



**UNIVERSITY OF LAGOS,
LAGOS, NIGERIA**

BOOK OF PROCEEDINGS



FOR THE
10th UNILAG ANNUAL RESEARCH
CONFERENCE & FAIR

Theme:
**Implementing New Research
Strategies for National
Transformation**

Date: 24th - 26th, November, 2015

Venue: Multipurpose Hall,
University of Lagos,
Akoka, Lagos.

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FOR NATIONAL TRANSFORMATION**

November 24-26, 2015

BOOK OF PROCEEDING

VOLUME 1 – Humanities:

***(Arts, Business Administration, Education, Law & Social
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PREFACE

BOOK OF PROCEEDINGS-10TH UNILAG RESEARCH CONFERENCE & FAIR NOVEMBER 24-26, 2015

It is a great pleasure to welcome everyone to the **10th UNILAG Annual Research Conference & fair with the theme *Implementing New Research Strategies for National Transformation***. The current development of modern science and technology combined with management on social and economic activities are contributing more solutions to national empowerment and development. This year's conference continues its tradition of being the premier forum for presentation of research results and experience reports on leading edge issues.

The conference will provide a major interdisciplinary forum for presenting new approaches from relevant areas of the sciences and humanities to foster integration of the latest developments in scientific research into applications, and to facilitate technology transfer from well-tested ideas into practical products.

Researchers, Practitioners, regulatory agents,—decision-making officials,—consultants, and vendors will all benefit from the—opportunity to exchange information on recent research trends and to examine ongoing research programs and **promote effective networking, coordination and cooperation channels between researchers, government and organizations**.

All participants are encouraged to attend the keynote and plenary sessions. These valuable and insightful talks can and will guide a better understanding in the future of research results.

Professor Christopher Allan Shisanya, the Dean, School of Humanities & Social Sciences; Kenyatta University, Kenya will deliver the keynote address on **Implementing New Research Strategies for National Transformation** as well as the plenary on **Climate Change and National Transformation in Nigeria**.

Other Plenary Speakers are:

1. Professor **Charles O. Esimone - DVC (Academics & Research)** Nnamdi Azikwe University, Awka
2. **Professor G.O.G. Awosanya**, Provost of Lagos State University College of Medicine, Lagos
3. **Engr. Dr. Emmanuel M. Adigio – Associate Professor in Mechanical Engineering and Deputy Director Technical**, Niger Delta University, Bayelsa State.
4. **Professor Ayo V. Atsenuwa**, Head, Department of Public Law, Faculty of Law, University of Lagos
5. **Dr. Gbolahan Gbadamosi**, Business School, Bournemouth University, UK

This year's conference has also featured a workshop on ***BASIC CONCEPTS OF PROPOSAL WRITING & GRANT MANAGEMENT*** on the second day of the event.

The call for papers attracted submissions from all over Nigeria, Africa, Europe, and the United States. The program committee received a total of **331** full papers and abstracts for review; accepted **190** full publications for Oral presentations and **110** abstracts for Poster presentation from the Sciences and Humanities discipline. The oral presentations are to run concurrently in the **five (5)** parallel sessions.

The following publications are available for participants:

A book of Abstracts containing all accepted abstracts submitted (300), including the abstracts of accepted full papers and a CD containing Two volumes of Books of Conference Proceedings in Pdf format are made available for participant.

Volume 1: for Humanities: **81** Papers from the Faculties of Arts, Business Admin, Education, Law and Social Sciences.

Volume 2: for Sciences: **109** Papers from the Faculties of Basic Medical Sciences, Clinical Sciences, Dental Sciences, Engineering, Environmental Sciences, Pharmacy and Sciences.

Putting together the conference has always been a team effort. All authors are well appreciated for providing the content of the program. Sincere appreciation to all members of the Conference Planning Committee (CPC); the abstracts and program sub-committee; and the reviewers who worked very hard in reviewing papers and providing feedback for authors. Finally, the University of Lagos Central Research Committee (CRC) led by the Deputy Vice Chancellor Academics & Research (Professor Babajide I. Alo FNAS) for providing leadership in the sustenance of research and scholarship and Congratulations to the University's management as backbone of the conference sponsor, and our generous corporate supporters.

There is a conference proceeding but the question is what's next? This matter has always been raised. I think it should be our reflection now -- what's next? This conference is a success because of everyone's efforts and participation.

Thank you very much!



Professor Olukemi A. Odukoya FPSN

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- 15/ART/06 existential Interrogation of Max Weber’s Cultural Determinism and Its Implication on Africa’s Development. **Oni, Michael Olatunji**
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ARTICLE TITLE: ETHICS OF HUMAN CLONING IN BIOTECHNOLOGY: AN EVALUATION FROM KANTIAN MORAL PERSPECTIVE

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ABSTRACT

Although considerations into the issues of human cloning are still speculative, the birth of the first successfully cloned mammal, the sheep Dolly, by Ian Wilmut and his colleagues, as published in the journal *Nature* in 1996, created a shift in the ethical discourse of human reproduction, stem cell research, and even the indirect use of potential ‘persons’ in scientific research that gave no considerations to human dignity and personhood. Owing to the boomerang effect of that biotechnological breakthrough in the United States at that time, President Clinton immediately banned federal financing of human cloning research and asked privately funded scientists to halt such work until the newly formed National Bioethics Advisory Commission could review the “troubling” ethical and legal implications. The Director-General of the World Health Organization (WHO) also joined in the campaign and characterized human cloning as “ethically unacceptable as it would violate some of the basic principles which govern medically assisted reproduction. These include respect for the dignity of the human being and the protection of the security of human genetic material.” This paper attempts to critically analyze and evaluate the moral arguments put forward for and against human cloning. It argues that attempts clone human being poses fundamental questions about man; his worth, individuality and dignity. The thrust of the argument derives from Kant’s philosophy on human dignity. A maxim from Kant’s Categorical Imperative states: “Act so that you treat humanity, whether in your own person or in that of another, always as an end and never as a means only”.

Keywords: cloning, biotechnology, human dignity, categorical imperative

1.0 INTRODUCTION

There is no doubt that among the technological breakthroughs that will define the time for future generations are: cloning and biotechnology. The advances made in the past decades have been tremendous and they are only a taste of what is yet to come. Virtually every aspect of our lives from what we eat, to our medical care, to how we live and work will one way or another be affected by them. In line with the above statement, Jay and Preston (2004), write: “imagine a world where cells can be created for therapeutic treatment of certain diseases or whole organs, generated for transplants. Extinct species of animals could be restored to earth’s population. Humans could duplicate themselves or make exact copies of deceased ones. While these things may seem a bit far-fetched, cloning could one day make a likely possibility.”

Since the cloning of the sheep Dolly, techniques have developed for cloning mice, goats, cattle, and other mammals. These successes have opened the door to the possibility of cloning humans. All of these accomplishments are remarkable, however a question that remains important to consider is: should we clone? The above question is commonly asked with reference to human related cloning, specifically embryonic stem cell research. This paper therefore aims in responding to the question of human cloning from the Immanuel Kant moral perspective.

1.1 CLARIFICATION OF CONCEPTS: BIOTECHNOLOGY AND CLONING

1.1.1 Biotechnology: Towards Definition

The word biotechnology is a cross between the Greek words ‘*bios*’ (everything to do with life) and ‘*technikos*’ is defined by, The Organization of Economic Co-operation and

Development (OECD) “as the application of scientific and engineering principles to the processing of materials by biological agents.” More simply, it is using living organisms to make useful products. Put in another light, biotechnology means the use of biological processes, organisms, or systems to manufacture products intended to improve the quality of human life.

1.2 SOME BIOTECHNOLOGICAL ACHIEVEMENTS

1.2.1 In-Vitro Fertilization (IVF)

In vitro Fertilization is the fertilization of a woman’s egg by her egg and a sperm together outside the body in a petri dish. After cell division takes place, the egg is returned to the mother’s womb. In other words, IVF involves fertilization of an ovum by sperm placed together with it in a sterile plastic dish that is kept in a warm, moist incubator, followed by transfer of the fertilized ovum into the mother’s prepared womb. It is transferred to the uterus of the mother or a receptor; a surrogate mother, (Iroegbu, 1994).

1.2.2 Stem Cell Research

Stem cells can be described from the word itself; cells of the stem. That means to say, they are those cells that are to be found at the basic being of the human person. They are the mother cells, from where all other cells are derived. Stem cells are the basic cells.” By way of definition, Stem cells are non-specialized cells that have the capacity to divide indefinitely in culture and to differentiate into mature cells with more specialized functions. Thus, any organ or tissue can be regenerated.

1.2.3 Genetic Engineering

This is also called Recombinant DNA Technology. It is the process of changing the genetic material of a cell. This technology which developed in the 1970s sparked up what has been referred to as the beginning of a new era in medicine. They hold the ‘plan’ of the particular individual in which they occur the same way an architect has the plan of the house he designs.

1.3 CLONING: A MISCONCEPTION

A quick and briefly look at what cloning is not will help us to understand what cloning is. By and large, cloning is not what you see in the movies. In the words of Aaron (2007), it is not photocopying. If you cloned your dog today, there would not be an exact replica running around and barking tomorrow, as suggested in the Arnold Schwarzenegger hit, *The Sixth Day*. Rather, you would create an embryo that could potentially be transferred into the womb of a surrogate mother. Nine weeks later, if all went well, a puppy would be born. This puppy would be genetically identical to your dog but, obviously, much younger. It might look like its parent but it would experience a different environment and, perhaps, mature differently. They would be infants, not adults as portrayed in the movie such as *Multiplicity*.

1.4 CLONING: ETYMOLOGY AND MEANING

Literally, Cloning means making copies of one thing, (Richard and John, 2006). In other words, Cloning is an umbrella term used to describe various process of duplicating (biological) materials. Etymologically, the term cloning is a derivative of the Greek “*Klon*” which means to “*bud*” or “*twig*”, (Pascal, 2007). Therefore, human cloning means generating at least one copy of another individual person. In a literal sense, identical twins are genetic copies of each other or clones of each other: they physically look alike and their genetic makeup is identical. Iroegbu (2006) refers to cloning is the scientific reproduction of a given organism in its DNA molecule. It is the production of a clone (another copy) of a given being. It is therefore, a sort of repetition of a being already in existence. The American

Medical Association defining cloning from the human being perspective says in a simple language as “copying a person”. For Andrew (1980), to clone is to make a person or organism again. It is to make clones of a given person, duplicating him or her once, twice, thrice indeed as many times as one wants. It is to make a carbon copy or more technically to realize a nucleus transplantation of the donor of the cell nuclei.

1.5 TYPES OF CLONING

1.5.1 Natural Cloning (Cloning in Nature)

This refers to the naturally occurring form of asexual or vegetative reproduction that characterizes some plants and lower animals. They constitute clear examples of cloning in nature. Binary fission, for instance, in amoeba in which two identical daughter cells are produced by the splitting of the parent cell is a good example of cloning in nature. Another spectacular example of cloning in nature is the process of identical or monozygotic twinning in human beings. This is the process whereby a single human embryo splits into two identical twins, (Christian, 2001).

1.5.2 Scientific Cloning

This is the notion people generally have in mind when the word cloning is used. Scientific cloning refers to the induced form of the natural processes of splitting, binary fission, monozygotic twinning et cetera found in some plants, lower animals and man respectively resulting in the production of an organism genetically identical to the parent organism that is, an induced form of asexual reproduction. It is the process of; making a genetic replica of an organism (plant or animal) or part of that organism (may be for transplant) from its cell. In the case of human cloning, it would involve making a genetic replica of a particular person once, twice or as many times, as the need arises.

2.0 HUMAN CLONING: OPPOSING VIEWPOINTS

The only way in which a human being can make some approach to knowing the whole of a subject is by hearing what can be said about it by persons of very variety of opinion and studying all modes in which it can be looked at by every character of mind. No wise man ever acquired his wisdom in any mode but this(John Stuart Mill).

2.1 Arguments for Cloning

2.1.1 Cloning For Therapeutic and Reproductive Benefits

The problem encountered, by the rising increase in the need for organ and tissue transplant and the burden it places on the donor and search for donors seems to come to an end with the possibility of human cloning as an end in view. This seems to be one possible benefit of cloning that is cloning for therapeutic benefits. Dan (2003) opines that human cloning would solve the problem of finding a transplant donor who is an acceptable organ or tissue match and would eliminate, or drastically reduce, the risk of transplant rejection by the host.

2.1.2 Preserving Society’s Rare Gems

The possibility, of human cloning, comes along with the idea of perpetuating those essential genetic characteristics of individuals, which is responsible for the individual’s achievements and possible survival. The hope of re-producing more than one Nelson Mandela, mother Theresa, Jesus Christ, et cetera, gives impetus to the call for human cloning. In other words, human cloning would allow families or society to reproduce individuals of great genius, talent, or beauty where these traits are presumed to be based on the individual’s desirable or superior genetic make-ups.

2.1.3 Human Cloning Helps to Solve Infertility

Solving infertility seems to be the central aim why cloning as a biotechnology phenomenon was evolved. According Jay and Preston (2004), one of the primary reasons for cloning is that it can help infertile couples have children who are genetically related to one of them. In this case, if a man, for example, could not produce sperm, he could still produce offspring by cloning. And if a woman could not produce eggs, she could produce offspring by cloning as well. This implies that Human Cloning would allow women who have no ova or men who have no sperm to produce an offspring that is biologically related to them (Robert,1993).

2.2. Arguments against Human Cloning

2.2.1 Cloning: Destroying a Sense of Self

If someone is a mere clone of a parent, what sense of self can there be? Will he feel he is fated to merely be an imitation of a parent, and so has no free will? Will he think that his life is already predetermined for him?" In addition, most people feel the weight of expectations from their parents how heavy will that weight be, knowing that a parent wanted an exact replica of himself? Worse still, what of those people who were cloned from the cells of a dead child imagine the expectations and sense of guilt that would accompany that person through life? Clones would certainly be aware of their natural predecessors and might suppose that their life course would be the same. This could discourage any ambition or hopes that they might have. Or clones might feel expected to match the accomplishments, if any, of the cloned persons, (Jay and Preston, 2004). Richard (1997) in his book: "The Confusion over Cloning" says: "their pride or satisfaction in their life direction could be diminished. Any sense of individuality, specialness, or freedom could be lost, and this—combined with the pressures of expectations—could cause severe psychological damage.

2.2.2 Diminish the Worth/ Respect for Human Life.

Human cloning will diminish the worth of the human person, if the person is cloned for the purposes of achieving a task for the society. In this wise, human cloning for such purposes would exploit the clones solely as means for the benefit of others, and would violate the equal moral respect and dignity they are owed as full moral persons. A different version of this worry is that human cloning would result in persons' worth or value seeming diminished because we would now see humans as able to be manufactured or "handmade." According to Kass and Wilson (2002), if human cloning becomes possible and legal, it would take away that feeling of continuity and confidence that results from belonging to a huge family of like individuals springing from a common experience. The clone would be outside that experience and therefore might be considered less than human.

2.2.3 Medical and Scientific Complications

Before, the successful cloning of Dolly many embryos were destroyed. If embryos are regarded as a human being in potentiality, it means that the life human person would have been lost as result of cloning. The whole experimental process cloning involves trial and error. If an error is made and an imperfect specimen is the result, the specimen is disposed of. To this end, Lee (1997) says, in human cloning, the error may not show up for months or even years. It would be heartless, as well as criminal, to dispose of an imperfect clone that had survived the rigors of birth."

2.2.4 Human Cloning could be used to Solve Social Problems

In his work titled "Cloning Serves the Interest of Those in Power," Jonathan(2003) opines that human cloning could be used to solve social problem by governments or groups to further their own interests or goals. Human cloning could be used by government and

individual selfish gains. Many science-fiction novels and motion pictures capture it clearly: clones as slaves, clones as robot like servants, clones as uncomplaining laborers in horrifying working conditions, clones as human guinea pigs in dangerous experiments, clones as soldiers to be sacrificed when required—these are just some of the possibilities for the misuse of human cloning.

2.2.5 Cloning Could Mean the End of Sexual Reproduction

Shortly after the announcement of the cloning of Dolly and the raising of the possibility of human cloning, **The New Times** quoted a woman biologist as saying that if cloning were easily accomplished, **“there will be no need for men”**, (David, 1999). She could be joking, but many have taken the possibility seriously. Therefore, if human cloning becomes possible, a woman could produce a clone without a man. All that would be required, besides the cloning techniques, would be DNA, an egg, and a womb either her own or another woman’s.

3.0 HUMAN CLONING FROM KANT’S MORALITY ON HUMAN DIGNITY

A quick look at the categorical imperative of Immanuel Kant will help a great deal in understanding this write-up on his arguments against human cloning:

3.1 The Categorical Imperative

The categorical imperative commands a law that forms the basis of particular actions. It is categorical because it instantly applies to all rational beings, and it is imperative because it is the principle on which we ought to act, (Stumpf and Fieser, 2008). The imperative is based on Kant’s “Humanity Formulation,” which states: “An action is right if and only if the action treats persons as ends in themselves and not as mere means.” This means that to treat a person as mere means is to regard him or her as solely an instrument for one’s own devices, which would be to overlook that person’s dignity or wholeness of self, (Timmons, 2011).

3.2 Human Person: Moral Equality cum Dignity

Humans have considered themselves to be essentially different from all other creatures and not just different but better because they have a moral worth or value. Without doubt the most influential proponent of the view that all human beings possess human dignity is Kant. Kant holds that human beings have “an intrinsic worth, that is, dignity, which makes them valuable” “above all price.” Other animals, by contrast, have value only insofar as they serve human purposes.

A critical analysis of Kantian categorical imperative reveals Kant’s moral theory emphasizes moral “equality” and human “dignity.” Human cloning strips the cloner this sense of equality in that one who is clone as a warrior will be expected to act as such and others inferior or others will consider him as inferior and product of scientific discovery and advancement. Not to treat others as equal as a person is, in a way, disrespecting them.

Therefore, by human dignity, Kant means that the human being, which is also the “person” “man” or the “rational being” has an absolute inner worth. Kant understands the human person as an intrinsically free being that is an end in itself. Kant states that in the kingdom of ends everything has either Value or Dignity. Whatever has a value can be replaced by something else as its equivalent; on the other hand, whatever is above all value and therefore admits to no equivalent, has dignity (cited in Herbert, 1964). According to Paschal (2011), human beings have an inherent dignity...As a result; some reproductive techniques have come under intense criticism as being unworthy of human dignity. Therefore, any artificial

reproductive system (example, human cloning) contravenes Kantian thought that “Everything has either a price or dignity.

3.3 Kant’s Right Motive vis-à-vis Human Cloning

Kant was a deontologist. This means that he made ethical decisions by considering the nature of the act itself, not its consequences. Kant would not think that the benefits of human cloning make it morally justified but the process involved in creating cloned person. Again from the categorical imperative, Kant makes his argument against human cloning from the point of view of right motive. **What is the right motive for Kant?** Kant believes that an act has specifically moral worth only if it is done with a right intention or motive. Everything else needs a good will to make it good. “Without a right intention, such things as intelligence, wit, and control of emotions can be bad and used for evil purposes. Although, proponents of human cloning may argue of their intention to clone is for example to help infertile couple. Therefore, their intention is good. But then, what in the case where one wants to clone for the purposes of exploitation and war? Hence, Kant concludes that it is not only the motive that counts we must also do what is right. The act itself must be morally right. Both the act and the motive are morally relevant.

4.0 EVALUATION: HUMAN CLONING FROM A PHILOSOPHICO-MORAL PERSPECTIVE

We shall now examine the morality of human cloning, that is, the replication of not just a part or some organs, tissues, specialized cells et cetera of human person, but of the full individual, whole and entire given the possibility.

Cloning understood as the multiplication of a given species or part of it is not the problem. To multiply is the very part and function of nature; it is inevitable if any species is to survive. Hence cloning as cloning is morally neutral. “That means that cloning can be good, as it can be bad. It depends on the motif (sic), method, implications, factors involved in the practice, and the consequences of such cloning praxis, (Iroegbu, 2005).

However, the problem and debate of human cloning arise at a different level. It is at the level of the **intention** and the use made of the cloned subjects or objects. When one considers the attending consequence and ongoing practice that arise from the cloned objects, then one begins to see the ethical problems. And they could be serious ones that attack our very beings as persons and as the human community with human values and intimate concerns.

On a religious ground, human cloning would amount to “**playing God**.” The idea is that only God can and should create a human life. This means that the coming to be of a new person is a creation, not a making or production. A creation is the bringing into being of a human being, a mysterious thing and something that we should regard with awe. When we take on the role of producing a human being, as in cloning, we become makers or manipulators of a product that we control and over which we take power.

More so, **cloning humans is unnatural**. This means that it goes against nature. In humans, as in all higher animals, reproduction is sexual, not asexual. Cloning, however, is asexual reproduction. Therefore, cloning humans is “contrary to nature”. While asexual reproduction does occur in nature, it is unnatural for the species *Homo sapiens* which practices sexual reproduction.

Human cloning which infringes the human dignity is that human beings would be used for exploited motives. That is the **exploitation of the individual**. Using Nigeria as a case study

where human rituals and sacrifices are carried out, if human cloning is feasible, then a **ritualist** would simply buy a clone person for ritual and sacrifice without being held responsible because the human person is sold as a commodity.

Finally, in human cloning, the person cloned would not be a unique individual. He or she would be the genetic copy of the person from whom the somatic cell was transferred. He or she would be the equivalent of an identical twin of this person, though years younger. He or she would live a pre-determined life from his clone and that affect him or her psychologically if it fails to meet to the standard of his clone to be like. Hence, Barbara (2007) opines that there is dignity and worth attached to our uniqueness as individuals, cloned individuals would not have it.

5.0 CONCLUSION

Our discussion has come full circle and what is left is to make bold the highpoint(s) conclusion reached in this write-up. This is the fact that human cloning, in event of its possibility, is unjustified besides being harmful to man and his society.

Firstly, human cloning seems to be saying that there's an ideal mode of human existence, a blueprint that lays out what it is to be human, predicated on.

Secondly, human cloning will hoard human life, putting it on hold and calling it forth into animation when it so desires. This dehumanizes man and makes him, not a product of authentic love by which we are all human but of scientific and technological wizardry and workaholism.

Lastly, cloning downplays marriage and promotes single parenthood with all its negative consequences. This makes sex saleable as well as deprives it of one of its principal functions -procreation.

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APTITUDE IN MUSIC: NOT AN ALTERNATIVE FOR A CAREER IN MUSIC EDUCATION

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ABSTRACT

The presence of music is of great significance in all spheres of life all over the world and Nigeria in particular. There is a plethora of musical talent shows being sponsored by telecommunication giants, breweries and other industrial conglomerates, such as 'Talent Hunt', 'Star Quest', and 'Project Fame' in Nigeria. It is pertinent to note that most of the musical activities going on in these groups are based on the achievements of a musical artiste through his or her actual performance on the stage. It does not show his/her aptitude, that is, the degree to which he/she can succeed if he/she takes a career in music. Only the knowledge of musical aptitude can reveal such, the need to document the association between musical aptitude and musical ability in Nigeria is essential to this study. Ten secondary schools were selected through a stratified random sampling procedure from five education districts. The study also proposed a sample of sixty participants for each of the selected schools. Musical aptitude and musical ability of the selected students were measured using scales adapted from Herbert Wing. A Chi-square test was done to test the relationship between their musical aptitude and musical ability. The implication of the findings is that knowledge of students' musical aptitude would assist in the selection of musical materials, their content and teaching strategies appropriate for each student.

Keyword: Music, Aptitude, Career, Music Education.

INTRODUCTION

Learning about sound and music has since ages been recognized in the didactic program in the World, since ages. Since the Pharaonic Egypt (in our own Africa) and through Greece: in fact in Ancient Rome, the Minister for Education and Culture- Marcus Terentius Varro- issued the Ministerial order decreeing music as one of the quadrivial (four) mathematical subjects (discipline) which comprised: Music, Arithmetics, Astronomy and Geometry: these four disciplines were obligatory in all institutions of higher learning. All the men of science and letters- philosophers, physicist, mathematicians- not omitting the musician themselves- since the era of the Egyptian Pharaohs in the B.C. years, through Greece and Rome, through the middle ages till the beginning years of our own 20th century enjoyed and benefited to varying degrees, from music education. Music is still recognized in the curriculum of studies till today.

More importantly, as demands for effective music education programmes increase, music educators will be requested to offer their service in channeling people towards choosing a career in music, the teacher of music oftentimes look out for students not only with ability in music but students having aptitude in music. It is therefore important to begin to describe music aptitude in persons so that music education programmes can effectively meet the developmental needs of students.

LITERATURE

Gibbon expresses that one premise of music education is that the arts are an integral part of human development and that music education contributes to that development (23). Music education is therefore important for human development in persons of all ages, including the young and old. Radocy and Boyle explain that development through music education depends, in part, on musical aptitude, and also on musical ability, that is, music behaviours that are a consequence of capacity, environmental influences, and formal instructions (263). If music ability is an integral part of musical development, an assessment of music ability is essential in the design and implementation of the most effective and efficient music education programmes for all age groups. Musical aptitude in fact reveals the extent of the musical abilities present in a child, thereby making the teaching and learning process efficient. It is therefore important to explain the concept of aptitude to music education as explained by various scholars. One study indicates that some persons desire music education because they are not satisfied with their current music skills and want to improve them (Gibbons 24)

Quintilian explains that:

If we make an absolute divorce between the two [nature and education], nature will still be able to accomplish much without the aid of education, while the latter is valueless without the aid of nature. [. . .] Nature is the raw material for education: the one form, the other is formed. Without material art can do nothing, material without art does possess a certain value, while the perfection of art is better than the best material (349).

Murphy (1990:71); Kennedy (1999:118), circulate the necessary-but-not-sufficient theory of aptitude, the pervasive commonplace of how innate ability (natural) relates to education (doctrinal). As the passive-yet-privileged nature of students, these researchers assert that aptitude can exist independently of the more active force of education, which only serves a supplemental role. Deploying an agricultural analogy, Quintilian contends “A thoroughly barren soil [that is, aptitude] will not be improved even by the best cultivation [that is, education]; but in the case of really rich land cultivation will do more for it than its own natural fertility” (349). In other words, a “natural” singer who possesses no training in singing is more effective than a trained singer devoid of aptitude; the ideal singer therefore arises from a balance of aptitude and education. McDonald and Simons support this assertion and conclude that musicality is a product of both nature and nurture, and one does not operate without the other (41). Also, Nelson takes the view that one of the responsibilities of education is to conserve and utilize human resources to the utmost advantage in order to provide for the happiness and well-being of the individual it serves. One of the challenges of secondary music teachers is to guide talented students into music and music education (97).

The word “aptitude” refers to fitness for performance although it is described in different ways by different people. Chauhan defines aptitude as a condition symptomatic of a person’s fitness, of which one essential aspect is his readiness to acquire proficiency in his potential ability and his readiness to develop an interest in exercising his ability, thereby revealing his/her essential ability in a given area (308). Most music educators, according to Schmidt and Jean (160), would agree that the development of creativity (the ability to create) is an important goal and that the music curriculum offers a unique opportunity for its cultivation. It is therefore, important in this study to emphasize the place of aptitude in music education. Research exploring those factors that affect music achievement has been of ongoing interest to music educators and others involved in the field of music education and music psychology. According to Harrison, Asmus and Serpe five variable types have been emphasized in the search for predictors of music achievement: (1) musical talent and

aptitude, (2) academic achievement, (3) intelligence, (4) musical experience, and (5) motivation for music.

Few studies, however, have simultaneously incorporated all five variables as predictors of music achievement. Investigators in most of these studies have looked at the simple relationship between music achievement and one of these five variable types. In a large number of studies, measures of musical talent and aptitude have been used to predict music achievement (132).

Career fields more often than not use particular patterns of aptitude; if one lacks aptitude his work may be difficult or unpleasant. Scholarly works have been written on the concept of aptitude in music education internationally. Richard Snow's conception of aptitudes is particularly useful: his view that aptitudes are multidimensional, his notion that aptitudes interact with situations which have multiple layers, and his focus on both the process and the product of aptitudes. Snow views the primary function of schooling as the development of aptitudes. Using Snow's conceptualization of aptitudes to define music aptitude may ultimately provide researchers and educators' insight into the best ways to teach this aptitude (1). Snow defines aptitude as the "degree of readiness to learn and perform well in a particular situation or in a fixed domain". He emphasized that three facets of the mind play a role in aptitudes: the cognitive (being able to analyze and interpret events), the affective (feelings and emotions), and the conative (goal setting and will 213).

Snow further emphasizes that aptitude such as intelligence are the "raw material for education and a product of education" it then need to be studied as inputs and outcomes when examining aptitude in individual (Martines, qtd. in Gehbach 215). Students' aptitude depends upon how effectively their cognitive and motivational resources interfere in tasks that are situated within a broader educational context. This aptitude, according to Gehbach, may be important in their own right and may also be important as a means to another end (215).

Akpata notes "music demands all skills, hence trained musicians must understand the mathematics behind musical rhythms and the science behind the production of a musical sounds both instrumentally and vocally." She adds that "in addition to the training, there must be a God-given talent." That talent she asserted can neither be taught nor be subject to examination malpractices, but could be nurtured and developed. She said students also need to have the passion to develop and share the talent (24). This was supported by findings from a survey that indicated that more than 75% of a sample of educational professionals believed that playing an instrument, singing and composing required a special gift or natural talent (Davis 537).

Hallam and Prince explored the qualitatively different ways in which groups of people with differing levels of involvement in active music making conceptualised 'musical ability'. Individuals (129 musicians; 80 non-music educators; 112 adults in other occupations; 60 students involved in extracurricular music; 34 not involved in extra-curricular music) were asked to complete in writing the statement "Music ability is": The statements were analyzed using an interactive process of categorization. Musical ability was conceptualized in relation to: aural skills; receptive activities; generative activities; the integration of a range of skills; personal qualities and the extent to which it is learned. In addition, the concept of musical ability was constructed in different ways by each group of participants. The greater the active involvement with music making the more detailed and complex the constructions became. This qualitative research, relying as it did on individuals spontaneously generating

their own conceptualizations of musical ability, did not take account of non-articulated beliefs (45).

In teaching music, knowledge about a pupil's weaknesses and strengths may be more important than knowledge about which tasks tend to be easy or difficult for the pupil. Aptitude in music education reveals such knowledge. Mereni (2007) describes the aim of Music education "as the acquisition of a musical ability" (56). It is therefore essential that the music educator puts into consideration the musical aptitude of the child in order to help the child develop musically. Leonhard stated that musical aptitude certainly has not escaped scrutiny in the hands of music educators and music psychologists, yet it must be recognized that beliefs regarding both the source and the description of musical aptitude should, and do, affect teaching procedures. The concepts of aptitude are mostly descriptions about tasks which people can perform, and those descriptions say little about how they do it (5-7).

Furthermore, one might be curious as to why for the past fifty years or more researchers such as Edwin Gordon, Drake Bentley, Herbert Wing, and Carl Seashore have shown more interest in musical aptitude. This interest is perceived to be the bedrock upon which music education is built. Zerull also asserts that the purpose of music education is to develop every child's capacity to make and experience music to the fullest extent possible (41). Similarly, Wing investigated this in music education; a child is expected to be a performer, a composer, or a theorist, and the concept of aptitude in music education will help music educators to determine who could be a performer, composer, or theorist in the future, thereby reducing the rate of people who might go into an area of their interest in music where they have little or no aptitude. Musical aptitude will help in proper placement of people into areas of music where they have aptitude (4). It reduces, to the barest minimum, the number of those going into a music career – instrumental or vocal – that may not have the fitness for performance.

However, Gordon is of the contrary opinion that it is not the duty of music educators to exclude a child from music class; hence, he disagrees with the findings that pupils who could not profit in a music class should be stopped from attending music lessons. He therefore insists that deliberate efforts should be made to follow up those who may have lagged behind in music (43). Leonhard agrees with Gordon and asserts that students most efficiently learn when instruction is directed appropriately to meet their individual levels of aptitude, whether they are music performers or they are engaged in general music activities (6). It is therefore in the interest of the music teacher to determine the level of musical aptitude present in a child in order to help such a child improve musically. Corroborating this assertion Gordon opines that how well one develops audiation (comprehension about music) and is able to understand and enjoy music is in large part dependent upon how well he or she is taught music (42). The best way to account for musical differences among children is to adapt the musical guidance and instruction they are receiving to their individual musical strengths and weaknesses. It is therefore the function of the music educator to cater for each child's need by knowing the musical aptitude each one of them possesses.

Onyiuke comments that it is rather unfortunate that musical activities these days have appeared to be the privilege of a select few, or deemed as aesthetic add-ons to the school curriculum (45). Ho, Cheng and Chan (n.p.) presume that music lessons would increase musical aptitude, as well as the non-music abilities associated with aptitude (2003). Sloboda also found that we all possess musical ability and that uncovering it requires careful consideration of how best to ignite interest and nurture its development (144).

It is the function of music educators to take students with aptitude in music seriously as Marzluf believes aptitude arises quietly and insidiously in the attitudes of teachers, students, parents and administrators, and reveals itself most often in the undocumented conversations in hallways, classrooms, and teaching practicums that constitute teacher lore (294).

METHODOLOGY

Primary data were sourced through a musical aptitude test, use of a questionnaire and non-participant observation. Answer sheets for each subject were scored for the number of correct and incorrect responses, while the number of “do not knows” or neutral responses were all sources of primary information for the study. The secondary sources of data collection are textbooks from the art discipline, psychology, and education. Unpublished dissertations, online journals, magazines and print media were sources of major information in this study.

The music aptitude test was preferred in a study of musical aptitude of students because it brings out the pre-musical experience a child has before training starts.

RESULTS

What is the relationship between the child’s musical ability and musical aptitude?

Table 1: Frequency and Percentage Distribution of Respondents by Musical Ability

Items	Options	Frequency	Percentage
I can sing.	No	164	27.4
	Yes	434	72.6
	Total	598	100.0
I do not play a musical instrument.	No	340	56.9
	Yes	258	43.1
	Total	598	100.0

At the end of the study, evidence from Table 1 shows that 72.6% of the respondents were of the opinion that they can sing while the remaining 27.4% of them responded otherwise. In order to find out the level of musical ability in a child, the questions on whether a child can sing or play a musical instrument was asked. The study shows that out of the 598 students used for the study 56.9% of them said they could play musical instruments while the remaining 43.1% stated clearly that they could not play any musical instruments.

Table 2: Frequency and Percentage Distribution of Respondents by Musical Aptitude

Items	Options	Frequency	Percentage
Respondents pitched the sound on the piano	Poor	142	23.7
	Average	32	5.4
	High	215	36.0
	Very high	209	35.0
	Total	598	100.0
Respondents could not identify the sounds they listened to	Poor	489	81.8
	Average	21	3.5
	High	57	9.5
	Very high	31	5.2
	Total	598	100.0
	Poor	82	13.7
	Average	127	21.2
	High	221	37.0
	Very high	168	28.1
	Total	598	100.0
Respondents can clap to the rhythm			
	Poor	56	9.4
	Average	114	19.0
	High	225	37.6
	Very high	203	33.9
	Total	598	100.0
Respondents know the sounds produced by the musical instrument			
	Poor	262	43.8
	Average	51	8.5
	High	152	25.4
	Very high	133	22.2
	Total	598	100.0

The researcher awarded marks for the sounds produced by each student and it was observed as follows: 35.0% of them properly pitched the sound on the piano; 36.0% were able to pitch the sound of the piano well but not perfectly; 5.4% were just average while 24% did poorly in pitch production. The students were tested in their ability to identify the sounds they listened to. From the results, it was observed that 81.8% identified the sound that was played; 3.5% of the samples were average; 9.5% did poorly, while the remaining 5.2% were very poor in sound identification.

Table 2 above reports the ability of the sample to remember the original music that was played. The result shows that 28.1% of the sample remembered the original music, while 37.0% of them also did fairly good; 21.2% were just average at remembering the original music; and 13.7% were poor at the musical memory test. The respondents were tested in their ability to clap to the rhythm and the results showed that 33.9% of the sample were able to clap to the rhythm; 37.6% could also clap to the rhythm but not very good; 19.0% were just average, and 9.4% of the respondents' clapping was poor. The level of knowledge of sounds produced by these musical instruments (violin, trumpet, drums, and flute) was tested, and the results show that 22.2% of the sample knew the sounds produced by the musical instrument perfectly; 25.4% were good at identifying the sounds produced, although 8.5% of them did not correctly get the exact sounds the instruments produced; 43.8% had poor results, as they did not know the quality of sounds produced.

Table 3: *Distribution of Respondents by Musical Ability And Musical Aptitude*

Musical aptitude	Musical ability		Total
	Can neither sing nor play an instrument	Can sing and/or play a musical instrument	
Poor	6 (27.3)	16 (72.7)	22 (100)
Average	53 (23.5)	173 (76.5)	226 (100)
High	35 (13.0)	235 (87.0)	270 (100)
Very high	6 (7.5)	74 (92.5)	80 (100)
Total	100 (16.7)	498 (83.3)	598 (100)
Chi-square = 16.733; df = 3; p-value = 0.001			

There is a significant association between musical aptitude and musical ability. Musical ability increases with musical aptitude. Among participants with poor musical aptitude, 73% had musical ability. Among those with average musical aptitude, the proportion with musical ability increases to 77 percent, while it rises to 87 percent among those with high musical aptitude. About 93 percent of those with very high musical ability had very high musical aptitude; hence, the higher the musical ability, the higher the musical aptitude.

DISCUSSION

It is important to differentiate aptitude from ability; therefore, we use a listening test that requires no previous musical experience or ability in playing a musical instrument. Music teachers' judgments about students' musical "talent" are often based significantly on musical achievement, not the potential to achieve. It is not uncommon, for example, for students of average aptitude to achieve at a high level as a result of a rich musical background and dedicated effort. Only a valid musical aptitude test can distinguish between actual achievement and the potential to achieve further. Because many students with high musical aptitude may not have had the opportunity to achieve in music, a musical aptitude test can reveal musical potential that might otherwise remain unknown to those students and their teachers.

This study establishes that musical aptitude reveals the extent of musical ability present in an individual. It is very natural to assume that persons who seem to have superior aptitude are also more interested in music studies and are more likely to choose a musical career. This study also shows that the parameter used in measuring musical aptitude in this study is quite different from the ones used in measuring musical ability, but the result reveals that these two terms are related. This means that children with higher musical ability are more likely to develop higher musical aptitude than those with low musical ability.

Sloboda et al. proposes the existence of a folk psychology of talent held by non-academics which postulated innately determined differences between individuals in their capacity for musical accomplishment (287). This was supported by the findings from a survey that indicated that more than 75% of a sample of educational professionals believed that playing an instrument, singing and composing required a special gift or natural talent (Davis 537).

SUMMARY OF FINDINGS

To investigate the possibility of a relationship between the child's innate musical ability and musical aptitude.	The study shows that musical aptitude and musical ability are positively related. The higher the musical ability the higher the musical aptitude.
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CONCLUSION AND RECOMMENDATION

Curriculum planners in the music field should enhance the quality of practitioners of early childhood music. Musicians and childhood educators who wish to teach young children should be properly trained. Schools at tertiary levels should be challenged to develop quality undergraduate programmes in music education. This would prepare musicians to work with young people in a variety of settings including community schools and formal early childhood centres.

The “golden years” of musical development matter. Teachers should be trained to effectively connect children and music at this critical stage in order for the children not to lose musical potential. More courses need to be established in our universities and colleges of education on how to help parents and future parents understand how to parent musically. This means that all schools should be mandated to take music as a core subject and not just see it as a hobby or as an appendage to other subjects. For instance, the present curriculum for secondary schools in Lagos treats music as a combined course known as Creative and Cultural Arts (CCA). It is only when music is taught as a core subject that all the items in its content will be fully appreciated and this will enable students to discover values inherent in music and this might eventually make them decide whether to take music as a career or not.

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THE EVOLVING CULTURE OF IGBO POPULAR MUSIC IN NIGERIA FROM 1940 TILL DATE: A HISTORICAL ANALYSIS.

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ABSTRACT

Popular music in Nigeria is kindled with high spirit of cultural awakening and representation by different ethnic groups in their various musical practices. This paper therefore takes a critical look at the evolution of the musical culture in the contemporary Igbo popular music in Nigeria from the pre-independence era (1940) to the modern era (2000). Coming from a historical perspective, this paper however adopts the ethnography method of gathering relevant data for evaluation and analysis. The outcome of the analysis thus reveals that the music element of the culture is the most evolved among other elements like the 'industry' and the 'audience/ consumer'. The independence/ post independence era (1960-2000) was observed to have witnessed the highest level of creativity and ingenuity in music production, performance and marketing. On the other hand, the modern era (2000 till date) was adjudged to have witnessed high level of technological influx into the music industry, in spite of that, lack of creativity and requisite standard in music creation and performance by the supposedly younger musicians was observed. The activities of music producers, promoters and corporate organizations in advancing popular music in Nigeria dominated the better part of the modern era. It is however recommended that this paper (which is like a historical document) should be archived in Cultural centres/ institutions in Nigeria for easy access and reference purposes to researchers and academia at large.

Keywords: Culture, Evolution, Popular music, Historical, Era

1. INTRODUCTION

Music is an integral part of any culture, expressing relevant features of a people's life and occupying a special place in the celebration of birth and death and other events in-between (Christopher 2004).

Culture is a French term derived from Latin word 'colere' meaning – to tend to the earth and grow, or cultivation and nurture (Zimmerman 2015). As defined by the Centre for Advance and Research on Language Acquisition, culture is a shared pattern of behaviours and interactions, cognitive constructs and understanding that are learned by socialization (Zimmermann 2015). It is imperative that the more a country or society grows in size (increased population), the more diverse the culture due to interactions by people with different backgrounds and affiliation. For example, Nigeria can be said to be diverse culturally owing to its numerous ethnic groups residing within its geographical enclave.

This paper examines popular music as practised by musicians who represent the Igbo ethnic group in Nigeria. To fully achieve the aim and objective of this paper, it is pertinent to give brief background on 'Igbo' as a linguistic element and also an identity of a particular race or people, and by extension, the evolution of their music.

Igbo language is classified in the 'Kwa' subgroup of the Niger-Congo language family, which is spoken in West Africa (Uchendu 1965; Onwuejeogwu, 1981). The language is spoken in Ala Igbo or Ani Igbo (Igbo land) by the people who are collectively referred to as 'Ndi Igbo';

their community is known as "Ohu na Igbo" - those in the lowlands and uplands. Oral tradition had it that the Igbos descended from the region of the Niger-Benue confluence five thousand years ago and did settle in Nsukka-Okigwe and Awka-Orlu uplands and later migrated from overpopulated and less fertile Igbo core areas to more fertile lands, particularly east of the lower Niger River. Today Igbo-speaking people live all over Nigeria and in diverse countries of the world. As a people, however, the Igbo are located on both sides of the River Niger in villages and larger communities as expressed by their political organization and they occupy most of south-eastern Nigeria. Presently, they constitute the entire Enugu, Anambra, Abia, Imo, Rivers (Ahoada area) and Delta (Asaba, Ika, and Agbo areas) States respectively (Nnamani 2014).

The concern of this paper therefore is to succinctly look at the music culture of the Igbos in Nigeria and carefully identify the key elements within this culture that witnessed monumental changes (either positively or negatively) within the contemporary music period 1940 – 2015.

2. PROBLEM

One of the major ethnic entities in Nigeria (Igbo) has in recent times been at the centre of various scholarly works and discourses. Most of the themes discussed emanates from cultural belief (Nwoye 2011); deity and morality (Ilegbune 2007); folk music (Nnamani 2014); musical instruments (Okoro 2012); family structure (Amobi 2010). But rather discouraging is the fact that little or no serious scholarly works or expositions have been done on contemporary Igbo popular music, the few existing literatures have given prominence to the traditional musical genre.

The foregoing however makes this paper very relevant and appropriate to the intent of bridging the existing gap in literature dearth on Igbo popular music. Furthermore, this paper will make attempt as part of its aim and objective to answer salient and pertinent questions: What is popular music culture and how did it evolve among the Igbos? What were those musical elements that experienced changes within the period? Which of the Igbo popular musicians made the most significant mark in the contemporary music scene in Nigeria during specific eras specified?

3. METHODOLOGY

In answering the afore-mentioned questions, the approach of this paper is largely descriptive, analytical and evaluative aimed at showing key aspects of Igbo popular music culture that underwent one form of metamorphosis or the other during the period specified. The perspective of this work is historical and as such the primary data (Igbo musical culture) is generated through ethnographic means. By ethnography, we imply that this paper intends to critically study and evaluate the socio-cultural changes within the contemporary Igbo popular music from the post independent era till date (1940-2015). Having been part and parcel of the same culture and society, the researcher feels the need to present an unbiased discourse on the subject matter based on advancement of ethnic identity in the academia.

Different literatures, books, journals, Masters and Ph.D theses were equally consulted in order to enhance the quality of discourse in this paper and also achieve a balanced research work.

Stemming from the angle of cultural anthropology and historical perspective, this paper however demarcates the period under study (1940 – 2015) into three distinctive eras for easy classification and analysis:

1. Pre-independence era (1940 – 1960)

2. Independence/ Post Independence era (1960 – 2000)
3. Modern era (2000 – 2015)

4. THEORETICAL FRAMEWORK

This paper will hinge its framework on the concept called ‘Evolution factor’ as one of the three (3) approaches relevant in tracing the origin of musical phenomenon in a non-literate society (Nettl, 1964). Whilst discussing Cultural dynamics in one of his literary works – ‘The Anthropology of Music, Merriam (1967) postulates:

The statement that culture is dynamic is a commonplace in anthropology, and it is equally applicable in ethnomusicology. No matter where we look, change is a constant in human experience: although rates of change are differential from one culture to another and from one aspect to another within a given culture, no culture escapes the dynamics of change over time.

Historians and ethnographers agree that culture (especially its musical element) is a very difficult concept to study, because it is constantly undergoing its own process of evolution which involves changes and adaptations to present realities. According to Ellwood, Cultural evolution simply indicates the evolution of civilization which is different from social evolution that only affects communities and their organization (779). Cultural evolution focuses on long term change of a social group not in size or location but in their behavioural pattern, artefacts and ideas due to migration. It is a process (though small) that takes place within and rises out of social evolution (Ellwood, 781).

Since this paper is interested in knowing how Igbo popular music culture evolved within the period specified, the evolution factor however underpins the intent and purpose expressed thus far. The varying elements of musical culture such as performance style, music products or style, listening audience, industry, and technological advancement will be used as parameters to determine the extent of evolution experienced in the musical genre (popular music) as initiated by contemporary Igbo musicians under the period (1940 – 2010).

5. WHAT IS POPULAR MUSIC CULTURE?

The word ‘Popular’ according to Wall (2003) connotes three different meanings by different people and from different viewpoints:

In one sense, popular things are widely liked. In another, popular things have poor cultural value and are associated with lower levels of education (as in the popular press). In the third sense, popular things belong to ordinary people of a society and express their interests and concerns.

Putting it in proper perspective for the purpose of this paper (Onyeji 2004) defines popular music as a genre encompassing several styles or hybrids which are readily comprehensible to a large number of the people without much knowledge of music theory or techniques. This does not differ from Shuker’s (2001) assertion that popular music is related as a person, product, practice, or belief that is liked or approved of by a large audience or have general interest. Tam Fiofori (2011); Piero (2007); Ekwueme (2004); Obi (2005); all attest to the fact that most popular musical styles or genres in Nigeria evolved through various activities of musicians who have affiliations with their various ethnic groups and by extension developed and popularized these musical styles or hybrids.

Having established the meaning of popular music as falling under the rubrics of this paper, we go a step further in defining the concept ‘popular music culture’. In his exposition on this subject matter, Wall (2003) posits that the relationship between music, industry, and

consumers is what constitutes popular music culture. The ‘culture’ aspect simply indicates set of ways or procedures of making sounds and images, consuming and thinking about music using different economic and technological means (Wall 2003:2).

The music aspect in the culture thus highlights the use of sonic elements (both voice and instruments) in expressing and communicating musical ideas through socially recognized channels and institutions to the target audience and consumer. Being a communicative tool, the musical product or style emanating from the contemporary popular music is embedded with the following elements which vary from one musician, period, socio-cultural context and geographical location to the other:

- Sources of inspiration
- Performance style & Costume
- Use of multimedia
- Identification and classification (existing styles or hybrids)
- Lyrical content/ themes (poetic / philosophical usage/adaptation)
- Instrumentation

For the purpose of analysis in this paper, these elements will be used as variables in determining the extent of change or evolution within the musical genre (Igbo popular music) during the period (1940 – till date).

Also, the **industry** aspect of popular music culture indicates the environment where the overall activities of corporately or individually owned institutions or organizations take place. These institutions are mostly vested with the responsibilities of promoting contemporary music cultures within and outside their geographical locations. They are involved as well in the production, packaging, distribution and marketing of musical symbols and ideas of talented and creative musicians / artistes. They create opportunities for exposure and forays into international music chart on behalf of the local musician/ artiste. These music promoters equally use planned music concerts especially during festive periods like, EID-DEL-KABIR, EASTER, and CHRISTMAS to bring artistes closer to their fans and also promote their music. Foreign tours and shows are also planned and executed by these promoters on behalf of their clients.

Examples of music producers/ promoters in Nigeria:

- Kennis Music Production
- Mo’Hits Records
- Premier Music Nigeria, and host of others

Corporate sponsors of music reality shows in Nigeria:

- MTN – project fame
- GLO – the X Factor
- ETISALAT – Nigerian Idol
- Nig. Brewery Company (NBC) – Star Quest
- ARTEL & GUINNESS NIGERIA – Nigerians Got Talent e.t.c.

Some institutions are established by legislation to supervise, regulate and coordinate the activities of musicians, instrumentalists, music producers and arrangers etc in the music industry and also mediate on their behalf to government agencies for the realization of their mutual rights, benefits and welfare. Such bodies or institutions in Nigeria are:

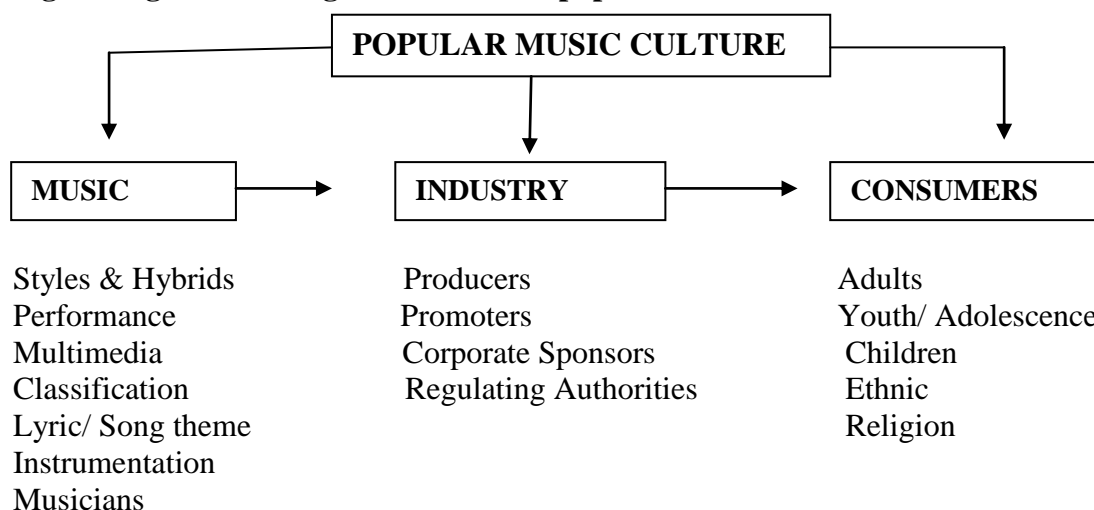
1. PMAN (Performing Musicians Employers Association of Nigeria)
2. Nigerian Copyright Commission (NCC)
3. Nigerian Intellectual Property Commission (NIPCOM)

Lastly, music **consumers**, who also are referred to as fans or audience, play a more vital role within the cultural set up of popular music. The sole aim of any musician/ artiste is to meet the yearnings and expectations of his targeted audience or fans, and this comes with a lot of creative inputs and hard work. Music fans or audience can be categorized into the following groups:

1. Adult audience (men and women)
2. Youth/ Adolescence
3. Children
4. Ethnicity (Igbo, Yoruba, Hausa, Efik, Ijaw, e.t.c)
5. Religion (Islam or Christianity)

These three elements mentioned above have strong roots into the cultural framework of any popular music genre despite the country, people or race that practice it. Therefore, the Igbo popular music which is the main focus of this paper will explore these core elements and sub elements inherent in the cultural framework of the music genre in order to determine the extent of change or evolution. The afore-mentioned are represented thus:

Fig. 1 Diagram showing the elements of popular music culture



6. EVOLUTION OF IGBO POPULAR MUSIC CULTURE WITHIN THE PERIODS/ERAS

PERIODS/ ERAS	MUSICAL STYLES/ HYBRIDS	TECHNO LOGY/ MULTI- MEDIA	PERFOR MANCE/ AUDIENC E	INSTRUME NTS	LYRICAL CONTEN T	MUSIC PRODUCER S & PROMOTE RS	MUSICIANS
PRE- INDEPENDENCE ERA: (1940 – 1960)	Broadway, big band, cool jazz, rock & roll (1940) Introduced by Colonial Masters	Monograms	Disco halls, Ballroom dance Halls etc. (Elites and Foreigners)	Gramophone	English		
	Palm-wine Music (1940+)	Live performances	Palm-wine bars, Recreational Centres (Urban workers and	Guitar, conga, Thumb piano (Ubo-aka) etc	Christian Hymns & Lyrics		Okonkwo Adigwe G.T. Onwuka Israel Nwaba

			artisans)				
	School Military Bands/ Orchestra (1940+)		Parades ground, School competitions	Trumpets, Borgue and Flute	Indigenous texts; European song		Boys & Girls scout, Brigade
	Highlife Music (1950+)	From West Coast region in Africa	Hotels, Clubs, and recreational centres. (Elites, Patrons & Govt Officials)	Orchestra Band, Brass bands Guitar bands	English, African Languages (Ghanaian, Sierra Leone, Liberia)		E.T. Mensah (Ghanian Pioneer)
INDEPENDENCE/ POST-INDEPENDENCE ERA (1960 – 2000)	Highlife music -as performed by Igbo musicians (1960+)	Analogue Recording: LPs	Hotels, Clubs, and recreational centres. (Elites, Patrons & Govt Officials)	Orchestra Band, Brass bands, Guitar bands	English, Pidgin & Igbo Lyrics	Foreign Record Label: Decca Records Polygram Rec'd	Celestine Ukwu Cardinal Rex Lawson Eddie Okonta Zeal Onyia E.C Arinze Stephen Osita Osadebe
	Ikwoilikwo - an Igbo version of Highlife (1970+)	Analogue Recording: LPs	Hotels, Clubs and recreational centres. (Elites, Patrons)	Music Bands : Lead, Rhythm & Bass Guitars; Keyboard; Percussions: Drums & Clapp	Igbo, Other ethnic languages; English, Pidgin	Indigenous Record Labels: Ivory Music (Emi Records) Tabansi Records Rogers All Stars Melody Records Olumo Records Premier Music (Polygram Records) Polydor Records Sony Music (CBS Records) Lemmy Jackson	Oliver De Coque Vincent Okoroego Dr. Sir. Warrior Dan Orji Nico Mbarga Bright Chimezie
	European music genres: Pop Disco Calypso Reggae Rap Gospel Jazz R&B etc \ (1970 – 90 +)	Analogue / Digital Recording: Audio Cassettes Tapes;	Churches, Amusement Parks; Beaches; Schools Nite Clubs etc Audience: Adults Students,			PMAN was formed 1982 , registered 1984	1970: Nelly Uchendu Tony Okoroji Ofege (etc) 1980: Onyeka Onwenu Chrisy E. Igbokwe Dora Ifudu Chris Mba Charles Oputa (etc) 1990: Junior & Pretty Stanley Nnorom Obiwon (etc)
MODERN ERA (2000 – 2015)	Pop Disco Calypso Reggae Rap Gospel R&B etc Jazz Hip-Life Hip-hop Dance hall Skits Slow tempo Raga	Digital Recording: Audio tapes; Audio CD Visual CD Mp3, Mp4, MPEG players; I Phones; Androids, Blackberr	Churches, Amusement Parks; Beaches; Colleges & Universities Nite Clubs etc Audience: Adults Students,	Computer generated tones and sequenced beats	English, Pidgin & Igbo Lyrics	Kennis Music Mo'Hits Records Premier Music Storm Records Raw Deal Records (and hosts of others)	P Square Nigga Raw Ruggedman Naeto C MC Loph Flavour Bracket Sunny Bobo Phyno (and host of others)

	Rock (etc)	y					
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SOURCES: EmekaMusicBlog.com (Record Companies in Nigeria)

360nobs.com (Nigeria Top 50 songs: 1960 – 2010)

Note: Names of artistes/ musicians highlighted above are mostly pseudo or stage names adopted for identity purposes.

7. CONCLUSION & RECOMMENDATION

This paper has done an elaborate discourse on the evolution of Igbo popular music culture the period mentioned earlier. Several social and musical trends that characterized each era were succinctly presented in a more easy-to-understand format. It was observed from the foregoing analysis that the music element within the culture was the most affected by changes and modifications. Certain socio-cultural practices within the eras inadvertently influenced the creative process of most of these musical styles. The foreign musical styles were major incursions on the musical culture of the Igbos in terms of their adaptation, performance and dissemination to the target audience. Secondly, it was also observed that the most creative era among others was the post-independent era that is the earlier periods (1960 – 80). It was within this era, that lots of dexterity and ingenuity were displayed by individual artiste or musicians in terms of their vocal delivery and the handling of instruments of western origin. Musicians of this era dully passed through training as apprenticeship (formerly or informally) before pursuing their musical careers. Lastly, the modern era (which is dominated majorly by young musicians) had the highest exposure to technological innovations especially in gadgets and equipments for music productions. However, this era is heavily criticized for lack of musical creativity, lyrical depth and dexterity in instrumentation as witnessed in the oldies (60s, 70s & 80s). The reasons are not farfetched; some musicians were just aping after foreign musicians of western culture to the detriments of their own cultural identity. Music is seen as a money making venture and so it is ‘garbage in, garbage out’ syndrome. No form of musical trainings for musicians, everybody believes in raw talent and as such tries to font musical ideas or style that is not entrenched in the rubrics of our core cultural foundations. As a result, the musical styles or hybrids go into oblivion as soon as the initiators leave the scene. It is a wonder, though, that there is this great gap or disconnect from the musical culture between the older generation of musicians and that of the modern day musicians. This argument however will be a discourse for subsequent studies.

The importance of this paper cannot be over-emphasised as it becomes very useful as reference document to relevant institutions or individuals who are interested in the development of musical genres across ethnic groups in Nigeria especially the Igbos. This paper is equally recommended as historical document on the emergence of Igbo popular music in Nigeria from the past to the present, to be archived in cultural centres or institutions in Nigeria for reference purposes.

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EPISTEMOLOGICAL ELITISM AND THE BOKO HARAM MENACE: TOWARDS A KNOWLEDGE-BASED STRATEGY FOR NATIONAL TRANSFORMATION

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ABSTRACT

The contemporary Nigerian society is characterized by violent conflicts emanating from ethnicity and religion, most especially in the Northern states of the country. Widespread violence and attacks have resulted in a high level of insecurity and uncertainty that has continued to threaten the continued existence of Nigeria as a polity. The recurring violent attacks have become a major phenomenon in day to day socio-political discourse in Nigeria. Many scholars opined, that, the major causes of the upheaval is a result of continued government neglect to address key issues at the point of incubation, as well lack of good governance. This work argues the position that the foundation of the Boko Haram insurgency can be found in the view that some people in the society can decide for others to perpetuate violence or propel others to violent acts based on the false belief that they know better than the others: Epistemological Elitism.

Keywords: Epistemology, Boko Haram, Terrorism, Epistemological Elitism, Religion.

INTRODUCTION

Boko Haram is only one of the most recent in a chain of challenges to the Nigerian state. Since its independence, Nigeria has been plagued with political instability, armed uprisings, ethnic tensions and religious violence (Campbell 2010). From 1966 to 1970, the country was torn by civil war, with the southern-based Igbo ethnic group fighting to establish the Republic of Biafra as an independent state in the southeast (Achebe, 2012). From the end of the civil war to 1999, there was a sequence of bloody military coups (Falola, 2011: xvii-xviii). During this period, fundamentalist religious groups also thrived, and at times came into vicious conflict with the ruling elite and other ethnic and religious groups (Human Rights, Watch 2012: 22). The Boko Haram sect is one of such groups.

Despite the severe and increasing threat posed by Boko Haram, the group remains understudied. The academic literature is limited and fragmented, and some of the information it provides are contradictory and unsubstantiated. In addition, the articles that have been written mostly focus on how the social, economic and political situation in Nigeria has contributed to the rise of Boko Haram, how the Nigerian authorities have responded to it and how it affects Nigerian society and politics (Zenn, 2013). Given that the conflict is taking place within Nigeria, such an approach is undoubtedly relevant.

Some notable studies (for example, Nnoli, 1994; Maguballi, 1969; Ochoche, 2002) have attributed the root causes of ethno-religious conflicts among groups in Nigeria to numerous factors, such as the ways and manners of propagating religions, mistrust and suspicions between various religious and ethnic groups, and ignorance and intolerance due to self-centeredness among the various groups. Other scholars opined the blame to be on Nigeria's colonial history and as well on the pluralistic nature of Nigerian state, claiming that the country's deepening ethno-religious conflicts are fallout of a continued feeling of distrust between the various units of the country (Nnoli, 1980).

This work is a total departure from current literature as it argues the thesis that the Boko Haram insurgency can be explained from the framework of epistemological elitism.

EPISTEMOLOGY AND HUMAN ACTION

The epistemological beliefs a person holds guide his or her actions. Actions are products of epistemological beliefs. As Michael A. Bishop and J. D. Trout put it, “*if one embraces a defective epistemology, one’s ability to act effectively in all areas of life is compromised*” (Bishop and Trout, 2005:6). If, actually, actions are products of epistemological beliefs, it can be inferred that epistemological thinking can have influence on whether people fight or not, whether they know they why are fighting and for what, and whether they can know how to abandon or contain violence. A person may claim ignorance of the consequences of his or her actions, yet he or she permits someone else (Imam, pastor, or a political office holder, or someone of economic or ethnic worth) to shoulder the epistemological burdens of such actions. In other words, a person may circumvent responsibility for their actions by obfuscation of their responsibility, hiding behind epistemological rationalizations regarding their duties, knowledge, actions, and freedoms by renouncing their own critical disposition in favor of the judgments of others.

A division of knowledge certainly exists which civilization is able to exploit through the division and specialization of labor, but where choices are made concerning the lives of others and especially of doing harm to them, a strict examination of beliefs and their sources is required. It is not enough to claim ignorance if the knowledge was easily accessible, or the conclusions embedded in the action or situation. In part, the need to take a look at how epistemology relates to violence should be motivated by the failure of integration and understanding: that is, a failure of critical thinking when critical thinking is most required, e.g., when truckloads of young girls are being transported away in the middle of the night, when individuals are slaughtered with reckless abandon, when innocent people are killed through suicide bombing or when innocent citizens are being directly targeted. Ignorance and rationalizations have their roots in moral failure, but moral failure is rooted in epistemological failure, and here too we find the sources of violence at the center of human thinking.

Socrates argued that a person does not do evil knowingly, that it is impossible to knowingly do evil (Segvic, 2006). That is not the point here; on the contrary, carrying out violent activities in groups stems from irrationalist thinking, or from not thinking at all, which amounts to the exclusion of reason in human behavior, and, hence, the denunciation of personal responsibility for actions. This is the epistemological problem that is dealt with here and, in effect, the epistemological foundation of the Boko Haram menace in Nigeria: the problem of epistemological elitism.

THE BOKO HARAM INSURGENCY IN NIGERIA

Nigeria is a federal republic with 36 states. According to the constitution, the states have significant sovereignty, but the central government controls most of the public revenue. This has focused political struggle extremely on control of the federal government, as the elites of each state compete with each other for shares of the national oil income. As with the rest of the populace, the political and religious elite is split along ethnic, religious and regional divides. The north-south dichotomy is a major fault line in the elite competition over positions, power and money (Bøås 2012: 3). The former Nigerian President, Goodluck Jonathan, is a southern-born Christian, and his presidency was seen as illegitimate by many Muslims in the North. Following his election in 2011, protests and violence erupted in several

northern states, leaving more than 800 people dead and 65,000 internally displaced (Human Rights Watch May 17, 2011). This is just one way of explaining the motives behind the Boko Haram group.

Boko Haram has been operational in Nigeria since early 2000 and is among the world's most active militant Islamist groups (AFP June 10, 2012; Global Terrorism Database October 16, 2012). The fact that Boko Haram largely conducts attacks within Nigeria has led some scholars to study the group from a strictly national standpoint.

Basically, Boko Haram is an Islamic sect that believes politics in northern Nigeria has been seized by a group of corrupt, false Muslims. As a result, it wants to wage war against them, and the Federal Republic of Nigeria generally, to create a pure Islamic state governed by sharia law (Walker, 2012). Since 2009, the group has been obsessed with a craving for vengeance against government officials, state institutions, and Islamic authorities for their role in a vicious clampdown of the group that year. But the group has shown itself to be very adaptable, developing its strategies expeditiously and changing its targets as the occasion requires. The group gained international attention in August 2011, when it bombed the United Nations compound in Abuja, killing twenty-three people. Some observers say Boko Haram has reached out to other global jihadist movements in the Sahel (Abimbola and Adesote, 2012).

Most people are of the view that the government has lost control over the security situation in the North and is not able to contain Boko Haram (The Guardian, 2012). Nigerian media also report that public services are declining as civil servants refuse to work in certain areas due to fear of attacks from the group (Nigerian Tribune, 2012).

EPISTEMOLOGICAL ELITISM AND VIOLENCE

Epistemological elitism holds that true knowledge can only be achieved by a particular class of individuals, especially the political or religious élite. Here, the desires of the others must be deferred to this class of people who sees themselves as the appropriate interpreters of the truth, whether it is called the truth of God, Nature, Science, or of the State. Hence, they assume the epistemological duty of thought and of reasoning. Those below are meant to understand that they are not accountable for the actions they are told to pursue (Moseley, 2002 :228). Destructive confrontations, tribal clashes and religious violence are, thus, the remit of those in control and are divorced from the citizenry of the nation. Accordingly, epistemological elitism maintains that people are considered to be pawns in the games of the elites; yet if their servile status is confronted, it will become clear that they have the capacity to judge events (ibid).

The political implication of epistemological elitism is evident: inasmuch as none but the select should enunciate on questions of knowledge, the majority becomes epistemologically docile to the élite, which translates well into political subservience. One philosopher who epitomized the subject of epistemological elitism is Plato.

Plato's epistemology rests on the assumption that the society is divided into classes that are characterized by varying capacities to reason. For Plato, only philosophers are assumed to know what is the Truth, and it is their duty to lead the other lesser mortals in all aspects of their lives for their own good (Plato, 1997). While Plato did not accept the institution of slavery for instance, it is often justified on the demeaning hypothesis that the owners know what is best for the slaves. The same is true of contemporary societies, in which those who

hold a higher status claim a better understanding than those below. Hence, if it is the wish of the élite to wage war, it is not the position of the masses to question the justice of it.

It is not a happenstance that political structures that attempt to subjugate others do so on epistemological grounds as well. If a political culture is cultivated, that is actively promoted by government administrators or religious leaders, that underscores submission to authority, then the conditions for critical thinking are affected for the worse. Such systems that highlight obedience and uncritical acceptance of ruling theories are somewhat to blame for violence in the Nigerian state. Bertrand Russell rightly warns that if “*democracy is not to be a failure, the ordinary citizen must be given more training in critical thought, and opportunity for pleasures less harmful than a sensational delight in violence*”. (Russell, 1988: 123)

EPISTEMOLOGICAL ELITISM: EXPLAINING THE BOKO HARAM ACTIVITIES

For the Nigerian Government to define and successfully counter the Boko Haram threat, it is highly imperative that they understand the foundation of the Boko Haram insurgency and the drive that propels the insurgency. Indeed, “*counterinsurgency cannot be defined except by reference to the cause of insurgency*” (Galula, 2006:3). This research locates the foundation of the insurgency, and similar insurgencies (both domestic and international) within the framework of epistemological elitism. Relating epistemological elitism to the Boko Haram insurgency in Nigeria is strengthened by considering the fact that most individuals in Northern Nigerian accepts that true knowledge can only be held by either the political élite, religious leaders, or other forms of undefined authority.

Knowledge is basically diffuse — hence no objective reason exists to split humanity into groups who hypothetically have their own truths, who are reliant on the equivalent of a Platonic philosopher king or theocracy for knowledge and direction. Karl Popper contends that the attitude of critical rationalism is favorable to peace, whereas an attitude of uncritical reliance on others for knowledge is conducive to violence (Popper, 1974: 224). In the Boko Haram thought-structure, we find the basis for their violent behavior. They reject reason as a remedy to societal problems, and instead opt for resolving societal problems through the use of brute force; and force is ultimately hostile to progress and life in that it terminates the prospect of creativity and growth by undermining societal collaboration. Moreover, the Northern part of Nigeria, notorious for the Boko Haram activities, reveals a noticeable deficiency in the recourse to objective reasoning in their affairs — violence remains an easy solution to intricate political, cultural, or even religious issues.

This is what specifically leaves room the use of force as a positive value; thus, it eventually paves the way for repressive structures, which is what Karl Popper envisages:

Irrationalism, which is not bound by any rules of consistency, may be combined with any kind of belief in the brotherhood of man; but the fact that it may be easily combined with a very different belief, and especially the fact that it lends itself easily to the support of a romantic belief in the existence of an elect body, in the division of man into leaders and led, into natural masters and natural slaves, shows clearly that a moral decision is involved in the choice between it and a critical rationalism (Popper, 1974: 232).

Choosing irrationalism panders to the roots of human conflict, whereas a critical rationalism can only condemn aggression as being contrary to the life of social, reasoning, and reasonable people. As such it is against our “better” nature, as Kant argues: “*Reason, as the highest legislative moral power, absolutely condemns war as a test of rights and sets up peace as an*

immediate duty” (Kant, 1970: 104). Critical rationality necessarily holds peace as its political corollary, for violence invokes force against reason, and as such it is hostile to thinking and hence to life. Reason demands the use of the mind and the mind cannot work well under threats of violence.

Kabir-Isa (2011) contended that Boko Haram exploited the abject poverty that is widespread in the north to mobilize jobless, inexperienced, and extremely poor youths to join its operation. Adibe (2012) pointed out that, regardless of the debates surrounding the origin and motivation of the Boko Haram violence, it was clear that Yusuf (the late Boko Haram leader) explored the abject poverty in the society to mobilize members to the group:

What is not in dispute is that Yusuf was responsible for raising its profile. He was in fact said to have established a religious complex that included a mosque and a school where many poor families from Nigeria and the neighboring countries enrolled their children (Adibe, 2012: 50 - 51).

He upheld that even though there was suspicion that some Nigeria elites are members, majority of the members are mainly impoverished northern Islamic students and clerics in addition to university students and many unemployed professionals. Little wonder the political, religious and charismatic leaders seize opportunity to brainwash and control these people with the arguments to approve violence.

Epistemological Beliefs and Religious Beliefs: Boko Haram from a Religious Viewpoint

Religion tries to understand the world, with little or no recourse to human reason. In its place, other forms of knowing are employed, such as faith, mystical experience, revelation, devotion and so on. Such epistemological dispositions are hazardous as they lend themselves to the undermining of reason. As a result, religious beliefs have been foundations and causes of violent activities in our world as it involves placing little or no importance on the capacity of thinking. In its place, the passions are invoked in various shades.

Following epistemological elitism, religion gives vent to the notion that only a few people are capable of reasoning. Religion, Marx claimed, is not only the “*opium of the people*”, it is also “*the sigh of the oppressed creature, the heart of a heartless world*”, and “*the spirit of spiritless conditions*” (Marx, 1975: 175). Marx held that religious consciousness, though an illusory form of consciousness which usually functions to legitimize a hierarchical social order, is imposed on oppressed people by the ruling classes. Leonard Peikoff corroborates this view thus: “*The masses are like an animal that obeys its instincts. They do not reach conclusions by reasoning*” (Peikoff, 1982). For religion, basically, knowledge is not dependent on the senses or rational thinking, but is derived intuitively through non-sensorial and non-rational methods such as prayer, meditation, ecstasy, and so on. Karl Popper notes that, in the whole, religion is nothing but an attempt to rationalize the irrational (Popper, 1974: 246). Ayn Rand describes religion as the acceptance of beliefs without confirmation or proof, either apart from or against the evidence of one’s senses and one’s reason (Rand, 1982: 62). The endpoint is mostly the rule of brutality (ibid. 70).

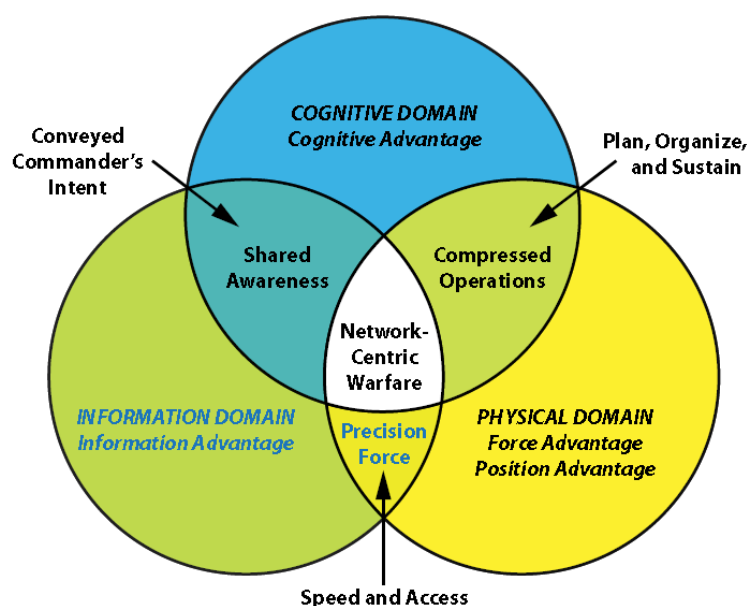
The Boko Haram bases its actions on the principles of Islamic religion (Kabir-Isa, 2010). Their principle of resting belief on the Islamic religion alone remains vulnerable against those who desire to manipulate others through intimidation or force: through the use of violence or of naked aggression. Here, the epistemological motivation is based on a weak premise. Faith asks the individual to suspend judgment in matters in which a critical assessment is paramount — to suspend the activity of the rational faculties and just to

believe. This remains a leap into the dark unknown, the acceptance of things without proof. It is therefore vulnerable to more twisted purposes: to accepting the orders of superiors without questioning; to waging war by those who would manipulate the obedient faithful for violent ends. This is the basis of the Boko Haram insurgency.

TOWARDS A SOLUTION

Military leaders today, are in constant search for new ways of making warfare very adaptive to the dictates of knowledge. The ceaseless quest for information and knowledge stands to essentially alter how we wage warfare. In conflict, victory will go to the side that obtains knowledge faster, understands its true value, and applies it more adaptively.

DOMAINS OF CONFLICT



Source: Phister Jr., P. W. and Mr. Igor G. Plonisch, I. G. (n.d)
http://www.dodccrp.org/events/2004_CCRTS/CD/papers/188.pdf.)

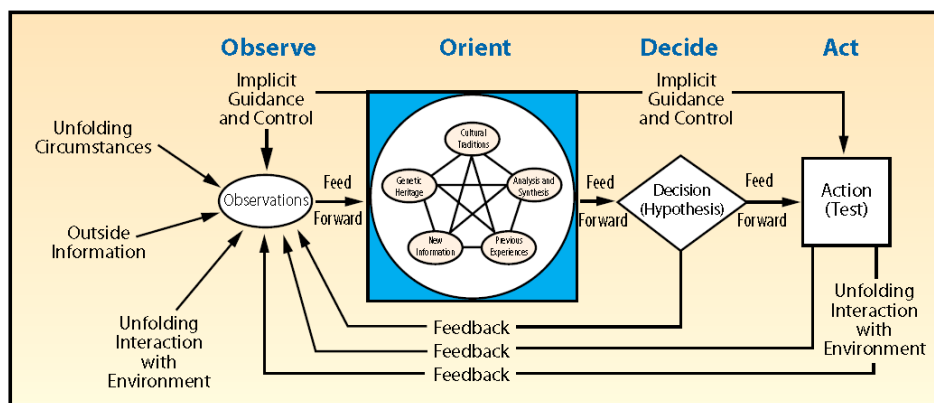
Basically, the Nigerian military should understand that in this contemporary world people use information, more than in the past, to gain a tactical advantage: *“In war information...is the single most significant military factor...for controlling the battle space....Information is the organizing principle of war”* (Osinga, 2007: 224). Furthermore, the Nigerian military must note that *“even if one has perfect information it is of no value if it is not coupled to a penetrating understanding of its meaning. Judgment is key. It is not necessarily the one with more information who will come out victorious, it is the one with better judgment, the one who is better at discerning patterns”* (ibid: 36). Only when they can determine these informational patterns and associate them with other patterns can they generate knowledge. In the end, *“the aim of a ‘perfect’ information warfare campaign is to influence adversary choices, and hence adversary behavior, without the adversary’s awareness that choices and behavior are being influenced”* (Szafranski, 1995: 60).

To gain a strategic victory over the Boko Haram insurgents, the Nigerian military need to tactically decipher, covertly target and effectively alter their truth filters. The term “truth filter” points to epistemic standards or criteria used, knowingly or unknowingly, by an individual or a group of persons to validate their observations and beliefs (Toffler and Toffler, 2006: 123). Alvin Toffler and Heidi Toffler assert that individuals in most contemporary human communities use any of the six filters below to validate their beliefs:

1. Consensus: something deemed true through conventional wisdom.
2. Consistency: something that guarantees truth if the supporting facts correspond with other facts.
3. Authority: something authenticated by a leadership figure.
4. Revelation: something assumed to be true and not subject to investigation.
5. Durability: something that confirms inherited facts which have stood the test of time.
6. Science: something that ascertains truth through rigid tests and experiments (Toffler and Toffler, 2006: 123 - 128).

From our analysis so far, and from the presuppositions of epistemological elitism, it is clear that the truth filters that can apply to the Boko Haram insurgency, and indeed most terrorist organisations, are Authority and Revelation. Fundamentally, the strategic goal of the Nigerian military should be to relentlessly alter these truth filters, thereby fluctuating their perception of reality so much that they become overly involved in vagueness and disorder due to the overwhelming contradictions of inconsistent ideas and communications, thus causing them to make flawed choices. In essence they attack the insurgents' ability to create knowledge from information.

The Nigerian army can do this by recognizing the full potential and strategic implications of utilizing knowledge to suppress and reduce the insurgents' knowledge and channels for information by penetrating their decision cycle and influencing their observations and perceptions.



Source: (Osinga, 2007: 231.)

Thus, to fully exterminate the Boko Haram insurgency, the Nigerian military must truly understand not only which truth filters the insurgents use but also (and more importantly) how the selection of such truth filters validates certain beliefs on which their actions are constructed.

Conclusion

This research has undoubtedly revealed the root of the Boko Haram insurgency and its antecedent threat to national security. Though a number of factors responsible for this unpleasant state of affairs has been identified by various authors among which include, failure of good governance, issue of neglect, poverty, high rate of unemployment especially among the youth, and so on, this research takes its point of departure by locating the insurgency within the theoretical framework of epistemological elitism (the view that a relatively few people know the truth better than others).

Epistemological attitudes and theories are immersed into philosophical positions, moral, political, as well as metaphysical. When people are called to renounce reason,

epistemological positions become dangerous designs. The initiation of force is always the negation of reasoned argument, and since irrationalism involves a partial or whole rejection of reason, it can be maintained that war results from the abandonment of reason and of a succumbing to less unifying social structures such as violence, mob-rule, suspicion, and other nihilistic forms of subjectivism. This is the replacement of the war of ideas with the war of might. Hermann Rauschning substantiates this standpoint, by referring to Adolph Hitler's statement: "*I need men who will not stop to think if they are ordered to knock someone down*" (Rauschning, 1940: 97). The attitude of rationality with its attending structures of trust and cooperation is lacking in the Boko Haram structure. Hence, its violent activities.

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“REASON AS A BACKGROUND FOR NATIONAL TRANSFORMATION” LESSONS FROM HEGEL’S METAPHYSICS

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ABSTRACT

Following the death of Kant and the illustrious career he left behind, the vacuum left made for a challenge in Germany, that is, who to complete or replace Kant’s system? In other words, who was to be Kant’s successor? This challenge was taken up by a line of thinkers who came to be known as German (Absolute) Idealists, among them Johann Gottlieb Fichte, Friedrich Wilhelm Joseph von Schelling, and Georg Wilhelm Friedrich Hegel. The last to be mentioned, i.e. Hegel, being a philosopher whose work flowered both as an effort in the completion of Kant’s metaphysical and epistemological system, as well as fully distinct metaphysical system in its own right, occupies our discussion in this paper. An examination of Hegel’s thought leads through a path of understanding the entirety of reality, the cosmos, history and nature all through the instrument of Reason. In this sense, rationalism is hoisted in Hegel’s system as the cornerstone upon which the whole structure of reality could be grounded and comprehended. The real is the rational as Hegel maintains, and he does so in a manner that elevates all reality to the plane, not just of an individual mind, but of absolute consciousness, implying, in other words, that reality is the expression of infinite or absolute thought or consciousness, an attitude that could be described as Transcendental Idealism. Using the instrument of Reason, Hegel develops the dialectic with which grades of syntheses are ascended up until the apex is reached, which is the synthesis of “Idea” and “Nature” in “Spirit” or “The Absolute Idea”, which alone is being and all truth. In Hegelianism thus, a vision of the history of the universe and the history of human consciousness as a necessary unfolding of infinite reason is outlined, and in such a picture that leads metaphysics and epistemology to dizzying heights. The background of Hegel’s development of this speculative system, the contents of this idea, the role and force of Reason within it, as well as the impact of Hegelian metaphysics upon the entire sphere of subsequent metaphysics shall all form our concerns within this paper.

Keywords: Reason, Rationalism, Reality, Absolute Idealism, Transcendental Idealism, History, Consciousness, Idea, Nature, Spirit, Finite, Infinite, Thesis, Antithesis, Synthesis, Dialectic, the Absolute Idea.

INTRODUCTION

Rationalism is a concept that is discussed under Epistemology, the branch of knowledge that deals with studying the nature, validity and limits of knowledge. Epistemology tends to verify knowledge concrete evidence given by the person proposing the knowledge. According to the Oxford Dictionary of Philosophy, Rationalism is “any philosophy magnifying the role played by unaided reason in the acquisition and justification of knowledge. The preference for reason over sense experience as a source of knowledge began with the Eleatics and played a central role in Platonism” (Blackburn, 1994, 308). Epistemology is relevant in metaphysics because generally one cannot find metaphysics and epistemology very far apart. Metaphysics is the branch of philosophy concerned with the nature and fundamental properties of being, while epistemology is the branch that explores the sources, nature, limits, and criteria of knowledge. Over time, when a philosopher makes a metaphysical assertion, he or she will generally consider whether it is the kind of assertion that could possibly be known; and

his/her audience will definitely demand how this assertion could be known, that is why metaphysics and epistemology go together. To this end, rationalism as an epistemological concept also serves in metaphysics, perhaps especially as an epistemic equivalent/correspondence of metaphysical idealism.

Hegelianism which happens to be a collective term for the school of thought referring to Hegel's philosophy, holds strongly in the dictum that "the rational alone is real." This simply implies that all reality is eligible of being expressed in rational categories. Its aims and objectives were to reduce reality to a more synthetic unity within the system of *Transcendental Idealism*. For Hegel, the philosophy of mind commences with the subjective mind which happens to be the first stage (the in-itself stage, of mind). While the second stage is the objective mind (the mind objectified in law, morality, and the State). This is the mind in the condition of out-of-itself.

There follows the condition of absolute mind, the state in which mind rises above all the limitations of nature and institutions, and is subjected to itself alone in philosophy, art and religion. To Hegel, the primary objective of the mind is freedom and its development must take cognizance in breaking away from the limitations imposed on it by human institutions and nature.

In this research work we shall be explaining first and foremost the concept of rationalism (reason), before giving a brief biography on the philosopher in question (Hegel). Afterwards Hegel's rationalism (which is the main subject matter of this paper) flowing into its critique which is to be developed as an adjunct to our analysis shall be articulated. This would be immediately followed by our conclusion.

RATIONALISM

Rationalism is one of the schools of thought in Epistemology that takes the stance that reason is that element that helps us to derive true knowledge. This is against the view of the empiricist who posits that knowledge is derived through our perception (experience). Rationalists have their own methodology of arriving at true knowledge. These include;

- i. **Intuition/Deduction:** This implies that certain propositions in particular subject matters are known to us through intuition, others can be known through deduction from intuited propositions. Here, Intuition is a form of rational insight. Deduction is a process where we derive conclusion from intuited premises through valid arguments. In deduction, the argument is valid when both the premise and conclusion are true. For instance, we can intuit that the number three is a prime number and that it is greater than two. We then deduce from this knowledge that there is a prime number greater than two. Intuition and deduction thus provide us with knowledge *apriori* which is knowledge based gained before experience. To some rationalists, mathematics can be known through induction and deduction. Arguments based on this thesis can also be looked at based on the different branches of philosophy. This helps to make rationalism more radical.

Based on the induction/deduction, the rationalists may understand the connection between intuition and truth differently. To some, it is infallible because whatever we intuit must be true.

- ii. **Innate knowledge thesis:** This implies that as part of our rational nature, we have knowledge of some things. The difference between the innate knowledge and the intuition /deduction thesis is that they gain their *apriori* knowledge in different ways. The Intuition/Deduction thesis cites intuition and subsequent deduction reasoning while the innate knowledge thesis offers our rational nature.

- iii. **Innate concept thesis:** Going by the innate concept thesis, some of our ideas are not gained from experience. In this concept, it is believed that while ideas are part of our rational nature, sense experience may trigger by which they are brought to consciousness, experience does not provide the concepts or determine the information they contain.

HEGEL

Georg Wilhelm Freidrich Hegel was born in Stuttgart on the 27th of August 1770. His father Georg Ludwig was born to a family of civil servants and pastors and he was a revenue officer in the fiscal service of Württemberg. His mother Maria Magdalena Louisa comes from a rich family that was home to some of the top theologians, lawyers and bureaucrats in Wurttemberg. She was highly educated and was a great influence to Hegel in teaching him the elements of Latin.

Hegel was the oldest of the four children begotten by the couple, out of whom one later died. Hegel started school at age three and by the age of eight; he had obtained the complete works of Shakespeare (in German translation). When Hegel became eighteen, he went to the Stift theological seminary in Tübingen; he later left because he showed little interest in traditional theology. He preferred studying Aristotle and had fondness for the writings of Rousseau.

Hegel obtained the coveted theologian certificate and on his original certificate, it was written in Latin as follows that Hegel devoted a lot of time and effort on philosophy '*philosophiae multam operam impendit*'. However, a copyist error transcribed the word as *multam* (many) as *nullam* (meaning none) in later reports. Two years later, Hegel obtained a PhD degree (Magister der philosophic).

However, rebellious against the ways of the Seminary Hegel became, he remained the industrious serious fellow he was; his friends at the seminary referred to him by the nickname "the old man". He was not contented with the simply pub crawling, carousing and making merry; he was still reading quite a bit and still remained extremely serious about learning (Pinkard, 1996).

Hegel went on to become one of the greatest philosophers in Germany and across the Western world in the 18th century and beyond. Hegel's principal achievement was his development of absolute idealism as a means to integrate the notions of mind, nature, subject, object, psychology, the state, history, art, religion and philosophy. In particular, he developed the notion of the master-slave dialectic and the concept of *Geist* ("mind-spirit") as the expression of the integration ("sublation", *Aufheben*), without elimination or reduction, of otherwise seemingly contradictory or opposing ideas. Examples include relationships between nature and freedom and between immanence and transcendence. He also made original and influential contributions to speculative logic, the role of history and the notions of the negative and the ethical. It is, however, his work on rationalism that we shall turn to for our major consideration in this paper.

HEGEL'S RATIONALISM

Although Kant's successors did not exactly repudiate what he had written, they certainly did stand it on its ear. This dramatic response to Kant was German Absolute Idealism, the philosophies of Johann Gottlieb Fichte, Friedrich Wilhelm Joseph von Schelling, and Georg Wilhelm Friedrich Hegel. Kant had argued that the mind imposes certain categories on the objects of experience and that this is what makes it possible to have knowledge of the world of experience. His epistemological thesis is that we can have knowledge only of the world of

experience and can have no knowledge of things “as they are in themselves.” The Absolute Idealists, however, transformed this epistemological skepticism into metaphysical idealism. What could there be such that the mind could not know it? They asked. If it is not knowable, they reasoned, then it is unthinkable; and if it is unthinkable, why, it just plain isn’t. So thought, or consciousness, does not merely categorize reality: its categories *are* reality. There cannot be unknowable things-in-themselves, they said, for everything that is, is a product of the knowing mind. Reality is not, however, the expression of your thought or ours or any other particular person’s, they said, for neither you nor any other person created the world of independent external things that exists around us. Rather, reality is the expression of infinite or absolute thought or consciousness. And when we think or philosophize about reality, this is consciousness becoming aware of itself, that is, becoming infinite.

Absolute Idealism, as the philosophy is called, attempted to achieve a complete and unified conception of reality, a conception that gave meaning to each and every aspect in relationship to the sum total. It was the towering pinnacle of metaphysical speculation, and virtually everything that happened subsequently in metaphysics and epistemology happened in reaction to it. Hegel was one of such Absolute Idealists, and from his perspective, the cosmos and its history are the concrete expressions of thought. Thus, everything that happens and every field of human inquiry remains the proper domain of the philosopher, who alone can understand and interpret the true relationship of each aspect of reality to the whole.

The main themes of Hegel’s philosophy are:

1. “Everything depends on grasping the truth not merely as Substance but as Subject as well.” This means that what is true, what is real, is not merely that which is thought of, but that which thinks. Thus, what is most real-the Absolute-is thought thinking of itself.
2. Hegel’s idealism is different from Berkeley’s. For Berkeley, the objective world in fact exists in the minds of individuals. For Hegel, the objective world is an unfolding or expression of infinite thought, and the individual mind is the vehicle of infinite thought reflecting on itself.
3. Reality, the Absolute, for Hegel, is not a group of independent particulars or states of affairs, but rather like a coherent thought system such as mathematics it is an integrated whole in which each proposition (each state of affairs) is logically connected with all the rest. Thus, an isolated state of affairs is not wholly real; likewise, a proposition about this or that aspect or feature of reality is only partially true. The only thing that is totally true (or totally real, because these amount to the same thing) is the complete system.
4. The Absolute, the sum total of reality, is a system of conceptual triads. To formalize Hegel’s system somewhat artificially; for proposition or concept A there is a negation, not-A, and within the two there is a synthetic unity, or synthesis, B. B, however, has a negation, not-B, and within B and not-B there is a synthesis, C. And so on. Thus, the higher levels of the system are implicit in the lower levels-for example, C and B are both implicit in A. In this way the entire system of thought and reality that is the Absolute is an integrated whole in which each proposition is logically interconnected with the rest.

Ultimately, therefore, we come to the apex, or highest triad: the synthesis of “Idea” and “Nature” in “Spirit.” And Idea and Nature are each, in turn, the synthesis of two lower opposing concepts. Thus, Idea is the synthesis of subjectivity (that which thinks) and objectivity (that which is thought of). What Hegel means by “Idea” is self-conscious thought, which is exactly what you would expect to be the synthesis of that which thinks and that which is thought of. To Brook Moore and Kenneth Bruder, “The absolute Idea, Hegel wrote,

alone is being, eternal life, self-knowing truth, and it is all truth” (Moore & Bruder, 2002, 201). In the end, therefore, we come to know the part played by every aspect of reality in the whole, and we are led to understand that the highest conception of the Absolute is as Spirit. According to Moore and Bruder:

So Hegel’s system is really a grandiose vision of the history of the universe and the history of human consciousness as a necessary unfolding of infinite reason. It purports to be a complex conceptual framework for each aspect of reality and for every component of human thought and history. This system represents the towering summit of metaphysical speculation (Moore & Bruder, 2002, 202).

It is a dictum of Hegel that states that “what is rational is actual and what is actual is rational”. Hegel explained that “actuality does not just correspond with existence rather actuality is what has to happen because of the implication contained in it. “To him who looks at the world rationally, the world looks rationally back” (Hegel, 13 Trans. By Hartman). For instance, when a few group of rich men try to oppose an underprivileged class as in oligarchy. It precedes the route to a violent change and revolt. Hegel explains that the revolt is the actual. The consequence that come with exploitation help to hasten and come with the realization of the actual but these things are not actual in themselves.

Hegel sees what is rational as being something that corresponds to the progress in the consciousness of freedom and it must happen because the lesson that has been derived from the old ontological argument presupposes its own existence. “And what is reason if not thought determining itself in Absolute freedom” (Hegel, 20 Trans. By Hartman).

Thus, what is rational is also actual as it has been illustrated. This means that there is a correspondence to progress in the consciousness of freedom. Hegel’s vantage point is to show that consciousness of freedom is ultimately progress. However, he does not assure this. Whatever comes out of it becomes history and history is made up of actual events and contingent elements whose strength has to be measured.

The cornerstone of Hegel’s system or world view is a notion of freedom, conceived not as a simple license to fulfill preferences but as the rare condition of living self-consciously in a fully rationally organized community or state. This is not so as it is charged for example by Karl Popper, a defence of the totalitarian state or the doctrine that ‘might is right’. Since Hegel requires a rational state to meet with stringent conditions, including the consent of the rational conscience of its members (Blackburn, 1994).

What the actuality of the rational tends to explain is that what we see around us is not the irrational result of a plot or of violence and brute force rather it is a result of becoming rational of the actual. The rationality contained in the actual then helps to stand against the consequences of exploitation such as injustice and oppression which make up the irrational part of human history. When Hegel talks about something real or actual, it is not in the same way the empiricist perceives it. He admits that what appears real to the empiricist as fact are irrational. It is after their apparent and perceived characters have been transformed by viewing them as aspects of the whole that they are seen to be irrational. However, he noted that knowing what is real and rational leads inevitable to the complacency of being inseparable that ‘whatever is right is right’.

Reason, Hegel says ‘is the conscious certainty of being all reality’. This does not mean that a separate person is all reality;

in his separateness, he is not quite real, but what is real in him is in his participation in reality. In proportion as we become more rational, the participation is increased (Russell, 1946, 664).

Hegel placed emphasis on reason as being what will eventually lead man to the Absolute Spirit.

For Hegel who is perhaps the most profound and prolific philosophical historian on record, a close scrutiny of world history would reveal that it has proceeded rationally, dialectically threading the rationally necessary part of Universal Reason (Unah, 2009, 15).

Hegel believes that for every aspect of philosophy including its history, what philosophy injects is reason. Reason is seen as the law of the world and in the world of history; things have moved rationally following the necessary foot print of world spirit. Reason it is believed by Hegel does not take anything from the eternal to nourish itself rather it has internal essentials that nourishes it.

Indeed, the final purpose of the world from possibility to actuality is only executed by reason's great designs. And what is reason if it is not thought determining itself in absolute freedom. By thus determining, itself in absolute freedom, thought as reason does not leave anything to mere chance but delineates the actual course of events and portray history as a unity embodying an overall plan that is a providential plan which has to be realized (Unah, 2009, 25).

Reason which Hegel sees as the self determination of thought in absolute freedom will then have to answer the question "what is the ultimate purpose of the world?" Hegel is more concerned with the pursuit of coherence and the therapeutic value of such a pursuit is at the heart of Hegel's way of thinking.

Because of his approach to philosophy, Hegel was concerned to criticize those of his contemporaries who found in philosophy not an actual reconciliation between man and the world but the pious hope that such a reconciliation might eventually be achieved, for whom reconciliation was a mere ideal. In his mature philosophical work, he constantly criticizes the work of Kant and Fichte as providing philosophical doctrines which make some kind of achieved harmony impossible (Plant, 1973, 125).

Furthermore, Hegel noted and argued that by showing and demonstrating with close attention that the world is intelligent requires a kind of experience which can be seen in different stages of development in human capacity and power which helps to translate to self-consciousness. This, Hegel notes cannot be achieved if the philosopher looks at the world in conventional terms otherwise he will become redundant. This is because conventional terms will enclose harmony and reconciliation rather what needs to be done is that the philosopher should develop conventional ways of speaking in a way that both his metaphysical and historical experience will be encapsulated. The way of this thought is what will then be seen and discussed in the context of Understanding, Reason and Dialectic.

Basically, however, Hegel's position is that the thought of the understanding corresponds to the conventional level of thought which the philosopher is in some way to develop....the level of Reason is attained when this dialectical enrichment of thought of the understanding has been attained (Plant, 1973, 126-127).

From upon these presented standpoints, we shall advance in an attempt to interpret and do a brief analysis of the substance and implications of Hegel's thought and system in rationalism.

ANALYSIS AND CRITICISM

Over the course of his intellectual career, Hegel was inspired by a profound vision of the movement and significance of cosmic and human history, to the expression of which he gave his life. This is not to say that he was what is usually meant by a visionary. Appeals to mystical intuitions and to feelings were abhorrent to him, so far as philosophy at any rate was concerned. He was a firm believer in the unity of form and content. The content, truth, exists for philosophy, he was convinced, only in its systematic conceptual form. The real is the rational and the rational the real; and reality can be apprehended only in its rational reconstruction. Copleston states that:

But though Hegel had little use for philosophies which took short-cuts, as it were, by appealing to mystical insights or for philosophies, which, in his opinion, aimed at edification rather than at systematic understanding, the fact remains that he presented mankind with one of the most grandiose and impressive pictures of the Universe which are to be met with in the history of philosophy. And in this sense he was a great visionary (Coplestone, 1963, 197-8).

The fundamental purpose of philosophy, Hegel maintains, is that of overcoming oppositions and divisions. 'Division (Entzweiung) is the source of the need of philosophy.' In the world of experience the mind finds differences, oppositions, apparent contradictions, and it seeks to construct a unified whole, to overcome the splintered harmony, as Hegel puts it. True, division and opposition present themselves to the mind in different forms in different cultural epochs. And this helps to explain the peculiar characteristics of different systems. At one time the mind is confronted, for instance, with the problem of the division and opposition between soul and body, while at another time the same sort of problem presents itself as that of the relation between subject and object, intelligence and Nature. But in whatever particular way or ways the problem may present itself, the fundamental interest of reason (Vernunft) is the same, namely to attain a unified synthesis. In Copleston's explanation of this Hegelian idea:

This means in effect that 'the Absolute is to be constructed for consciousness; such is the task of philosophy'. For the synthesis must in the long run involve reality as a whole. And it must overcome the basic opposition between the finite and the infinite, not by denying all reality to the finite, not by reducing the infinite to the multiplicity of finite particulars as such, but by integrating, as it were, the finite into the infinite (Copleston, 1963, 203).

But a difficulty at once arises. If the life of the Absolute is to be constructed by philosophy, the instrument will be reflection. Left to itself, however, reflection tends to function as understanding (Verstand) and thus to posit and perpetuate oppositions. It must therefore be

united with transcendental intuition which discovers the interpenetration of the ideal and the real, idea and being, subject and object. Copleston states “Reflection is then raised to the level of reason (Vernunft), and we have a speculative knowledge which ‘must be conceived as identity of reflection and intuition’. Hegel is evidently writing under the influence of Schelling’s ideas” (Copleston, 1963, 203-4).

As we have seen, the task of philosophy is to construct the life of the Absolute. That is to say, it must exhibit systematically the rational dynamic structure, the teleological process or movement of the cosmic Reason, in Nature and the sphere of the human spirit, which culminates in the Absolute’s knowledge of itself. It is not, of course, a question of philosophy trying to do over again, or to do better, the work accomplished by empirical science or by history. Such knowledge is presupposed. Rather is it philosophy’s task to make clear the basic teleological process which is immanent in the material known in other ways, the process which gives to this material its metaphysical significance. In other words, philosophy has to exhibit systematically the self-realization of infinite Reason in and through the finite.

Now if, as Hegel believes, the rational is the real and the real the rational, in the sense that reality is the necessary process by which infinite Reason, the self-thinking Thought, actualizes itself, we can say that Nature and the sphere of the human spirit are the field in which an eternal Idea or an eternal essence manifest itself. That is to say, we can make a distinction between the Idea or essence which is actualized and the field of its actualization. We then have the picture of the eternal Idea or Logos manifesting itself in Nature and in Spirit. In Nature the Logos goes over, as it were, into objectivity, into the material world, which is its antithesis. In Spirit (the sphere of the human spirit) the Logos returns to itself, in the sense that it manifests itself as what it essentially is. The life of the Absolute thus comprises three main phases: the logical Idea or Concept or Notion, Nature and Spirit. And the system of philosophy will fall into three main parts: logic, which for Hegel is metaphysics in the sense that it studies the nature of the Absolute ‘in itself’, the philosophy of Nature and the philosophy of Spirit. These three parts together form the philosophical construction of the life of the Absolute.

We can speak, therefore, of the human mind rising to a participation in the self-knowledge of the Absolute.....It is not every level of consciousness which is a participation in the divine self-consciousness. To achieve this participation the finite mind has to rise to the level of what Hegel calls absolute knowledge (Copleston, 1963, 218).

In this case it is possible to trace the successive stages of consciousness from the lowest to the highest levels. And this is what Hegel does in the *Phenomenology of Spirit*, which can be described as a history of consciousness. If we consider the mind and its activity in themselves, without relation to an object, we are concerned with psychology. If, however, we consider mind as essentially related to an object, external or internal, we are concerned with consciousness. And phenomenology is the science of consciousness in this sense. Hegel begins with the natural unscientific consciousness and proceeds to trace the dialectical development of this consciousness, showing how the lower levels are subsumed in the higher according to a more adequate point of view, until we reach the level of absolute knowledge.

The phenomenology falls into three main parts, corresponding with the three main phases of consciousness. The first of these phases is consciousness of the object as a sensible thing standing over against the subject. And it is to this phase that Hegel appropriates the name ‘consciousness’ (Bewusstsein). The second phase is that of self-consciousness (Selbst-

bewusstsein). And here Hegel has a lot to say about social consciousness. The third phase is that of Reason (Vernunft), which is represented as the synthesis or unity of the preceding phases on a higher level. In other words, Reason is the synthesis of objectivity and subjectivity. Needless to say, each of these main divisions of the work has its subdivisions. And Hegel's general procedure is first to describe the spontaneous attitude of consciousness at a given level and then to institute an analysis of it. The result of the analysis is that the mind is compelled to proceed to the next level, considered as a more adequate attitude or point of view.

Hegel's influence, we must note, has continued in contemporary philosophy but mainly in **Continental philosophy**. In contrast, contemporary Analytic philosophy of the English-speaking world came about as a reaction against Hegel. There has however also been wide spread criticism of Hegel in the continental tradition too. Take for example, Arthur Schopenhauer who deduced that Hegel's philosophy is "a pseudo-philosophy paralyzing all mental powers stifling all real thinking" (Schopenhauer, 1839).

After the death of Hegel, Schelling was called upon to succeed him at Berlin. This was because the government of the day had wanted to counter the influence that Hegelian philosophy had exerted on a generation of students. Since the early period of his affiliation with Hegel, Schelling had become more religious in his philosophizing criticizing thus the rationalism in Hegel's philosophy. At this period of Schelling's presence in Berlin, important forms of later critical reaction to Hegelian philosophy evolved. Criticism of Hegel has been widespread in the 19th and the 20th centuries; aside Schopenhauer, a diverse range of individuals including Marx, Kierkegaard, Nietzsche, Russell, G. E. Moore, Eric Voegelin and A. J. Ayer have challenged Hegelian philosophy from a variety of perspectives. Among the first to take a critical view of Hegel's system was the 19th Century German group known as the Young Hegelians, which included Feuerbach, Marx, Engels, and their followers. In Britain, the Hegelian British Idealism school (members of which included Francis Herbert Bradley, Bernard Bosanquet, and, in the United States, Josiah Royce) was challenged and rejected by analytic philosophers Moore and Russell; Russell, in particular, considered "almost all" of Hegel's doctrines to be false. According to Walter Kaufman:

One of the few things on which the analysts, pragmatists, and existentialists agree with the dialectical theologians is that Hegel is to be repudiated: their attitude toward Kant, Aristotle, Plato, and the other great philosophers is not at all unanimous even within each movement; but opposition to Hegel is part of the platform of all four, and of the Marxists, too (Kaufman, 1959, 88-119).

Some of the criticisms of Hegel led to the emergence of several other prominent schools of philosophical thought a good number of which (as we shall point out in our conclusion) developed, ironically, with substantial traces of Hegelian influences in them. Many of Schelling's own criticisms, for example, of Hegel's rationalism found their way into subsequent "existentialist" thought, especially via the writings of Kierkegaard, who had attended Schelling's lectures. In addition, the interpretation Schelling offered of Hegel during this time itself helped to shape subsequent generations' understanding of Hegel, contributing to traditional understanding of Hegel as a "metaphysical" thinker in the pre-Kantian "dogmatic" sense.

CONCLUSION

In conclusion, scholars have asserted that Hegel's Dialectics is enough proof that he is a rationalist. Dialectics for Hegel here, is primarily differentiating between the characteristics of speculative thought and other categories of the same subject matter. The question and answer method of dialectics then proceeds to a situation where one gets to reason before making decision.

Hegel considered his philosophy as science and he insisted on upholding his philosophy as rationalism. Hegel explained that the abuse of reason is no longer reason. Hegel is convinced by the traditional explanations on how knowledge takes place. He criticizes and rejects the epistemological theories based on the absolute separation between knowing a subject and a known object. Going by Hegel's opinion as rationalism relates to history, the sole thought which philosophy puts into history is the 'simple concept of reason'.

According to Hegel "Reason is the law of the world and in the realm of world history, things have proceeded rationally following the rationally necessary footprint of the world spirit" (Unah, 2009, 25).

There are views of Hegel's thought as a representation of the summit of early 19th-century Germany's movement of philosophical idealism. It would come to have a profound impact on many future philosophical schools, including schools that opposed Hegel's specific dialectical idealism, such as (and despite the criticisms) Existentialism, the historical materialism of Marx, historicism, and British Idealism. His historicist and idealist account of reality revolutionized European philosophy and served as an important precursor to Continental philosophy, Marxism and historicism as well. Maurice Merleau-Ponty wrote that "All the great philosophical ideas of the past century – the philosophies of Marx and Nietzsche, phenomenology, German existentialism, and psychoanalysis – had their beginnings in Hegel" (Merleau-Ponty, 1964, 63). Hegel died in 1831, but his ideas live on, influencing generation after generation of thinkers, and as Michel Foucault would contend, contemporary philosophers may all be doomed to find Hegel waiting patiently at the end of whatever road they travel.

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EXISTENTIAL INTERROGATION OF MAX WEBER'S CULTURAL DETERMINISM AND ITS IMPLICATION ON AFRICA'S DEVELOPMENT

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ABSTRACT

Culture is a critical factor in the development of a people, it is without doubt the foundation upon which a formidable socio-economic structure necessary for development can be built. However, since the time of Weber, culture took a deterministic nomenclature, by asserting that a given set of cultural factors will give rise to a given pattern of socio-economic life. Thus, in Weber's and other cultural determinists view, certain 'traditional cultures' in most Third World Countries are negative and as such contributed to economic backwardness and poverty. This work rejects this view and argues for cultural possibilism in the existential tradition. We submit that culture is not static but rather dynamic through man's existential powers, who has the ability to recreate or reconstitute the world as he deems fit.

Keyword: Existentialism, culture, determinism, possibilism, Development.

INTRODUCTION

Development without doubt is central to human existence. Development involves transcendence from one level of life to another. This is a stage by stage evolution of a more advanced and sophisticated personality. It is therefore safe to say that culture is the soul of a nation, it is what distinguishes a people. Culture therefore drives development, it is the hallmark of authenticity, a loss of which leads to inauthentic living or a life controlled by the anonymous 'they'.

Max Weber in his seminal work "The Protestant Ethic and the Spirit of Capitalism", first published in 1904, followed by "The Religion of China: Confucianism and Taoism" (1951), where he argued that Confucianism created an environment hostile to capitalist development by emphasizing kinship as the primary source of social relatedness and thereby promoted economically inefficient nepotism.

The cultural and religious determinism of Weber was in many ways reminiscent of the environmental determinism of Hippocrates and Aristotle, both of whom had in their various works invariably argued that the natural environment determined not only the physical appearances of human groups, but also their social consciousness and psychological predispositions (Tatham, 1951:128). Hence, according to Hippocrates, Asians generally were "easy going" because they lived in very favourable regions. They stood in stark contrast to the "penurious Europeans", who, living in a harsh environment, had to work harder to ameliorate their suffering (Ibid). Aristotle held more or less the same views on environmental and social life.

However, the spectacular economic performance of Japan, China and Other Confucian societies since the 1950s has demolished Weber's thesis and it would appear an underestimation of man's existentialities at challenging the "givens" or the facticity of existence. Thus, we reject this view and see humanity everywhere surrounded by possibilities.

PHILOSOPHY AND CULTURE

The role of philosophy to the cultural development of any society cannot be over-emphasized. It is infact, “the base and the apex, the foundation, the ceiling and the roof of any civilization, any religion and science, indeed any discipline” (Momoh, 2000:2).

Philosophy, it must be noted is rooted in the problems philosophers attempt to resolve (Fadahunsi, 2002: 167). It is thus “not just a theoretical armchair ability to analyse and understand reality” (Oguejiofor, 2001:13).

Philosophy can therefore not be divorced from the environment, this informs Balogun’s (2014) position when he maintains that, philosophy could not have occurred in isolation of events in the environment which have great influence on the cultural mainstay of various people and races (p.14). A classical example is the response of the Milesians to mythological explanation given by the Ionian culture on the origin of the cosmos, rejecting the myths and offers a scientific, explanations on the original stuff.

This tradition was to characterize the history of philosophy through the ages, as an existential reflection on the activities in the society. Hence, Sodipo (1973) conceives philosophy as a:

Reflective and critical thinking about the concepts and principles we use to organize our experience in morals, in religion, in social and political life, in law, in psychology, in history and in the natural sciences (p.3).

Similarly, Plato’s Idealism is rooted in the social expression of Greek Society that unjustly condemned Socrates to death. Thus, Plato’s idealistic metaphysics can only be appreciated in the light of the decadent political period of Greek. Philosophy can therefore not be separated from the environment, every philosophy is culturally founded, it is therefore rooted in the problems philosophers attempt to resolve (Fadahunsi, 2002:167).

Again, in the medieval period or a time otherwise known as “dark ages” attention was shifted to the relation between faith and reason.

The early Christian theologian, Tertullian gave classical expression to the view with rhetorical question “what hath Athens to do with Jerusalem?” Consequently, the prevalent culture in medieval thoughts was the Church with its creeds and practices as such philosophical thoughts and reflections during this period hovered around the predominant cultural indexes (Balogun, p.12).

Immediately following the Middle Ages was the period of enlightenment when efforts were made to separate religious theses from reason. Notable thinkers in this period includes but not limited to Francis Bacon, David Hume and other scientific minded thinkers who sought for an empirical explanations thereby rejecting apiori notions which eventually pave way for the development of science which blossom in the industrial revolution and the consequent capitalism.

From the foregoing, philosophies are not devoid of the prevailing intellectual, socio-cultural and economic conditions at the time. This fact is captured by Fredrick Hegel (1973), when he writes:

Whatever happens, every individual is a child of time; so philosophy too is its own time apprehended in thoughts. It is just as absurd to fancy that a philosophy can transcend its contemporary world as it is to fancy that an individual can overlap his own age, jump over Rhodes (p. 11).

Examples of the Nexus between philosophical reflections and the history surrounding them are endless. Existentialist philosophy (with which we intend to interrogate the African predicament) is a response to the challenges of ruins and penury following the Second World War, when humanity was faced with the possibility of extinction (Fadahunsi, 2002: 168). Expectedly, existentialist thinkers were averred to the prevailing abstract rationalism which tends to put God at the centre of his woes, but on the contrary, existentialist rose against this thought, placing man in charge of his destiny. Hence, regarded as a movement of protest.

Thus, for Kierkegaard and Nietzsche both leading lights in the existentialist movement agree that “the system, the impersonal public is suffocating. They agree that abstract thought leads to a continuous “suicide of reason” (Unah & Osegenwune, 2010: 131). This is the true condition in Africa, hence all the philosophies of development are founded on abstract terms and not on the individual person that drives development, whose authentic selfhood is lost to his experiences of slavery, colonialism and neo-colonialism.

It is thus clear that all philosophies are epochal, having their source in time. This is aptly captures by Ogundowole (2004):

The emphasis made by each philosopher depends on the major problems prevalent at a given historical period of the development of mankind. That is why a good grasp of what philosophy is, demands that we approach and view philosophy epochally (p. 23).

To establish this truism, Ogundowole further states that:

Epochal comprehension of the essence of philosophy enables one to realize that philosophies differ in content depending on the nature of problems tackled by the given philosopher at a given time and space; as well as the overall level of comprehensive awareness of the society and mankind in general and the ability to relate such special awareness to the development of philosophy (Ibid).

The point of emphasis is that though philosophical language is crafted in abstract terms, which implies that pure thought are the raw materials for philosophizing, philosophy however transcends the bounds of pure thought to be socially relevant, hence, “social milieu affects the content of philosophy, and the content of philosophy seeks to affect social milieu, either by confirming or opposing it” (Nkrumah, 1970: 14).

It is logical to say that no philosophy can exists in a vacuum, as philosophies of all cultures and epochs attest to this fact. Philosophy is a response to the socio-political exigencies of the various epochs. Philosophy can therefore not be divorced from the socio-political realities of a particular time, Nicolitio Gianan (2009) writes on the relationship between culture and philosophy, when he writes:

Philosophy and culture and interdependent entities. The latter is said to be the cradle of the former; the former analyzes, refines, and appreciates the latter. Culture in this view needs to cultivate and nurture philosophy; and philosophy functions as an evaluator and studies culture in order to further develop and enrich it (p. 118).

Accordingly, Gbani conceives cultures as “the ideas, customs, skills, arts, attitudes, sciences, modes of perception and habits of thought and activity of a people or group that are transferred or communicated, or passed along as in or to succeeding generations (p. 119). For this reason, Gbani concedes that all philosophy is culturally shaped and socially determined. He was of the opinion that:

No one can deny that most cultures have changed, and philosophizing also has evolved in the process. Philosophy has transformed itself into something that is already in dialogue with culture itself, not in opposition to or away from it (p. 118).

Human cultures as a mode of existence, is therefore not static, rather dynamic through the ingenuity of philosophy which continuously to probe the foundations of beliefs and knowledge to refine same for the betterment of man and his society. Hence, the function of philosophy everywhere according to Wiredu (1980) “is to examine the intellectual foundations of life, using the best available modes of knowledge and reflection for human well-being” (p. 62). It can be deduced that “culture is subject to philosophical examination” (Balogun, 2014: 17). This explains why Olusegun Olatipo in his essay “philosophy and culture” (1999) opines that:

Philosophy has a crucial role to play in the production, clarification and propagation of the ideas and values that guide a thought and life of a people. Philosophy serves to challenge a people’s established views of themselves and their condition as a precondition for defining or re-defining who they are and what they can be (pp. 20, 21).

The nexus between philosophy and culture shows that, culture shows that, culture needs philosophical reflections, since these reflections are rooted in the social milieu or cultural heritage of the people. Every society has benefited immensely from this relationship, laying the foundation of development as it did to the prevailing myth in ancient Greece.

The African situation cannot be exempted from this revolutionary character of philosophy. What is however needed is to engage African culture in the existentialist tradition of possibilities, man the creator of culture is a bundle of possibilities an unfinished product, this is captured by Unah (1996):

Genuine human existence demands that the self assumes true responsibility for itself and its deed and that the genuine individual create new possibilities for himself or seek to realize his historical possibilities (p. 107).

We agree with Godwin Sogolo that an emerging African philosophical tradition needs to be rooted in and also to be nourished within the context of the African culture, history and the experience of the people (Oyeshile, 1998: 186), in the same vein, developmental crisis in Africa can only be remedied genuinely through the existential values of the people, it only requires that the African person needs to be rehabilitated existentially.

More importantly is the crucial role of philosophy in “the production, clarification and propagation of the ideas and values that guide, the thought and life of a people” (Olatipo, 1999:20). Again, there is the critical aspect of philosophy, where it “serves to challenge a people’s established views of themselves and their condition as a precondition for defining or redefining who they are and what they can be (Ibid, pp. 20, 21).

Thus through man's existential activities cultures assumes a dynamic trait as opposed to rigid status, for which cultural determinists are guilty.

ON CULTURAL DETERMINISM

Max Weber, in his book, "The protestant ethic and the spirit of capitalism" (1930), maintains that the emergence of the modern economic development (in Europe) depended on a prior shift in cultural values generated by Protestantism. Weber argued that discipline, austerism, frugality and individualism – all traits of those Protestants sects – were key ingredients in the development of capitalism. Buttressing his point, he argued that areas of German and Switzerland which were protestant were on the whole more economically developed than those which were catholic.

In 1951, Weber published another book, "The Religion of China: Confucianism and Taoism" in which he argued that Confucianism created an environment hostile to capitalist development by emphasizing kinship as the primary source of social relatedness and thereby promoted economically inefficient nepotism.

The cultural and religious determinism of Weber was in many ways reminiscent of the environmental determinism of Hippocrates and Aristotle, both of whom had in their various works invariably argued that the natural environment determined not only the physical appearances of human groups, but also their social consciousness and psychological predispositions (Taylor, 1872:p.128). Hence, according to Hippocrates, Asians generally were "easy going" because they lived in very favorable regions. They stood in stark contrast to the "penurious Europeans", who, living in a harsh environment, had to work harder to ameliorate their suffering (ibid). Aristotle held more or less the same views on environmental and social life.

However, the spectacular economic performance of Japan, China and other Confucian societies since the 1950s has demolished Weber's thesis and it would appear an underestimation of man's existential potentialities at challenging the "givens" or the facility of existence. Thus, we reject this view and see humanity everywhere surrounded by possibilities.

Francis Fukuyama's "Trust: the social virtues and creation of *"Prosperity"* (1995). Added a new dimension to the cultural determinist theory when he argues that societies with higher levels of trust are inclined to be more developed when compared to societies in which there were lower levels of trust. He writes.

A nation's well being as well as its ability to complete is conditioned by a single pervasive cultural characteristics the level of trust inherent in society (Hamilton, 1996:24).

To make good his point Fukuyama argues that "low trust" societies such as China, France and Italy, where close relations between people do not extend much beyond the family, are poor at generally larger social institutions like multinational corporations so, Fukuyama observes, they are at comparative disadvantage. In contrast, 'high trust' countries like Japan, Germany, and the USA are bound to do much better at generally multinational corporations which, in turn, will lead to improved conditions of life and economically vibrant economies (ibid.).

Fukuyama's position has been criticized by scholars who have tried to show that, contrary to his central thesis, some societies which Fukuyama categorize as "low trust", actually have been able to facilitate the development of large scale corporations. Then, too, China, which

according to Fukuyama is “a low trust society”, has not only actually been able to create large corporations but also is developing very rapidly.

Further, in advancing his theory of social trust as an all pervasive factor, Fukuyama ignored the role of government control and direction. In the case of both South Korea and China, the role of government is an important factor in evolving socio-economic policies. In such a situation development may take a given direction whether the society in question is “low trust” or “high trust”.

Another major criticism against Fukuyama’s social trust theory is the seemingly bias. Instead of a global outlook, he concentrated on the Euro-Asia cum American social economic experiences and completely ignore the African realities.

In Africa, there is a higher degree of social cohesion and trust than perhaps in any other part of the world. Surely, if “social closeness” and “social trust” were the key for corporate development, then Africa could be a cradle of multinational corporation.

Reacting to this view, Mazrui argued in his article “Social Distance and the Trans-class Man in Africa”, that rather than be a blessing, this close knit social unit to which members belong, any upward economic mobility of a few is likely to be tempered in order to satisfy the social demands of the community. Should that happen, social closeness, rather than being an asset, actually turns out to be a liability (Mazrui, 1968: 195).

Though A. A. Mazrui rejected Fukuyama’s cultural determinist theory, he without doubt advances his own scientific language, in a paper, “Development in Multicultural Context: Trends and Tensions” He proposes as a “cultural foundation “for all “other development” the fostering of a common language (p. 129). Mazrui worries that Africa could be missing out on development, particularly scientific development because of not having adapted her indigenous languages for scientific work. His hope for Africa lies in Africa adapting her indigenous languages so that “scientific concepts can become the necessary economic tools for economic development”. Mazrui is a cultural determinist in so far as he subscribes to the view that a scientified language *ipso facto* leads to development.

But to what extent is “the scientific adaptation” of a language is a *sine quo non* for scientific and technological development?

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But to what extent is "the scientific adaptation" of a language a *sine qua non* for 'scientific and technological development? - An examination of a few selected languages will highlight the problematic character in Mazrui's thesis. Starting with Arabic, we note that since time immemorial this language has had scholars like Avicenna (Ibn Sina 980-1037) teaching medicine and philosophy. Averroes (Ibn Rushd, 1126-1198), a medical scholar, mathematician and philosopher, also used Arabic in his studies. Bertrand Russell, commenting on science in the Arabic language observes, "Writers in Arabic showed some originality in mathematics and in chemistry - in the latter case as an incidental result of alchemical researches. Mohammedan civilization in its great days was admirable in the arts and in many technical ways."

To go by Mazrui's thesis that adapting a language for science leads to (technical) development, what is one to say about Arabic on the one hand, in which language at a very early historical period there was a rich scientific and mathematical heritage. On the other hand, today the majority of the Arab speaking world is still regarded as a developing world. Arabic then is not only an old language with a rich scientific heritage, but is now also spoken in many less technically advanced areas?

Mazrui seems to subscribe to the view that Japan and Korea have been successful because they have adapted their 'languages for 'science. A careful examination of the facts, however, reveals that such adaptation of the Japanese language was not a cause, but an effect. Although the Japanese language had "for millennia been influenced by the Chinese language (which was itself scientific to some extent) transcultural exchange remained largely barren. Only during Meiji times (also known as the period of enlightened rule, 1867-1912) did Emperor Mutsihito issue the imperial charter (April 1869), in which he announced the government's intention to modernize Japan and to turn to Western countries for new ideas.

In these circumstances, the adaptation of the Japanese language must have been but one of the many programs arranged to carry out an already conceived plan or policy in which the predominant or 'primordial element was the intent to modernize by obtaining outside (Western) technology. If the scientific adaptation of language *per se* were enough to engender development, the Chinese language with the largest number of speakers, its imperialistic past and, of course, its scientific heritage, would have led to development much earlier than the Meiji period.

But the Korean experience raises an interesting point in that Korea was able to develop scientifically precisely at the moment it was colonized. Why was that so and why have African countries continued to use the "colonial excuse" to explain away the failure of development efforts? Did Korea develop in spite of colonialism because of the benevolence of Japanese imperialism, or are we to look for the reasons for Korean development in some internal strengths of the Korean people?

An inquiry into the language factor vis-à-vis colonialism is especially pertinent to our discussion because the colonial powers in Africa spoke either French or English – two languages rich in scientific terminology, if scientific language was an aid in scientific and technical development, then Francophone and Anglophone sub-Saharan Africa received a rich scientific language transfer. Why then did Africa not, take advantage of that rich heritage?

Mazrui could argue that although used by colonial rule, these languages remained largely elitist and were not sufficiently diffused to the 'grass roots; consequently the relevant technical terminology was not sufficiently diffused in society. But that argument would be spurious at least. There are such countries as India and Malaysia, both colonized by the British, both using English as the official language in schools government and business, and both with a large grassroots populace who have never really come to "speak English". Moreover, their mother tongues, namely, Hindustan and Malaya, are not scientific languages in the strict sense of the term. Why is it that those countries have been able to develop?

If hypothetically, Zaire and Uganda were to become 100 percent French and English-speaking in the next years, would they be on the threshold of an industrial revolution?

CULTURAL ALIENATION AND ADAPTATIONISM

Obi Oguejiofor in his work, *Philosophy and the African Predicament* (2001), painted a graphic pictures of the African Condition historically. Apart from being the cradle of the human race, “Africa was also the cradle of the technological evolution of humanity from the invention of wooden and bone tools to the momentous advance into the stone-age” (p. 24).

In addition, the continent was host to ancient civilizations such as Egypt, Kush, Napata and Meroe, Nubia and Axiam (Ibid). However, the trans-Atlantic slave trade was a darkest blight in African history. Thus, the experience of slave trade alter the progress and advancement of the continent, not only in terms of the exploitation of physical resources but of the mental effects on the people.

The effect of slavery on African societies was thus not limited to visible factors, even of greater consequences is the invisible political, psychological and social effects (p. 29).

Consequently, the legacy of the slave trade on the continent was that of fear, social insecurity, violence and political instability (Olaniyan, 1985: 120).

If for any other things, colonialism left the African persistently stigmatized as inferior, hence, the lost of authentic selfhood and the utter dependence on ‘others’.

Ayittey makes this comments on the devastation colonialism caused on the psyche of the African, to the effect that though it ended in 1840, Africans are yet to recover from the psychological trauma.

It was probably this, rather than the physical and economic damage of the salve trade, that wrenched the heart from the inner psyche of blacks and assailed the very cultural soul of their existence (Ayittery, 1992:5).

Colonialism, according to him, compounded the problem, since colonial subjugation was a cultural and emotional humiliation suffered on top of the pervasive denigration of Africans as inferior (Ibid., p. 7).

Thus, the assault on Africa’s dignity through history were not sufficiently looked into by the subsequent philosophies of development, hence, a neglect of man’s existence at the expense of the exploitation of his physical environment.

However, in the existentialist tradition we submits that man is not a product of history but rather, history is the product of human activities. Even in the face of economic situation, man is free to decides what to do and how to react to the situation.

F. N. Ndubuisi (2006), *Freedom and Determination: An Inquiry Into Man’s Moral Responsibility*. This is basically a critical evaluation of J. P. Sarte’s notion of freedom. Man makes himself, the author declares. Man’s freedom to recreate his world is not negotiable. Failure to accept freedom on the level of practical reason and refusal to live according to the reality of human condition are the evidence of bad faith (p. 56).

Acceptance of any deterministic forces outside man is illusion. Hence the facticity of human being can be seen as a particular set of contingent facts that are true of him strictly. There is no compelling factor outside one to value something as high or low. One’s decision in regard to the value of things is entirely one’s (p. 60).

However, human reality or freedom encounters limitation on account of the given which is surpassed or nihilated. But when obstacles cease to exist then freedom becomes non-existent.

We constitute a freedom that chooses but we do not choose to be free. We are condemned to freedom.

Freedom is germane to authentic nation building, it is the human capacity of self determination, self orientation and self detachment.

Muyiwa Falaiye in his work, *“Theoretical Black Activism and Social Change: beyond Rodney and George Ayittey”* (2005), where he chronicled the African woes as adumbrated by the internalists and externalists percussion, he calls for an end to the blame game, which generated more heat than the needed energy.

Falaiye in an existential language calls for a development that is rooted in the people’s environment, as such, the “people must recognized that development must be a true reflection of the needs of the environment in which they live” (p. 50).

Characteristically, Falaiye makes case for cultural adaptationism, where we accept what is useful from other cultures for the development of our environment, “Africa must consider the appropriateness of adapting elements of external cultures especially as they relate to its own existential needs”. (p. 51).

On the whole, Falaiye’s philosophy of cultural adaptationism is central to this work, by demonstration that the lamentations of the externalists and internalists are impartial but a close circle. In the process of development, cultures need not lose their essential consciousness that makes for the uniqueness of a people. They can still maintain their linguistic, socio-cultural, legal, economic, and political heritage” (Ibid).

As we have shown in this work the bane of development in Africa is the total loss of our cultural roots and wholesale acceptance of everything Western. A characteristic of an unauthentic being.

Thus, cultural adaptationism is the hallmark of an authentic people, the unauthentic who already losses what it means to exist, will automatically adopt all that is available.

CONCLUSION

Having shown the weaknesses of Weber’s Cultural Determinism, we subscribe to cultural possibilism, showing that it is within the People’s existential power to alter culture and eventually the superstructures erected upon it. Through the existential possibilities, we see the human person as ultimately responsible for charting a course for one’s own development and for humankind.

To achieve these task of social reconstruction, we agree with Wamala (1999) that Africa needs:

- a marshal plan, not in terms of finance, but in its cultural, intellectual and conceptual frameworks.
- a close examination of issues like cultural laxity towards work, leanings toward corruption by leaders, and a sober view concerning money and management.
- a check on such cultural traits as lack of accountability, and an instinctive desire to get rich quickly. (p. 57).

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UNDERSTANDING THE BIOLOGIZATION OF ETHICS THROUGH EVOLUTIONARY ETHICS

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ABSTRACT

With the growing success and impact of the natural sciences in the explanation of phenomena and in the workings of many spheres of human life, there has been increasing advocacy for the adoption of the scientific method in attending to many of the age-old problems that have puzzled and pre-occupied philosophy and philosophers. This has been witnessed in the demands, for example, to naturalize metaphysics and epistemology, and in the same vein, acknowledging the revolutionary breakthroughs in the biological sciences, has there also gone the call for the biologization of ethics. With roots in the works of Charles Darwin and taking a more modern take-off with E.O. Wilson's call for scientists and humanists to take ethics temporarily off the domain of philosophers and biologicized, the challenge therefore had become for evolutionary biologists and other scientifically-minded ethicists to define goodness with reference to ethical theory and then explain why human beings ought to be good. In this paper, we trace this movement from its source in Darwin's *The Descent of Man*, to the growth of evolutionary ethics in a build-up to understanding the backdrop against which the emergence of sociobiology as a field was set. Sociobiology was to provide the podium from which E.O. Wilson made his call, and with decades to follow which witnessed great achievements in the field of biology, or the New Biology, as it came to be known, the crusade for morality to be approached from biological basics only gained more impetus. We review these developments in this work, take note of several criticisms against this approach like Hume's "Is-Ought problem" and the naturalistic fallacy, analyze how much these criticisms served in containing biologized ethics, and draw up some conclusions for the discussion with an examination of recent efforts by Sam Harris to revive approaches on how science can determine human values.

INTRODUCTION

The biologization of ethics started with the publication of *The Descent of Man* by Charles Darwin (1809-1882) in 1871. In this follow-up to *On the Origin of Species*, Darwin applied his ideas about evolutionary development to human beings. He argued that humans must have descended from a less highly organized form--in fact, from a "hairy, tailed quadruped ... inhabitant of the Old World"¹. The main difficulty Darwin saw with this explanation is the high standard of moral qualities apparent in humans. Faced with this puzzle, Darwin devoted a large chapter of the book to evolutionary explanations of the moral sense, which he argued must have evolved in two main steps.

First, the root for human morality lies in the social instincts. Building on this claim by Darwin, today's biologists would explain this as follows. Sociability is a trait whose phylogenetic origins can be traced back to the time when birds "invented" brooding, hatching, and caring for young offspring. To render beings able to fulfill parental responsibilities required social mechanisms unnecessary at earlier stages of evolutionary history. For example, neither amoebae (which reproduce by division) nor frogs (which leave their tadpole-offspring to fend for themselves) need the social instincts present in birds. At the same time as facilitating the raising of offspring, social instincts counterbalanced innate aggression. It became possible to distinguish between "them" and "us" and aim aggression

towards individuals that did not belong to one's group. This behavior is clearly adaptive in the sense of ensuring the survival of one's family.

Second, with the development of intellectual faculties, human beings were able to reflect on past actions and their motives and thus approve or disapprove of others as well as themselves. This led to the development of a conscience which became "the supreme judge and monitor" of all actions.² Being influenced by utilitarianism, Darwin believed that the greatest-happiness principle will inevitably come to be regarded as a standard for right and wrong by social beings with highly evolved intellectual capacities and a conscience.

These claims by Darwin could be viewed as some starting point for what came to be known as evolutionary ethics. Evolutionary ethics tries to bridge the gap between philosophy and the natural sciences by arguing that natural selection has instilled human beings with a moral sense, a disposition to be good. If this were true, morality could be understood as a phenomenon that arises automatically during the evolution of sociable, intelligent beings and not, as theologians or philosophers might argue, as the result of divine revelation or the application of our rational faculties. Morality would be interpreted as a useful adaptation that increases the fitness of its holders by providing a selective advantage. This is certainly the view of Edward O. Wilson, the "father" of sociobiology, who believes that "scientists and humanists should consider together the possibility that the time has come for ethics to be removed temporarily from the hands of the philosophers and biologicized".³ The challenge that then followed for evolutionary biologists such as Wilson had been to define goodness with reference to evolutionary theory and then explain why human beings ought to be good.

In this paper, we shall look at some of the arguments put forth by evolutionary biologists on explanations for morality in humans as well as the positions and challenges posed by and against evolutionary ethics. We shall likewise consider how this thread linked into the rise of sociobiology, some revolutionary episodes in biological science, and how all these led to the acts of biologicized ethics. Furthermore, extra attention will be paid in considering some criticisms and challenges facing the approach, as well as some potentials still inherent in the biologicization of ethics.

EVOLUTIONARY ETHICS: BACKGROUND IN DARWINISM

Based on the claims we earlier outlined as made by Darwin, can Darwin thus answer the two essential questions in ethics? First, how can we distinguish between good and evil? And second, why should we be good? If all his claims were true, they would indeed support answers to the above questions. Darwin's distinction between good and evil is identical with the distinction made by hedonistic utilitarians. Darwin accepts the greatest-happiness principle as a standard of right and wrong. Hence, an action can be judged as good if it improves the greatest happiness of the greatest number, by either increasing pleasure or decreasing pain. And the second question--why we should be good--does not pose itself for Darwin with the same urgency as it did, for instance, for Plato (Thrasymachus famously asked Socrates in the *Republic* why the strong, who are not in need of aid, should accept the Golden Rule as a directive for action). Darwin would say that humans are biologically inclined to be sympathetic, altruistic, and moral as this proved to be an advantage in the struggle for existence.⁴

The next important contribution to evolutionary ethics was by Herbert Spencer, the most fervent defender of that theory and the creator of the theory of Social Darwinism. Spencer's theory can be summarized in three steps. As did Darwin, Spencer believed in the theory of hedonistic utilitarianism as proposed by Jeremy Bentham and John Stuart Mill. In his view,

gaining pleasure and avoiding pain directs all human action. Hence, moral good can be equated with facilitating human pleasure. Second, pleasure can be achieved in two ways, first by satisfying self-regarding impulses and second by satisfying other-regarding impulses. This means that eating one's favorite food and giving food to others are both pleasurable experiences for humans. Third, mutual cooperation between humans is required to coordinate self- and other-regarding impulses, which is why humans develop principles of equity to bring altruistic and egoistic traits into balance.

However, Spencer did not become known for his theory of mutual cooperation. On the contrary, his account of Social Darwinism is contentious to date because it is mostly understood, in the words of Michael Ruse, as "an apology for some of the most vile social systems that humankind has ever known,"⁵ for instance German Nazism. In short, Spencer elevated alleged biological facts (struggle for existence, natural selection, survival of the fittest) to prescriptions for moral conduct. For instance, he suggested that life is a struggle for human beings and that, in order for the best to survive, it is necessary to pursue a policy of non-aid for the weak: "to aid the bad in multiplying, is, in effect, the same as maliciously providing for our descendants a multitude of enemies"⁶. Spencer's philosophy was widely popular, particularly in North America in the 19th century, but declined significantly in the 20th century.

Which answers could he give to the two essential questions in ethics? How can we distinguish between good and evil and why should we be good? Spencer's answer to question one is identical to Darwin's as they both supported hedonistic utilitarianism. However, his answer to question two is interesting, if untenable. Spencer alleged that evolution equaled progress for the better (in the moral sense of the word) and that anything which supported evolutionary forces would therefore be good. The reasoning behind this was that nature shows us what is good by moving towards it; and hence, "evolution is a process which, in itself, generates value".⁷ If evolution advances the moral good, we ought to support it out of self-interest. Moral good was previously identified with universal human pleasure and happiness by Spencer. If the evolutionary process directs us towards this universal pleasure, we have an egoistic reason for being moral, namely that we want universal happiness. However, to equate development with moral progress for the better was a major value judgment which cannot be held without further evidence, and most evolutionary theorists, Ruse being among them, have given up on the claim. It also is subject to more conceptual objections, namely deriving "ought" from "is" (which we shall look at much later), and committing the naturalistic fallacy, which we shall consider briefly in the opening parts of the next section of this paper.

PROBLEMS IN EVOLUTIONARY ETHICS AND THE EMERGENCE OF SOCIOBIOLOGY

Aside attacks against evolutionary ethics by those who supported Hume's claim that normative statements cannot be derived from empirical facts, a related argument against evolutionary ethics was voiced by British philosopher G.E. Moore. In 1903, he published a ground-breaking book, *Principia Ethica*, which created one of the most challenging problems for evolutionary ethics: the "naturalistic fallacy." According to Ruse, when dealing with evolutionary ethics, "it has been enough for the student to murmur the magical phrase 'naturalistic fallacy,' and then he or she can move on to the next question, confident of having gained full marks thus far on the exam".⁸ So, what is the naturalistic fallacy and why does it pose a problem for evolutionary ethics?

Moore was interested in the definition of "good" and particularly in whether the property *good* is simple or complex. Simple properties, according to Moore, are indefinable as they cannot be described further using more basic properties. Complex properties, on the other hand, can be defined by outlining their basic properties. Hence, "yellow" cannot be defined in terms of its constituent parts, whereas "colored" can be explained further as it consists of several individual colors. "Good," according to Moore, is a simple property which cannot be described using more basic properties. Committing the naturalistic fallacy is attempting to define "good" with reference to other natural, i.e. empirically verifiable, properties. This understanding of "good" creates serious problems for both Darwin and Spencer. Following Bentham and Mill, both identify moral goodness with "pleasure." This means they commit the naturalistic fallacy as good and pleasant are not identical. In addition, Spencer identifies goodness with "highly evolved," committing the naturalistic fallacy again.

Another main problems evolutionary ethics faces is that ethics is not a single field with a single quest. Instead, it can be separated into various areas, and evolutionary ethics might not be able to contribute to all of them. Let us therefore look at a possible classification for evolutionary ethics, which maps it on the field of traditional ethics. In doing this, we find that there is the problem of placement in contemporary ethical theory faced by evolutionary ethics. For philosophy students, ethics is usually divided into three areas: metaethics, normative ethical theory, and applied ethics. Metaethics looks for possible foundations of ethics. Are there any moral facts out there from which we can deduce our moral theories? Normative ethical theories suggest principles or sets of principles to distinguish morally good from morally bad actions. Applied ethics looks at particular moral issues, such as euthanasia or bribery. However, this classification is not adequate to accommodate evolutionary ethics in its entirety. Instead, a different three-fold distinction of ethics seems appropriate: descriptive ethics, normative ethics, and metaethics. Descriptive ethics outlines ethical beliefs as held by various people and tries to explain why they are held. For instance, almost all human cultures believe that incest is morally wrong. This belief developed, it could be argued, because it provides a survival advantage to the group that entertains it. Normative ethical theories develop standards to judge which actions are good and which actions are bad. The standard as defended by evolutionary ethics would be something like: *Actions that increase the long-term capacity of survival in evolutionary terms are good and actions that decrease this capacity are bad.*

However, the field has not yet established itself credibly in normative ethics. Consequentialism, deontology, virtue ethics, and social contracts still dominate debates. This is partly due to the excesses of Social Darwinism but also due to the unintuitive nature of the above or similar standards. Evolutionary ethics has been more successful in providing interesting answers in metaethics. Michael Ruse, for instance, argues that morality is a "collective illusion of the genes, bringing us all in.... We need to believe in morality, and so, thanks to our biology, we do believe in morality. There is no foundation "out there" beyond human nature."⁹

Descriptive ethics seems, as yet, the most interesting area for evolutionary ethics, a topic particularly suitable for anthropological and sociological research. Which ethical beliefs do people hold and why? But in all three areas, challenges are to be faced.

The following are therefore some lingering challenges for evolutionary ethics:

- How can a trait that was developed under the pressure of natural selection explain moral actions that go far beyond reciprocal altruism or enlightened self-interest? How can, for instance, the action of Maximilian Kolbe be explained from a biological point

of view? (Kolbe was a Polish priest who starved himself to death in a concentration camp to rescue a fellow prisoner.)

- Could not human beings have moved beyond their biological roots and transcended their evolutionary origins, in which case they would be able to formulate goals in the pursuit of goodness, beauty, and truth that, according to Anthony O'Hear, "have nothing to do directly with survival, and which may at times militate against survival?"¹⁰
- Morality is universal, whereas biologically useful altruism is particular favoring the family or the group over others. "Do not kill" does not only refer to one's own son, but also to the son of strangers. How can evolutionary ethics cope with universality?
- Normative ethics aims to be action-guiding. How could humans ever judge an action to be ensuring long-term survival? (This is a practical rather than conceptual problem for evolutionary ethics.)
- Hume's "is-ought" problem (which we shall examine later) still remains a challenge for evolutionary ethics. How can one move from "is" (findings from the natural sciences, including biology and sociobiology) to "ought"?
- Similarly, despite the length of time that has passed since the publication of *Principia Ethica*, the challenge of the "naturalistic fallacy" remains.

Evolutionary ethics is, thus, on a philosopher's time-scale, a very new approach to ethics, and though interdisciplinary approaches between scientists and philosophers have the potential to generate important new ideas, evolutionary ethics still has a long way to go.

Despite the continuing challenge of the naturalistic fallacy, evolutionary ethics has nonetheless moved on with the advent of sociobiology. In 1948, at a conference in New York, scientists decided to initiate new interdisciplinary research between zoologists and sociologists. "Sociobiology" was the name given to the new discipline aiming to find universally valid regularities in the social behavior of animals and humans. Emphasis was put on the study of biological, i.e. non-cultural, behavior. The field did, however, not get off the ground until Edward Wilson published his *Sociobiology: The New Synthesis* in 1975. According to Wilson, "sociobiology is defined as the systematic study of the biological basis of all social behavior."¹¹

Sociobiology is a field of scientific study which is based on the assumption that social behavior has resulted from evolution and attempts to explain and examine social behavior within that context. Often considered a branch of biology and sociology, it also draws from ethology, anthropology, evolution, zoology, archaeology, population genetics, and other disciplines. Within the study of human societies, sociobiology is very closely allied to the fields of Darwinian anthropology, human behavioral ecology and evolutionary psychology. Sociobiology investigates social behaviors, such as mating patterns, territorial fights, pack hunting, and the hive society of social insects. It argues that just as selection pressure led to animals evolving useful ways of interacting with the natural environment, it led to the genetic evolution of advantageous social behavior.

Following Wilson's 1975 publication, the new field quickly became the subject of heated controversy. Criticism, most notably made by Richard Lewontin and Stephen Jay Gould, centered on sociobiology's contention that genes play an ultimate role in human behavior and that traits such as aggressiveness can be explained by biology rather than a person's social environment. Sociobiologists generally responded to the criticism by pointing to the complex relationship between nature and nurture. In response to some of the potentially factious

implications sociobiology had for human biodiversity, anthropologist John Tooby and psychologist Leda Cosmides founded the field of evolutionary psychology.

Defined by E.O. Wilson as: "The extension of population biology and evolutionary theory to social organization",¹² sociobiology is based on the premise that some behaviors (both social and individual) are at least partly inherited and can be affected by natural selection. It begins with the idea that behaviors have evolved over time, similar to the way that physical traits are thought to have evolved. It predicts, therefore, that animals will act in ways that have proven to be evolutionarily successful over time. This can, among other things, result in the formation of complex social processes conducive to evolutionary fitness. The discipline seeks to explain behavior as a product of natural selection. Behavior is therefore seen as an effort to preserve one's genes in the population. Inherent in sociobiological reasoning is the idea that certain genes or gene combinations that influence particular behavioral traits can be inherited from generation to generation.

For example, newly dominant male lions often will kill cubs in the pride that were not sired by them. This behaviour is adaptive in evolutionary terms because killing the cubs eliminates competition for their own offspring and causes the nursing females to come into heat faster, thus allowing more of his genes to enter into the population. Sociobiologists would view this instinctual cub-killing behavior as being inherited through the genes of successfully reproducing male lions, whereas non-killing behaviour may have "died out" as those lions were less successful in reproducing.

When Charles Darwin wrote *The Origin of Species*, he withheld discussion of the origins of human morality and cognition. Despite Darwin's restraint, some of the strongest reactions to the theory of natural selection had to do with its connection to ethical matters. The intersection between evolution and ethics continues to be a site of controversy. Some claim that human ethical judgments are to be explained by their adaptive value. Others claim that human ethical systems are the result of cultural evolution, not biological evolution. In the context of cognitive science, the central issue is whether humans have ethics-specific beliefs or cognitive mechanisms that are the result of biological evolution. There is increasing evidence that the human brain comes prewired for a wide range of specialized capacities. Arguments for this are found under such theories as Nativism and Domain Specificity. With regard to ethics, the central questions are to what extent the human brain is prewired for ethical thinking and, insofar as it is, what the implications of this are.

There is one sense in which humans are prewired for ethics: humans have the capacity for ethical reasoning and reflection while amoebas do not. This human capacity is biologically based and results from evolution. *Ethical nativism* is the view that there are specific, prewired mechanisms for ethical thought. Adherents of sociobiology, the view that evolutionary theory can explain all human social behavior, are among those who embrace ethical nativism. Wilson, as we have seen, goes so far as to say that ethics can be "biologized." Sociobiologists claim that humans have specific ethical beliefs and an associated ethical framework that are innate and are the result of natural selection. They support this view with evidence that humans in all cultures share certain ethical beliefs and certain underlying ethical principles (for example, as advanced by the theory of Human Universals), evidence of ethical or "pre-ethical" behavior among other mammals, especially primates, and with evolutionary accounts of the selective advantage of having innate ethical mental mechanisms. Most notably, they talk about the selective advantage (to the individual or to the species) of altruism.

Consider, for example, a particular moral belief or feeling for which an evolutionary explanation has been offered, namely the belief that it is wrong to have (consensual) sex with one's sibling. Some sociobiologists have argued that this belief (more precisely, the feeling that there is something wrong about having sex with a person one was raised with) is innate and that we have this belief because of its selective advantage. When close blood relatives reproduce, there is a relatively high chance that traits carried on recessive genes (most notably, serious diseases like sickle-cell anemia and hemophilia) will be exhibited in the resulting offspring. Such offspring are thus more likely to fail to reproduce. Engaging in incest is thus an evolutionarily non-adaptive strategy. If a mutation occurred that caused an organism to feel or believe that it is wrong to engage in incest, then, all else being equal, this gene would spread through the population over subsequent generations. Sociobiologists think they can give similar accounts of our other ethical beliefs and the mechanisms that underlie them.

What are the implications for ethics if ethical nativism and some version of the sociobiological story behind it are true? Some philosophers have denied there are any interesting implications. Ethics, they note, is *normative* (it says what we ought to do), whereas biology -- in particular, the details of the evolutionary origins of humans and our various capacities -- is *descriptive*. One cannot derive normative conclusions from empirical premises. To do so is to commit the naturalistic fallacy. It would be a mistake, for example, to infer from the empirical premise that our teeth evolved for tearing flesh to the normative conclusions that we ought to eat meat. This empirical premise is compatible with ethical arguments that it is morally wrong to eat meat. By the same reasoning, the fact that evolution produced in us the tendency to have some moral feeling or belief does not necessarily entail that we ought to act on that feeling or accept that belief on reflection. In fact, some commentators have suggested, following Thomas Huxley, that "the ethical progress of society depends, not on imitating [biological evolution],....but in combating it."¹³

Ethical nativists have various responses to the charge that they commit the naturalistic fallacy. Some allow that the fact that humans have some innate moral belief does not entail that we ought to act on it, while insisting that nativism has something to tell us about ethics. Perhaps biology can tell us that we are not able to do certain things and thus that it cannot be the case that we ought to do this. For example, concerning feminism, some sociobiologists have claimed that many of the differences between men and women are biologically based and unchangeable; a feminist political agenda that strives for equality is therefore destined to failure. This argument has been criticized, for example by Phillip Kitcher, on both empirical and normative grounds.

Some sociobiologists, e.g. Wilson and Ruse, have argued that the facts of human evolution have implications for moral realism, the metaethical position that there are moral facts like, for example, the moral fact that it is wrong to torture babies for fun. A standard argument for moral realism says that the existence of moral facts explains the fact that we have moral beliefs (on moral realism). If, however, ethical nativism is true and an evolutionary account can be given for why people have the moral beliefs they do, then an empirical explanation can be given for why we have the ethical capacities that we do. The standard argument for moral realism is thus undercut.

One promising reply to this line of thought is to note that moral facts might be involved in giving a biological account of why we humans have the moral beliefs that we do. In the case of incest, the moral status of incest might be related to the selective advantageousness of incest. Consider an analogy to mathematics. Although we might give an evolutionary

explanation of the spread of mathematical abilities in humans (say, because the ability to perform addition was useful for hunting), mathematical facts, like $2 + 2 = 4$, would still be required to explain *why* mathematical ability is selectively advantageous. Many of our mathematical beliefs are adaptive because they are true. The idea is to give the same sort of account for moral beliefs: they are selectively advantageous because they are true. Selective advantage and moral status can, however, come apart in some instances. One can imagine a context in which it would be selectively advantageous for men to rape women. In such a context, it might be selectively advantageous to have the belief that rape is morally permissible. Rape would, however, remain morally reprehensible and repugnant even if it were selectively advantageous to believe otherwise.

Even if there is a tension between ethical nativism and moral realism, the tension might not be so serious if only a few of our ethical beliefs are in fact innate. Many of our ethical beliefs come from and are justified by a reflective process that involves feedback among our various ethical beliefs; this suggests that many of them are not innate. The nativist argument against moral realism depends on the strength of its empirical premises.

In Wilson's view, sociobiology makes philosophers, at least temporarily, redundant, when it comes to questions of ethics. He believes that ethics can be explained biologically when he writes:

*The hypothalamus and limbic system ... flood our consciousness with all the emotions - hate, love, guilt, fear, and others - that are consulted by ethical philosophers who wish to intuit the standards of good and evil. What, we are then compelled to ask, made the hypothalamus and the limbic system? They evolved by natural selection. That simple biological statement must be pursued to explain ethics.*¹⁴

Ethics, following this understanding, evolved under the pressure of natural selection. Sociability, altruism, cooperation, mutual aid, etc. are all explicable in terms of the biological roots of human social behavior. Moral conduct aided the long-term survival of the morally inclined species of humans. In Wilson's view, the prevalence of egoistic individuals will make a community vulnerable and ultimately lead to the extinction of the whole group. Mary Midgley agrees. In her view, egoism pays very badly in genetic terms, and a "consistently egoistic species would be either solitary or extinct".¹⁵

Wilson tries to avoid the naturalistic fallacy in *Sociobiology* by not equating goodness with another natural property such as pleasantness, as Darwin did. This means that he does not give an answer to our first essential question in ethics. What is good? However, like Darwin he gives an answer to question two. Why should we be moral? Because we are genetically inclined to be moral. It is a heritage of earlier times when less morally inclined and more morally inclined species came under pressure from natural selection. Hence, we do not need divine revelation or strong will to be good; we are simply genetically wired to be good. The emphasis in this answer is not on the "should", as it is not our free will which makes us decide to be good but our genetic heritage.

THE NEW BIOLOGY AND THE BIOLOGIZATION OF ETHICS

The biological revolution served further to grant more impetus to the campaign for the biologization of ethics. We are in the midst of a new revolution in biology. From the unraveling of information locked within the human and other genomes to the complexities of interactions between organisms in diverse ecosystems in changing environments, biologists

and members of the public are grappling with an almost overwhelming flood of new information. Integration across biological sub-disciplines is emphasized, paralleling the integration taking place in the maturing field of systems biology. As biological phenomena become amenable to the analytical tools of chemistry, physics, mathematics and computer science, biology is increasingly a multidisciplinary venture. Biological forces have many profound effects on society, and in turn humanity has strongly affected our biosphere.

Reflecting on our current state of living in this **biological revolution** in the contemporary world, here are a dozen things that humans have discovered in the last fifteen years.

1. Humans have discovered the structure of the genetic substance DNA—the double helix of Watson and Crick—the general nature of the process by which the chromosomal strands are replicated.
2. Humans have discovered in viruses how to achieve the perfect replication of DNA molecules that are biologically effective.
3. Humans have discovered the code by which DNA specifies the insertion of amino acids in proteins.
4. Humans have discovered how to produce hybrid cells between the most diverse vertebrate species, including hybrids between man and mouse; and some of these hybrids have gone on multiplying for several (cellular) generations.
5. Humans have discovered the power of viruses to invade bacterial and other cells and to insert the genes of the virus into the genome of the host; and we have good reason to conjecture, though not yet to affirm, that this phenomenon is involved in cancer.
6. Humans have discovered hormonal contraceptives and grasped in principle the strategy for devising a contraceptive pill for *both* sexes, by knocking out certain hormones of the hypothalamus, the master sexual gland of the body.
7. Humans have discovered on a large scale in the livestock industry that deep-frozen mammalian sperm, suitably mixed with glycerol, can be banked indefinitely and drawn upon as desired to produce viable offspring.
8. Humans have discovered in human females how to produce superovulation, the release of several eggs into the oviduct at the same time instead of the customary one, with the possibility on the horizon of withdrawing substantial numbers of human eggs for storage, culture in test tubes, or surgical manipulation, without destroying their viability.
9. Humans have discovered in rabbits how to regulate the sex of offspring by removing fertilized ova from the female before they become implanted in the wall of the uterus, "sexing" the embryos by a technique entailing the deletion of some 200 to 300 cells, flushing embryos of the "wrong" sex down the drain, and then in a substantial minority of cases, successfully reinserting in the uterus embryos of the desired sex that proceed to develop normally.
10. Humans have discovered drugs, above all the hallucinogens, that simulate psychotic states of mind; and have thereby rendered it plausible that the latter are the product of inborn errors of metabolism and as such remediable by the administration of drugs.
11. Humans have discovered in principle, and to a certain extent in practice, how to repress the immunological "defenses" of the body.
12. Humans have discovered a combination of immunological and surgical techniques by which the kidney, liver, or heart can be transplanted with fair prospects of the recipient's survival for months or even years—the first constructive proposal for turning our death wish on the highways to some advantage.

Each of these is a major discovery or complex of discoveries in itself, but they add up to far more than the sum of their parts. They constitute a veritable Biological Revolution likely to be as decisive for the history of the next 150 years as the Industrial Revolution has been for the period since 1750. According to Donald Fleming:

Definitions of what constitutes a revolution are legion. An undoctinaire formulation would be that every full-scale revolution has three main components: a distinctive attitude toward the world; a program for utterly transforming it; and an unshakable, not to say fanatical, confidence that this program can be enacted—a world view, a program, and a faith.

In this sense, Darwinism did not usher in a full-scale biological revolution. Darwinism was a profoundly innovating world view, but one that prescribed no steps to be taken, no victories over nature to be celebrated, no program of triumphs to be successively gained. Indeed, one of the most plausible constructions to be put upon it was that nothing much could be done except to submit patiently to the winnowing processes of nature.¹⁶

Following Darwin, there was Francis Galton, Herman J. Muller, Joshua Lederberg, Robert Edwards, Richard Gardner, Francis Crick, etc. These scientists have revolutionized biology in several of its aspects to include eugenics, biological engineering, genetics, sex control, etc., and the revolution continues till present in such forms as molecular biology, synthetic biology, neurobiology, etc. These revolutions in biology have granted more and more confidence to scientists and humanists responding to Wilson's call to establish biological foundations for human morality. But as Kitcher would ask, how do you "biologize" ethics? There appear, as Kitcher himself would provide, to be four possible endeavors:

1. Sociobiology has the task of explaining how people have come to acquire ethical concepts, to make ethical judgments about themselves and others, and to formulate systems of ethical principles.
2. Sociobiology can teach us facts about human beings that, in conjunction with moral principles that we already accept, can be used to derive normative principles that we had not yet appreciated.
3. Sociobiology can explain what ethics is all about and can settle traditional questions about the objectivity of ethics. In short, sociobiology is the key to metaethics.
4. Sociobiology can lead us to revise our system of ethical principles, not simply by leading us to accept new derivative statements—as in number 2 above—but by teaching us new fundamental normative principles. In short, sociobiology is not just a source of facts but a source of norms.¹⁷

Wilson, according to Kitcher, appears to accept all four projects. However, when critically analyzing Wilson's advocacy for scientists and humanists to consider together the possibility that the time has come for ethics to be removed temporarily from the hands of the philosophers and biologized, we must make note that the subject at present consists of several oddly disjunctive conceptualizations. The first is ethical intuitionism, the belief that the mind has a direct awareness of true right and wrong that it can formalize by logic and translate into rules of social action. The purest guiding precept of secular Western thought has been the theory of the social contract as formulated by John Locke, J.J. Rousseau, and Immanuel Kant and re woven into a solid philosophical system by John Rawls. Rawls' imperative is that justice should be not merely integral to a system of government but rather the object of the original contract. The principles called by Rawls "justice as fairness" are those which free

and rational persons would choose if they were beginning an association from a position of equal advantage and wished to define the fundamental rules of the association. In judging the appropriateness of subsequent laws and behavior, it would be necessary to test their conformity to the un-challengeable starting position.

The Achilles heel of the intuitionist position is that it relies on the emotive judgment of the brain as though that organ must be treated as a black box. While few will disagree that justice as fairness is an ideal state for disembodied spirits, the conception is in no way explanatory or predictive with reference to human beings. Consequently, it does not consider the ultimate ecological or genetic consequences of the rigorous prosecution of its conclusions. The human geno-type and the ecosystem in which it evolved were fashioned out of extreme unfairness. In either case the full exploration of the neural machinery of ethical judgment is desirable and already in progress. One such effort is called ethical behaviorism. Its basic proposition holds that moral commitment is entirely learned, with operant conditioning being the dominant mechanism. In other words, children simply internalize the behavioural norms of the society. If there is any truth to this theory of innate moral pluralism, the requirement for an evolutionary approach to ethics is self-evident. It should also be clear that no single set of moral standards can be applied to all human populations, let alone all sex-age classes within each population. To impose a uniform code is therefore to create complex, intractable moral dilemmas - these, of course, are the current condition of mankind.

We have mathematics, which are objective formulas describing the laws of nature. Mathematics was discovered fairly early once civilization began. Why would an objective moral code, that encompasses all humans, in all cultures, in all age and sex groups, be so elusive if it existed, when mathematics (a universal code for explaining nature) is so easily found and confirmed by all who practice it? Also, since we evolved by natural selection, then why would the universal moral code not explain the behavior of the rest of the species we share the planet with, that we evolved from, and share common ancestors with? If the fundamental universal moral code is to promote the survival of the species, or by extension, life as a whole, then all life does indeed share the same universal moral code. Some make the argument that this is not a moral code as it is an "every individual for himself", or "do whatever you want" attitude. That is a warped way of interpreting ethical behaviorism. It would seem obvious that it would include a worldview of working together for the advancement of all humans, even all life, to ensure that life will continue to exist, if not for ourselves, but for our descendants. Making a better world for all of us and especially our descendants could therefore be the driving force of our moral judgment. In this case, the arguments put forth by biologized ethics might still have a long way to go in presenting itself as truly convincing on the task of explaining human moral behavior. We shall next consider other challenges posed before this approach of biologicization of ethics, as well as some promises inherent in the method thereof.

CHALLENGES AND PROMISES OF THE APPROACH

The Is-Ought Problem was put forward by David Hume who was the first philosopher to persistently argue that normative rules cannot be derived from empirical facts. Hume maintained:

In every system of morality, which I have hitherto met with, I have always remark'd, that the author proceeds for some time in the ordinary way of reasoning, and establishes the being of a God or makes observations concerning human affairs; when of a sudden I am surpriz'd to find, that instead of the usual copulations of propositions, is, and is not, I meet with no proposition that is not connected with an

*ought, or an ought not. This change is imperceptible; but is, however, of the last consequence.*¹⁸

It is this unexplained, imperceptible change from "is" to "ought" which Hume deplores in moral systems. To say what "*is*" the case and to say what "*ought to be*" the case are two unrelated matters, according to him. On the one hand, empirical facts do not contain normative statements, otherwise they would not be purely empirical. On the other hand, if there are no normative elements in the facts, they cannot suddenly surface in the conclusions because a conclusion is only deductively valid if all necessary information is present in the premises.

How do Darwin and Spencer derive "ought" from "is"? Let us look at Darwin first, using an example which he could have supported.

1. Child A is dying from starvation.
2. The parents of child A are not in a position to feed their child.
3. The parents of child A are very unhappy that their child is dying from starvation.
4. Therefore, fellow humans ought morally to provide food for child A.

Darwin writes that "happiness is an essential part of the general good."¹⁹ Therefore, those who want to be moral ought to promote happiness, and hence, in the above case, provide food. However, the imperceptible move from "is" to "ought" which Hume found in moral systems, is also present in this example. Thus, Darwin derives ought from is when he moves from the empirical fact of unhappiness to the normative claim of a duty to relieve unhappiness.

The same can be said for Spencer whose above argument about the survival of the fittest could be represented as follows:

1. Natural selection will ensure the survival of the fittest.
2. Person B is dying from starvation because he is ill, old, and poor.
3. Therefore, fellow humans ought to morally avoid helping person B so that the survival of the fittest is guaranteed.

Even if both premises were shown to be true, it does not follow that we *ought* to morally support the survival of the fittest. An additional normative claim equating survival skills with moral goodness would be required to make the argument tenable. Again, this normative part of the argument is not included in the premises. Hence, Spencer also derives "ought" from "is." Thomas Huxley objects to evolutionary ethics on these grounds when he writes:

*The thief and the murderer follow nature just as much as the philanthropist. Cosmic evolution may teach us how the good and the evil tendencies of man may have come about; but, in itself, it is incompetent to furnish any better reason why what we call good is preferable to what we call evil than we had before.*²⁰

In spite of these challenges and criticisms leveled against evolutionary ethics, and consequently, biologized ethics, the ongoing revolutions in the field of biology as well as the increasing dominance of the scientific method in explaining much of the phenomena in nature and reality has seen to the persistence and potential signs of further development in the approach of evolutionary and biologized ethics. One recent pointer to the persistence, promise of new life, and future potential for the biologicization and scientification of ethics is the book ***The Moral Landscape: How Science Can Determine Human Values***, published by Sam Harris in 2010. In it, he promotes a science of morality and argues that many thinkers

have long confused the relationship between morality, facts, and science. He aims to carve a third path between secularists who say morality is subjective (e.g. moral relativists), and religionists who say that morality is given by God and scripture. Harris contends that the only moral framework worth talking about is one where "morally good" things pertain to increases in the "well-being of conscious creatures".²¹ He then argues that, problems with philosophy of science and reason in general notwithstanding, 'moral questions' will have objectively right and wrong answers which are grounded in empirical facts about what causes people to flourish.

Challenging the age-old philosophical notion that we can never get an 'ought' from an 'is', Harris argues that moral questions are best pursued using, not just philosophy, but the methods of science. Thus, "science can determine human values" translates to "science can tell us which values lead to human flourishing".²² It is in this sense that Harris advocates that scientists begin conversations about a normative science of "morality".

Harris believes science has already begun to pin-down the causes of human "happiness", and that regulating this pursuit is the purpose of "social morality".

Sam Harris's case starts with two premises: "(1) some people have better lives than others, and (2) these differences are related, in some lawful and not entirely arbitrary way, to states of the human brain and to states of the world".²³ The idea is that a person is simply describing material facts (many about their brain) when they describe possible "better" and "worse" lives for themselves. Granting this, Harris says we must conclude that there are facts about which courses of action will allow one to pursue a better life.

Harris attests to the importance of admitting that such facts exist, because he says this logic applies to groups of individuals as well. He suggests that there are better and worse ways for whole societies to pursue better lives. Just like at the scale of the individual, there may be multiple different paths and "peaks" to flourishing for societies - and many more ways to fail. Harris then makes a pragmatic case that science could usefully define "morality" according to such facts (about people's wellbeing). Often his arguments point out the way that problems with this scientific definition of morality seem to be problems shared by all science, or reason and words in general. Harris also spends some time describing how science might engage nuances and challenges of identifying the best ways for individuals, and groups of individuals, to improve their lives.

Harris makes a philosophical case through the work, and says science requires that one acknowledge certain values (e.g. curiosity). Although Harris's book discusses the challenges that a science of morality must face, he also mentions that his scientific argument is indeed philosophical. Furthermore, he says that this is the case for almost all scientific investigation. He mentions that modern science amounts to careful practice of accepted first philosophical principles like empiricism and physicalism. He also suggests that science has already very much settled on *values* in answering the question "what should I believe, and why should I believe it?".²⁴ Harris says it should not be surprising that normative ethical sciences are, or would be, similarly founded on bedrock assumptions (Basic norms). Harris says:

*...science is often a matter of philosophy in practice. It is probably worth recalling that the original name for the physical sciences was, in fact, 'natural philosophy'... One could call [his case in The Moral Landscape] a 'philosophical' position, but it is one that directly relates to the boundaries of science.*²⁵

The way Harris thinks science might engage moral issues draws on various philosophical positions like ethical realism (there are facts worth calling 'moral facts'), and ethical naturalism (these facts relate to the physical world). Harris says a science of morality may resemble Utilitarianism, but that the science is, importantly, more open-ended because it involves an evolving definition of well-being. Rather than committing to Reductive materialism, then, Harris recognizes the arguments of revisionists that psychological definitions themselves are contingent on research and discoveries. Harris adds that any science of morality must consider everything from emotions and thoughts to the actual actions and their consequences.

To Harris, moral propositions, and explicit values in general, are concerned with the flourishing of conscious creatures in a society. He argues that "Social morality exists to sustain cooperative social relationships, and morality can be objectively evaluated by that standard."²⁶ Harris sees some philosophers' talk of strictly *private* morality as akin to unproductive discussion of some private, personal physics. Harris also discusses how interchangeability of perspective might emerge as an important part of moral reasoning. He alludes to an 'unpleasant surprise principle', where someone realizes they have been supporting an ineffective moral norm (e.g. reported cases of Jew-hunting Nazis discovering that they themselves were of Jewish descent).

As regarding Science and moral truths, Harris identifies three projects for science as it relates to morality: (1) explaining why humans do what they do in the name of "morality" (e.g. traditional evolutionary psychology), (2) determining which patterns of thought and behaviour humans actually *should* follow (i.e. the science of morality), and (3) generally persuading humans to change their ways. Harris says that the first project is focused only on describing what is, whereas projects (2) and (3) are focused on what should and could be, respectively. Harris's point is that this second, prescriptive project should be the focus of a science of morality. He mentions, however, that we should not fear an "Orwellian future" with scientists at every door - vital progress in the science of morality could be shared in much the same way as advances in medicine.

Harris says it is important to delineate project (1) from project (2), or else we risk committing a moralistic fallacy. He also highlights the importance of distinguishing between project (2) (asking what is right) from project (3) (trying to change behaviour). He says we must realize that the nuances of human motivation is a challenge in itself; humans often fail to do what they "ought" to do even to be successfully selfish - there is every reason to believe that discovering what is best for society would not change every member's habits overnight. Harris does not imagine that people, even scientists, have always made the right moral decisions—indeed it is precisely his argument that many of them are wrong about moral facts. This is due to the many real challenges of good science in general, including human cognitive limitations and biases (e.g. loss aversion can sway human decisions on important issues like medicine). He mentions the research of Paul Slovic and others to describe just a few of these established mental heuristics that might keep us from reasoning properly. Although he mentions that training might temper the influence of these biases, Harris worries about research showing that incompetence and ignorance in a domain leads to confidence (the Dunning–Kruger effect).

Harris explains that debates and disagreement are a part of the scientific method, and that one side can certainly be wrong. He also explains that all the debates still available to science illustrate how much work could still be done, and how much conversation must continue.

What Harris has done, essentially, is to re-open the debate on the biologicization and scientification of ethics, while at the same time erecting new scaffolds upon which the approach, or method even, could build upon into enjoying tremendous success in the near or distant future.

CONCLUSION

Through the course of this paper, we have endeavoured to retrace the roots of biologized ethics through evolutionary ethics which began with Darwin's publication on evolution and the human species titled *The Descent of Man*. We considered how Darwin, and Spencer after him, were faced with how evolution could account for "goodness" in humans, their response to this puzzle, the positions of evolutionary ethics, and the criticisms of the "Is-Ought" problem and "naturalistic fallacy" posed against it. We also examined the background factors that led to the emergence of Sociobiology and the seminal work of E.O. Wilson within the field, a stand-point from which he called for ethics to be taken off the territory of philosophers and biologized by scientists and humanists.

Acknowledging that revolutionary events in the field of biology itself should, would and certainly did much in providing grounds and confidence for this move to biologicize ethics, we thus considered steps by which this could happen, and to this we leaned on Kitcher's "Four Projects" in trying to obtain a model on how this programme could be realized. There are, as to be expected, problems strewn along the path to the complete "naturalization" of morality in humans, and we made reference to some in the work, however, with much promises yet holding out in such fields as neuroscience, neurobiology, cognitive science, genetics and epigenetics, etc., much reasons still avail among scientists, humanists, and even scientifically-minded ethicists to retain a justifiable measure of optimism that the project of "ethics biologized" or the "science of morality" is one with much potential still in the pipelines for future achievements and further unraveling of much of the "mysteries" behind human moral behavior.

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SCULPTURAL HORTICULTURE IN CONTEMPORARY ENVIRONMENTAL DESIGN: A PERCEIVED STRATEGY FOR NATIONAL TRANSFORMATION

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ABSTRACT

Sculptural horticulture is an horticultural practice of training live perennial plants by clipping the foliage and twigs of trees, growing grasses, vines, plants, shrubs and sub shrubs to develop and maintain clearly defined shapes. This research investigates sculptural horticulture in contemporary environmental design, a perceived strategy for national transformation. A multifaceted methodological approach was engaged in investigating the visual property and the underlining environmental significance of sculptural horticulture in Lagos environ. Library research, interview, participant observation and visual documentation were all put to use in this research. Published materials in form of books, magazines, posters, articles in journals as well as catalogues of exhibition were sourced. Unpublished thesis, seminar and conference papers were also consulted. Interview as a method was employed to bring the researcher into personal interaction with the horticulturist and sculptors. Selected topiary and sculptural horticulture were analyzed and related to the sustenance of the environment. It was discovered that most of the horticultural design in Lagos Nigeria were limited to planted foliage which were used for gardening and landscaping. It was further discovered that, in an attempt to create a three dimensional horticulture, geometric shapes and the hybrid of metal and plant were created instead of reinforcing the work with armature. It was recommended that there should be a multidisciplinary approach to horticultural design towards achieving the integration of sculptural technicalities for a sustainable environment and national transformation.

Keywords: Sculpture, Horticulture, Environmental Design, Strategy, National Transformation

INTRODUCTION

Horticulture is the branch of agriculture that deals with the art, science, technology, and business of plant cultivation. It includes cultivation of fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds, grass, ornamental trees and plants conservation, landscape restoration, landscape and garden design, construction, and maintenance. Horticulturists apply their knowledge, skills, and technologies produce plants for human food and non-food uses, personal or social needs.

Sculpture is the branch of visual arts that operates in three dimensions. It is one of the plastic arts which has not been effectively incorporated into horticultural study. Sculptural horticulture is any type of sculpture that is created with living, growing grasses, vines, plants or trees. It can be functional and/or ornamental. As an art form it is a type of living sculpture. Sculptural horticulture is a suitable medium that can be employed to address environmental parameters when devising plans, programs, policies, buildings, human-designed and environment. Diverse areas of sculptural rendition have been explored as a significant media of decorating the environment i.e, fibre glass, direct cement modeling, clay work, wood carving to mention a few. In spite of this, sculptural Horticulture in contemporary environmental design has not been well explored in Nigerian society. Hence the need for the study.

LITERATURE, MATERIALS AND METHODS

PURPOSE OF THE STUDY

The purpose of this paper is to:

- i. Examine the emergence of horticulture in contemporary sculptural design.
- ii. Examine the relationship between sculptural horticulture and environmental design
- ii. Investigate the socio-cultural significance of sculptural horticulture in Lagos metropolis.
- iii. Make an analysis of the armature and the design employed in sculptural horticulture.

RESEARCH QUESTIONS

In line with the purpose of this study answers will be provided to the following questions:

- i. What led to the emergence of horticulture in contemporary sculptural design?
- ii. What are the relationship between sculptural horticulture and environmental design?
- iii. What is the socio-cultural significance of sculptural horticulture in Lagos metropolis?
- vi. What kind of armature and design is employed in sculptural horticulture?

METHODOLOGY

A multifaceted methodological approach was engaged in investigating the visual property and the underlining environmental significance of sculptural horticulture in Lagos environment. Library research, interview, participant observation, including audio-visual documentation were all put to use in this research. Library research is primarily to survey literary works that are related to the study. Books, magazines, posters, articles in journals, seminar and conference papers were also consulted. Unpublished works like thesis,. Interview as a method was employed to bring the researcher into personal interaction with the horticulturist and sculptors.

SIMPLEST THEORY

This study is guided by simplest theory. It was propounded by Ulrich and Parson (1992) to explain how and why being around plants can be beneficial. They maintained that in the modern world, we are bombarded constantly with so much noise, movement and visual complexity that our surroundings can overwhelm our senses and lead to damaging levels of psychological and physiological excitement. Environments dominated by plants, on the other hand, are less complex and have patterns that reduce arousal and, therefore, reduce our feelings of stress.

SCULPTURE: A MEDIA OF EXPRESSING ARTISTIC INGENUITY

Drabelle (1990) define sculpture as the branch of visual arts that operates in three dimensions. It is one of the plastic arts. Durable sculptural processes originally used carving (the removal of material) and modelling (the addition of material, as clay), in stone, metal, ceramics, wood and other materials but, since modernism, shifts in sculptural process led to an almost complete freedom of materials and process. A wide variety of materials may be worked by removal such as carving, assembled by welding or modeling, or molded, or cast. Sculptors through the ages have traditionally worked with non-living media such as clay, plaster, glass, bronze, or even plastic.

The art of sculpture is no longer restricted by traditional sculptural concepts, materials or methods of production. It is no longer exclusively representational but frequently wholly abstract. Nor is it purely solid and static: it may reference empty space in an important way, and can also be kinetic and capable of movement. Finally, as well as being carved or modelled, it can be assembled, glued, projected (holographically), or constructed in a wide variety of ways. Types of Sculpture include Free-standing sculpture: is surrounded on all

sides by space and relief sculpture: (encompasses bas-relief, alto-relievo or haut relief, and sunken-relief). (Olaomo, 2011)

HORTICULTURE

Ashmun et al (2000) defines horticulture as the branch of agriculture that deals with the art, science, technology, and business of plant cultivation. It include the cultivation of fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds and non-food crops such as grass and ornamental trees and plants. It also includes plant conservation, landscape restoration, landscape and garden design, construction, and maintenance, and arboriculture.

Horticulturists apply their knowledge, skills, and technologies used to grow intensively produced plants for human food and non-food uses and for personal or social needs. Their work involves plant propagation and cultivation with the aim of improving plant growth, yields, quality, nutritional value, and resistance to insects, diseases, and environmental stresses. They work as gardeners, growers, therapists, designers, and technical advisors in the food and non-food sectors of horticulture. (Burt, 2000)

Horticulture primarily differs from agriculture in two ways. First, it generally encompasses a smaller scale of cultivation, using small plots of mixed crops rather than large fields of single crops. Secondly, horticultural cultivations generally include a wide variety of crops, even including fruit trees with ground crops.

SCULPTURAL HORTICULTURE

Sculptural horticulture is any type of sculpture that is created with living, growing grasses, vines, plants or trees. It can be functional and/or ornamental. It is also refer to as an horticultural practice of training live perennial plants by clipping the foliage and twigs of trees, shrubs and subshrubs to develop and maintain clearly defined shapes, perhaps geometric or fanciful. The term also refers to plants which have been shaped in this way. As an art form it is a type of living sculpture. The word derives from the Latin word for an ornamental landscape gardener, *topiarius*, a creator of *topia* or "places", a Greek word that Romans also applied to fictive indoor landscapes executed in fresco. There are several different types of living sculpture techniques, including topiary (prune plants or train them over frames), sod works (create sculptures using soil and grass or moss), tree shaping (growing designs with living trees) and mowing and crop art (create patterns or pictures with plants or in lawns). (Forsyth and Katherine, 2004) (Gerlach-Spriggs,1998) (Kaplan, 1998). (O'Connell, Kim,1999). (Rothert, 2000). (Tyson, 2002).

ARMATURE

Kaplan et al (1983) defines armature as a protective bar of soft iron or steel used as an outer covering or structure. It is also a framework that supports a sculpture while it is being modeled. In sculpture, an **armature** is a framework around which the sculpture is built. This framework provides structure and stability, especially when a plastic material such as wax, newspaper or clay is being used as the medium. When sculpting the human figure, the armature is analogous to the major skeleton and has essentially the same purpose: to hold the body erect. It is often made of heavy, dark aluminium wire which is stiff, but can be bent and twisted into shape without much difficulty. The wire is affixed to a base which is usually made of wood. The artist then begins fleshing out the sculpture by adding wax or clay over the wire. Depending on the material and technique, the armature may be left buried within the sculpture but, if the sculpture is to be hollowed out for firing, it must be removed.

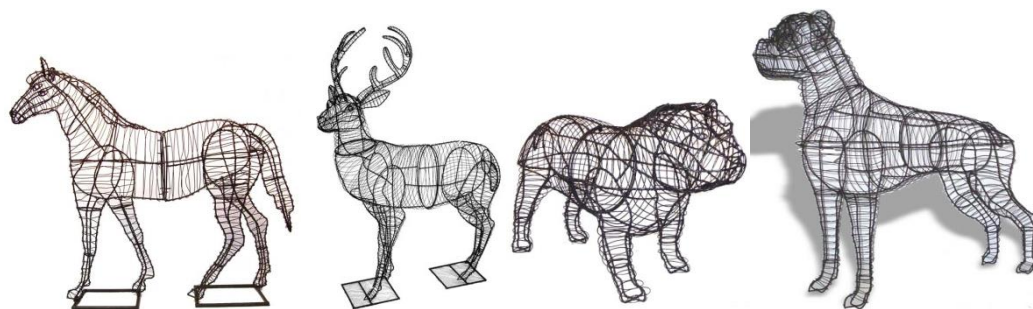


Figure1: Horse

Figure 2: Antelope

Figure 3: Bulldog

Figure 4: Boxer

The armature above indicating horse, antelope, bulldog and boxer are part of the selected one for analysis in this work. The armature was produce from a full understanding of anatomical structure of animal and wire work.

SCULPTURAL HORTICULTURE TRIMMING TOOLS

As identified by Lewis (1996), sculptural horticulture trimming tools are listed below Hedge Shears, Frames, Long-Handled Shears, Pole Pruner, Wire Mesh, Wire Snips/cutters and pliers, Paddle Wire, Floral Wire and/or Small Ty-wraps, Brown or similar colored spray paint (optional), Tons of grapevines, Miniature outdoor lighting, Cutting Pliers, Leaf and Plant Cleanser, Scissors

SCULPTURAL HORTICULTURE IN LAGOS METROPOLIS

The horticultural designs in Lagos metropolises are classic in nature. It is always fashionable and elegant, usually because of its simplicity and restraint in style. Horticultural designs in Lagos can be seen across Lagos highways such as Oshodi, Ikorodu road, Lagos Island, University of Lagos, Ojota, Ketu-tipper garage, Surulere, Stadium, Alaka, Iganmu etc. The Components of classic horticulture include :Round ball pyramid, bird on pyramid, two tier pyramid, square pyramid, bird on pedestal, ball standard, spiral tree and ball on pedestal to mention a few. Most of these horticultural designs are low land Plant used basically for outdoor design.

Horticultures in Lagos metropolises play a role in the development of healthy communities in three distinct ways:

- By providing a physical condition or appearance that makes people proud to be considered part of the community and by enhancing the economic and social condition of the community;
- By providing opportunities for sharing of values, interests and commitments that open the door to friendly association and lead to further cooperation which has the impact of demonstrating the individual's ability to have control and responsibility for changes in the community;
- By providing a surrounding that is more comfortable physically in which to live and work.

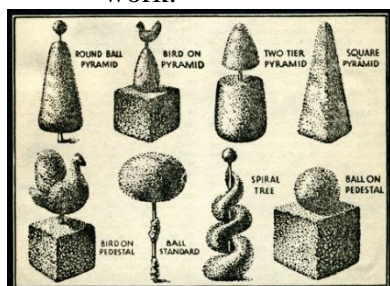


Figure 5: Component of Topiary

Figure 6 above is the representation of the components of classic horticulture represented in eight strata. These include Round ball pyramid, bird on pyramid, two tier pyramid, square pyramid, bird on pedestal, ball standard, spiral tree and ball on pedestal to mention a few. The horticultures identified above are purely plants without the usage of armature as a means of reinforcing the plant to achieve the desired result. Though in recent years, the horticultural designs made in Europe has the integration of sculptural structure in its preparations and makings which makes it different to the ones produce in Nigeria.

Far beyond global warming, horticultural design has got some other significant import in the society at large which needs to be effectively utilized. The analyses of the image below depict the nature of horticultural design produce in Lagos Metropolises.



Figure 6: Square on Flower Bed



Figure 7: Water Fetcher



Figure 8: Circle on Flower Bed



Figure 9: A Street Hawker

The image in Figure 6 is a horticultural design represented as square on floor bed. This topiary was carefully trimmed and nurtured from time to time to achieve the required result. In Figure 7, the circles on flower bed represent a globe with branches of the flower standing as re-inforcement to the circular shape of the flower. This was used as decorative plant to add beauty to the environment. In Figure 8, is a horticultural truck pusher achieved with metal welding, cement and Plant. The work was initial produced using metal sheet and iron rod strategically positioned at a strategic place on the road. Topiary plant was planted in the surrounding of the image and nurtured from time to time to achieve the required result and to achieve beautiful design. The image above in Figure 9 depicts a street hawker with balls of leaves on her head and her hand with a metallic rod used as a support. The image was painted using white and blue gloss as anti-rust in order to enhance the aesthetic appeal of the works to passers-by. The crawling lives planted to enhance the image was perfectly trimmed and nurtured until it retained the shape of the metallic image.

SCULPTURAL HORTICULTURE IN EUROPE AND ITS SIGNIFICANCE

The physical condition of an area, be it a neighborhood or an office complex, provides a measure of the self-worth of the area, defines the value of the individuals within that area and projects that definition to outsiders. Thus, if an area is dilapidated or vandalized, has trash-filled vacant lots or is sterile steel and concrete, it sends messages that those in charge (the city government, the owner, the employers) do not place value on the area and the people there; it implies that the people have no intrinsic worth and no control over their environment; it tells outsiders that this is not a good place to be. A study in Atlanta (Brogan, 1980) examined the association between psychosocial health of the community and the physical environment (e.g., landscaping and nearby land use) and sociocultural environment (e.g., population density and income). The results indicated that the characteristics of physical and sociocultural environments were about equally important in explaining the variations in the psychosocial health of the community. Groups, such as the Partners for Livable Places, maintain that plants are the fastest, most cost-effective agents for changing negative perceptions of an area, enhancing the economic and social conditions and improving the psychosocial health. These are what the sculptural images listed above captured as produced in Atlanta, U.S.A.

The plants used in sculptural horticulture in the western world are evergreen, mostly woody, have small leaves or needles, produce dense foliage, and have compact and/or columnar (e.g., fastigate) growth habits. Common species chosen for topiary include cultivars of European box (*Buxus sempervirens*), arborvitae (*Thuja* species), bay laurel (*Laurus nobilis*), holly (*Ilex* species), myrtle (*Eugenia* or *Myrtus* species), yew (*Taxus* species), and privet (*Ligustrum* species). Shaped wire cages are sometimes employed in modern topiary to guide untutored shears, but traditional topiary depends on patience and a steady hand; small-leaved ivy can be used to cover a cage and give the look of topiary in a few months. The hedge is a simple form of topiary used to create boundaries, walls or screens.



Figure 10: A Woman with a Lamb in her hand



Figure 11: A woman embracing a Peacock



Figure 12: A Bird on a flower ridge

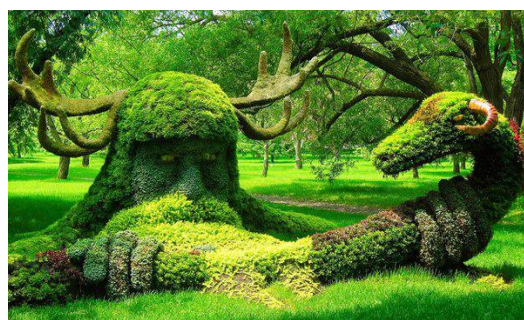


Figure 13: A man with horns

The image in Figure 10 is the portrait of woman with a lamb gracing on her hand. The image was rendered with a well calculated foreshortening. The work was produced using a sculptural armature as the structure of the work before applying sods to it. The plants used for this work were mostly woody, having small leaves or needles. The plant on the sculptural horticulture produced dense foliage with compact and columnar fastigated for easy growth

habits. Figure 11, depict a full image of a woman in sitting position embracing a peacock. The sculptural horticulturist depicted a full understanding of human forms and anatomy as well as advance interplay of tones, chiaroscuro, foliage, and drapery using topiary. Figure 12 depicts a bird rendered with foliage and diverse colourful flowering plant of illuminous colours. The bird was erected on a dome-shaped ridge with a well grazed plant of fluorescent green, red, purple, dark green and light blue. The work was created on a well trimmed lawn with good area view and landscaping. The image was rendered with a well calculated foreshortening. It is also important to know that this work was created using strong rods, carving wire and chicken wire as reinforcement.

The image in Figure 13 is the portrait of a beast like man carrying four horns on his head holding his prey in his hands. The figure depicts the human portrait revealing the facial part and the identifying features. The artwork was rendered with selected topiary leaves with fluorescent green, army green, and touch of red.

FINDINGS OF THE STUDY

In the course of researching into relevance of sculptural horticulture in contemporary environmental design the following discoveries were made.

- Plants have played an integral role in the development of human civilization. And environmental repositioning.
- It was discovered that horticultural usages in Nigerian society is only limited to gardening and environmental landscaping without considering the aesthetic appeal that sculptural horticulture can add to the beauty of the environment.
- As it was discovered that the study in these areas is primarily the domain of social scientists, there are few research in this area of study. Several explanations for the dearth of studies in the current literature ranging from "taking plants so much for granted that it never occurred to the masses, government, NGO, and individuals" to a belief that work in this area was so "fundamental. Hence, the need for more studies to focus on the importance of people-plant relationships in the development of our culture and the application of that information to modern life.
- The absence of interdisciplinary efforts of combining sculptural technicality with the aesthetics of horticulture is yet to be explored. This in itself can make the horticulturists and the sculptural artist to supply the insight about plants and the guidance needed social to explore further and communicate this critical area.
- It was discovered that sculptural horticulture can be functional, ornamental or decorative piece which can be site specific and used both indoor and outdoor.
- It was discovered that there are several different types of living sculpture techniques used for topiary depending on the location. Tree shaping (growing designs with living trees) with geometric shapes is commonly used in Lagos environ while topiary (prune plants or train them over frames), sod works (create sculptures using soil and grass or moss), mowing and crop art (create patterns or pictures with plants or in lawns) are used in Europe.
- It was also discovered that creating a living sculpture is also a collaborative process that can bring artistic minds, logistical minds, and scientific minds together. A team collaborating to design and build a living sculpture can learn a lot about themselves, each other, and what partnerships are all about - while making a functional and/or ornamental public sculpture in their community.

CONCLUSION AND RECOMMENDATIONS

The following recommendations are therefore given for further study.

- Knowing more about human interaction with plants, from our food to our folklore, will help us better understand ourselves and our roles in the "grand scheme of things."
- As it was discovered that the study in these areas is primarily the domain of social scientists, more studies need to focus on the importance of people-plant relationships in the development of our culture and the application of that information to modern life.
- Attention and preference should be given to this study area in our environment for the development of human life
- Proper inventory should be taken on the use of plant for sculptural horticulture in our environment in order to know the area with maximum attention and this should be documented.
- Through interdisciplinary efforts, horticulturists can supply the insight about plants and the guidance needed by social scientists to explore further and communicate this critical area.
- With sufficient information, horticulturists may play a role in altering culturally based or learned responses to vegetation by strongly re-enforcing more environmentally sustainable and humanly healthful landscapes. The production, installation and maintenance of appropriate landscapes will continue to be major goals of horticulture, but the actual plant content and configuration involved may be altered by further studies. This would influence both production and marketing

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CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION: AN ECO-LINGUISTIC STUDY OF PRINT MEDIA REPORTS ON OIL EXPLORATION IN THE NIGER DELTA

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ABSTRACT.

The study focuses on environmental issues as reported in the media. The rate of oil exploration in the Niger Delta region has rendered the land barren even though the region is blessed with rich mineral resources, those resources have been exploited to the disadvantage of the people who are predominantly agrarian. The level of oil exploration has left the Niger Delta people with no option of any means of livelihood. These environmental issues have been widely reported in the media. The focus of this study therefore is to critically examine those reports from the perspective of language by applying the theoretical principles of Eco-Critical Discourse Analysis to explicate the discourses raised. We apply Eco-Critical Discourse Analysis as a theoretical model in this study because it deals with the application of Critical Discourse Analysis to texts about the environment and environmentalism, in order to reveal hidden assumptions and hidden messages and comment on their effectiveness in achieving environmental aims. The model implies intervention by providing resources for those who may be disadvantaged by exposing the hidden things, since they are not evident for the individuals involved and because of this, they cannot be fought against. Critical Discourse Analysis reveals how texts are constructed so that particular and 'Potentially indoctrinating' perspectives can be expressed.

Keywords: Environmental Issues, Climate Change Niger Delta, Oil exploration, print Media Reports, Eco-Linguistics, CDA.

INTRODUCTION

"The news media select events for reporting according to a complex set of criteria of newsworthiness; so news is not simply that which happens, but that which can be regarded and presented as newsworthy...the more newsworthiness criteria an event satisfies, the more likely it is to be reported" (Fowler 1991: 12).

This study presents a discourse-analytical approach to media reports on the level of environmental degradation in the Niger Delta region through the use of Critical Discourse Analysis which Teun van Dijk observes, "emphasizes the obvious". As a contrast to this view, Fowler observes that: *"The news media select events for reporting according to a complex set of criteria of newsworthiness; so news is not simply that which happens, but that which can be regarded and presented as news worthy...the more newsworthiness criteria an event satisfies, the more likely it is to be reported"* (1991: 12). The theories and methods of the new interdisciplinary field of discourse analysis may be brought to bear in a more systematic and explicit account of the structures of media messages to demonstrate the points of convergence in the above postulations. Since discourse analysis is a multi-disciplinary enterprise, it is able to relate structural account to various properties of the cognitive and sociocultural context. Discourse analysis emerged as a new transdisciplinary field of study between the mid-1960s and mid-1970s in such disciplines as anthropology, ethnography,

microsociology, cognitive and social psychology, poetics, rhetoric, stylistics, linguistics, semiotics, and other disciplines in the humanities and social sciences interested in the systematic study of the structures, functions, and processing of text and talk (see van Dijk, 1985b). In order to limit discussion of the vast domain of discourse-analytical media research, we shall focus on the study of news as reported in the press with regards to environmental despoliation in the Niger Delta region.

BACKGROUND TO THE STUDY

The Niger Delta region is ravaged by crises emanating from oil exploration. The crises became pronounced precisely On 23 February 1966, when Isaac Boro of the Niger Delta Volunteer Service (NDVS) and a group of 159 youth, took up arms against the Nigerian state as a result of the perceived injustice, marginalization, and political exclusion suffered by the Ijaws and other Niger Delta indigenes in the immediate post-colonial Nigeria. Isaac Boro led a revolt against the Nigerian state when he proclaimed the Niger Delta Peoples Republic and launched a guerrilla war against the federal government. He established the first militia group known as Niger Delta Volunteer Force that engaged the armed forces of Nigeria in a bloody battle (Ojakorotu 2006). This process marked the beginning of militancy in the Niger Delta. Several years of oppressive military dictatorships worsened the plight of the Niger Delta and led to the emergence of the late Ken Saro-Wiwa's led Movement for the Survival of Ogoni People (MOSOP). Despite the commitment of MOSOP to the principle of nonviolence, a well-armed military outfit was expressly formed to repress the protests organized by MOSOP and the Ogoni people, and numerous people were killed in the process.

Nonviolent approaches to curbing violence in the Niger Delta failed with the death of Ken Saro-Wiwa. The federal government and the Multi National Oil Corporations could not be persuaded to proactively engage the Niger Delta militants on the salient issues of environmental despoliation, degradation, neglect, politics of exclusion and other forms of injustices imposed on them since the discovery of crude oil in commercial quantities at Oloibiri, the present Bayelsa state in 1956. Consequently, youths in the region resorted to the formation of armed militant groups for the purpose of advancing the cause of the Niger Delta people. Their targets were the oil pipelines with the aim of drawing government attention to their plight. The Human Rights Watch writing on the level of militancy in the Niger Delta region says: The successful return of Nigeria to a democratic dispensation on 29 May 1999 marked a major turning point in the subsequent brazenness of youth militancy in the Niger Delta. In addition, politicians...fanned the flames of youth militancy by the recruitment and supply of arms to militants, gangs and cults for the purpose of rigging of elections, intimidation, harassment and outright assassination of political opponents. Principal amongst them were Asari Dokubo and Tom Ateke's groups, which were obviously sponsored by the Peter Odili's government in Rivers state. However, when Dokubo and Odili fell out after the 2003 elections, he quickly turned to the art of populism by transforming his followers into NDPVF, which adopted an overtly political rhetoric, identifying itself in opposition to the perceived marginalization and neglect of the Niger Delta and framing its activities in terms of strident political demands (HRW, 2008: 57). Although Asari Dokubo was arrested by the federal government, the arrest did not yield any positive result. It rather led to the formation of a deadlier and faceless group, *the Movement for the Emancipation of the Niger Delta (MEND)*, which claimed its mandate was to unite militant groups in the region, embark on a systematic strategy of disruption of Multi National Oil Companies' infrastructure and activities, and the kidnapping of foreign oil workers as an extra legal method and bargaining weapon for negotiation, and redressing the political/socio-economic dehumanizing conditions of the Niger Delta. Some of the resultant effects of militancy in the region include:

Vandalism of oil facilities, Hostage taking for ransoms and Oil bunkering among other forms of criminality.

THEORETICAL FRAMEWORK

Over the years, it has been discovered that language can hardly be separated from the culture of a people--environment inclusive. Language experts have therefore focused on ensuring that they come up with a suitable way of analysing language in relation to environmental issues. This culminated in the branch of linguistic study known as Eco linguistics. This aspect of language study through the efforts of MAK Halliday emerged in the 1990s as a new paradigm of linguistic research which takes into account not only the social context in which language is embedded, but also the ecological context in which societies are embedded. Halliday's paper titled "*New ways of Meaning: the challenge to applied linguistics*" paves the way for linguistic consideration of the ecological context and consequences of language. Halliday tried to make linguistics relevant to the issues and concerns of the 21st century, particularly the widespread destruction of the ecosystems. Using the issues of 'economic growth', as examples, he described how the orientation of the English language with regard to unmarked terms such as large, grow, tall, and good gives growth a positive aspect, despite the negative ecological consequences. Taking off from this Hallidayan postulation, the field of Eco linguistics has developed considerably, primarily in the direction of analysing the ecological impact of specific discourses rather than languages in general. *Language & Ecology Research Forum* which specialises in fronting for a balance in the management of the environment posits that: "*Eco linguistics examines the influence of language on the life-sustaining relationships of humans with each other, with other organisms and with the natural environment.*" The forum observes that "...academic enquiry within this aspect of language study ranges from the impact of advertising discourse in encouraging ecologically damaging consumption to the power of nature poetry to encourage respect for the natural world." Approaching language study from this position can be taken from two dimensions: 'eco-critical discourse analysis' and 'linguistic ecology'. While critically examining the main approaches to be adopted in analysing language from the perspective of the environment, Dorni (2008) quoting "Bang and Døør observes that there is provision for a model to explain the environmental constitution of human language (qtd in Bundsgaard and Steffensen, 2000). This model, based on the three dimensionality of social praxis, depicts three types of dimensions, an *ideo-logical*, a *socio-logical*, and a *bio-logical*. The first dimension involves individual mental, cognitive, and psychological aspects. The second one includes collections of individuals ranging from the family, which is the basis of social organisation, to include members of neighbourhood, speech communities, and whole societies. The last dimension is about '*biological collectivity*' and the coexistence of human beings with other species (Bundsgaard and Steffensen, 2000). Indeed, the structuralist approach to linguistic systems makes use of the ideological dimension and rejects the sociological and the biological. The sociolinguistic paradigm in its turn tackles in addition to the ideological aspect a sociological scope and excludes the biological aspect. The template presented below as expatiated by *Bang and Døør* paints a clear picture of how Eco linguistic perspective, is primarily described as an overall approach where the three dimensions are incorporated.

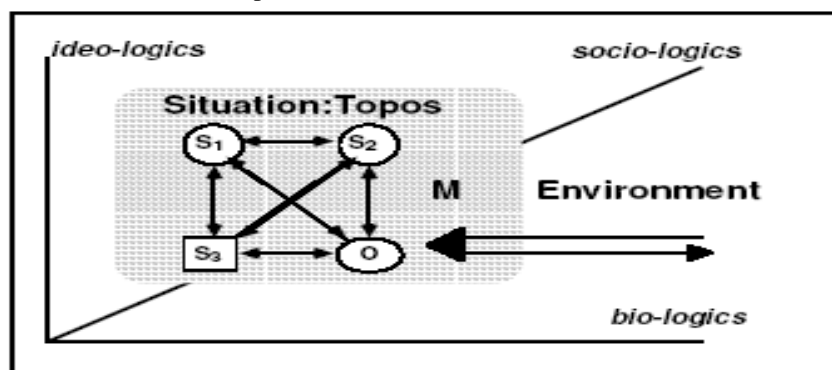


Figure1 A Dialogue Model about the Three Dimensionality of Social Praxis (Bang and Døør, in Bundsgaard and Steffensen, 2000: 10).

From the diagram, we observe that there is a connection between ideologies, sociology, biological issues encapsulated within an environmental setting. The three concepts interact within the human habitat for easy and effective realization of the ideals. They are intertwined and therefore inseparable. This proves that language functions within an environment and not in a vacuum. Because our focus in this study is on climate change and environment degradation from the perspective of language use in media reportage, we adopted the Eco-critical discourse analytical model.

ECO-CRITICAL DISCOURSE ANALYSIS

As Stibbe 2012, Harré et al. 1999 observe, *Eco-critical discourse analysis includes, but is not limited to the application of critical discourse analysis to texts about the environment and environmentalism, in order to reveal hidden assumptions and hidden messages and comment on the effectiveness of these in achieving environmental aims.* The approach however includes analysis of any discourse which has potential consequences for the future of ecosystems, such as neoliberal economic discourse and discursive constructions of consumerism, gender; politics, agriculture and nature (see Goatly 2000, Stibbe 2004). Eco-critical discourse analysis does not just focus on exposing potentially damaging ideologies, but also searches for discursive representations which can contribute to a more ecologically sustainable society. It also incorporates approaches such as Eco semiotics (Selvamony 2007) which has to do with the study of signs and symbols. The study therefore adopts Critical Discourse Analysis as a theoretical model for analysing the data. The aspect of CDA adopted here is that of Norman Fairclough which he says is "a contribution to the general raising of consciousness of exploitative social relations, through focusing upon language" (1989: 4, Fairclough, 1992, 1993, 1995a, 1995b; Chouliaraki and Fairclough, 1999). For Chouliaraki and Fairclough (1999), CDA "brings social science and linguistics ... together within a single theoretical and analytical framework, setting up a dialogue between them" (6). Fairclough worked closely with the Hallidayan theory of SFT before arriving at the branch of CDA which he says is most acceptable in analysing issues of deprivation, injustice and power relations. SFT therefore forms the foundation upon which CDA is built, (see Fowler et. al., 1979; Fowler, 1991; Hodge & Kress, 1979). Fairclough's approach also draws upon a number of critical social theorists, such as Foucault (i.e. concept of *orders of discourse*), Gramsci (concept of *hegemony*), Habermas (i.e. concept of *colonization of discourses*), among others (Fairclough, 1989, 1992, 1995a, 1995b). Chouliaraki and Fairclough (1999) posit that CDA has a particular contribution to make. They argue that, "the past two decades or so have been a period of profound economic social transformation on a global scale...although these changes are due to particular actions by people the changes have been perceived as "part of nature" (p. 4). That is, changes and transformations have been perceived as natural and not due to people's causal actions. The recent economic and social changes, according to Chouliaraki and Fairclough (1999), "are to a significant degree associated transformations in the language, and discourse" (p. 4), thus, CDA can help by theorizing transformations and creating an awareness "of what is, how it has come to be, and what it might become, on the basis of which people may be able to make and remake their lives" (p. 4). With such an objective in mind, Chouliaraki and Fairclough (1999) claim that CDA of a communicative interaction sets out to show that the semiotic and linguistic features of interaction are systematically connected with what is going on socially, and what is going on socially is indeed going on partly or wholly semiotically or linguistically. This means that, CDA systematically charts relations of transformation between the symbolic and non-symbolic, between discourse and the non-discursive. (p. 113). In this approach of CDA, there are three analytical focuses in analysing any communicative event: *text* (e.g. a news report), *discourse practice* (e.g. the process of production and consumption), and *sociocultural practice* (e.g. social and cultural structures which give rise to the communicative event) (Fairclough, 1995b, p. 57; Chouliaraki & Fairclough, 1999, p. 113).

DATA COLLECTION

This study makes use of the purposive method of data collection. Through this method we generated thirteen (13) news headlines and over leads from three newspapers published in Nigeria with topical issues on environmental mismanagement in the Niger Delta region. These newspapers are: *The Guardian*, *Vanguard* and *Daily Trust*. The choice of these media houses is based on purposive methodology. In terms of data analysis, our approach is both

qualitative and quantitative; an approach which has to do with the interpretation of the content of data through the systematic classification process of identifying and describing themes or patterns that emerge from such data and subjecting them to numerical analysis.

DATA PRESENTATION/ INTERPRETATION

Coalition underlines environmental emergency in the Niger Delta Jun 9, 2013 –Vanguard. The above headline as demonstrated by the Vanguard newspaper describes an appalling situation in the Niger Delta region and calls for an urgent attention to rescue the situation. **Text1**

Nigerian way of life under threat from pollution Jun 3, 2013 – Vanguard. Again the vanguard sees danger in the above headline--a source of danger that points to extinction of a particular set of people if attention is not focused on the rate of despoliation and cautious steps taken to arrest the ugly situation. **Text2**

The Health Effects of Oil Contamination Feb 4, 2013 –Guardian. Here there is a description of the challenges that come with pollution from the perspective of health. There is a saying that a healthy nation is a wealthy nation but here we are confronted with a situation where the people's health is deliberately put at stake through oil exploration. **Text3**

Extent of Environmental Contamination and Threats to Human Health in Ogoniland Aug 5, 2011 –Guardian Text4
Again the report of UNEP as reported above is in the form of a state of emergency. It poses a threat to the human race and demands urgent attention of government or those involved to address the issues or be ready to face the repercussions.

Crude oil pollution raises cancer risk among Nigerians Dec 14, 2013. The implication of the above headline is that more Nigerians are at the risk of developing different types of cancer due to exposure to crude oil pollutants. This means that Nigerians are at an increased risk of developing cancer due to exposure to toxic chemicals from crude oil pollution.

Text5

Niger delta oil spills clean-up will take 30 years, says UN Aug 5, 2011 Guardian. As reported by the Guardian newspaper, the devastating effects of the oil spills in the Niger delta will cost \$1 billion to rectify and take up to 30 years to clean up. That headline is substantiated by the report of The UN Environment Programme (UNEP) which announced that Shell and other oil firms systematically contaminated a 1,000 sq km (386 sq mile) area of Ogoniland, in the Niger delta, with disastrous consequences for human health and wildlife. The implication is that Nigerians had paid a high price for the economic growth brought by the oil industry. **Text6**

Fishing in Nigeria - an Endangered Occupation Dec 15, 2010. Daily Trust. The people of the Niger Delta region are predominantly agrarian but the headline above tends to nullify their occupation by pointing to the fact that their occupation is as it were a risky business occasioned by the level of environmental degradation in the region. This means that the possibility of existing in such an environment is slim and dangerous. **Text7**

Up in Smoke - Nigeria's continued reliance on gas flaring-Vanguard. As reported by Vanguard, the expression "up in smoke" is horrific and threatening. It poses a dangerous and unsafe situation and demands an urgent attention in the area. This threat emanates from gas flaring. This time the impact is not directly on the trees, grasses or other environmental issues

but on the atmospheric condition of the Niger Delta region. This also points to the fact that the problem is holistic: the land, the water and even the air none is safe. **Text8**

Nigerian villagers reject shell oil spill compensation offer Saturday, 14 September 2013-Daily Trust. The above headline as pointed out by Daily Trust newspaper a Kaduna based newspaper means the inhabitants of the Niger Delta region refused to accept the offer given to them by their oppressors who destroy their means of livelihood. But there is more to this reportage due to the use of the word “villagers” which implies permissivity. The term as used in the Nigerian parlance refers to those who lack the basic knowledge of urbanization. But the report contradicted itself by going further to say**Rejected an offer of compensation from Royal Dutch Shell for damage done to their livelihoods by oil spills from pipelines operated by the company.** **Text10**

Niger delta oil spill victims reject 'derisory' Shell compensation offer Sep 17, 2013 – Guardian. When we compare this headline with that of Daily trust as shown above, there are ideological differences in terms of reportage. Taking a closer look at the use of the words we see the Guardian making use of the expression “Niger delta oil spill victims” as compared to the Daily Trust use of the word “*villagers*”. The ideological import is that of the derogatory use of the word “*village*” in place of the word “*victims*” as used by the Guardian. Again daily trust is guilty of derogatory usage of terms when the word “local” is used in the expression “Shell accepts responsibility for the Bodo spills but the two sides disagree about the volume spilt and the number of “*local people*” who lost their livelihoods as a result. Who are people? and who are local people? Is it a deliberate use of a word? A derogatory expression? Or an attempt to downplay the importance of the “victims”? Or “villagers”? The Guardian’s report is succinct and straight to the point. It gives the main cause of the spill as ..*from rusting Shell pipelines*.... **Text11**

Oil spill from Agip’s Brass Terminal pollutes Atlantic Ocean Dec 2, 2013 - Residents forced to stop fishing. The headline above can be taken to mean that the despoliation and degradation of environment is beyond the Niger Delta issue’ it also extends to the outside world-the Atlantic Ocean. The report is closely followed by a rider which states unequivocally that even the residents could not stand the risk as they are forced to flee from their domain. **Text12**

FG Loss 4trillion to militants Daily Trust. The reportage here points at the issue of counting the cost of negligence, ineptitude and failure to take charge of the pressing needs of the people. As the Federal Government fails to curb the issues of environmental degradation, the people are forced by circumstances to indulge in what majority term “criminality” a term the “boys” rejected and continue to reject. Again this report is from the daily trust newspaper which is based in the north. **Text13**

DATA ANALYSIS: THE USE OF LANGUAGE IN THE DATA

Plain Headlines

A news headline according to Chilwa (2007) is the title of news story that summarizes the entire story. The main headline is usually on the front page of a magazine or newspaper. Usually printed in bold letters, headlines summarize the main points of the story. They occupy more space than the texts they refer to and where more significant words or coinages exist, they are still printed bolder than others or highlighted in italics. This is in order to stress a particular word or idea. Words on the headline are usually short and crisp. Wording is

determined by ideas to be expressed, technology of printing and the kind of audience associated with the paper or magazine. Technology of printing includes choices in terms of style availability of space and accompanying photographs. Other criteria include simplicity, informality and impact (Freeborn et al, 1986). The headlines selected here are all simple statements outwardly. They describe the situation of the oil exploration in the Niger Delta region as reported by the media houses. They might seem to be plain statement but on a closer look and through the application of CDA, the study uncovers the hidden ideologies behind such statements. We selected those that treat topical issues as seen in the stories. These issues are: environment, spillage and economy/financial issues.

LEXICAL ITEMS IN THE HEADLINES

Lexical choices made by man especially in writing form important aspects of "personal and cultural identity, as well as being the carrier of knowledge" (Askeland & Payne, 2006, p. 736). Rogers and colleagues (2005) are of the opinion that "language indexes, expresses, and constitutes social relations, while at the same time challenging social relations". Following this view, language can be said to be "dialogic, intertextual and historically based" (376). Considering social and cultural aspects of language Bell (1997) mentions that "language constitutes social reality as well as reflects it" (Wang, 2009:753). Carrying out a study in the area of environmental issues from the point of view of media reportage can be viewed as a pivotal point in Critical Discourse Analysis as Popp (2006) opines that "media language choice is an institutionalized means of framing reality" (p. 6). Therefore, framing social, political, cultural, economic, and ideological realities highly depends on the language use of the mass media in general, and printed news media in particular. Our focus in this segment of the study therefore is to examine those lexical items that have been used frequently in the data to try and explore the ideological background of the texts.

LEXICAL ITEMS DENOTING ENVIRONMENTAL DESPOLIATION IN THE DATA

- (1). Coalition underlines **Environmental emergency** in the Niger Delta Jun 9, 2013 – Vanguard.
- (2). Nigerian **way of life under threat from pollution** Jun 3, 2013 – Vanguard
- (3). The **Health Effects of Oil Contamination Feb 4, 2013 –Guardian**
- (4). **Extent of Environmental Contamination and Threats to Human Health** in Ogoniland Aug 5, 2011 –Guardian
- (5). **Crude oil pollution** raises **cancer risk** among Nigerians **Dec 14, 2013**
- (6). Niger Delta **oil spills clean-up** will take 30 years, says UN Aug 5, 2011 Guardian
- (7). **Fishing** in Nigeria - **an Endangered Occupation** Dec 15, 2010. Daily Trust
- (8). **Up in Smoke** - Nigeria's continued reliance on **gas flaring**-Vanguard
- (9). **Nigerian villagers reject shell oil spill compensation offer** Saturday, 14 September 2013-Daily Trust.
- (10). Niger Delta **oil spill victims reject 'derisory' Shell compensation offer** Sep 17, 2013 – Guardian
- (11). **Oil spill** from Agip's Brass Terminal **pollutes** Atlantic Ocean **Dec 2, 2013 -**
- (11a) **Residents forced to stop fishing.**
- (12). **FG Loss 4trilion to militants** Daily Trust.

INTERPRETATION OF KEY LEXICAL ITEMS IN THE DATA

There are certain lexical items that have been foregrounded in the data. Our focus on lexical foregrounding is premised on Fowler (1966:16) opinion that: *Lexis is the level of linguistic form at which variables can be treated with the greatest freedom and are of significance for stylistic study.* Bloomfield (1933) and Ajulo (1994:139) agree with the above assertion when

Ajulo, quoting Bloomfield lends credence to the claims that: *The description of a language begins with phonology; when the phonology of a language has been established there remains the task of telling what meanings are attached of the several phonetic forms. This phase of description is semantics which ordinarily is divided into syntax and lexicon.* Lexis and semantics are so intricately linked that they can hardly be separated from each other in the description of a text. Commenting on the central role played by lexical items in linking up with the rest of the text in a linguistic system, Halliday (1978:79) says: *The semantic system is an interface between the rest of the linguistic system and some higher order of symbolic system. It is projected unto or realised by the lexico-grammatical system.* Based on the above assertion, we shall carry out a scale count of some key foregrounded words in the data. This feature of analysis according to Olofin (2005:93) helps to identify certain features of a language that are prominent linguistically in a text. This process also evaluates the use of lexical items in terms of their relevance to the theme of the text. Though, this type of analysis has been criticised by most scholars who claim that texts cannot be reduced to mere counting; Ullman (1965), Fowler (1966), Halliday (1973) and Crystal (1983) argued that the number of occurrences of lexical items must be of relevance because numerical data on language is significant during analysis as a rough statistical indication of frequencies could be helpful to check the analyst's opinion that some features are prominent in the text. There are many lexical items that are prominent in the text in terms of frequency which work toward unification of the text by foregrounding the message. We have selected six lexical items for analysis because they capture the over-all idea and meaning of the data. These items are:

- i. **Environment**
- ii. **Contamination**
- iii. **Compensation**
- iv. **Gas flaring**
- v. **Oil**
- vi. **Pollution**

Figure2. Tabular representation of foregrounded lexical items in the data

Environment-	11/96	x	360/1	=	41.25
Contamination-	17/96	x	360/1	=	63.75
Compensation-	8/96	x	360/1	=	30
Gas flaring-	10/96	x	360/1	=	37.5
Oil-	30/96	x	360/1	=	112.5
Pollution-	20/96	x	360/1	=	75
Total percentage distribution					360°

Figure3. Percentage distribution/ interpretation of each lexical item

Lexical	Frequency
Environment	11
Contamination	17
Compensation	8
Gas flaring	10
Oil	30
Pollution	20
total	96

INTERPRETATION OF RESULTS

The interpretation of the above diagrams demonstrates the fact that the site of the struggle, conflict and militancy in the Niger Delta is oil which takes the largest percentage

of the discourse in the data with 30% and an average frequency occurrence of 112.5%. Closely followed in that scale is the issue of environmental pollution with an average of 20% with a percentage occurrence of 75%. Contamination of the Niger Delta environment ranks third with an occurrence of 17% with a percentage distribution of 63%. Gas flaring which is a

major issue in the Niger Delta region ranks fourth with an average occurrence of 10 with a percentage distribution of 37.5%. The focus on complaint about the environment and the consequences of the rate of oil exploration and environmental degradation ranks fifth with an occurrence of 11% and a percentage distribution of 41.25%. The least occurrence in the scale is the issue of compensation. Because the residents of the area are not given any consideration, the issue of compensation is relegated to the background. Its occurrence is in the region of 8% with a frequency distribution of just 30%. The persistent occurrence of the word "oil" in all of the reports considered in this study is anchored on the fact that the focus is on the product and not on the inhabitants of the environment. This is clearly demonstrated where the least attention paid to the corporate social responsibility of the multinational oil companies that operate in the region as can be found in the data. This kind of data analysis is in conformity with Halliday's (1973: 119) assertion that patterns of **stylistic prominence** may reflect thesis or themes or other aspects of the meaning of lexical items in a given context. The foregrounding of the key words brings to prominence the urgency in the demand for a habitable environment, the need for equity, fair play, justice and above all the consideration of the sanctity of human life where the environment is given adequate protection for the survival of the human race in the Niger Delta region of Nigeria.

CONCLUSION

This paper focuses on the application of the theoretical concept of Eco-Critical Discourse Analysis to describe and interpret the newspaper reports of some media houses on the issues of environmental degradation in the Niger Delta region. The study discovers that the choice of language especially in the reportage of the Niger Delta issues is influenced by the demands of the level of degradation and the need for urgent attention in the area. The predominance of certain lexical items appears to down play the need for preservation of the environment to the expense of the livelihood of the residents of the region. Though the reports are described from the perspective of linguistics, they tend to point to the fact that the inability of the authorities to call certain elements to order also fans the ember of militancy and violence in the region. Through the use of certain lexical items, the study discovers that the issue of oil takes prominence while the idea of compensating the inhabitants is hardly given any attention. We believe that if the Niger Delta environment is given adequate preservation and the people adequately compensated, the issue of climate change will be effectively managed and the level of militancy in the Niger Delta will be minimised if not eradicated.

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INFLUENCE OF RURAL-URBAN MIGRATION ON THE HEALTH AND NUTRITIONAL STATUS OF OLDER PERSONS IN RURAL AREAS, IMO STATE, NIGERIA

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ABSTRACT

Increase in rural-urban migration and simultaneous growth in the population of older persons living in the rural areas are part of the demographic changes being experienced in most developing countries. Consequently, there may be decrease in the general welfare of older persons who are left behind. This paper investigates the effect of migration on various dimensions of elderly health and nutrition using data from selected rural areas of Imo State, which has one of the highest rates of rural-urban migration in Nigeria. Descriptive research (survey) design was adopted. Four hundred older persons aged seventy and above was selected using the multi-stage sampling procedure. Questionnaire and in-depth interview were used for data collection. Data collected were analyzed using descriptive statistics. The study found positive influence of migration on health and nutrition of older persons in the rural areas. These positive outcomes were traced to remittances from family members living in the cities which led to improvements in health and diet of older persons. Based on the findings, it was recommended that, rural-urban migrants be more involved in providing healthcare facilities as well as disseminate information on good nutritional habits among older persons in rural areas.

Keywords: Rural Areas, Migration, Social Amenities, Rural-Urban Linkages, Successful Ageing

Background to the Study

Nigeria and other developing nations are experiencing an increase in the number of able-bodied men and women leaving the rural for urban areas. It is expected that this movement to urban areas should reduce population pressure on the rural areas, improve its economy and reduce rural poverty, but that seems not to be the case. In the absence of welfare and social security systems and institutionalized care, older persons basically depend on kin-based social support systems. In addition, retirees in most developing and transition economies do not receive their pensions as at when due; this increases the poverty among older persons as well as increases the pressure on family members to provide for the needs of older persons among them. For many in the rural areas, migration is therefore considered one of the most promising ways for poor families in developing and emerging countries to rise above poverty (Ajaero and Onokala, 2013).

The United Nations predicted that the elderly-dependency ratio will double to reach 20 percent in 2050 in less developed countries. Whether rural-urban migration is beneficial or not to the population left behind (often children and older persons), it has become of increasing interest in the literature. So far the literature has mostly concentrated on causes

and consequences of rural-urban migration (Okahankuele, 2013; Nwanna, 2004), Research on the consequences of rural-urban migration on the health and nutrition of older people is still scarce and somewhat inconclusive (Marcus, Persian and Stohr, 2013).

Migration of adult children of older persons however, can compromise the traditional intra-family care arrangements and the allocation of responsibilities, which potentially decreases the welfare of older persons who sometimes are left in remote and isolated villages (Apt, 2000). On the other hand, increased income (from remittances) might allow older persons access to health- and welfare-improving resources. Kuhn et al., (2011) suggest a positive impact of adult children's migration on their parents' physical and mental health in Indonesia, Antman (2012) studies suggest a negative health effect for older persons left behind in Mexico. The differences in the result of both studies underscore the importance of this study for policy formulation in developing countries.

This study contributes to the literature by providing evidence that rural-urban migration can have a causal, overall positive influence on the health and nutritional status of older persons. From observation, rural dwelling older persons whose children have migrated to the cities eat a more diverse diet, are more mobile, allowing them to lead more independent lives, and tend to judge their own health more positively, as a result. The paper argues that health effects are heterogeneous across different subgroups of older persons' population and provide evidence that remittances from family members in the cities are responsible for these results.

Rural-Urban Migration and Older Persons in Rural Areas

Availability of remittances is the most important aspect of rural-urban migration that might have a positive influence on the health and nutritional status of older persons in the rural areas (Ajaero and Onokala, 2013; Marcus et al, 2013). Firstly, in the absence of free health care or insurance, remittances provide funds to pay for health services. Ejehu (2015) provides evidence that older persons in rural areas whose children are in urban areas are more likely to seek medical attention for their illnesses than those who have no connection with the cities. Secondly, an increase in income creates opportunity for older persons to enjoy other important health inputs such as their diets, leisure or living conditions. Such health inputs might affect both physical and psychological health dimensions. Thirdly, although it is difficult to identify the direction of causality, recent evidence suggests that there might be a causal effect of poverty and income on poor health status. Poverty will make prescribed medicine and good nutrition unaffordable (Ejehu, 2015).

In spite of the remittances, the high rate of rural-urban migration by able-bodied men and women deprives the rural areas of the labour required for agriculture (Ajayi and Babalola, (2009). Other related consequences are: depopulation of rural areas, reduction in rural agricultural produce, and reduction in Gross Domestic Product (GDP) of the nation, poor living standard and underdevelopment among others. In most rural areas in Imo State, observation reveals that rural-urban migration has impinged on some economic activities such as cutting of palm nuts for oil production and palm wine tapping. The implication of this is that an important source of income for most rural dwelling older persons is lost. The tapping of palm wine used to be a skill among families and it generated a lot of income.

Migration can also influence the traditional duties assigned to family members, for example provision of informal eldercare. Choi (2005) reported that with more women entering into the labour force, there is a reduction in the quality of eldercare. The trend portrays the reality of lack of employment opportunities in the rural areas and the increasing availability of employment for women created by the labour-intensive manufacturing operations of multinational organizations in the cities (Nwanna, 2004). The women are also employed as nurses, teachers, domestic servants and in other service jobs that abound in the cities. The women take up these jobs in order to support their families in the rural areas (Apt, 2000). This further puts a strain on the social support networks for older persons in rural areas. The uniqueness

of African extended family system however, lies in the fact that rural-urban migration does not permanently sever social relationship with kit and kin in the rural areas.

Finally a spillover channel causing potentially negative health effects of migration also on older persons is the reluctance of health workers to remain or practice in the rural areas. A lack of health professionals could cause a severe deterioration in health services that are available to the rural population. Due to lack of infrastructural facilities in the rural areas, health professionals hardly want to remain there and practice. Doctors for instance prefer to come from the cities to consult with their rural patients. The effect of this is that rural areas lack adequate health personnel and health care facilities (National Bureau of Statistics, 2010).

Purpose of the Study

The main purpose of the study was to examine the influence of rural-urban migration on the health and nutritional status of older persons in rural areas, Imo State, Nigeria. Specifically, the study sought to:

1. Determine whether rural-urban migration has influence on the health of older persons in rural areas.
2. Ascertain whether rural-urban migration has influence on the nutritional status of older persons in rural areas.

Research Questions

1. To what extent does rural-urban migration influence the health status of older persons in rural areas?
2. What is the influence of rural-urban migration on the nutritional status of older persons in rural areas?

Methodology

The study adopted a descriptive research (survey) design and the population consisted of older persons living in selected rural areas in Imo State. Four hundred older persons- aged seventy (70) years and above were chosen from some selected rural communities using the multi-stage random sampling procedure. All the Local Government Areas (LGAs) were stratified into Senatorial Districts (SDs). There are 3 SDs in Imo State. Using a random sampling technique, 4 rural LGAs were selected from each of the SDs. 5 Registration Areas (RAs) were randomly selected from each of the LGAs making a total of 60 RAs. Thereafter, a total of 100 orthodox churches were randomly selected from the 60 RAs and 40 older persons were purposively selected from the churches making a total of 400 respondents. The choice of orthodox churches was based on the observation that older persons in Imo State worship there. Respondents consisted of both male and female older persons who have retired from the organized public and private sectors and those involved in subsistence activities such as farming. A self-structured questionnaire and in-depth interview served as the research instruments. The data collected were analyzed using descriptive statistics.

Biographic Information of the Respondents

Table 1: Showing the Biographic Information of the Respondents

Distribution	Frequency	Percentage
Age		
70-74	150	37.5
75-79	140	35.0
80-84	102	25.5
85+	8	2.0
Total	400	100
Sex		
Male	180	45.0
Female	220	55.0
Total	400	100
Educational Attainment		
Non-Literate	120	30.0
FSLC	108	27.0
WASC	122	30.5
HND/B.Sc	35	8.8
M. Sc/P.hd	15	3.8
Total	400	100
Marital Status		
Married	160	40.0
Separated/Divorced	10	2.5
Widowed	230	57.5
Total	400	100
No of Children		
Less than 3	108	27.0
4-6	102	25.5
7-9	100	25.0
10-12	80	20.0
None	10	2.5
Total	400	100
Ages of Children		
20-29	60	15.0
31-40	100	25.0
41-49	82	20.5
50+	58	14.5
Total	400	100
Occupation		
Farming/Fishing	80	20.0
Trading	50	12.5
Retired	270	67.5
Total	400	100

Table 1 shows the distribution of the respondents by biographic information. Data obtained reveal that 150 (37.5%) respondents were between the ages of 70-74; 140 (35%) were between the ages of 75-79; 102 (25.5%) were between the ages of 80-84, while 8 (2%) were 85 years and above. With reference to gender, data reveal that 180 (45%) were male while 220 (55%) were female. Distribution of participants based on educational attainment shows that: 120 (30%) were non-literates, 108 (27%) had FSLC, 122 (30.5%) had WASC, 35 (8.8%) had HND/B.Sc., 15 (3.8%) had M. Sc/Ph. D. Concerning the marital status of respondents, it was found that: 160 (40%) were married, 10 (2.5%) were either divorced or separated, while the majority 230 (57.5%) were widowed. This is not a surprise considering the age range of the population under study. At this age, many of them would have lost their spouses. From the data on the number of children, the following were found: 108 (27%) had less than three children, 102 (25.5%) had 4-6, 100 (25%) had 7-9, 80 (20%) had 10-12 and 10 (2.5%) had no children. With regards to the ages of their children, data revealed the following: 60 (15%) had children between the ages of 20-29, 100 (25%) had 31-40, 82 (20.5%), 41-49 and 58 (14.5%) had children aged 50+. The ages of their children show that they are mature enough to leave on their own, hence the migration to the cities. Regarding occupation of the respondents, data revealed that: 80 (20%) were involved in either farming

or fishing, 50 (12.5%) were petty traders, while the majority 270 (67.5%) had retired from active work. This again buttresses the fact that older persons in the rural areas actually need social support networks from government and family members.

Table 2: Health Status of Older Persons in Rural Communities of Imo State

S/N	Statements	Response category			
		Strongly Agree	Agree	Disagree	Strongly Disagree
1	I have a lot of physical energy	20 (5.0%)	55 (13.6%)	125 (31.3%)	200 (50.0%)
2	I can see, hear and speak without difficulty.	29 (7.3%)	67 (16.8%)	182 (45.5%)	122 (30.5%)
3	My health restricts me from looking after myself and home	75 (18.6%)	220 (55.5%)	60 (15.0%)	45 (11.3%)
4	I am healthy enough to get up and move about.	30 (7.5%)	60 (15.0%)	180 (45.0%)	130 (32.5%)
5.	I have been consistently taking medications to sustain my health	75 (18.6%)	220 (55.0%)	55 (13.6%)	50 (12.5%)

The data in Table 1 indicates that a minority of older persons 75 (18.6%) agreed that they had a lot of physical energy, while the majority 325(81.3%) disagreed with the statement. With regards to ability of older persons to speak and hear without difficulty 96 (24.1%) respondents agreed that they could see, hear and speak without difficulty, as against a higher proportion 304(76.0%) that differed in their opinion. Also, 295 (74.1%) respondents reported that their health restricted them from looking after themselves and their homes, while 105(26.3%) disagreed with the statement. Among the respondents, 90(22.5%) admitted that they were healthy enough to get up and move about, 310 (77.5%) differed in their opinion. Finally, 295(73.6%) respondents admitted that they had been consistently taking medications to sustain their health, while 105(26.1%) respondents disagreed with the statement. From the above responses, one may deduce that older persons in rural communities are not enjoying optimal health.

Table 3: Access to Quality Nutrition by Older Persons in Rural Communities

S/N	Statements	Response category			
		Strongly Agree	Agree	Disagree	Strongly Disagree
1	I decide the food I eat and when I eat it.	105 (26.3%)	120 (30.0%)	100 (25.0%)	75 (18.6%)
2	I try not to eat food or drinks that are highly processed and contain preservatives, artificial flavours, colours, and related chemicals.	100 (25.0%)	180 (45.0%)	100 (25.0%)	20 (5.0%)
3	I consume more fruits and vegetables than starchy food.	130 (32.5%)	150 (37.5%)	60 (15.0%)	60 (15.0%)
4	I prepare what I eat.	40 (10.0%)	100 (25.0%)	180 (45.0%)	80 (20.0%)

Table 2 indicates the responses on access to quality nutrition by older persons in the rural areas. The data indicates that 225 (56.3%) respondents agreed that they decided the food they ate and when they ate it, while 175 (43.6%) respondents disagreed with the statement. Among the older persons, 280 (70.0%) affirmed that they try not to eat food or take drinks that are highly processed and contain preservatives, artificial flavours, colours, and related chemicals, while 120 (30.0%) disagreed with this view. Again, 280 (70.0%) respondents admitted that they consumed more of fruits and vegetables than starchy food, while 120 (30%) held a different opinion. Finally, 140 (35.0%) respondents claimed that they prepared their meals themselves; while a larger proportion 260 (65.0%) disagreed with this position. From the above result, it may imply that the majority of older persons in most rural communities have an unhindered access to quality nutrition in Imo state.

Table 4: Influence of Rural-Urban Migration on the Health and Nutritional Status of Older Persons in Rural Communities of Imo State

S/N	Statements	Response category			
		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	I occasionally go to the city for medical check up	100 (40.6%)	220 (50.0%)	50 (15.2%)	30 (6.2%)
2.	My health has improved considerably	92 (28.2%)	200 (50%)	68 (20.8%)	40 (11.0%)
3.	Our migrant children organize free health services	190 (49.5%)	210 (51.5%)	0 (0%)	0 (0%)
4.	Migrant family members pay for my medical bills.	150 (48.0%)	148 (37.2%)	60 (20.5%)	42 (10.0%)
5.	I enjoy high diversity of food	150 (46.5%)	152 (49.4%)	48 (8.0%)	50 (10.%)
6.	Money sent to me is basically spent on food	98 (18.0%)	200 (50.0%)	60 (20.5%)	42 (10.0%)

8. I depend on remittances from my children	100	250	20	30
	(40.0%)	(50.8%)	(4.5%)	(5.2%)

The data in Table 3 indicate that a majority of older persons 320 (90.6%) agreed that they go to the cities to see their doctor, while minority 80(21.4%) disagreed with the statement. With regards to improvement in health 292 (78.2%) respondents agreed with the statement as against a lower proportion 108 (31.8%) that differed in their opinion. All the respondents affirmed that their children living in the cities organize periodic health talks for them. Among the respondents, 298 (75.2%) admitted that family members send money for hospital bills. While 102 (30.5%) refuted the statement. Majority of the respondents 302 (94.9%) respondents admitted that their food was diversified while 98 (18%) disagreed with the statement. Majority of the respondents 319 (92.7%) agreed that they spend the remittances basically on food as against 81 (20.3%) who had a different view. From the above responses, one may deduce that rural-urban migration has a positive influence on older persons in rural areas of Imo State, Nigeria.

With regards to the in-depth interview, twenty respondents (ten male and ten female) were asked to comment on their health, specifically whether they thought their health had degenerated significantly in recent years. The analysis of their replies and other issues that came up during discussion showed that older persons' view on health and health-related issues were based on their ability to perform activities, rather than from a medical perspective of disease. One of the respondents said, *"I can't see without my pair of glasses, my attendance to church meetings has reduced due to muscular and joint aches, otherwise, I am fine"*

Deterioration in health was related to inability to remember things and mobility among others. Some however, reported that they were on medication for old age-related diseases such as arthritis, diabetes and high blood pressure. There were questions on access to quality nutrition. A retiree said, *"I am able to buy medicine and food because my children care a lot for me, when last did I receive my pension?"* Almost all the respondents had gardens close to their homes from where they gathered fruits and vegetables which enhanced the quality of their nutrition. They also claimed that family members living in the cities do bring food items such as rice, noodles, and beverages among others whenever they visited home. Some however claimed that at times, they could not afford the type of food they wanted.

Discussion of Findings

Influence of Rural-Urban Migration on the Health and Nutritional Status of Older Persons in Rural Areas

The study revealed that the benefits derived from remittances seem to cushion the influence decreasing contact to family members had on older persons and thus explain why there was no widespread negative influence of rural-urban migration on the health and nutritional status on rural dwelling older persons in general. The majority of older persons claimed that they used remittances to pay hospital bills and buy foodstuffs as well. They also reported that their family members who live in the cities do organize free medical services periodically for their community. Most of them were on constant medication due to old age related diseases. This is in tandem with studies such as Obashoro (2010; Oladapo ,2002) which reported a decline in health as people get older. Some older persons complained that they could not afford the cost of medical bills; consequently, they resorted to self-medication and receiving treatment from traditional healers. Apart from that, distance from their homes to the health centres also posed a challenge to their health. This calls for more provision of medical facilities in the rural areas.

The study also found that older persons had adequate knowledge of good nutrition as most of them claimed to harvest fruits and vegetables from their gardens. Improved transportation system enabled some of them who were physically fit to travel to nearby city markets to buy

whatever they wished to eat. This is in tandem with Ige (2010) who posited that through rural-urban linkages, rural areas could be positively influenced by urban areas. Again, rural markets have been transformed by contact with the cities. In the local markets, a lot of food items (noodles, beverages, margarine, soft drinks among others) from the cities were being sold; this has increased the variety of food consumed by rural dwellers.

Majority of older persons claimed they were not coping with the activities of daily living and would have been happier if family members were around to assist. This agrees with the findings Ejehu (2015) who reported the negative influence of migration on older persons' mental health. Research on social networks and cognitive health however, indicates that an active lifestyle and good integration into society might protect older people against deteriorating memory (Fratiglioni et al., 2004). On the other hand, Apt (2000) provides evidence that being socially disconnected may not necessarily affect mental health of older persons if they do not feel isolated. Besides, migration to urban areas does not mean a complete separation from family members in rural areas. City dwellers do maintain contact with their communities of origin through cultural associations they formed in the cities (Badru, 2004). Older persons should be encouraged to live active lifestyles by providing recreational facilities in rural areas.

Conclusion

Based on the findings of the study, the following conclusions were made:

The challenges faced by older persons who are in the majority in rural areas call for an upgrading of their living standards. They need support from government and stakeholders because family members alone cannot provide all their needs. Some older persons in the rural areas do not have family members to turn to; they need assistance from the government. For as long as no concrete measures are taken to develop rural areas, migration to the cities will not end.

Recommendations

In view of the conclusions reached, the following recommendations are made:

1. Employment opportunities should be created for youths in the rural areas so they could remain and look after their aged parents.
2. Rural areas should be developed (provision of good roads, hospitals, potable water); this will encourage city dwellers to visit homes more regularly.
3. Geriatric hospitals are needed in the rural areas
4. Poverty alleviation programmes should include older persons since not every one of them receive remittances from family members in the cities.
5. Recreational and other leisure facilities are needed in the rural areas for the promotion of active lifestyles among older persons.

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CAN VALUE FOR LIFE MOTIVATE ACTION AGAINST BIOTECHNOLOGY-BASED AGRICULTURE AND GM FOODS?

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ABSTRACT

“The world will little note, nor long remember what we say here, but it can never forget what they did here”. This statement by Mr. Abraham Lincoln (Gettysburg Address, Nov 19, 1863), applies to the permissive and general application of genetic engineering (also biotechnology) to agriculture and medicine in Nigeria in the sense that past presidents, governors, legislators, ministers for agriculture and rural development, health, and science and technology did not act on any of the letters that I wrote them—with supporting evidences—about the practice and the effects of the consumption of its products. It also applies in the sense that the rest Nigerians have also not taken seriously the things that I have been writing about the practice and the effects of consuming its products. The statement applies in the third sense that when the governments and Nigerians realise that I have been saying and writing the truth, solid and liquid GM foods would be everywhere, the rate of diseases and death due to ingesting them would be phenomenal and irreversible. Therefore Nigerians can never forget what biotechnology companies did in Nigeria.

In this paper I report the use of banners, dialogue and emphasis on value for life to inform and educate Nigerians on the issues in agriculture based on genetic RE-engineering or biotechnology with the belief that these will motivate them to demand the banning of it, the use of GMOs for farming, and the production and importation of GMOs and GM foods. I also report my findings.

Keywords: Agriculture, biotechnology, GMOs GM foods, value.

INTRODUCTION

Our ancestors exhibited a very high sense of value when they chose between one thing and another thing. In this regards, their values for human health and life transcended and supplanted their value for money and other material things. Evidences of the practice of this are, *Sai safia* (Hausa), *Ndu bu isi* and *Ndu ka aku* (Igbo), *Alafia ni ogun oro* and *Alafia lo ju* (Yoruba).

Interactive research method carried out in and outside the universities show that the difference between our ancestors and us on the matter of values is that they practiced the values that they learnt naturally while we speak so much about the values but do not practice them. As a defence of this, the value for human life, the supreme or most significant, necessary and important of our traditional values has diminished among all classes of Nigerians beyond imagination and below the level that is necessary for the long-term sustenance of our population, economy, security and international competitiveness. This means that national development cannot be sustained.

AIM

* To find out if Nigerians will reject genetic RE-engineering or biotechnology-based agriculture, farming based on genetically modified organisms (GMOs), and genetically modified foods (GM foods) based on the value for their health or lives when they are told the flaws in genetic RE-engineering method, the effects of farming with GMOs, and the effects of consuming GM foods, and shown some pictures to support what they are told.

METHOD

1). Physical contact, use of banners and dialogue. This report is limited to the research carried out in Abuja in 2010 at the Eagles Square, the Federal Secretariat, and at Radio House, opposite the International Conference Centre, Abuja, because they are authenticated with pictures.

Method 1: Banner information and dialogue method



The banner message is **Reviving the Good Health and Longevity that our Ancestors Enjoyed Through Natural and Safe Foods and Environments. Sai lafia, Ndu bu isi, Alafia lo ju.**

The picture shows the researcher and author of this paper in dialogue with a director of one of the federal ministries at Eagles Square. He expressed surprise and disappointment that Nigerians were not told about genetic engineering before its introduction to agriculture and lamented the ignorance of Nigerians about “what we are eating”. He added: “No wonder more Nigerians are suffering diabetes, cancers and kidney diseases, and are dying”. He commended my “the good work” and encouraged me to “continue with the good work”.



The picture LHS shows the author in a dialogue with some members of staff of the federal ministries who came to see what information the banners carried at Eagles Square. The dialogue took this form: I read out a message on any of the banners and they reacted to it. As an example, a banner informs: *The truth about GM foods is that they cause kidney failure, cancers, diabetes, infertility, etc, and death because they contain toxins, carcinogens and less nutrients. Kill biotechnology bill and ban GM foods.* They reacted to the information by expressing ignorance about what I read, agreement or disagreement with it, shock or surprise, asking for clarification or evidence, commending my effort, and condemning the government.

In the picture RHS, above, the author while responding to questions that were asked by some members of staff of the federal ministries at Eagles Square uses the information on the banners which apply to the questions asked for giving answer to the question or emphasis to the answer.

CONTINUATION



Above LHS, is the picture of the researcher and the author of this paper standing in front of Radio House, Abuja, the second venue of the research. The banners are opposite Radio House. Participants included staff of Radio Nigeria, visitors to Radio Nigeria, international conference centre staff and conference attendees, and others. Above RHS: While I was having dialogue with the people opposite Radio House, news came to us that Mrs. Jonathan had sent lories-load of bags of rice for distribution to the public and that they were being off-loaded in the International Conference Centre which is alternate to the Radio House building. All of them rushed to the International Conference Centre as soon as they heard this. I went over there and had the picture taken. Back the following day to continue my research I learnt that two people died due to the stampede to have rice. Picture from a Radio House reporter showed only one dead person.



The dead young woman on the ground, the scramble, and the successes.

Question: Would she have died without the rice? Any place for value for her life in her action?

Responses and reactions at both venues were similar. This made generalisation possible.

Some of the questions that I was asked at both venues

- 1). "Are GM foods available in Nigeria?"
- 2). "Are GM foods produced in Nigeria?"
- 3). "Which companies produce GMOs and GM foods in Nigeria?"
- 4). "How can we identify or recognise GMOs and GM foods?"
- 5). "Why do the people who produce GMOs and GM foods produce them if they have the characteristics that you told us they have and if GM foods are, as you told us, not safe for consumption, and based on the pictures that you showed to us?"
- 6). "The evidences that you showed us are based on experiments with rats. Is there any evidence of human beings who ate GM foods and were harmed by it or died due to it?"
- 7). "There is hunger and food scarcity in Nigeria. Why would people not eat what they find?"
- 8). "How many people have died in Nigeria due to GM foods?"

The answers that I gave to them

1). There are GM foods in Nigeria Proof: the GM cassava that was developed for the Supper Cassava Programme under Dr. Jonathan was developed at Bill and Melinda Gates Crop Science Centre and brought to Nigeria from there. Professor Richard Sayre headed the team that developed it. Dr. Martin Fregene who worked at the institute at that time—he is now at the ministry of Agriculture and Rural Development—and Dr. Ada Mbanaso of the RCRI, Imudike, are the Nigerians who were in the team. The GM cassava is used under the programme of producing bread with twenty percent cassava content. Therefore the bread and other foods based on it are GM foods. Take note that the public is only told that cassava is used for producing the bread. That the cassava is GM cassava and how it was developed are hidden from the public.

Because GMOs are sold to our farmers who are encouraged to farm with them by being told that they produce much more than our native and natural seeds, stems, roots, nuts, vegetables, fish, cow, etc, that they will prosper by selling them, and because more people farm now with GMOs, there are GM foods in Nigeria. There are GM foods in Nigeria because IITA, Ibadan, RCRI, Umudike, Monsanto, Syngenta, and DuPont which developed GMOs are operating in Nigeria.

2). GMOs and GM foods are produced in Nigeria but GMOs are largely developed abroad, especially in the USA, and brought to Nigeria by agencies of the ministry of Science and Technology and the IITA, Ibadan. There may be other agencies for this not discovered yet.

3). The development and production of GMOs and GM foods in Nigeria are carried out primarily by some agencies under the federal ministry of science and technology and the IITA, Ibadan. But Monsanto Company (USA), Syngenta Company (Switzerland), and DuPont Company (USA) also do and they are all in Nigeria. Monsanto USA is the biggest and most evil.

4). The objective identification of GMOs and GM foods is based on laboratory safety experiments and clinical studies. I have no evidence that any of these has been done in Nigeria. The evidences that I have are based on those done abroad—in the UK, USA, Russia and France. Observations can be applied for “identifying” GM foods when they are in their raw forms but not GMOs. Specific cases: If you are close to the farm where GMOs are farmed with, the time that they produce is different from the time that our native and natural seeds, stems, fishes, cows, etc produce. Usually they produce earlier. If you do not have access to the farms, it should be noted that raw GM foods generally have extra large sizes. Other signs are their tastes, textures, time when they spoil, signs of mycotoxins, and allergic reactions some hours after their ingestion.

5). The production of GMOs and GM foods is motivated by commerce by very rich biotechnology and genetic engineering companies, especially Monsanto, Syngenta (Novartis plus AstraZeneca), DuPont, Bayer CropScience AG (division of Bayer AG), AGFA, and Dow Agroscience, and by the big companies that market processed liquid and solid GM foods, especially Coca-Cola, Pepsi Cola and Nestle.

6). An example of a GM food that caused death and harm to people is the GM milk that was produced by Showa Denko KK, Japan. The cow was genetically RE-engineered (or modified) to produce more milk. It produced L-Tryptophan, an altered form of natural tryptophan, a protein. This triggered eosinophilia myalgia syndrome (EMS) in the people who drank the milk in 1989 in the USA and the EMS caused death to not less than 37 people and permanent disabilities to not less than 1,500 people. About 2,000 people were hospitalised¹.

Another example is that the only clinical safety study carried out with GM soybean meal showed that the DNA of the GM soya survived processing and was detected in the digestive tract. There was evidence of horizontal gene transfer to gut bacteria². The experiment was cut off before the GM DNA and any active bio-element if left would do harm to the volunteers or cause them to die.

7). This question is in two parts. The first part, “There is hunger and food scarcity in Nigeria” is a comment. My answer to that is that the genetic engineering and biotechnology companies and institutes directly and through the Nigerians that they paid caused the food scarcity so that there will be hunger. Then they began to use the food scarcity and the hunger as argument for making Nigerians accept GMOs and GM foods. Such strategy was used by Mr. Henry Wallace, the founder of Pioneer Hybrid Seed Company, and Dr. Norman Borlaug to make the governments of Mexico and India to give them absolute access to the agriculture and food production of Mexicans and Indians in the 1940s to 1950s. The Rockefeller Foundation USA financed its execution³. The USA benefited immensely from both. Dr. Borlaug was given the Nobel Prize for Peace for bringing such immense

benefit to the USA. Indians have been committing suicide because of the failure of GM seeds, mostly GM cotton seeds developed by Monsanto⁴.

The Consultative Group on International Agricultural Research (CGIAR) applied the strategy to Nigeria under the so-called Green Revolution. It asserted deceitfully that it will increase food production and availability and make Nigerians enjoy food security. But since 1968 when the IITA, a child of CGIAR, began agricultural activities in Nigeria, food availability has been diminishing and cost of available foods has been increasing. Another reason for food scarcity is that they have made farmers concentrate on trading out (exporting) of our raw foods. In order to make the government approve it, they say: "Agriculture has become business and no more for development". Most of our raw foods are now exported. Why sell foods before people have fed well? The number of Nigerians export of our foods continues to increase. They use this for increasing their GMOs and GM foods production. We had always had foods more than we need and we will enjoy that again if emphasis is put on feeding Nigerians and not on exporting foods from our farms. Still another reason for food scarcity, farmers are paid to grow crops and the harvest taken away. Some are thrown into the sea and others turned into processed GM foods.

Concerning the second part, "Why would people not eat what they find?", this question has connection with the value for life and safe foods. What this means is that if we have value for our lives and for safe foods we must cease to keep silent over the production of GMOs and GM foods and do all that we can to have GMOs and GM foods banned in Nigeria so that we will not be forced to eat what we find. We will eat safe foods and traditional longevity with good health will be revived in Nigeria. We will not eat the things that look like foods but are poisons and cause death. If we fail to do any of these, we give biotechnology companies and institutes the authority, right and freedom or permissiveness to increase their activities. Take note that if this happens, at some finite time in the future, there will be only GMOs and GM foods in Nigeria. This means that diseases and deaths will be very common and lifespan will be ten to twenty years at this time, or less. This will happen because their ultimate aim is to usurp ownership of all our sources of foods. To support this, note that Monsanto Company USA declared sometime ago: "No food shall be grown that we don't own"⁵. This means that we will be forced to eat what we find, given by Monsanto, USA, DuPont (USA), Syngenta (Switzerland), and others.

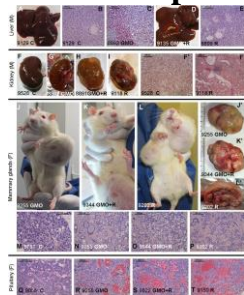
If we want to eat what we want and like, we should have GMOs and GM foods banned. This will end taking natural and native seeds, etc away and storing them in seed and gene banks in the USA and Europe. This will make us have only natural, organic and safe foods. I found that these are disappearing. Two examples are a species of tomato that looks like the heart and a species of potato that is red. Also in order to eat what we want and like, we must end patent right on seeds. It denies us right over our sources of foods and transfers the right to biotechnology companies and researchers. Terminator is another practice that we must top in order to eat what we want, like and is safe because it makes seeds, etc usable for only one season. Farmers must buy new seeds every time. Note that these reasons also reduce available foods, the first issue raised.

Obviously if we use food scarcity and hunger as argument or reason to do nothing about biotechnology-based agriculture and the production of GMOs and GM foods in Nigeria, food scarcity, hunger, diabetes, cancers, kidney, liver and heart diseases, deaths, infertility, still birth, deformities and disabilities will continue to increase, NOT DECREASE. Moreover, age at death will continue to DECREASE. Therefore we will inadvertently sustain what we want to end.

8). Take note that increasing number of people are dying of diabetes, cancers and kidney, liver and heart failure. When this was observed in the UK and USA researchers tried to find out why and they showed correlation between it and introduction of GM foods. Genetically Engineered Crops, Glyphosate, and the Deterioration of Health in the United States of America,⁶ Since the connection was established, most European governments have banned GMOs and GM foods. Not less than seventy governments have banned it globally. Americans have been demonstrating against GMOs, GM foods and Monsanto Company USA and demanding the labeling of GM foods but they have not succeeded. Their through votes failed because the big companies used a lot of money to win more votes. I have tried to establish the connection in Nigeria but lack money to carry my research through.

Take note that our pathologists do not investigate causes of death to first causes. They use only last cause. Nigerian researchers lack foresight and loyalty to Nigerians.

One of the pictures used for defending my answers and explaining more



These pictures are from research by Giles-Eric Seralini et al, 2012⁷, for confirming the claim by Monsanto, USA, that its GM corn, NK 603 and Roundup are safe. They showed the contrary.

Researchers noted: “Anatomopathological observations in rats fed GMO treated or not by Roundup, and effects of Roundup alone. Macroscopic and microscopic photographs show male livers (A–E) and left kidneys (F–I), female mammary glands (J–P) and pituitaries (Q–T), according to Table 2. The number of each animal and its treatment is specified. Macroscopic pale spots (D) and microscopic necrotic foci in liver (C clear-cell focus, E basophilic focus with atypia), and marked or severe chronic progressive nephropathies, are illustrated. In females, mammary tumors (J,J0,N adenocarcinoma and K,K0,L,L0,O,P fibroadenomas) and pituitary adenomas (R–T) are shown and compared to controls (C after the rat number)”

Method 2: Dialogue method

Another method based on dialogue was carried out by the use of questions. The questions were formulated to text value for life and food of the people, knowledge of the people about the application of genetic engineering, etc. Only six of the questions asked are reported here because of number of page specified for report.

- 1). What is of the greatest value, necessity or importance to you in life?
- 2). What is to you food, or what do you call food, or what is your definition of food?
- 2). Why do you eat and drink whatever is to you food?
- 3). Would you know if what is given to you to eat, or you buy, is poisoned by looking at it?
- 4). When you sense change in the colour, taste, texture, etc, of anything that is to you food, do you act on your sensitivity by not eating or drinking it or you ignore your sensitivity and take it?
- 5). Would you eat or drink anything that is to you food if you are sure that it is poisonous?
- 6). What situation will make you eat or drink anything food that you know is poisonous?

DISCUSSION

Not less than ninety percent of the participants were ignorant about the introduction of genetic engineering and biotechnology and how our native seeds, stems, roots, fishes, etc are turned into GMOs. They were also ignorant about the effects of farming with GMOs and that GM foods are not safe for consumption. They did not know about patent right, gene bank and land issues. They did not know about the importation of GMOs, processed GM foods and GM food supplements. They did not know about food additives. They spoke about unsafe foods in terms of “chemical foods” and “agric foods”. They were also ignorant about the production of synthetic chemicals which are sold to farmers as herbicides and pesticides, e.g. Monsanto’s Roundup Ready.

Their attitude to food scarcity showed that they do not know that we have more than enough seeds, stems, nuts, tubers or roots, leaves, fruits, and land and water animals for our foods, that GMOs are not necessary, a fact that even the UN has finally accept⁸, and that the claim about the necessity of GMOs is a commercially and politically motivated strategy for deceiving us and forcing us to accept GMO and GM foods. Nigerians rely more on seeing to accept or believe. Therefore demonstration of safety study and clinical study are necessary. The mass information men have not helped on this matter because they deny Nigerians the right information. Their loyalty is absolutely to the biotechnology companies and not to Nigerians.

CONCLUSION

Nigerians make no practical use of their traditional philosophies. This means that philosophy is purely academic. Traditional values have been very seriously affected by this. E.g., the value for life has decreased phenomenally and value for material things has increased also phenomenally.

RECOMMENDATIONS

To arouse value for life and, hence, action against genetic RE-engineering, GMOs, GM foods, and synthetic herbicides and pesticides, open safety study with rats, clinical studies with volunteers, and consistent mass information, with reinforcement, are absolutely necessary. University people, religious leaders and ministers, moral company executives, women and youths should act their parts quickly. The men of mass information practice should cease to be loyal to biotechnology companies and institutes because of “brown envelop” and give absolute loyalty to Nigerians. Nigerians should cease to oppose information against GM foods ignorantly.

APPRECIATION AND THANKS

Appreciation and thanks given to Prof. A. B. Sofoluwe (R.I.P), Prof. C.O Uwadia, Prof. Omololu Soyombo, Prof. O. Adegbenro, Prof. O. Ogundipe, Prof. T. Asobele, Prof. I. A. Mowete, Mr. G. O. Jemitola, Mr. A. Fagbemiro, Dr. V Ojini, Dr. Tunde Lawal, Dr. A. Aknyemi, Prof L. O. Chukwu, Prof. M. Falaiye, Prof. F. Ndubuisi, Dr. A. A. Ayorinde, and Dr. G. O. Omogunloye.

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**UTILIZATION OF PLAY-THERAPY ON SOME PSYCHOLOGICAL PROBLEMS
OF CHILDREN OF BEGGARS IN DESTITUTE CENTERS: A CASE OF IMO
STATE DESTITUTE CENTER, NIGERIA**

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ABSTRACT

The study investigated the utilization of play-therapy method in solving some psychological problems of children in Destitute Center in Imo State of Nigeria. The study was hinged on the risk of begging in Nigeria society which has created a large hole in the life of children belonging to these beggars. The study was restricted to destitute center in Imo State for proper control of the study. The children of beggars are faced with some psychological problems such as anxiety, depression and obsessive behaviours to mention few. This study adopted three research questions and three hypotheses. The design of the study was quasi-experimental design which has pre/post test control group design. Multi-stage sampling techniques were used to select 50 participants consisting of 28 female and 22 male. The Intervention was Play-Therapy method used for experimental group. The instruments for the study were Goldberg Depression Inventory by Goldberg (1993) and Beck Anxiety Inventory by Beck (1980). The statistically tool used was Covariance (ANCOVA) at 0.05 level of significance. The result showed that play-therapy methods significantly reduced the level of anxiety and depression of children of beggars in destitute center in Imo State. The results of this study were situated within the existing body of knowledge and some germane recommendations were made based on the findings.

Keywords: Anxiety, Obsessive-Compulsive behaviour and Play Therapy.

BACKGROUND TO THE STUDY

Begging may be seen as a social problem arising from poverty and hunger which does not only have psychological consequences such as anxiety, depression and obsessive compulsive behaviour on the victims if not well addressed. But it may also bring about the development of inferiority complex in the beggars children since they may not be able to interact freely with other children. Children of beggars may find themselves under a lot of pressure in both the social and economic spheres of their lives. They tend to live at the margin of existence and opportunities. They may be exposed to a lot of difficulties, stress and psychological problems.

The art of begging especially in a developing country such as Nigeria may have emanated from cumulative problems such as hunger, rural/urban migration, political instability, social insecurity, unemployment, culture and poverty resulting in homelessness. Without a home, most individuals would face emotional difficulties. Beggars in Imo State like in other parts of Nigeria, appear to ply their trade in all busy public places at all times in order to survive. Periodically law enforcement officers harass the beggars in an attempt to get them off the streets and place them in destitute centers.

Hectic life and activities surrounding children of beggars inside and outside destitute centers pose serious challenges to the children and these tend to affect the physical, social

and psychological aspects of their lives. These may often manifest as psychological problems such as Anxiety, Obsessive-Compulsive Behaviour (OCB) and Depression.

Anxiety is a combination of heightened physiological arousal and excessive worry. This behaviour may occur in these children when they experience excessive worry over their well-being, fear of isolation from other children in the society and other environmental challenges. Obsessive-Compulsive Behaviour (OCB) characterized by unreasonable thoughts and fears may lead children of beggars to engage in repetitive behaviours which may interfere with their social behaviour and ability to function well in social activities and even in public places.

In order to effectively help children of beggars who are experiencing social, emotional, psychological and behavioural difficulties, Play Therapy may be one of the interventions that a trained counsellor can employ to ameliorate the problems before they degenerate to major psychopathologies that only trained and experienced clinicians can handle. Play therapy is an interpersonal process whereby a trained counsellor systematically applies the curative powers of play (for example relationship enhancement, role-playing, communication and mastery) to help clients resolve their current psychological difficulties and help prevent future occurrence. Play therapy was established by Association for Play Therapy (APT) in 1982 as a specialized treatment modality. Play Therapy is widely used among psychologists and counsellors to treat a wide range of emotional and behavioural problems (Bratton and Ray, 2000). It is a vehicle for communication between children and a counsellor on the assumption that children will use play materials to directly or symbolically act out feelings, thoughts and experiences that they are not able to meaningfully express through words (O'Connor, 2005). The Therapy may be used with children aged from 4 to 15 years to provide a way for them to express their experiences and feelings through a natural, self-guided, self-healing process. Due to the peculiar status of children of beggars who are often not educated, Play Therapy may be adequate to bring out the likely psychological problems they face in their daily activities. Knowledge is often communicated through play, it may therefore become an important vehicle for them to know and accept themselves and others.

There are numerous and sensitizing play materials that can be used to identify negative feelings in them. The use of games such as Colour Your Life, Pick-Up-Sticks, Balloons of Anger, Worry Can and others are some of the components of play therapy techniques. Play Therapy may therefore provide numerous benefits to the affected children of beggars, among them are enjoyment, relationship building, improved communication and healthy physical, mental, emotional and social benefits. Play has restorative functions when dealing with social challenges, grief, depression, obsessive compulsive behaviour, anxiety and cooperative skills (Jensen-Hart, 2010). Play Therapy is in consonance with basic concepts and postulations of psychoanalytic theory of Sigmund Freud (1958) that individual beings have feelings and thoughts that are unacceptable to and are repressed by the conscious mind. In a situation where they are isolated, they may feel rejected, depressed, and anxious and may exhibit obsessive-compulsive behaviour. The theory may also be useful in bringing about social interaction between children of beggars and their environment. In order to effectively meet the mental health needs of children, counsellors may need to leave the abstract world of verbalization and enter the child's world of concrete reality via the child's language and play. Play, a natural phenomenon amongst children irrespective of their circumstances can therefore be a veritable strategy for improvement as they play with adults. Landreth (2001) believes that a therapeutic working relationship with children is best established through play and the relationship is crucial to the activity referred to as therapy. Despite the wide use of Play Therapy and the number of studies in the literature, there are few studies that experimentally measured the effectiveness of individual play therapy.

Statement of the problem

Previous studies in Nigeria such as (O'Connor, 2005) and Okunmadewa (2001) have focused on beggars themselves and ignored the more critical and even more vulnerable of the segment of the beggars population; these are the children of the beggars themselves. Among the children also are some who may be disabled, in terms of their physical, emotional, social, moral state and behaviours. Children of beggars would fall within this category because of the presence of social and psychological problems in their lives which may make it impossible for them to adequately meet their educational, vocational, personal and social needs. Children of beggars in destitute centers may often experience a variety of difficulties ranging from poor living conditions, lack of finance, personal problems (isolation and loneliness), risk of accident, abuse from the public and exposure to criminal acts amongst many environmental problems.

Poverty makes some children to live and/or work in the street, do odd jobs, increases their vulnerability to trafficking, armed robbery attacks/involvements, rape and other vices.

Theoretical Framework

There are several theories of Play Therapy and techniques appropriate for the group treatment of psychological problems of children but the one that has provided a framework on which this study is hinged is Psychoanalytic Theory by Sigmund Freud (1949). Psychoanalytic theory is a distinctive way of thinking about the human mind and of responding to psychological distress.

The theory emphasizes that the root to all adult problems can be traced back to childhood. Children's psychological problems may be as a result of an unsuccessful progression through childhood development which in turn has resulted in problems with the balance of a person's personality structure which are the ego, superego and id. In Freud's psychoanalytic theory of personality, the unconscious mind is a reservoir of feelings, thoughts, urges, and memories that outside of our conscious awareness.

Purpose of the study

The purpose of this study was to investigate the effect of Play Therapy on some psychological problems of Destitute Children of beggars in Orlu and Mbaise, Imo State, Nigeria. The specific objectives of the study are to:

1. Examine if there would be a significant difference in the post-test mean scores on depression between children of beggars in destitute centers exposed to Play Therapy and those in the control group.
2. Explore the effect of Play Therapy on post-test mean scores on Anxiety among children of beggars in destitute centers.

Research questions

1. What significant difference if any would occur in the post-test mean Depression scores of children of beggars in Play Therapy and those in control groups?
2. What will be the effect of Play Therapy on the post-test mean scores on Anxiety between children of beggars in destitute centers?

Hypotheses

The following hypotheses were formulated to guide the study.

1. Post-test mean Depression scores will not be significantly different between children of beggars in the Play Therapy group and those in the control group.
2. Play Therapy will not have a significant effect on the post-test mean scores on Anxiety of children of beggars in destitute centres.

Significance of the study

The study provided counsellors with empirical data on the profiles of children of beggars with psychological challenges so they can provide appropriate counselling services to this segment of society.

The study helps children with psychological challenges to acquire effective coping skills that would enable them deal with the realities of their situations.

Literature overview

Begging is defined as an act of asking for money without an exchange of services in a public place (Mortimer 2005). To beg according to Moore (2005) simply means to ask for money, food, clothes and other kinds of items as a gift or charity. Eyo, Usoro and Usoro (2007) viewed begging as a national malady that eats into the fabrics of social, economic, religious, political and educational structures. This means that begging is a serious national problem which affects every aspect of the society especially the wellbeing of individuals.

Begging especially on the side of children, may result to sexual assault by the prospective male benefactor, misfortune of being knocked down by passing vehicles, depreciation of societal image, disorderliness and stigma against the nation's social and economic systems. Selby (2008); Kamat (2008) stated that begging as a phenomenon, has several attitudes in response to the trend in Nigeria, which can be described in three ways, latent, manifest and indifferent. Culture and religion are obvious indices or determinants of these attitudes, along with other determinants such as an individual's personality, home background (begging is a household profession in some communities) and the economic situation in Nigeria. Begging especially in Nigeria could be seen as a social problem. According to Jelili (2006) begging negates the norms, expectations and values of the society. For example in Igbo culture, hard work is highly valued therefore begging in its absolute sense is not popular and beggars are usually looked down upon as belonging to wretched persons in the society.

Carrous (cited in Qudiz 2005) noted that an estimated 850 million people are hungry while two billion suffer from mineral or protein deficiencies.

Begging can be anything from entertainment or ceremonial begging. According to Jelili (2009) Entertainment Begging is done by singing and dancing on the streets and at functions to entertain people. The beggars wander streets, sing-begging and receive more gift than other. Khalid (2006) stated that, Ceremonial beggars are seen at ceremonies; they have a very active nose for news about ceremonies. They are particularly different from other groups in that they render small services to their clients such as fanning them with locally made hand fans, mopping their faces with handkerchiefs or the tail of their wrapper, an decorating them with stickers. Some of them chant un-coordinated ululations. In this group are the aged and a few young persons who take up begging as a pastime.

Begging could be as a result of the following factors: overpopulation, unemployment, high standards of living and cost of living, inadequate education and employment, environmental degradation, and so on. Some of the factors associated with begging are follows:

FGN/UNICEF (1990) maintained that Poverty may be one of the causes of begging especially in developing countries like Nigeria. Some of the poverty indications include inadequate housing, poor health care, malnutrition, unemployment and lack of education.

Shah (2011) found that 80% of people who beg are homeless. UNICEF (2000) report stressed that 100 million children of beggars worldwide are homeless, and about 15,000 children in Nigeria alone are homeless. In this study, homelessness of the beggars and their children was a major concern to the government before they were provided with some of the destitute centers even though they still indulge in seeking for assistance outside their homes just to meet with some of their basic needs.

Wolf (2005) in a study discovered that some respondents attributed the reasons for begging to addictive disorders such alcohol dependency (41%) and drug dependency (24%) while

most of the beggars spent money received from begging on irresponsible and unnecessary items like drugs, alcohol and tobacco.

A survey of beggars carried out by (Lynch, 2005) showed that all the respondents were unemployed. In the Nigerian situation, FGN/UNICEF (1990) viewed begging in terms of the economic situation of poor urban families whereby children were subjected to working conditions for the survival of the families involved.

Today, children are used to beg for assistance and this is among the social problems unleashed on the nation. Begging sometimes is rooted in the religious and cultural beliefs of Nigeria. To some people, it is a way of obeying the commandment of some gods/goddess. To some, once one is disabled, one must beg for a living. As regards to the former, an average mother of twins is convinced that once she disobeys the god, the consequence is grave as she can be struck with death or deprivation, while the latter believes he/she will die of hunger as the only alternative to begging.

Begging as a social problem may have negative effects, especially on the side of the children of beggars. Jibril (1997) posits that the adverse effects of begging are loss of dignity, self esteem and development of dependant mentality on the part of the children killing their natural intelligence and initiative. These may often lead to depression and anxiety. Beggars also constitute social and economic threats to Nigerian society especially in the cities as some criminals hide under the guise of beggars to perpetuate their evil deeds (Jelili, 2009). The National Planning Commission and UNICEF (2001) stated that begging has grave negative psychological, social and health consequences. Although, children of beggars operate from their destitute centers, they tend to constitute nuisance to the general public by either indulging in street begging or hawking.

However, the psychological effect of begging, especially in Nigeria, is the involvement of considerable number of its population in begging. According to Gans (1995), the existence of the poor actually benefit various segments of the society. In Gans' view, poverty and the poor actually satisfy positive functions for many non poor groups of the society.

Abbott and Ploubidis (2008) pointed out that worldwide estimates of the number of adolescents and children who live with a disability vary widely. Issues of accuracy and reliability of statistics have been raised for individuals with intellectual disabilities and individuals with mental health concerns, as well as those with physical and sensory disabilities. Children of beggars may belong to these groups of individuals. The following are some of the other factors that affect them in the society: poverty, isolation of the children of beggars and prejudice in relation to class stratification and gender.

Beggars' children with psychological problems have needs very similar to the needs of all other children, as clearly stated in Article 23 of the United Nations' Convention on the Rights of the Child. (UNICEF, 2000). They need to live in a safe and supportive environment; they need education, health services and access to sport and recreation. They also need to develop skills that will serve them well in the larger society.

According to Brown, Nesse, Vinokur and Smith (2003) globally, it is widely acknowledged that the greatest impediment to the lives of beggars' children with psychological problems is prejudice, social isolation and discrimination. Brunstein and Schultheiss (1998) stated that some cultures are more while others are less tolerant of beggars' children with psychological problems. In Nigeria, for example being to be borne by a beggar or acquiring a disability could be interpreted as evidence of 'bad blood', incest, or divine displeasure. In Nigeria, individuals with intellectual disabilities such as beggars' children may struggle more than in other societies where there are none.

Association for Play Therapy (2001) defines play therapy as a developmentally sensitive therapeutic modality in which a trained play therapist uses the therapeutic powers of play to help clients prevent or resolve psychosocial difficulties and achieve optimal growth and development. Landreth (2002) define Play as the singular central activity of childhood and is

a spontaneous, enjoyable, voluntary and non goal directed activity which gives concrete form and expression to children's inner worlds and provides them with a symbolic language for self-expression. What these imply is that play can be a positive way to get children to express themselves and deal with their problems?

Research Design: The research design for this study was quasi-experimental pre-test/post-test control group design.

The Study Area: The study was carried out in Imo state.

Population of the Study: The target population consisted of all male and female children of beggars living in destitute centers in Imo State.

Sample and Sampling procedures: Simple random sampling through the hat and draw method was used to select two destitute centers from the three existing ones. The two destitute homes selected were Akpodim Rehabilitation home defined by the researcher as Training centre 1 and Orlu Cheshire home as Training centre 2. Participants who scored 30 and above (an indication of psychological problems), were selected for the main study. This way, 50 participants consisting of 28 female and 22 male participants qualified for the main study while the remaining 17 participants who scored below 30 were not qualified. For ease of management, intact homes were used.

Research Instruments

Two research instruments were used to collect relevant data for this study. These were:

- a. Psychophysiological Symptoms Checklist (PSC) (Omoluabi, 1987).
- b. Beck Anxiety Inventory (BAI) (Beck, 1980)

Procedures for Data Collection

Phase 1: Pre-treatment phase: In this study, Directive play therapy is employed to ensure that the children are well guided to achieve results. There were two experimental groups - one treatment group and one control group. Three activities were carried out during this phase. The first was Pre-Assessment using the PSC as baseline assessment tool to qualify participants for training. The second activity involved the random assignment of intact groups to treatment and control conditions while the final activity was the administration of GDI and BAI to participants in the two experimental groups to get pre- test scores on each of the three measures.

Phase 2: Treatment (Play Therapy): The aim of the therapy was to assist the children of beggars to develop stronger self-esteem; self-value and be able to handle those psychological problems that impede their sense of being. The therapy progressed through six sessions. The research assistants were involved in the treatment only to explain the procedure and content in the respondents' language where necessary. They explained and interpreted the process throughout the sessions.

Play 1: Balloons of Anger

This is a component of Play Therapy that can make children release or reduce their anxiety level. A balloon of anger is an enjoyable, effective technique that provides children with a visual picture of anger and the impact that it can have on them and their environment. It allows the children to see how anger can build up inside of them and how, if not released slowly and safely, can explode and hurt them or others. Balloons are the only material for the game. The researcher made the children to blow up the balloons and tie them.

Play 2: Worry Can

Children often worry about numerous challenges that they keep bottled up inside. These worries may be the root of some of their psychological problems, such as fear, depression, peer conflict, temper tantrums, and separation anxiety. Worry Can is an effective method for helping children to identify and then discuss their worries with an adult and/or other child so that they can deal with their obsessive compulsive behaviours. The materials needed were a re-closable can, colour paper, markers, glue, and scissors. At the end of the activity the researcher cut a strip of paper large enough to completely cover the can signifying the closure of all their worries. The researcher encouraged the children to play and laugh off their worries. This technique was used for children who were identified as depressed. The session closed with the researcher informing the participants to prepare the lessons learnt as the therapy was drawing to a close.

Method of Data Analysis

Data collected for this study were analyzed using both descriptive and inferential statistical tools appropriate for testing each hypothesis. The level of significance for each test of hypothesis was pegged at the 95% confidence level

Test of Hypotheses

Hypothesis One states that Post-test mean Depression scores will not be significantly different between children of beggars in destitute centers in the Play Therapy group and those in the control group. The results of the analysis are presented in Tables 1 and 2.

Table 1: Descriptive Statistics of Pre and Post-test Depression scores of the participants across the experimental conditions

Group		N	Pre-test Depression		Post-test Depression		Mean Difference
			Mean	Std. Dev	Mean	Std. Dev	
Play Therapy group		58	33.24	2.11	27.66	1.05	5.58
Control group		42	33.05	1.75	31.76	1.69	1.29
Total		100	33.16	1.93	29.71	1.37	3.44

Evidence from Table 3 shows that participants exposed to Play Therapy training had a higher mean difference of 5.58, whereas the Control Group had 1.29. To determine whether significant difference exists in depression scores among participants, one-way ANCOVA was used and the results are presented in Table 2.

Table 2: ANCOVA Test of Difference in Post-test Depression between Experimental and Control Groups

Source	Sum of Squares	Df	Mean Square	F
Corrected Model	430.41	2	215.21	129.64*
Covariates(Pre Depression) test	19.57	1	19.57	11.79*
Experimental condition	418.67	1	418.67	252.21*
Error	161.15	97	1.66	
Corrected Total	599.39	99		

*Significant at 0.05; df= 1 & 97, F-cal =252.21; F-critical= 3.94

The ANCOVA results presented in Table 2 show that for the experimental condition, the F-value obtained was 252.21. Given 1 and 97 degrees of freedom at 0.05 level of significance, this is greater than F-critical of 3.94. It was therefore evident that there is a significant difference in post training depression between children of destitute beggars in the Play Therapy group and those in the Control Group. It was therefore concluded that training in play therapy was successful in ameliorating depression among children of beggars in destitute centers. Hypothesis Two states that Play Therapy will not have a significant effect on the post-test mean scores on Anxiety among destitute children of beggars. The results of the analysis are presented in Tables 3 and 4.

Table 3: Descriptive Statistics of Pre and Post-test Anxiety scores of the participants across the experimental conditions

Group	n	Pre-test Anxiety		Post-test Anxiety		Mean Difference
		Mean	Std. dev	Mean	Std. dev	
Play therapy group	58	21.83	2.50	14.32	1.54	7.51
Control group	42	21.48	2.72	18.83	1.91	2.65
Total	100	21.66	2.61	16.58	1.73	5.08

Results in Table 3 show that participants exposed to Play Therapy had a post-test mean Anxiety score of 14.32 (sd=1.54) against a pre-test mean anxiety score of 21.83 (sd = 2.50) which yielded a mean reduction of 7.51 between the pre- test and post-test mean Anxiety. The control group obtained a mean pre-test Anxiety score of 21.48 and recorded a post-test score of 18.83 (sd=1.91) at post-test thus yielding a pre-test post-test mean difference of 2.65. One-Way ANCOVA was used to determine whether significant differences exist in post test anxiety scores between participants in the Play Therapy and Control groups. The results are presented in Table 4.

Table 4: ANCOVA Test of Difference in Post-test Anxiety between participants in Play Therapy group and those in the Control group

Source	Sum of Squares	Df	Mean Square	F
Corrected Model	499.24	2	249.62	86.08*
Covariates(pre-Anxiety)	4.69	1	4.69	1.62ns
Experimental Condition	498.81	1	498.81	172.00*
Error	281.92	97	2.90	
Corrected Total	785.42	99		

*Significant at 0.05; F-cal =172.00; F-critical= 3.94; df= 1 & 97, ns = not significant.

The results in Table 5 show that for the treatment condition, the F-value obtained was 172.00 which is greater than the F-critical value of 3.94 given 1 and 97 degrees of freedom at 0.05 level of significance This indicates that training with Play Therapy was effective in reducing anxiety among children of beggars in destitute centers. Therefore, hypothesis 2 was rejected.

Summary of findings:

Based on the research hypotheses formulated for this study, the findings are summarized as follows:

1. Play Therapy had significant impact on depression among children of beggars in destitute centres.
2. There is significant effect of experimental conditions on post-test scores of anxiety among beggar's children.
3. The interaction effect of experimental conditions and gender on the post-test mean anxiety scores of children of beggars in the destitute centres was not statistically significant.

Discussion of findings

The first hypothesis stated that there is significant difference in Depression among children of beggars in destitute centers in the Play Therapy group and those in Control group. These differences may be as a result of acquisition of knowledge received from the Play Therapy Training programme which is seen as a viable intervention for treating a variety of emotional and behavioural problems such as withdrawal, anxiety and depression in the lives

of children of beggars in destitute centers. Bratton and Ray (2000) summarized the results of a comprehensive literature review of 82 play therapy research studies from 1942–2000 in which positive outcomes were noted with each of the research areas. Self-concept, behavioural adjustment, social skills, emotional adjustment, intelligence, and anxiety/fear are topics demonstrating the most significance regarding the efficacy of play therapy.

Bratton and Ray (2000) maintained that Play Therapy intervention is to help children participate in learning, self-avoidance, gaining a sense of responsibility, controlling emotions, showing respect, self-acceptance and accepting others, improving behaviours such as social skills, increasing self-esteem and reducing depression.

The second hypothesis stated that Play Therapy will not have any significant effect on the post-test mean scores on Anxiety of children of beggars in destitute centers. The findings showed that there is significant difference in the level of anxiety among children of beggars in destitute centers exposed to Play Therapy group and those in Control group. These differences may be as a result of acquisition of knowledge received from the Play Therapy Training programme which is seen as a viable intervention for treating emotional problems such as anxiety in the lives of children of beggars in destitute centers. The treatment and game used had helped the children to gain self-esteem and fight anxiety as they realized they can win in life if they win in games. The researcher interpreted the colour of sticks that the children choose and the colours that they avoided.

In support of this finding, Victor (2007) pointed out that many children with the problem of anxiety undergo a successful cognitive-behavioural treatment with play therapy though some children show the least response to the treatment it has been suggested that in a counselling context, play is to the child, what verbalization is to the adult. Leblan and Ritchie (2001) assert that the literature pertaining to the use of play therapy with children frequently describes play as their language and toys as their words Hall (2002).

The implications of the findings on anxiety here support the use of play therapy to assist children of beggars in dealing with their fears of social stigma, hunger and even poverty. The counsellor's resourcefulness in using some of the play therapy techniques such as worry can and balloons of anger was positive in assisting the children's development of their self-concept and self-esteem. This finding therefore fills the gap in knowledge.

Conclusion:

In the light of the proceeding discussions and summary of findings, the following conclusions were made:

1. There is significant effect of experimental conditions on post test scores of anxiety among beggar's children.
2. Play therapy had significant effect on Obsessive Compulsive Behaviour among children of beggars in destitute centers.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Stakeholders should ensure the establishment of Counselling Centres in the destitute centres to be managed by a trained counsellor.
2. A workshop can be planned for children of beggars in all states intimating them on the need to be free from begging, inviting resource persons to teach various trades and liaising with Federal, State and Local Government to provide funds for a take-off projects such as shoe making, weaving, soap making etc.
3. There should be a special department for the destitute in the Ministry of Social Welfare, Funded by Government in order to organize and manage destitute centres in all the states. Government should instruct employment agencies to reserve certain percentage of their work force for them. A destitute centre should perform three main functions such as physical restoration, educational, vocational, psychological and psychosocial rehabilitation.

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VISUAL ART APPRECIATION OF NIGERIA: THE ZARIA ART SOCIETY EXPERIENCE

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ABSTRACT

This paper focuses on the Modern Nigeria art and its gradual but steady growth since the establishment of the first higher institution in Nigeria (1955) by the colonial government, to award a Diploma certificate in art, (Nigerian College of Arts, Science and Technology). As shown in the paper, of the historic trends of transformation of Nigerian traditional art, that was started by Ben Enwonwu and popularised by the Zaria Art Society Members. The growth of Nigerian modern art and the philosophy of the Zaria Art Society have continued to expand even many years after the closure of the Society. This paper also discourses the extension of the philosophy of the Zaria Art Society into the Church by one of its member, (Bruce Onobrakpeya) who represented most of his Christian images in traditional Urhobo style as against the popular western style. The paper exposes that Nigeria has a rich art and diverse culture which existed long before the colonial reign and thus encourages the efforts of the Zaria Art Society in recalling and using Nigerian traditional forms and motifs in their modern art by way of synthesis.

Keywords: Art, Traditional, Philosophy, Historic, Synthesis.

INTRODUCTION

The diverse culture of Nigeria and its ancient history, to a large extent represent its people and their lifestyle. Each region in Nigeria has their own arts which are drawn from their rich cultural heritage and tradition. Before the advent of Europeans into Africa, there were local artists and craftsmen who had long practised their skills as craft and craft and are in charge of the society's art cults. This is proven by the highly creative artistic works discovered in Nok (500.B.C.), Igbo-Ukwu (900. A.D.), Benin (1400. A.D.), Ile-Ife (1000-1500.A.D.), among others. However, the advent of European missionaries to Benin Kingdom brought international recognition to Nigerian traditional art. Layiwola (2010) observes: "The City of Benin had attracted several visitors since 1486 when Joao Alfonso d'Aveiro, a Portuguese, first visited Benin City". The Nigerian traditional art has slowly but continuously grown and translated into the present day modern art. Aside the formation of the traditional art of Nigeria, the present day statues of modern Nigerian art can also be linked to the impact of Nigeria College of Arts, Science and Technology Zaria, which was the first institution of higher learning in Nigeria to award a Diploma certificate in art and on whose platform the Zaria Art Society was born.

MODERN NIGERIAN ART

Different forms of art and craft such as, Terra Cotta, Wood Carving and Bronze Casting Calabash carving, Tusk and Horn Carving, shell, and weaving of textile products had existed in Nigeria long before what has now come to be known as Modern Nigerian Art. The art of every society plays a major role in the history of the society.

Modern Nigerian Art is said to have started in the early 20th-Century with the contributions of Aina Onabolu (1881-1963) who is today regarded as 'The father of Modern Nigerian Art'. Ogbachie (1999) writes, "A tentative date of 1906 is assumed in this essay as the beginning of Modern Nigerian Art." Onabolu was the first Nigeria artist to receive a formal education in art, thus he single-handedly brought about change in the Nigerian school curriculum by

making sure that art as a subject was included in the school curriculum and taught during the era of colonial government in Nigeria. Onabolu's figurative drawings, landscape and portraiture meet the European mimetic realism standard. Iriwieri (2010) asserts: "Onabolu's drawings and paintings show great sensibility in the discipline, which he acquired in the art academies in London and Paris. Some of his works remained to this day the finest naturalistic portrait paintings of contemporary Nigerian art". When the task of spreading the teaching of art across the nation became heavy for Onabolu alone to bear, he advised the colonial government to invite Kenneth Murray another art teacher from Europe for assistance. With the eventual arrival of Kenneth Murray (1902-1972) Modern Nigerian Art began to develop in Nigerian schools particularly in secondary schools, and Ben Enwonwu is recorded to be a major benefactor of Onabolu's effort through Kenneth Murray.

Kenneth Murray encouraged his students to adapt traditional African forms and motifs into their art practices, his students, particularly Ben Enwonwu, is known for such practice. This was revealed by Nzegwu (1999), "Murray encouraged his students in Umuahia to attentively study and take design inspiration from *uli* forms, and the sculptural iconography around them". She further states: "Like Okeke did years after Enwonwu had transcended these kinds of concerns, Enwonwu differently valued both his Onitsha and European art experiences, constantly exploring the limits of the former with the techniques he learned from the latter". Moreover, Murray transformed and took the training in art to a level Egonwa (2001) described as "the evolution of the concept of Natural Synthesis," which involves a blend of the techniques of African arts with those of European experiences. Therefore, Enwonwu's awareness of the culture of his people, no doubt, influenced the nature of his art (paintings and sculptures), which was a combination of Nigerian and European arts that he learnt from his teacher Kenneth Murray. Though Murray and Enwonwu contributed in the synthesis of art and culture in Nigeria, their efforts were not noticeable because they were few in number. Subsequently, a force came from the then newly established Nigerian College of Arts Science and Technology (NCAST) in 1958 by a group of students who formed a society known as the Zaria Art Society.

Thus what is today known as the Modern Nigerian Art can be ascribed to the contributions of fine art practitioners like Aina Onabolu, Akinola Lasekan (both were advocate of naturalistic painting), Ben Enwonwu, among others. However, modern Nigerian art attained its height of significance when young and promising Nigerian artists from the Nigerian College of Arts, Science and Technology formulated a philosophy of 'Natural Synthesis'. The philosophy preaches the adoption of experiences in modernity while maintaining the best of Nigerian culture. The synergy of academic art and Nigerian culture was highly promoted by the members of the Zaria Art Society but it however did not end with them. Many years after the existence of the Zaria Art Society, modern Nigerian art continues to grow even stronger. The growth of modern Nigerian art can also be attributed to the establishment of various workshops for art training such as: A the Ori-Olokun Movement in 1968 by the renowned Bishop Michael Ajayi Crowther at the University of Ife (now Obafemi Awolowo University). Chukuegu (2012) identified Adeniyi Adeyemi and Wale Olajide as notable beneficiaries of the workshop organised to encourage interest in Yoruba Art.

NIGERIAN COLLEGE OF ARTS, SCIENCE AND TECHNOLOGY (NCAST)

The Nigerian College of Arts, Science and Technology (NCAST) Zaria played a significant role in the development of modern Nigerian art. It is remarkable that the first society of art to be recorded in the history of Nigerian art emanated from the institution, in the name of Zaria Art Society which was founded in 1958. This society became popular during the period that art centres and workshops gained recognition in Africa. Some of the notable art centres which

existed when the Zaria Art Society was formed included: The Oshogbo Workshop at Ibadan, Cyrene Workshop in Zimbabwe, Kamba Art Centre in Kenya, among others. Some of the notable members of the Zaria Art society identified by Bruce Onobrakpeya (2013) one of the member of the society include: Yusuf Grillo, Simon Okeke, Uche Okeke, Demas Nwoko, Oseloka Osadebe, Okechukwu Odita, F. N. Ekeada, Ogbonnaya Nwagbara, William Olasebikan and I. M. Omagie (the last two listed here were associate members).

THE ZARIA ART SOCIETY

A society is a group of people with a particular purpose and a common interest, members of a society often shares same culture within the same geographical region. Thus in a society, the members share a common identity or desire and a common purpose. Furthermore in a society, the members are expected to be an organized group of people that meets or associates for the same interest, such as: religion, culture, science, politics, and arts, humanitarian, among other reasons or ideologies. The above definitions and explanations are necessary to be able to situate the Zaria Art Society in their right position. The Society's existence spanned between 1958 and 1961 and was founded with the sole purpose of synthesizing academics with culture by way of art practice. On this Grillo (2013) opines: "The Zaria Art Society was simply a group of young art students that began to recognize one another in Zaria. They were students with like aspirations who got together just as the saying 'Birds of the same feather flock together'".

The Zaria Art Society was a product of an informal discussion between Uche Okeke and Demas Nwoko at Ibadan, during their interview into the school in 1957. Okeke and Nwoko were already practicing artist before they came for the interview; this probably was there reason for understanding and thinking of a better way to reposition the Nigerian art at that time. The fact that the nation was still under colonial rule at that time was a more reason why they believed that individually and collectively Nigerians should uphold their cultural heritage. This led to informal meetings of few persons who believed in their vision. During their discussions on art and other issues, ideas were exchanged and developed and the Zaria Art Society was born. Ikpakronyi (2004) asserts, "On the 9th of October 1958, the Zaria Art Society was formally inaugurated. This was a great achievement and as earlier agreed by the members, it was immediately registered with the Students' Union of the College like other associations".

The Zaria Art Society was an informal society that was opened to membership for all students from all the departments in the college. In Nwoko (2013) account, Shemu and Okin from the Department of Architecture were also members of the society. According to Nwoko, the two architecture students attended meetings with the art students and participated in outdoor drawing which was the medium used by the society to gain recognition.

Bruce Onobrakpeya who was also another active member of the society, revealed that the society was an intellectual one and most of its members were already engaged in various kinds of professional arts before they were admitted into school. In the account of Bruce Onobrakpeya, other members such as himself, that didn't know much about art before they gained admission into the school decided to join the society, because they knew that there was much to gain from it. Most members of the society were interested in working as professional artists after completing their education and not just to acquire certificates. Onobrakpeya, however, agrees with Demas Nwoko that there were students from other departments who often joined in their informal discussions. These students, he referred to as 'associate members' because they were mostly their friends from other departments.

The first president of the society was Simon Okeke, who was in 1957 set, same with Yusuf Grillo (while Uche Okeke, Demas Nwoko, and Bruce Onabrakpeya were in 1958 set). Uche Okeke (1975) attests to Demas Nwoko's assertion of Simon Okeke as the first leader of the group thus: "Simon Okeke, (1937-1969) was the first leader of the group who espoused the concept of synthesis of old and new". Much later in 1959, Simon Okeke resigned as the president of the society and the mantle of leadership fell on Uche Okeke. Ikpakronyi (2004) asserts:

Shortly after the election, Simon Okeke, for personal reasons, relinquished his post. A fresh election was then conducted and the mantle of leadership fell on Uche Okeke on the 9th of February 1959, Olaosebikan was then the secretary. When he left in 1959, Okechukwu Odita became the secretary of the society till it was dissolved in 1961.

The society flourished and encouraged all students of the College to join because of its philosophy of 'Natural Synthesis' or 'cultural life' which the founding members believed cuts across all disciplines. It was therefore an open society, as the case may be, outside of the academic programme. The society spanned three generations of students, from 1958 to 1961 when it was formally closed. Apart from the members of the Zaria Art Society, the Zaria art school has contributed greatly and still contributing to the development of art in Nigeria through its graduates in different sectors of the society, particularly the educational sector. They are: J.B. Akolo (Painting), Y.A.G. Lawal, (Painting), D.O. Babalola (Sculpture), C.C. Aniakor (Painting), C.O Adepegba (Sculpture), D. Jegede (Painting), K. Oshinowo (Painting) among others.

MEMBERS OF THE ZARIA ART SOCIETY



Plate I: Sitting from left to right: Bruce Onobrakpeya, Yusuf Grillo, Uche Okeke, and Demas Nwoko. Back Row: Oseloka Osadebe, Ogbonaya Nwagbara, and Okechukwu Odita. (Source: *Africanartwithtaj.blogspot.com*)

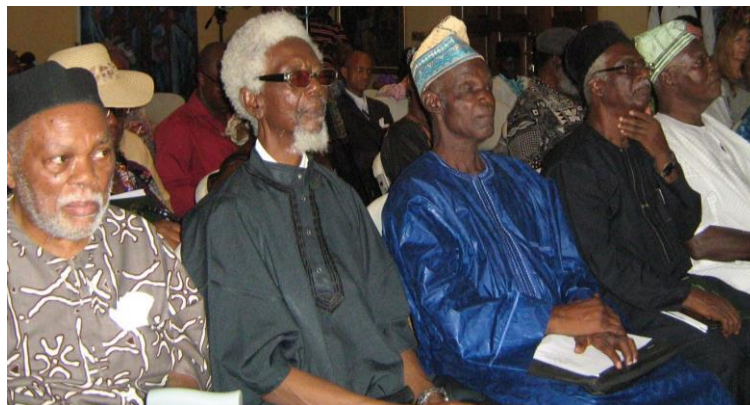


Plate II: Some of the members of the Zaria Art Society with their classmate: Prof. Jimoh Akolo in 2011. (Source: *Africanartwithtaj.blogspot.com*.). Sitting from left to right: Uche Okeke, Demas Nwoko, Jimoh Akolo, Bruce Onobrakpeya and Yusuf Grillo.

THE ROLE OF THE ZARIA ART SOCIETY MEMBERS IN THE SYNTHESIS OF WESTERN AND TRADITIONAL ART IN NIGERIA

About ten years after Enwonwu's foresight and vision in the development of a true Nigerian contemporary art by recognition of his ancestral home through his art came a group of young men from the Zaria art school that were inspired and guided by Enwonwu's art and philosophy. These young Nigerian artists in 1950s in the then College of Arts, Science and Technology at Zaria, started a society with the sole aim of synthesising between Western and Nigerian traditional art. Collectively, they commenced the search for an indigenous art tradition as against the Western representational art that was the case of the early educated Nigerian artists. The Zaria Art Society members were aware of the harm that the newly introduced Western art could cause to Nigerian culture. They sensed that there was something fundamentally wrong in the academic syllabus, and decided to use their association to correct it, by trying to merge Nigerian traditional art with the newly introduced Western style. According to Oloidi (1989):

A reversal was needed if true, modern Nigerian art was to be established. In order to focus their thoughts, the Zaria Art Society advanced their theory of natural synthesis which, essentially, called for the merging of the best of the indigenous art traditions, forms and idea with the useful western ones.

The radical change spread from the academic circle to other cultural centres around the country, where several other young, talented artists were trained. This new art style which started in the mid-1950s was highly embraced particularly by the youths who saw it as a quest in the spirit of Nigerian independence. This radical art tradition change continued after the Zaria Art Society was closed down. Gradually it spread from Ahmadu Bello University, Zaria, to University of Nigeria Nsukka, with the development of the *Uli* art style. Also at Obafemi Awolowo University, Ife, a similar style called *Ona* was developed all in search of a true Nigerian identity through visual arts.

WESTERN AND TRADITIONAL ART SYNTHESIS IN THE CHURCH BY ONE OF THE MEMBER OF THE ZARIA ART SOCIETY

The spread of synthesis of Modern and traditional art in Nigeria also extended to Churches with Bruce Onobrakpeya championing it. Bruce Onobrakpeya was recorded to have worked extensively in the area of Nigerian indigenous Christian art using Urhobo motifs and art styles to interpret Bible stories.

Bruce Onobrakpeya was formally trained as a painter in Western European technique and material, but through series of experimentation and exploration, he evolved a synthesis in print making that depicts authentic African culture in foreign and local techniques and materials. His unique art style seems to have solved the problem of identity in his struggle to retain Nigerian identity in the world of art. Quel in Onobrakpeya (1992) says, “Nigeria is in the throes of change. It requires a type of art (call it modern) that will reflect its on-going effort to achieve meaningful development and cultural identity”. Onobrakpeya is one Nigerian artist that has worked tirelessly in trying to synthesis Bible stories and make it Nigerian by interweaving Christianity with Nigerian culture. Quel in Onobrakpeya (1992) further writes, “Notwithstanding his traditional background and the nostalgia expressed in a good majority of his works, Onobrakpeya is a devout Christian. He has drawn considerable inspiration from the Bible for many of his Christian themes”. He has handled several church commissions. Among his church commissions, as observed by Quel in Onobrakpeya (1992), were the “complete set of the Catholic Stations of the Cross” for St. Paul’s Catholic Church, Ebute-Metta Lagos, Nigeria, in which he represented the Disciples of Christ as Urhobo indigenes. He produced 60 illustrations for the Catholic National Catechism in Nigeria. In 1977, his prints entitled, ‘Life of St. Paul’ in traditional Urhobo style was presented by Bishop Fitzgibbon to Pope Paul VI on the occasion of his 80th birthday. Apart from the Catholic Church, he also recorded that in 1979, one of his works entitled ‘Ota Gbinowe’ was presented to the Archbishop of Canterbury during his visit to Nigeria. In Onobrakpeya’s works one can hardly find any stylistic difference between the treatment of Christian and Nigerian themes, thereby making it possible for him to synthesize his Christian images in order to bring the message nearer home.

CONCLUSION

Nigeria as a nation is known for its diverse culture, which is responsible for its rich art, the arts and culture of Nigeria cuts across all its geographical region and dates back to 500 B.C. However, the beginnings of what can be described as a visual academic cultural dialogue between academic trained artists and their culture in Nigeria started with Ben Enwonwu who was recorded by most authors as the first trained Nigerian Artist to make a remarkable effort in promoting Nigerian culture through his art works. In 1958, a pressure group from the newly established institution (Nigerian College of Arts Science and Technology Zaria) formed the Zaria Art Society. The society introduced and adopted a philosophy they called ‘Natural Synthesis’ and this marked the beginning of a new dawn on the contemporary art scene in Nigerian. This was an avenue for young Nigerian artist to revisit their culture, and bring in some aspects of it into what was being taught in school by their European teachers.

Though the society existed for only three years, it left a remarkable impact on the Nigerian art scene. So much has happened and is still happening in Nigerian art since the closure of the Zaria Art Society, their philosophy of “Natural Synthesis” has been a driving force among many Nigerian artists, and this has also lead to the formation of many art groups. Some of the notable groups that towed the line of the society are as follows: Uli, Ona, Nsibidi and Ara. Though the above mentioned groups existed in different regions of the country and were of different era, their philosophies are not far from that of the Zaria Art Society’s Natural Synthesis.

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MAXIMIZING DIGITAL ADVERTISING FOR EFFECTIVE NATIONAL DEVELOPMENT

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Advertising has taken a new form with the digitalization of the world and companies, nations and individuals are making a good use of it. This can be seen in the gradual movement from analogue technologies to the digital technologies in almost all sectors of the country. The new media has metamorphosed the use of advertising to becoming a more purposeful element in the International Marketing Communications. This is because with the new media advertising has become more accessible, ubiquitous and very handy and can be easily manipulated to one's use as a consumer. This has further empowered the consumers towards becoming the creators of information while having a variety of information to choose from. The new media has also help advertisers to create awareness for their goods at low costs on investments. This has in turn improved the gross national product of the nation and it is further leading to greater presence in the global world. However this paper avers that the new media is in its growing state in Nigeria but with the availability of adequate power supply, bridging of the digital divide between the urban and the rural dwellers in Nigeria, there is also the need to build a viable and all-encompassing broadband infrastructure round the country. With this and many more, advertising will be maximally utilized for national transformation.

Advertising, New Media, National Development, Consumers and Advertisers.

INTRODUCTION

The global village, which was first coined by Marshal McLuhan (1964, 1989), is the world we now live in. A world where Internet has taken over almost every aspect of life be it economic, social, entertainment, political, information and culture. Communication messages are now disseminated worldwide in real time and within the split of a second in contrast to the old media in which the feedback is delayed. In the new media feedback has become instant. The new media has affected all aspects of mass communication, journalism and electronic media. One of the area in which new media has changed the landscape is advertising. Advertising which is the creation of awareness for products, services and ideas has gone digital with the advent of the Internet and new media hence the emergence of digital advertising. Digital advertising refers to marketing media that is digitally displayed. Digital advertising, also known as new media advertising or Internet advertising, is essentially using the online opportunity to communicate marketing messages to consumers or visitors via the Internet.

Digital advertising is:

the leverage of Internet technologies or the new media to deliver promotional advertisements and messages delivered through email, social media websites, online advertising on search engines, banner ads on mobile or Web sites and affiliates programs. Digital advertising is the use of electronic, computing, and Internet-based technologies to change traditional revenue models and business designs to the mutual benefit of customers and vendors. Iloka (1999,p.16)

Digital advertising by definition implies the usage of Internet based technologies to create mutual understanding between producers and consumers of products and services. The digitalization and the rapid development of Information and Communication Technologies (ICT) and software with the advent of the Internet not only changed the face of communication but also that of information and communication management for the individual and the society. The Internet is a collection of computer networks that connect millions of computers around the world and is constantly changing and expanding. Bell (1998, p.11). As the Internet and information and computer technologies developed in geometric progression, their contribution to national development also increases. The time when countries are islands to themselves and what happens within their enclaves is restricted to only their geographical spaces seem to be in antiquity now. Any event or incident is now disseminated live and real time, a good example was that of the whole world watching the planes plummet into the World Trade Centre on September 9th 2011. The ubiquity of the Internet and the ICT in peoples and nations lives has changed the idea of national development.

National development is the transformation of every sector of a particular country from one phase to the other usually from a bad or fairly good one to a better phase. National development is usually reflected in the lives of the people of a nation and also in the progress notched by the nation in all areas such as governance, politics, economics, social, media, cultural and so on. This is seen in growth and development of social infrastructure, physical infrastructure and human capital development. It is also manifested in services, media and in areas like marketing communication and advertising. This transformation can be seen in the gradual movement from analogue technologies to the digital technologies in almost all sectors of the country especially the advertising industry.

Internet, information and communication technologies entrance into Nigerian advertising had metamorphosed the process of marketing products, ideas and services. Agencies and clients are becoming aware of the need and impact of online advertising and are beginning to give advice to their clients on advertising on the online platforms like Twitter, Facebook, Yahoo. Agencies now have the opportunity of educating clients based on their demands on the right platform to use in placing their advertising campaigns and how to use them. Access to the Internet and other mobile applications had changed consumers' behaviour towards the traditional media. They now gravitate more to their smartphones, tablets, I-Pads, virtual platforms, YouTube and the likes because of their ubiquity in present times..

Winer (2008, p.5) avers that with the emergence of the Internet or technological devices such as computers, digital cameras, cell phones etc, marketers today are talking of creating "experiences" for their customers in attempts to differentiate their products and services from competitors and this are made easier through the new media. As a result, marketers begin to look for ways to interact more with their customers as well as to allow their customers to interact more with them. Also markets are becoming fragmented with the traditional demographic breakdowns become less and less useful hence marketers are more interested in "behavioural targeting," that is, focusing on developing personalized messages based on what people are doing on the Web for example tracking "clickstreams" or the paths that people take when surfing the Web, or where they are by their personal GPS "system" and the cell phone and not what we want people to do on the web.

These changes have impacted marketers in that the increase in the number of "alternative" media and the increased competition in many markets has fragmented markets, shifted power in the transaction to buyers, and resulted in less TV viewing. These changes in the

marketplace are not simply a U.S. phenomena. The same trends are occurring in other countries. For example, in India, people of undergraduate age are just as familiar with and use social networking and other similar media just as frequently as their counterparts in Western countries like China, Singapore, Korea, and Japan. However, Nigeria is not left behind as children, adolescents, youths and workers are avid users of the new media for social interaction and identity creation. In consonance to this (Boyd and Heer, 2006, p.518) found out that the presentation of self is determined and given structure by the identities of those with whom one is connected. Hence one's identity can be known by those one identifies with on the new media just like the saying 'show me your friend and I will tell you who you are'.

LITERATURE REVIEW

In its primitive form advertising can be traced back to ancient Egyptian's bricklayers who branded their bricks (Farquahar, 1989) as an advertising medium since bricks were limited at the time. The advent of new printing technologies rise of literacy rates and consumer affluence, and other factors, made possible mass circulation of newspapers, magazines and mass audience radio programmes. Not quite long the first modern advertising agency in the U.S., Walter Thompson was created (Patrick, 1993). At first the new agency served only as a media buying service, but customers demand dictated expansion into a full line of advertising services. Advertising reached its prime in the 1950s, sparked by the popularity of a small number of major networks, which made delivery of mass audience relatively easy. Mass media created a mass audience for mass-produced products. Popular culture celebrated the advertising executive as the epitome of the post-war marketing executive. However, by 1985, the signs of advertising decline have been inescapable due to advance in technology. The mass media could no longer deliver a mass audience. At the same time, consumers demanded more customization in their products (of which "service" was a major component) or flexibly manufactured hard goods.

In Nigeria the early years heralded the transmission of advertising messages through traditional media like the town crier, gongs and songs. During the colonial pre-independent years, the Europeans in Nigeria handled advertising. Ozoh (1998, p.67) posits that the Europeans advertising offices in Nigeria served as extensions of their multinational companies around West Africa. After independence, the local practitioners took over from their European counterparts as a result of the Indigenization Decree of 1974. Thereafter, the entire advertising business was handled by West African Publicity Limited which later split to Lintas Limited handling the main advertising concerns and Afro Media handling outdoor advertising. However, the improvement of new technologies at home and workplace, made advertising messages to be transmitted on the Internet leading to the fragmentation of the mass media audiences who receive advertising messages through the Internet. This fragmentation resulted into a convergence between a number of industries and technologies: computers (both hardware and software), telecommunications, information services, consumer electronics, and content providers such as entertainment, news, and educational services creating a new media market.

THEORETICAL FRAMEWORK

Technological determinism.

This is a theory propounded by Marshal McLuhan in 1964, which means that inventions in technology invariably cause cultural change. He is of the opinion that the medium is the message meaning the way we live is largely a function of the way we process information. He is saying that we are living in a new age of technology that has never been experienced before and the new media is changing the way people think, act, and feel hence people react to and accommodate technological change. This he said had led to the creation of a new

world in societies by advances in information technology called the global village. He sees the medium that is the channels of communication as the primary cause of cultural change, which in this case is the online platform or Internet and posits that the message performs a subordinate role. This means that the new media had created a new platform for information dissemination and had given room for immediacy and interaction between buyers and sellers of information.

Uses and gratification

This is a theory by Blumler and Katz's, which suggests that media users play an active role in choosing and using the media. Users take an active part in the communication process and are goal oriented in their media use. The theorists say that a media user seeks out a media source that best fulfils the needs of the user. Uses and gratifications assume that the user has alternate choices to satisfy their needs. This theory was used for this study to show that the users of online technologies make use of these media as they want and as they like as long as it fulfils their need for information. This is why they seek for information out of the numerous information available to them, the ones they need and also determine how it is to be treated not as the producer of such information did intend it.

PROBLEM

Communication messages had been transferred from one place to the other through the traditional media of newspapers, radio and television and this had led to problems of delayed feedback over the years but with the world becoming digitized comes the emergence of new technologies and media. A new world had been created where the new media calls the shot while the traditional media follows. This paper examines the effect or impact of the new media through digital advertising on national transformation. It then examines the ubiquity of digital advertising, its characteristics, functions and contributions to national development while concluding by exploring the state of such advertising in Nigeria and suggests what needs to be done to actualise and maximise its use in national development.

NEW MEDIA FORMS

New media technologies take on different forms namely Internet forums, web logs, social networks, microblogging, pictures, videos and so on. In confirmation of this, Kaplan and Haenlein (2010, p.20) posits that there are six different types of social media namely Collaborative projects e.g. Wikipedia, blogs and micro blogs e.g. Twitter, Content Communities e.g. Youtube, social networking sites e.g. Facebook, Virtual game worlds e.g. world of witchcraft and Virtual social network e.g. Second life. Taking this further, Lon Safko and David K. Brake (2009) categorised new media technologies to include:

- **Social networks**– these sites are used to connect with other people and to share information. Popular tools include Facebook, Friendster, LinkedIn, Ning, Orkut, Bebo, KickApps, MOLI, Fast Pitch! And Plaxo.
- **“Publish”** – These sites disseminate information, for instance, data about your company or products. Publishing sites include Type Pad, Blogger, Wikipedia and Joomla.
- **“Photo sharing”** – Popular photo-posting tools include Radar.net, SmugMug, Zoomr, Flickr, Picasa, Photobucket and Twitxr. Flickr lets users share visual content easily.
- **“Audio”** –Some firms communicate with their employees and customers via audio files over the Web hence they use popular tools include iTunes, Rhapsody and Podbean.

- **“Video”** – Popular tools include YouTube, Metacafe, Hulu, Viddler and Google Video. YouTube, an Internet sensation, enables users to share their videos with the world.
- **“Livecasting”** – Some tools for broadcasting in real time include SHOUTcast, BlogTalkRadio, TalkShoe, Justin.tv and Live365.
- **“Gaming”** – Similar to virtual worlds, these online environments feature competitive games like World of Warcraft, Entropia Universe or Halo3. In Ever Quest, a “three dimensional...multiplayer online role-playing game,” users interact in specific roles. Firms like Pizza Hut have used Ever Quest as a “viral marketing tool.”
- **“Productivity applications”** – This category is a catchall for business productivity tools, such as Read Notify, Zoho, Zoomerang, Constant Contact and Eventful.
- **“Rich site summary” (RSS)** – This tool keeps you updated on the most current information from Web sites you select. Popular tools include RSS 2.0, Atom and PingShot. One RSS, FeedBurner, is an “audience engagement” and publicity application that enables companies to promote their online content. It provides useful data about visitors to your blog and their reactions to it.
- **“Search”** – These tools help you find what you want on the Web. Popular versions include Technorati, Red lasso, Every Zing, Meta Tube, Yahoo! Search and Ice Rocket. Google Search is the Internet’s most popular search application (130 million U.S. users in May, 2008). It lets companies link their Web pages and targeted online ads to pages that searchers select and visit often.
- **“Mobile”** – Many business people see their cellphones as their most crucial technological devices. New media cellphone tools include Jumbuck, CallWave, air G, Jott and Brightkite. Jott, a “voice transcription service,” lets you call a number from your cell to transcribe a note to anyone, including yourself. It is an effortless way to remind you of upcoming tasks and meetings. Call Wave offers a lot of cell phone tools, like voicemail-to-text, “synchronized video,” audio conferences and e-mail faxes.
- **“Interpersonal”** – These Web sites help people communicate with each other. They include WebEx, iChat, Meebo, Acrobat Connect and Skype. Go To Meeting is a popular online meeting application that also offers VoIP (voice over internet protocol), “meeting recording” and multiple-user screen sharing, which is great for slide shows.

NEW MEDIA CHARACTERISTICS

New media enjoys five distinctive characteristics: digitality, convergency, interactivity, hypertextuality, and virtuality (Chen & Zhang, 2010; Lister, Dovery, Giddings, Grant, & Kelly, 2009 and Flew, 2005.). New media or digital media dematerializes media text by converting data from analogue into digital form, which allows all kind of mathematical operations. It also makes it possible for large amount of information to be retrieved, manipulated, and stored in a very limited space. The new media also converges the forms and functions of information, media, electronic communication, and electronic computing. The convergence power of new media can be easily demonstrated by the emergence of the Internet in terms of its powerful functions embedded in computer information technologies and broadband communication networks. This also leads to the industry convergence displayed by the constant merger of big media companies and the product and service convergence evidenced by the successful connection and combination of media’s material, product, and service in the media industry.

Third, the interactive function of new media, i.e., between users and the system regarding the use of information resources, provides users a great freedom in producing and reproducing the content and form of the information during the interaction. In addition, the interactivity of new media makes the interaction among different networks and the retrieving of information through different operational systems, both available and convenient. The freedom in controlling the information endows new media a great power in the process of human communication.

Fourth, the hypertextuality of new media brings forth a global network centre in which information can freely move around and spontaneously interconnect. This global network phenomenon has begun to rebuild a new life experience for human beings, which in turn will lead the transformation of economic activities, cultural patterns, interactional styles, and other aspects of human society (Castells, 2000). Finally, the cyberspace formed by new media allows people to generate virtual experience and reality. The invisible cyberspace not only induces a gap between reality and virtuality, but also effectuates the free alternation of one's gender, personality, appearance, and occupation. The formation of virtual community that crosses all the boundaries of human society definitely will challenge the way we perceive reality and have traditionally defined identity. (Jones, 1995).

NEW MEDIA FUNCTIONS

Businesses use the new media to promote products or services with 'word-of-mouth' advertising e.g. Facebook enables Internet users to connect via numerous clever applications and make suggestions to their friends and acquaintances on the platform. Facebook is also useful for contacts within organizations. MySpace, one of the first, most popular social network sites, grows daily by 230,000 new users working in 15 different languages. It is great for reaching targeted groups, and features numerous popular applications, including blogs, instant messaging and widgets, which are on-screen tools, such as clocks and weather reports. LinkedIn, a primary business network, has 24 million professionals in 150 industries. It's a good source of job listings and candidates' résumés. The new media encourages creativity as customers are allowed to publish their own materials on any topic. e.g. Blogger available in 41 languages enables the instantaneous sharing of all types of information in multiple formats, including video, making it a superior marketing tool. Millions of bloggers use Word Press, which employs "open-source software" to let users develop their own blogs or Web sites. Multiple authors can co-develop blogs on Word Press, which offers 60 templates to simplify Web site construction.

The new media aids the sharing of pictures or visual images e.g. Flickr lets users share visual content. People at different locations can work together to organize photos and videos, so this is a great application for families and friends, as well as businesses that want to distribute visual images. Flickr account holders can upload 100 megabits of visuals monthly. It has more than three million users. Through Podcast.com marketers reach targeted consumers and professionals can use them to showcase their expertise. One is also enabled to podcast (personal on demand broadcast) digital audio or video files to selected users. Businesses also use YouTube to market products and services. Highly versatile, YouTube even works with the Apple iPhone. For example, Brightcove, an online video publishing service, allows companies to display films to build brand awareness and disseminate recruitment information.

It is also an effective platform for distance learning e.g. the NOUN programme where students learn via materials downloaded from the Internet. The new media is used for quick

communication. Businesses use Twitter to communicate quickly with employees and to conduct basic market research by evaluating users' comments and reactions. Through BlogTalkRadio, users can create and broadcast their own radio shows over the Internet. This service offers numerous professional features, including functions that enable users to field telephone calls during their broadcasts and to distribute MP3s (digital audio files using data compression). It's an excellent way to disseminate audio content, such as product information, educational materials and public relations fact sheets. Business meetings can even be broadcast. The new media allows people to interact, for example, Second Life enables users, called "residents," to congregate and interact in the guise of avatars (virtual alter egos in various forms, from humans to robots, animals or mythical creatures). Second Life has some 15 million accounts registered worldwide. Its participants' interactions often involve trading. Entrepreneurs can use Second Life to promote products or develop online businesses. Companies that are active on Second Life (e.g., CNN, Coca-Cola, Dell and Disney) often have 24-hour staff to voice the avatars that greet you in their Second Life stores. The American Cancer Society raised more than "200,000 real dollars" in this virtual world, where John Wiley & Sons publishing has a bookstore you can visit. Sun Microsystems uses it to run a "virtual campus" for staff training. Often, 70,000 users are logged on simultaneously.

Acteva helps organizations manage events. Its software generates attendee lists, name badges and other materials. With Google Docs, users can collaborate on the development and editing of documents, including spreadsheets. It features the versatility of a commercial suite of office programs, and has surveying and polling capacity. The free desktop application MSGTAG tells you when others receive and view e-mails you've sent. The TiddlyWiki aggregator works well for collaborative online ventures, like project management, and for publication of user manuals and product tutorials. Digg lets users relay Internet content and Web site information to help keep employees, salespeople and clients up-to-date with Web-based information. Yelp is a popular rating service for retailers, restaurants and other businesses that need public feedback. The new media has also made people to be current about events happening around them. An example is the TiddlyWiki aggregator that works well for collaborative online ventures, like project management, and for publication of user manuals and product tutorials. Digg lets users relay Internet content and Web site information to help keep employees, salespeople and clients up-to-date with Web-based information. Yelp is a popular rating service for retailers, restaurants and other businesses that need public feedback. Kotler P & Armstrong G (2010, p.529) enumerated the following as the major online marketing domains namely Business to Consumer (B2C), Business to Business (B2B), Consumer to Consumer (C2C) Consumer to Business (C2B) and Business to Government (B2G).

DIGITAL ADVERTISING'S CONTRIBUTION TO NATIONAL DEVELOPMENT.

Tax Breaks for Conducting Business Online

Many merchants using online advertising can save more in taxes than if they sell using traditional retail or a physical storefront. Online merchants can also write-off certain portions of utilities like vehicles, office equipments.

CHEAPER THAN PRINT ADVERTISING

Digital advertising is more cost effective than traditional advertising particularly for small businesses because it is much quicker to update and maintain digital marketing campaigns, especially as technology continues to improve. By conducting business Online and using the proven form of e-Commerce marketing, merchants have the potential to generate far more in

Return On Investment (ROI) with less spending than they could ever hope to expect from costly print advertising campaigns.

INTERACTIVE ADS OR MARKETING CAMPAIGNS

One benefit to online advertising is the merchant's ability to develop and improve a number of interactive advertising or marketing campaigns designed to reach out and engage shoppers. Videos, flash, presentations, graphics, moving animations; they can all be used as interactive devices to help entice shoppers to drop in and shop around for the products or services offered.

Flexible Ad or Marketing Campaigns

With digital advertising, merchants can develop more creative marketing ideas and launch them using the power and flexibility of the Web for both delivery and functionality.

Builds Lasting Customer Relationships

Technology and the reach of the Web have made it easier for online merchants to form long lasting relationships. That, combined with tools that make customer management and servicing more efficient, using up less time, has also sparked more creative ways to market to customers Online. Online can have a direct influence on how customers view the overall brand or product. If done correctly, it will help build lasting customer relationships, which in itself has benefits.

HELPS BUILD BRAND CREDIBILITY

Digital advertising helps in increasing brand awareness and credibility among shoppers looking for what you sell. With the ever-expanding list of online marketing channels, it's getting easier for sellers to spread the word and saturate certain areas of the Web with their products and brand. As shoppers scour the Web for information about a product that interests them, they notice the companies and brands that they see, many take note and store them away for next time. By utilizing the proper marketing channels in your niche, you may very well find yourself building long standing credibility and brand awareness among shoppers and existing customers. Better brand awareness and credibility also helps to increase word of mouth buzz.

GATHERS FEEDBACK FROM CUSTOMERS

Having a website that displays and offers products for sale is a great way to attract customers, make money and grow a business where you can get feedback about your site. Some digital advertising tools are meant to gather information or feedback from customers about how the business can improve. Conducting business online and offering polls, questionnaires and feedback forms is a great way to get direct input from existing customers and even shoppers who haven't yet purchased.

CONDUCT CHEAP MARKET RESEARCH

Many online sellers use their site, customers and competitors as a way to conduct market research surrounding a particular product or one in which they hope to introduce in the future. It's much easier to catch a glimpse into a particular selling market using the resources and data from online businesses, including your own. Trying to conduct market research for a brick and mortar store can be difficult and may take much time to plan and execute. With the availability of data on the Web and through the use of new technologies offered on the Web, online sellers are able to conduct market or product research quickly, efficiently and without hassle.

LOWER STARTUP COSTS/ INCREASE EFFICIENCY

Many times it is much cheaper and takes less startup capital to open up an e-Commerce business compared to a retail store location or chain. By starting out the business with less investment capital or startup funds, it can help to increase efficiency and leaves more funds available for actually marketing the brand or products.

INCREASES GROWTH OR OPPORTUNITY POTENTIAL

Marketing Online has the potential to increase store growth at a much quicker rate than traditional marketing or retail business. Digital advertising can also generate more opportunities for any business no matter the products you sell and potentially at a much quicker rate. Major media networks may pick up on you via online channels and report your business to consumers, while you may not have ended up on their radar had you only sold offline. The Online market offers a much fairer playing field and opens up doors that otherwise might be closed off to a retailer. It allows nearly any business, no matter their size to grow and have the same potential opportunities as larger sellers do.

Global Market Reach

The World Wide Web spans across and reaches exactly the world. With the reach and technology offered through digital advertising, sellers have the ability to target consumers anywhere in the world, even smaller sections or local regions. Online marketing initiatives are deployed in a variety of ways, to span globally and having this type of reach opens up the possibility that customers can find the business from any where they reside and buy from them without having to travel to another location having global market reach means potentially having customers worldwide, without the limitations of traditional media or geographic boundaries. Finally, digital advertising communicates directly to your niche/target market when executed properly and it is easy to measure the success of your campaign.

THE STATE OF ADVERTISING IN NIGERIA

On the Nigerian landscape, marketers and their clients are becoming aware of the need and underlying effects of online marketing. The trend has started to build where agencies ignorantly advise clients to use banner ads and display ads for campaign on Facebook, Yahoo, local news and entertainment sites, as opposed to looking critically at what the clients want to achieve and advising them on all the various digital marketing platforms available and what each of them can achieve and how to use them. Azoto (2015, p.5) The Nigerian Communication Communications (NCC) Nigeria has recorded over 75 million active mobile phone lines as at March 2010. By 2012, this had increased by about 69.01%. 84% of urban dwellers have access to mobile phones while only 58.5% of rural dwellers have access to mobile phones, about 3 billion advertising impressions are served in Nigeria every month which amounts to more than 1140 impressions every second. Also, media consumption is changing too with the rise of convergent technology. Social media is growing while the number of consumers online is growing rapidly because the Internet makes their lifestyle easier as they tend to shop around more because they have access to several other points of information and they use the Internet to research before committing to purchase. Many are early adopters of technology and do have a world view. Presently, so many things like phone, tablets, applications, games consoles, websites and the rest take people's attention. All of a sudden there are so many places people are spending their time and to capture attention, you no longer need a good product, you need something that is either exceptional or meets a definite need of the public. Consumer attention span is also reducing and there is a jostling for space between different media. There is a bigger measure of control in the online space. And there is a more accurate measure of who is interacting, engaging with and viewing your adverts. Companies also want to have a presence in as many areas as possible hence the need for digital advertising.

Digital advertising is also a lot more customisable and can fit a wider range of budgets. People prefer a sustained presence online. Another increasingly important aspect of digital advertising is feedback to ensure that there is a way to measure the reach of your adverts and have an idea of whom your adverts are impacting. Digital advertising gives room for audience participation to get the potential customer excited about using your product or service. The current 'share a coke' campaign being carried out by the Coca-Cola Company has risen to become a global phenomenon. There is a need for content generators to constantly try to create a need for participation at the end of every advert.

STATE OF DIGITAL MARKETING IN NIGERIA

The Nigerian Digital space has witnessed tremendous growth, people now turn to their digital devices for a lot of activities; information consumption, communication, socialisation, entertainment etc.

	Statistics	Note
Total Population	183.5 Million	
Active Internet Users	70.3 Million	Penetration: 38 %
Active Social Media Accounts	13.6 Million	Penetration: 7%
Mobile Connections	138 Million	Vs Population 75%
Active Mobile Social Accounts	12.4 Million	Penetration: 12.4%

Table 1: People on digital platforms in Nigeria (NCC, 2012)

With the projected growth of Internet penetration in the country, there is the need for digital marketing campaigns to be carefully planned and executed in line with the objectives of key performing indices (KPI) clearly spelt out. It is of utmost importance to develop an effective Internet marketing strategy by pondering over what the company is trying to achieve by answering questions such as:

Does the company want to communicate news? Is it to build a corporate identity? Is it to distribute marketing information? Does it want to provide a live information source? Does the brand want consumers to purchase/find best buys? Does the brand want to sell, auction, or perhaps get people to call? On the basis of these would benefits be derived from online advertising?

Against the above, it is therefore necessary to highlights benefits to both agencies and brands respectively. Digital advertising has led to consumer involvement and interaction, brand engagement through content creation, media accountability, measurability and effectiveness and customer relationship management. Digital advertising has led to effective advertising approach which creates synergy between diverse media, higher margins – increased innovation and development of unique services and tools, more robust planning platform – using strengths of traditional media to drive awareness to digital touch points, creates a point of differentiation amidst other agencies. It is therefore noteworthy to state that online marketing for Nigerian brands should be about engagement; a reason to notice, a reason to stay with your consumer because Nigerian brands cannot ignore the power of the Internet. The first step is to consider the brand's Internet strategy by identifying the overall goals of the business, as this is the case in all business and strategy planning. Once you have planned your overall strategic goals, you need to decide how your online Internet strategy can complement your off-line plans. An Internet marketing strategy should include: specific business goals, objectives for internet activity, and a programme of actions that will achieve your business goals, benchmarks for measuring achievement, a business model – what it will cost and what it will achieve.

However, here are some of the issues facing digital advertising in Nigeria. Lack of Internet connection and most of the people in the rural areas are not connected or do not have Internet connections hence they are cut off from it. Low-speed Internet connections are another barrier. Also, if companies build large or over-complicated websites, individuals connected to the Internet via dial-up connections or mobile devices experience significant delays in content delivery. Another issue is insufficient ability to measure impact, lack of internal capability, and difficulty convincing senior management about the need for digital advertising. There is scepticism on making online payment hence there are late adopters of new technology. In Nigeria, we have very few specialized digital marketing agencies/consultants that do offer professional services, and this affects the output and results got from test campaigns thereby making organizations think of online advertising and interactive marketing as ineffective.

CONCLUSION

The fact that many Nigerians, most especially those in urban areas have adopted the Internet as part of daily life is not in doubt and wherever people congregate, you have markets developing and where you have markets developing you have advertising of products and services. In Nigeria, this has led to evolution of platforms like VConnect, OLX, Vanguard online, Naira land and Linda Ikeji's Blog. Advertising online is far more effective than traditional forms of marketing because you can target a particular demography, country, search keyword or phrases. It lets you reach new customers and grow your business. It's unique because you can customize your budget, where, when your ads appear; determine the budget that you can afford while measuring the ROI of your Ads. However, in order to achieve optimum utilisation of digital advertising in Nigeria, there is the need to bridge the digital divide between rural and urban Nigerians. In addition, there is the need to build a viable and all encompassing broadband infrastructure round the country. Educationally, the areas of multimedia, digital advertising and new media need to be infused into our educational level than present level. Also, there is the need for government to reduce tariffs on computer hardwares and other technological devices to a level that they are freely available and cheap to acquire by Nigerians. Furthermore there is the need to encourage the growth of home made software and apps by Nigerians that will power digital advertising. Researches are also to be conducted on the state of digital advertising in Nigeria and solutions sought on how digital advertising can be well utilised in the country.

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CONTEMPORARY LINGUISTIC RESEARCH AND NATIONAL TRANSFORMATION: AN APPRAISAL OF THE PRAGMA-CRAFTING THEORY

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ABSTRACT

In all countries of the world, language is an instrument of reform; it transforms society in diverse ways and in various facets. This paper engages the roles of language in national development which is not something any country wishes to ignore, particularly in this age of globalization, technological development, scientific breakthrough and challenges in the areas of insecurity, economic recession, outbreak of epidemics and a host of other predicaments. The paper is not a textual analysis of discourse using the Pragma-crafting Theory. Rather, it investigates how notions in the theory can be instrumental to national transformation or progress across certain facets of national life. A reactionary product of the Pragmatic Act Theory by Jacob Mey, the Pragma-crafting Theory is a very recent theoretical framework for the analysis of discourses across genres. Therefore, it is suitable for the elucidation of the functional potency of language in societal transformation. This study finds out conclusively, that language takes goal-driven dimensions as it informs, persuades and mobilizes society towards a common goal.

Keywords: Jacob Mey, the Pragma-crafting Theory, linguistic theory, nation-building,

1. INTRODUCTION

Indeed, language is vehicular in all human societies, especially when its potentials are fully explored. There is no doubt that language has both positive and negative potentials. However, in this paper, the positive connotations of language imply the roles of language in transforming society for good. To investigate the functional potency of language in social reform and societal development, I hinge on the Pragma-crafting Theory (cf. Acheoah 2015). The thrust of this paper is to investigate the relevance and applicability of the Pragma-crafting Theory in the development of any nation, of which Nigeria is not an exception. It is common knowledge that linguistic theories such as the Pragma-crafting Theory are theoretical underpinnings for the investigation of sociolinguistic phenomena, apart from being useful in the analysis of discourses of various kinds: cartoons, advertisements, drama, poetry, the novel, etc. In this paper, I examine how language fosters national development through its roles in two spheres of national life: advertising (where language is used to influence consumption patterns and standard of living; and religion (where language is used as an instrument of rhetoric towards transforming human beings and the societies in which they live.

2. THEORETICAL FRAMEWORK: THE PRAGMA-CRAFTING THEORY

The Pragma-crafting Theory shows that language use is systematic and can be accounted for. The super-ordinate concept which anchors all other concepts in the Theory is labeled “P-crafting Features” (Pragma-crafting Features). According to Acheoah, every Pragma-crafting (P-crafting) stage in communication involves illocrafting, uptake and sequel. Therefore, P-crafting is a super-ordinate pragmatic act which produces linguistic and extra-linguistic elements of communication. At different stages of a communicative event, there is a candidate for inference. At every such stage, the interactive and non-interactive participants explore P-crafting Features (inference features): indexicals (INDXLs); Shared Macro-

knowledge (SMK); Shared Contextual Knowledge (SCK); Shared Knowledge of Emergent Context (SKEC) Geoimplicatures (GIs); Linguistic Implicatures (LIs); Contextual Presuppositions (CPs); Behavioural Implicatures (BIs), Pragmdeviants (PDs), Object Referred (OR) and Operative Language (OL) to ascertain messages and sequels. Figure 1 below shows the notions captured by the Theory as contained in Acheoah (2015:23):

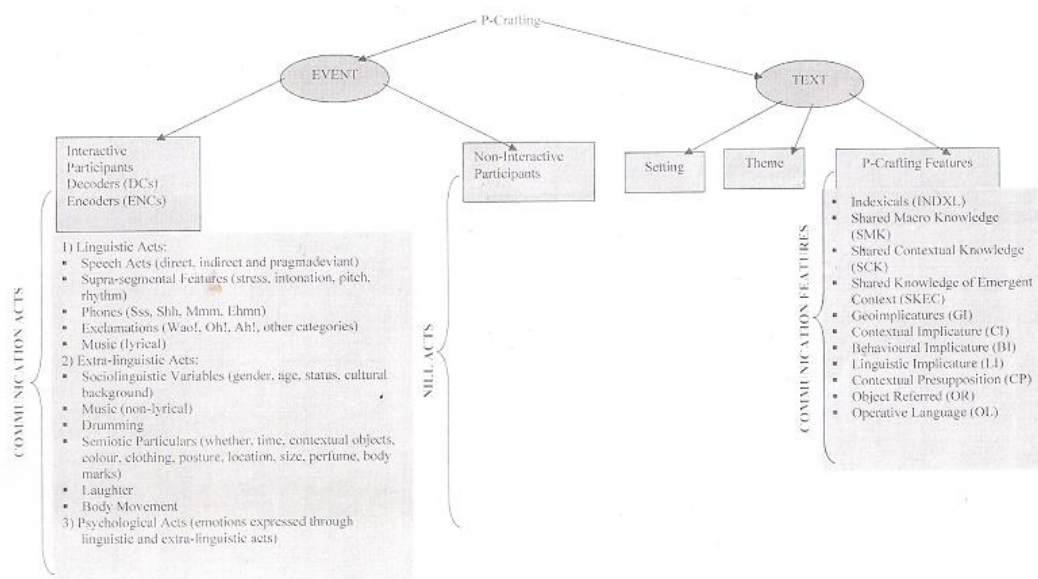


Figure 1: Structure of Pragma-crafting

Figure 1: Structure and Notions in the Pragma-crafting Theory

Concepts in the Pragma-crafting Theory that are relevant to this study are briefly explained below. See Acheoah (2015) for detailed discussion of the concepts:

- Shared Macro-knowledge (SMK)

This is the amalgam of participants' shared knowledge as touching states-of-affairs in the larger society.

- Shared Contextual knowledge (SCK)

This is the background knowledge of participants of a particular discourse; it fosters effective communication.

- Emergent Context (EC)

An emergent context is any situation that suddenly emerges in society or on-going discourse. It redirects how language is used and interpreted. It also determines the effects of language (sequels/perlocutionary acts) in communication; see Austin (1962) for insights on speech act classification into locutionary, illocutionary and perlocutionary acts.

- Geoimplicatures (GIs)

The term is coined from two words: "geographical" and "implicature". It refers to practices that have geographical restriction in terms of people, and not just in terms of physical boundaries.

- Linguistic Implicatures (LIs)

Meanings implied through linguistic elements (language) of Text are known as linguistic implicatures. See Grice (1975) for tips on conventional implicatures.

- Behavioural Implicature (BIs)

This is any meaning implied through extra-linguistic and psychological acts.

- Contextual Presuppositions (CP)

These are products of shared contextual knowledge (SCK).

3. FUNCTIONS OF LANGUAGE IN NATION-BUILDING: AN APPRAISAL OF THE PRAGMA-CRAFTING THEORY

In this section, I examine the roles and implications of language in nation-building via an appraisal of the Pragma-crafting Theory.

3.1 Advertising

I postulate that advertising is instrumental in nation-building because:

- a) People's health flourish for better productivity when they are convinced via advertisers' linguistic strategies to use certain efficacious products;
- b) Death rate is decreased when the people of a country are sensitized via pragmatics of advertising to use food products, drugs and other goods;
- c) Through advertising business activities are made to flourish in society.

The Pragma-crafting Theory shows that there are different categories of shared knowledge which advertisers explore in making goods attractive to prospective buyers. These categories of shared knowledge include: Shared Knowledge of Emergent Context (SKEC) and Shared Macro-knowledge (SMK). Marketing products effectively necessitates linguistic devices which are essentially pragma-rhetorical. For example, because advertisers already know that society loves celebrities in different spheres of life, they use pictures of such celebrities in products so that those who really aspire to be great, can use such products. Advertisers who declare: "Harp bear for happiness" simply explore what the Pragma-crafting Theory labels "Shared Macro-knowledge". When a person suddenly becomes the latest musical celebrity in society (Emergent Context), and his/her picture is used to advertise or market certain products, then Shared Knowledge of Emergent Context (SKEC) is being explored by such advertisers to market the products. For more tips on the implications of shared knowledge in discourse, see Bach and Harnish (1979), Searle (1969) and Allan (1986)¹. Thus, the Pragma-crafting Theory recommends that rhetoric is potent in nation-building when recent happenings are "keyed into" in language use. The Theory also proposes the use of non-verbal elements to amplify verbal elements in communication. The concept, "Extra-linguistic Acts" is used in the Theory to accentuate the communicative potency of paralinguistic and non-verbal elements of communication. Acheoah submits that in the frame of the Pragma-crafting Theory, DCs (Decoders) imply that ENC (Encoders) know that certain VEs (Verbal Elements) & NVEs (Non-verbal Elements) are deduced as OR (Object Referred) in OL (Operative Language). For example, knowing that certain products are based on age or status, advertisers should be able to use non-verbal elements of communication skillfully. Extra-linguistic acts in the Pragma-crafting Theory include: Sociolinguistic Variables (age, cultural background, social status/class, gender, relationship); Drumming; Semiotic Particulars (weather, time, contextual object (CO), colour, clothing, posture, perfume, location/position, size, body mark and silence); Laughter (it is capable of conveying expected emotions of solidarity, peace, approval, admiration, etc.) and Body Movements. According to Acheoah, not all body movements are gestures. Like gestures, body movement can reveal psychological states of participants, besides being able to achieve communicative goals. Television and radio adverts employ extra-linguistic acts to market products for the overall good of society. The Pragma-crafting Theory demonstrates that language use should be a thing of credit, rather than being incidental². I dislodge the common view that advertisers use language to perform the sole role of deceiving their audience by making them buy low quality products. If this is sometimes the case, it is not always the case.

The Pragma-crafting Theory interestingly recommends that speakers of any language should understand that by presupposing that their audience is aware of OR (Object Referred), they can articulate messages better, faster and broader. Indeed, there are categories of presuppositions and implicatures in the Pragma-crafting Theory that capture language use in consumer adverts. To articulate illocutionary goals effectively, advertisers make use of:

- a) Linguistic Implicatures (LIs) i.e. meanings implied through linguistic elements (language) of Text.
- b) Behavioural Implicature (BIs) i.e. meanings implied through extra-linguistic and psychological acts.
- c) Contextual Presuppositions (CP) i.e. products of Shared Contextual Knowledge (SCK); in a specific discourse (micro context), participants deduce meanings from verbal and non-verbal data limited to the participants themselves.

3.2 Religion

To understand the roles of religion in nation-building, the following postulations are crucial:

- a) Sustainable development is impossible in a nation driven by moral decadence;
- b) Religion is an instrument of social control;
- c) Religion preserves ethics and values of society for common good.

The Pragmatic use of language in religious discourses is captured by the Pragma-crafting Theory. Acheoah (2013) investigates language use in religious discourses and submits that illocutionary forces (speech acts) are intentionally directed towards encoders' communicative intentions. Speakers (religious leaders such as Pastors, Reverends, Bishops, etc.) direct utterances towards persuasion, relying on presuppositions and mutual knowledge they have with their audience. Linguistic elements in religious discourses have obvious communicative potency. Such elements help preachers establish substantive relationship with their congregation. Such preachers select speech acts and vocabulary items appropriately. Therefore, religious discourses restore people to rectitude, correct society, foster national cohesion and progress. The Pragma-crafting Theory shows that Contextual Implicatures (CIs) and Linguistic Implicatures (LIs) facilitate the decoding of covert and overt messages in religious speeches. Religious speakers exploit natural human tendencies by situating their messages in varied social, pragmatic and psychological contexts.

4. DISCUSSIONS AND CONCLUSION

Acheoah (2012) submits that speakers use language (as evident in commercial adverts) to communicate their individual thoughts and feelings as well as psychological experience. The advertiser, for example, has personal feelings about the taste of the public (he may even have sound knowledge of it) and the desire of the consumer (since he has assumed that the consumer is a rational thinker); a rational thinker reads advertisement contents on different products and decide which is preferable despite his background knowledge of how deceptive language of adverts may be. The categories of implicatures and presuppositions in the Pragma-crafting Theory are germane in the explanation of psychological issues in the use of language for nation-building. For example, the presuppositions that the public are aware of the deceptive linguistic and paralinguistic dimensions which some adverts take, does not mean that advertisers will use destructive adjectives to market their products. Doing so will mean mere publicity rather than advertisement.

Language is an instrument of nation-building. See Adegbija (2004), Adegoju (2009) and Settee (2008) for illuminating perspectives on the roles of language in society. However, the roles and dimensions of language in promoting national life is facet-driven, that is, choice of words, speech act selection and sequencing depends on communicative goals of speakers who enchant with language in various discourse domains.

NOTES

1. Searle's theory on "direction of fit", concerns the match between our words and the world. Therefore, it shows that participants of discourse often have common background knowledge

which facilitates the encoding and decoding of linguistic and extra-linguistic elements of communication.

Bach and Harnish use the concept Communicative Presumption (CP) to capture shared knowledge between or among participants of discourse.

Allan Keith's term "world-spoken-of" explains that indeed, communicative elements are informed by states-of-affairs which participants of discourse are already aware of; Allan (1986) contends that communication has failed if the audience cannot locate speakers' or writers' world-spoken-of, that is, the societal phenomena they address. Therefore, in adverts and religious discourses, the selection of linguistic and extra-linguistic elements of communication is message-driven.

2. This position corroborates Fowler (1981) who opines that linguistic structure is not arbitrary, but is determined and motivated by the functions it performs.

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HEAD WITHOUT HEART; APPRAISING *ALTINE'S WRATH* AND *HANDS THAT CRUSH STONES*

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ABSTRACT

Deprived women are the victim of circumstances perpetrated by egocentric men left at the mercy of a patriarchal order. In pursuit of a phallo-centric propagation which leaves women at the receiving end, dramatic literature and the theatre postulates a stance antithetical to the woman's wellbeing. Such ill-conceived portrayal that reiterates and berates woman as being perpetually helpless results in the damage of the female psyche and leaves them conditioned detrimentally at the man's expense. Using the case study approach, this study asserts that portrayal of women in their helpless state makes matters worse for the coping gender as Osofisan's *Altine's Wrath* and Eze-igbo's *Hands that Crush Stones* posit.

INTRODUCTION

One thing that is notable about women and the way they are portrayed in dramatic texts is that most of them are written by men. Scholarly records bear witness to the fact that until the 17th century women were not allowed to appear on stage. All female roles were played by young male actors. According to Felner (51) (cited in Wilson 2007) it is stated that "In Athenian society, where women were excluded from all political roles and were not even considered citizens, it followed logically that they could not participate in the creative processes of theatre". If women could not participate in the creative processes of theatre as insinuated above, it follows that all forms of portrayal of women did not come from a woman's perspective. As a matter of fact, from Greek theatre era until the 20th century no notable female dramatist of the theatre can be accounted for. Hence, the society in which the woman lives, headed by a man who often times does not regard her as an equal, given the opportunity to showcase the woman's potential will turn out biased. However, one thing is certain and that is the fact that whatever is portrayed in drama and theatre holds an iota of truth. When playwrights, as they often do portray women as suffering in play texts or victims of societal laws and subject of an injurious act, it only mirrors the obvious to the effect that women are at the receiving end.

Allen (63) submits that:

Theatre's duality, its mirroring quality, offers direct immediate reflection. Shakespeare believed that theatre's purpose was just this: to mirror life, throw back an image so we can 'see 'ourselves'. Theatre has immediacy, present vitality and is ephemeral. It is limited in size, a living art form, provocative, entertaining and truly magical with its 'active construction of meaning in regard to human experience.

Theatre's duality as said above is its ability to reproduce the tensions inherent in our world. Therefore, Queen Jocasta finds herself in a situation orchestrated by divine and patriarchal forces. If it weren't the custom, made by the men of old Greek society, she would not have been a victim of an incestuous relationship which leads to her death. It is enough that her husband the King of Thebes is dead, but tradition compels her to marry the new king who turns out to be her son. In several societies, such inhuman lore abound such as a situation where the woman must drink the bath water of her husband's corpse as evidence that she is not a culprit in his demise. Not minding the medical consequences of such customary acts against the woman, these manmade injunctions still exist unchallenged and many women

suffer its consequences. Some other societies would shave the widow's hair and lock her up to mourn the late husband for 14 days, sometimes without food and water. When incidences such as these make the subject matter of drama, it goes without mincing words that the society in which such acts of inhumanity are perpetrated cannot be divorced from the portrait of women we see in drama.

Abuya (104) asserts that:

Women have always constituted a larger disadvantaged group in almost all known and existing societies. The kinds of problems and experiences hitherto thought of as mundane and of little interest are shared by women the world over. Despite their large population everywhere, gender difference is a common phenomenon.

Ogundipe (37) is of the view that women are powerless on the basis of the principles of social stratification which operate in Nigeria. Under these principles, there are three kinds of valued resources. They are power, the ability to impose one's will on others, prestige (honour and respect) and property, material good. Debunking the inequality status of women's ration to men, Ogundipe states that in any society, there is hierarchy ranked status from high to low, based on the abilities and appearances that are culturally valued. Ogundipe goes on to say that in Nigeria that since men are culturally given the superiority, they are entitled to a greater share of resources. Making further assertions, Ogundipe states that "inherent in the culture of most Nigerian societies are cultural norms, attitudes and values which continue to render women powerless" (38).

Continuing, Ogundipe (38, 39) posits that:

Socialization practices condition women into accepting their future roles as cooks, beasts of burden, hewers of wood and fetchers of water, in short second class citizens, as they are raised ironically by women to accept their inferior roles and not to aspire to areas of male preserve in education or careers.

It is in the light of the above issues, stereotyping women as mere domestic and powerless lots that some scholars have resorted to pulling down the foundation of the male dominated society which limits the aspiration and prospects women have to realize their potentials. Theatre and drama have been able to expose these ills perpetrated against the female essence. The portrayal of women in the light of their present predicament as most likely dependent on their male counter parts calls for review.

According to Albert (59):

Little wonder that feminist scholars, wherever they are found around the world, find it fashionable to start their study of any problem by first making reference to the fact of women's exclusion, distortion, misrepresentation, exploitation and neglect [by men]. The typical feminist literature therefore, starts by making reference to some unacceptable things men do [in the public and private spheres]; how these affect women and what needed to be done towards liberating or empowering the woman in a patriarchal world. This pattern of scholarship is not limited to Nigeria,...

It cannot be disputed that most societies, whether European or African has cultures that undermine women's place and subject them to the whims and caprices of the male folk. Recurrent themes in drama, of the ages past and present is full of women concerned issues, which in great numbers portray a state in which women are relegated to the background and undermined. As these subjects make dramatic literature as themes, the light in which they are put forward, biased or pro-women leaves the documentary evidence full of or devoid of the principles of equity. Therefore, in the following analysis of plays, significant issues related to

women's position, perception and attitude of men towards them, as permitted by the cultural and socio-economic circumstances will form the core areas of analysis.

As we shall see in the analysis of Akachi-Ezeigbo's *Hands that Crush Stones*, the pitiable condition of widows are exposed. The theatre informs as well as educates and exposes the ills inherent in our societies, especially the sort of injustice meted out against women. For example, Altine's predicament in Lawal's household, notwithstanding his status as wife, He still resorts to maltreating her for reasons without substance. The functions of the feminist theatre aims to pull down the phallo-centric strongholds which seeks to keep the woman as an object of the man's fancy, disposable at will and subject to his whims and caprices.

Sonpa and Kapur (69) state that: "Women's lack of authority, autonomy and 'bargaining power' also renders them without redress in the face of discrimination, exploitation and injustice". In most of the Greek plays, although not overtly stated, we find that female characters are victims of the influence of patriarchal dominance and rule. A typical case is the *Antigone* by Sophocles and *Women of Troy* by Euripides where women suffer the brunt of manmade decisions. At other times, the woman really stands up against male dominance.

According to Wilson and Goldfarb (154) "The young Greek heroine Antigone and the Medieval religious figure Saint Joan are the epitome of the independent, courageous female, willing to stand up to male authority with strength and dignity". The society of the old-Greek to the late 19th century was built on a foundation regulated by the power of men's thought until the late 18th century when women rights activists began to demand equal rights for all. Until the wake of conscious feminist thoughts, playmaking and writing which came after the printing press formulates a core subject that vilifies the stance of male dominance and the evil of oppressive headship and habitation perpetrated against the woman. Since a lot of people are steeped in customary and traditional beliefs that leave them indoctrinated, the role of the theatre in brainwashing an aspect of people often conditions their mindset in receiving certain information as universal or parochial. Basing their argument on the powerful effects of the theatre at influencing opinions, Waincott and Fletcher (18) posit that:

The Greek philosopher Plato found theatre disturbing and potentially dangerous. Because Plato found theatre so effective in performance, he feared that convincing acting and the powerful language of a gifted playwright could harm society if the artists decided to present subversive or morally corrupt ideas.

A critical examination of the above position shows that drama is capable of creating a concrete vision on our social psyche. Some of these areas in which dramatic literature has informed and perpetrated its anti-womanish ideals comes through its portrayal of female characters in the playmaking process. Throughout much of theatre history, dramatic representations and the portrayal of women have shown them as perpetually dependent on the man, weak and incapable of making sound rational judgement except assisted by the man. It may not have changed totally in favour of women, but the apparent thing about the lot of women in drama is that, instead of the age long portrayal of women as subservient and weaklings, recent playwrights have jettison the hegemonic prevalence of male dominance and the numerous injustices meted out against the woman. In considering Nora's portrayal in Ibsen's *A Doll's House*, Wilson and Goldfarb (155) assert that:

It has been said that Nora's slamming of the door marked the beginning not only of modern drama but of the emancipation of modern women. Nora's demand that she be treated as an equal has made her typical of all housewives who refuse to be regarded as pets.

Despite the rebellion against the institution of marriage, women are usually seen as those who are not supposed to cry when beaten, dumb and nit wits. As housewives, their place it is said is the kitchen and the bed. The relegation of women has been a heated subject but dramatic literature gives us a wider view of how through state laws and oppressive tendencies perpetrated against women, the authority of the man is asserted. For instance, most society, especially African regards the woman as a subordinate and not an equal partner in a marriage relationship. Again, Wainscott and Fletcher (138), referring to the socio-cultural milieu of Ibsen's times when he wrote *A Doll's House* says that "When you understand that married women could not own property and had no rights to their children, it makes Nora's decision in *A Doll's House* (1879) to leave her family even more frightening and poignant".

Re-representing women in the good light and not the weak and helpless person she has been portrayed has become the preoccupation of a school of thought known as feminism. These critics consider drama and its medium a viable tool for the deconstruction of patriarchal strongholds.

The ancient world to which most of the intellectual basis for which dramatic literature has been shaped relies most times on acceptable tradition and customary formulations put forward by the men. For every law, ancient and modern, except in very few liberal societies today, majority of conventions and 'what nots' are the views of men of how they perceive women, not how women should be perceived. This inverted opinion leaves the woman at the mercy of the male counterpart who is at liberty to exploit and take advantage of the woman. At any point in time when the man feels that the woman is getting too enlightened and may challenge his authority, which too often is his might, he feels threatened. The theatrical environment engendered by Theatre's hegemony has been one of a patriarchal nature which has left women at the bottom of the artistic abyss, often painting them in the negative where productions showcasing women abound. As means of transportation and shared knowledge spread farther than what men had envisaged, so did the maltreatment of women in the works of art which the modern era produced. The kitchen had been their abode and until the man of the house have need of the woman which he always have need of, mind you, women were to keep their place below the man's shadow.

African customs and traditions, especially Nigerian cultural heritages would have been perfect if the women folk were a complete ignoramus instead of a 'wild duck' the sort of 'modern woman' ideas which has gained more academic grounds. No matter how sweeping these statements might appear, sociological patterns in Afro-centric thoughts show that education of the girl child is responsible for quite a number of the rebellion against the barbaric standing orders that women do not amount to anything; their place is the kitchen; their principal responsibility is to bear children and make the home and to fulfil the vows of matrimonial contracts while the man lusts himself in an aggrandized parade of his alter-ego! Looking at Henrik Ibsen's stand at what such patriarchal injustice amounts to, Brockett and Franklyn (2003) posits that most of Ibsen's plays were about women and made clear boldly, to the effect that ideology, such as the repression of the female will-power/voice were the cause of problems and suggested the need to change it. Therefore, in *A Doll's House* (1879), Nora, upon realizing that, as a woman, she has always been kept ignorant of the practical world and treated as a play thing, chooses to leave her husband and children in order to learn about the world so she can make decisions for herself.

According to Brockett and Ball (165), Ibsen in his 'Preface' to *A DOLL'S HOUSE* says "A woman cannot be herself in the society of the present day, which is an exclusively masculine

society, with laws framed by men and with a judicial system that judges feminine conduct from a masculine point of view”. Contrarily, in *Ghosts* (1881), Mrs Alving, conforming to traditional morality, has remained with a depraved husband only to have her only son go mad, presumably from inherited syphilis. In the long run, the borderline between yesterday’s theatre and the current theatre experience is that both derives from the former’s accumulated biases, especially against the female who were not admitted into mainstream policy and decision making circuits until the coming of age of the modern woman. Today, women in governance (Law, Politics and Businesses) have a meeting point where they discuss and help each other. The social consciousness, unlike before, is great. Although not all women struggle are feminist by ideology, advancement in technological know-how has afforded many women the opportunity to leave the dark age of customary laws and its detrimental effects.

***HANDS THAT CRUSH STONES* by Akachi-Eze-igbo**

According to Marshal (219):

A more radical feminist approach extends dependency theory's critique that Western capitalist penetration retards long-term economic growth, political democracy, and quality of life in less-developed societies, arguing that dependent development also exacerbates gender inequality. According to this radical perspective, the subsequent expansion of the cash economy frequently recruits males while leaving females to labor in subsistence production where they are denied opportunities for upward mobility and independence from patriarchal control.

The above position that ‘dependent development also exacerbates gender inequality’ holds true when we examine the facts depicted in the play under study. The figure of Chief Mbu is practically all that we see from beginning to the end until Madam Udentá’s intervention turns the records in favour of the women. Going by Marshal’s position above, “the subsequent expansion of the cash economy frequently recruits males while leaving females to labour in subsistence production where they are denied opportunities for upward mobility and independence from patriarchal control”. What does that mean? It simply implies that men are the ones in charge, and that recruitment favours the male folk (For example, How come Single Bone, Sergeant and the Police that symbolize power or instruments of power are used against the widows?). For one thing, one notices that it is Chief Mbu-despite his title as Chief, a custodian of local tradition and customs, who should know that women without husbands deserve a welfare package who denies them the opportunity to rise beyond their immediate circumstances in want of a better life. Here, we see patriarchy, a situation wherein the man, having knowledge about the traditional laws uses it to his advantage. The women engage in subsistence production services, crushing stones for Chief Mbu and are denied ‘opportunities for upward mobility’. What does this mean? These widows have been crushing stones and deserve a pay rise but when they make a demand, the Chief refuses to add any salary to their wages. He insists that they take what he’s been giving them or leave his quarry. This is one reference to Marshal’s position that ‘dependent development also exacerbates gender inequality’. The inequality herein spoken about is the discrimination of widows by the Chief Mbu led administration. This is a man who is a capitalist and head of the Izunga local government. As a leader and employer of labour, Mbu combines instruments of power such as the police and single bone his bodyguard to molest the women.

When *Hands that Crush Stones* begins, we see a group of widows and two women, whose husbands do not cater for decrying their lot. They are under-paid and they work without receiving adequate compensation for their labour so they have embarked on strike. Using the

strike as a protest against the Chief Mbu owned quarry where they work, the women are helpless but determined to carry on with the strike. Pointing to the Chief's capitalist tendency, Amina, one of the widows says: "You see these big men do not want to part with money even when it is logical to do so. We come here in the morning before eight, crush stones till five in the evening only to go home with the starvation wage he pays us" (2).

In the two weeks period since the inception of the strike, faced with the challenge of having resources to cater for their basic needs such as food, they learn from Ruki, a fellow widow that a certain Madam Udentia who is contesting in the forth coming local council election with Chief Mbu and that Udentia is sympathetic to the women's cause. Immediately, they dispatch some women to go while others hold it down at the quarry. When Chief Mbu arrive the quarry, he is unwilling to add any kobo to their wage, instead he says: "...I am not adding a kobo to what I pay you. If you do not like what you receive, then go away (28)". In Mbu's calculations, the women are replaceable, therefore, since no one may employ them he assumes they will come crawling back, begging to be employed. This is a capitalist attitude to human relations. Mbu, being the local government chairman should be in a better position to know that these women are widows, helpless and without other means of survival, yet he insists on handing them such wages as is barely enough to cater for their basic needs. As this scene ends we see Mbu ordering the police to bath the women with tear gas after his thug Single Bone had punched Kemi. This is an abuse of women's dignity, but who cares? The law which should have salvaged the women's cause works for Mbu, therefore it is a case in favouring patriarchy all the way.

In scene three, having got wind of the women's suffering, Madam Udentia sends pressmen to the quarry where the women, having worked without receiving salary have been abused because they demanded for a pay rise. Interested more in the protection of his ego-image and if reported in the bad light may not win the elections, instead of initially meeting the demands of the women, Mbu poses for the camera, fully aware that his evil deeds have been exposed, capitalizes on the situation to his advantage. Mbu pays the women salary for last month in front of the camera and gives them the pay rise they demanded-all for show! To expose his deception, Sergeant says: "Chief, you hear me, sah? Wetin we go do with de women. Make we no arrest dem again?" (42). Definitely, Chief Mbu shuts the police officer up and goes ahead to make political statements and promises that the likes of him will never fulfil; that his government has plans to better women's lot. Lies! If there is anything to learn from this play, it is the fact that Chief Mbu who is a representation of a male dominated society where women hardly find their voice, makes life difficult for the woman. The playwright may be inferring that until women stand up and give the male folk a run for their selfish ambition, just like Madam Udentia's action proved fruitful, although in actual fact we did not see her in the play, that women should come to the realization that once they agree to call men's bluff that there will be a rethink on how women are treated, most often to the man's advantage.

ALTINE'S WRATH by Femi Osofisan

Comparing the psyche of a power-drunk husband to that of a military officer, Mama (4) discusses issues bordering on a man's mental picture of the woman as weak and subservient which makes them treat women in the inhuman manner they do. Hence, as it relates to a woman's wellbeing, Mama (4) believes that:

In the thinking of ordinary Nigerians, the military man exemplifies the masculine ideal. That is why the materially ambitious father has a vested interest in wedding his daughter to a groom clad in khaki. Street children and madmen can be seen acting out the roles of soldiers: they march, salute, and gesticulate frantically in a bid to convey their wholly imaginary authority.

Altine's fate is equivalent to a prisoner in a military regime in that, first, she was married off to Lawal when she was still a young girl by her late father and grandfather as a token of appreciation to Lawal's family who played host to them when Altine's family migrated from the east. Years later, Lawal has finished his University Education and is now a permanent secretary in a government ministry. However, Altine is more or else a prisoner in her husband's house. She does not have a wife's status but is abused at will by Lawal. When marriage is supposed to be about Husband and Wife, in Lawal's case, it is between Husband and his numerous concubines and mistresses. To make matters worse, Altine does not sleep in the main house; she has a cubicle at the backyard where she operates from. When the play opens, Lawal brings one of his mistresses home, then as Mariam the mistress protest that Lawal is yet to send Altine packing, he tells her that: "...Altine has her own room there, at the back of the house. And I've not allowed her to step into my room for over three years now. Okay? So you can stay with me. Stop fussing!" (4). To say that Lawal is a shameful man is not enough but when we look at his religion which allows him to take more wives as much as he can cater for, he is justified in spite of Altine's predicament. No matter how right or wrong Lawal's actions in this regard is, it is his attitude towards Altine that smacks of irresponsibility. Lawal has turned Altine into a punch bag, abuses her and does not regard her as a wife-equal partner in the marriage contract. For example, when Lawal tells Altine to get Mariam food, as she makes to go, Lawal insists that Altine kneel to greet Mariam, he does this to please another woman at his wife's expense: "... (Altine stares, silent. Lawal angrily hits her) I say greet her, you dumb female goat. Down on your knees! (Altine falls, and crawls as he kicks her. She drools in the mouth (6))". It is such inhuman treatment meted out on Altine by Lawal over the years that led to Altine's current state of dumbness. Altine has suffered so much as a wife in Lawal's hand until the coming of Mariam. Meanwhile, Altine had registered in an extra mural class where she gets herself equipped with basic knowledge of the world and how things are, these being the reason why initially, after his University Education, Lawal considers Altine too crude for him. Altine says: "A slave, isn't that all you wanted? Remember, all those years you went to the University, and I had to slave to pay your fees, and maintain the children, as well as your aged mother...." (31). In Lawal's mind, Altine does not qualify for the kind of wife he wants so he brings home different women. It was on one of such occasions that Altine's predicament began. Narrating her ordeal after she transformed from the battered house wife into the typical sort of modern woman picture that Lawal always wanted, Altine says: "... until that horrible day, when you brought that girl, Hauwa, to sleep on our bed. And the next day I had to wash the bed clothes, yes, wash off your smells and muck, after you'd beaten me up! You do remember it all, Mr Lawal Jatau? (32)". After suffering so much, Altine takes the bull by the horn when she truncates a business deal between her Husband and a certain Alhaji friend of Lawal. Lawal as a Permanent Secretary engages in corrupt practises that gives him wealth. This business transaction wherein he defrauds innocent people in the name of Government business makes Lawal very rich in that through the identity of his dumb wife's name, money is traded into his account lest his identity is revealed. When Altine had studied the situation and come to the realization that she has to pay Lawal back in his own coin, she transfers all the money, which has been in her name into a new account, lay claims to owning the properties. This action paralyzes Lawal who now finds himself at Altine's mercy. Mariam's reaction is as follows:

Mariam: I didn't know you could be this trusting my dear! To keep everything in her name! And then to deceive me that you were sending her away.

Lawal: ...illiterate and dumb! She wasn't supposed to know a thing!

Lawal thinks that Altine will remain dumb. But he is surprised that after all the pains he puts her through that she is able to turn it in her favour. In the end, Altine overcomes Lawal's oppressive regime, claims all his life's savings and leaves Lawal wretched. Lawal is typical of a military husband, authoritative and tyrannical. But as we see, Altine, having studied the situation, refused to be trampled upon, she wins by cunning. Despite all her sufferings, she does not fight back, like a dove she bears her sorrow until she perfected her act to make this bully of a husband pay for all his eccentricity. Altine's rise above Lawal's expectation, the bottom of the pit where he has put her is a victory for womanhood. Osofisan seems to be making a point here, to the effect that, although women live in a man's world, a world that is not women friendly, it would be suicidal to stay put and allow the heavy weight of man's injustice to overcome them. Rather, that the woman should devise a way of liberating herself. At the end, Altine succeeds. Who would have thought that a husband as mean and dubious as Lawal could be overcome? The strength of every woman who suffers injustice, oppression and evils which is directed at them by manmade laws, customs and traditional beliefs can only be transcended once those who suffer it face it with the mindset that, despite her weakness, if she could only try, change is imminent. For men and the society that empowers them to engage in anti-woman businesses, time to give up all negativity against the woman is now.

CONCLUSION

The two plays in this analysis shows to a large extent that in societies where men have an upper hand that the women always suffer. The pains of motherhood and the challenge of surviving in a male dominated world is a burden for women who must begin to take their destiny in their hands and chart a new course of life for themselves. Those in the Nora and Altine category who men have largely taken advantage of whatever the law or religion or customs says to do in their favour against the women must be resisted. The plight of widowhood on the other hand is a condition that must be taken up by all who have had course to be born and bred by a woman, married to a woman and feels deeply about a better life for women. In both plays, there is a trend-a common insight runs through the pages of the play texts, and that is the fact that the society in which these women live makes laws and have customs which are not in the woman's favour. The enforcement of these patriarchal orders always limits the woman's potentials else no progress has been made to alleviate their plight.

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GRADUATE UNEMPLOYMENT DATA TRACKING MECHANISM APPLICATION AND SIGNIFICANCE IN CONTROLLING GRADUATES PARTICIPATION IN CRIMES IN NIGERIA

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ABSTRACT

The International Labour organisation (ILO) (1988) defines unemployment as the pool of people above a specified age who are without work, are currently available for work during a specified period of reference. Graduate Unemployment in Nigeria has been a scourge to the extent that job seekers today go to the National stadium for job tests and interviews. Unemployment in its ramification is undesirable because it introduces uncertainty, despair and inequities into the economic system. Graduate unemployment which is a segment of the educated unemployment can be very dangerous for any economy as it breeds different types of social vices as lack of knowledge about its growth can be retrogressive. This study will determine the actual graduate unemployment data in Nigeria. The study will also assist in determining whether there is any positive unexpected relationship between the rate of graduate unemployment and the rate of graduate involvement in crimes in Nigeria which will lead to providing the best analytical graduate unemployment data tracking mechanism in Nigeria. The study concentrated in ten (10) local government areas in Imo state. Certain crimes have been identified like kidnapping, armed robberies, bank fraud, drug peddling etc. The study data were collected by the instrument of questionnaires.

Keywords: Graduate Unemployment, Unemployment, Data Tracking, Economy, Crimes

1. INTRODUCTION

The most conspicuous dimension of the high level of unemployment in Nigeria in the recent times is its prevalence among college and university graduates. Unemployment among college and university graduates became more serious between 1993 and 1997 when on the average, nearly one out of every ten applicants was a university graduate, a sad reflection of the continued economic depression (CBN, 1999). Graduate unemployment in its ramification is undesirable because it introduces uncertainty, despair and inequities into the political, cultural and economic system of our nation (Todaro, 2000). Majority of the causes of the problems associated with graduate unemployment may be traceable to conflict theory which says that society is made up of groups that have opposing interests. Coercion and attempts to gain power are ever-present aspects of human relations where those in power attempt to hold power by spreading myths or by using violence if necessary. The consequence at this point is that the helpless (unemployed) gets himself or herself involved in situations that will restore him to power, protect him from being exploited or give him opportunity to struggle or remove inequality and alienation from him in life (Neuman, 2000). The problems so created can be acute and dangerous in a country due to the fact that higher institutions continue to produce more graduates than are jobs to accommodate them (Todaro, 2000; Bamiro 2013).

The rate of growth of this form of unemployment is visibly large and present in almost all the states of the country. According to Timarny (2007) the rate of graduate unemployment and its consequences have attained high disciplinary index in the economy of African nations. According to him graduate unemployment is defined as the pool of people above a specified age with one form of certificate and training from a higher institution without work, are seeking work during a period of reference. While Sachs-Larrain (1993) defined unemployment rate as the member of unemployed people as a proportion of the labour force. In this context, labour force represents all those with work or all those seeking work, that is, the sum of the employed and unemployed. Individuals that ate neither employed nor seeking work are considered to be out of the labour force.

When government desires to achieve domestic expansion it relies on fiscal measures to raise domestic income such as taxation on both personal incomes and other sources but these may not be possible especially when high rate of graduate unemployment abounds in the country. The government through the National Bureau of statistics periodically releases different rates of unemployment which they regard and look upon as a major instrument for job creation. Frequently, the number of such publications and rates may be high or low and in some respects ignoring specific unemployment groups like graduate unemployment. The World Bank Report (2013) is of the view that job creation in Nigeria has been inadequate to keep pace with expanding working age population. The report further says that the official unemployment rate had steadily increased from 12 percent of the working age population in 2006 to 24 percent in 2011. However this report did not specify actually the rate of graduate unemployment in Nigeria. Thus we are confronted with ambiguous situations which make a bargaining condition for solutions to the problems of graduate unemployment and its impact on crimes very difficult. The insidious nature of the problems created by this type of unemployment at the local, state and Federal levels has stifled local ingenuity, suppressed entrepreneurial growth, emasculated potential desire for self-development and genuine economic decision making at different levels of government.

It is pertinent to explain that the existence of significant group of unemployed graduates in Nigeria has in the recent decades given rise to high level of youth restiveness, drug peddling, cyber frauds, bank frauds, kidnapping armed robberies and other vices. Thus social and economic demands make it imperative on the government to seek inwardly for solutions to these problems by adopting speedily the applicability of the simulated market theory which refers to the promulgation and implementation of industrial policies as well as the creation of institutional structures which are aimed to generate both market-conforming and market-augmenting dynamics in the economy (Timamy, 2001).

The implementation of these innovations is only possible when there are reliable facts and figures to control or manage the oscillating graduate unemployment in Nigeria. The graduate unemployment data tracking mechanism is a distinctly functional domestically developed data device aimed at harnessing, analyzing and measuring the number and rate of growth of graduate unemployment in Nigeria. The data tracking is established on some technical imperatives seen as a necessary precondition for unemployed graduates to be linked to the data exchange. These include files on experienced and inexperienced job seekers, areas of specializations, employers target, etc.

Planning the funding and application of a data tracking mechanism of this kind is guided by an explicit research vision, interest on human capital development and supported by a policy framework capable of generating the quality of data required within that vision and the

national objectives that it tends to serve. Relying on a regular, consistent and reliable unemployed graduate data will assist immensely in policy making affecting job creation and control of social vices in Nigeria.

Based on the negative effects of graduate unemployment it is therefore logical for the government to espouse some measures to checkmate its growth. These measures include the support and sponsorship of some private institutions or organizations that have the wherewithal to provide reliable data on graduate unemployment in Nigeria.

2. LITERATURE REVIEW

Since the early 90's there has been unprecedented interest in the nature and rate of growth of graduate unemployment in Nigeria. The focus on graduate unemployment is not a coincidence on the contrary. It has been heightened on account of the number of social vices perpetuated by unemployed graduates in Nigeria. Graduate unemployment forms a significant part of the educated unemployment. Some publications emanating from authors such as Sachs- Larrain (1993); Todaro (2000); Timamy (2007) and UNDP (1997) view unemployment as a matter of exigency rather than a phenomenon. International labour organization (1988) defined unemployment as a pool of people above a specified age who are without work, are currently available for work and are seeking work during a period of reference. The organization is of the view that the following conditions must exist for a person to be considered as unemployed. To be considered as seeking work a person must take clear actions include registration at an employment exchange, applications to employers, checking at an employment exchange, applications to employers, checking at work sites and placing or responding to newspaper advertisements.

Sachs – Larrain (2000) defined unemployment rate as the number of unemployed people as a proportion of the labour force. Labour force according to them is the sum of the employed plus the unemployed while individuals that are neither employed nor seeking work are considered to be out of the labour force.

Todaro (2000), posits that there is unexpected positive relationship between levels of education and rates of unemployment in developing countries- the opposite of the situation in developed countries. For many developing countries according to him (Todaro, 2000) unemployment rate rises with higher levels of education e.g. in India 1989 the unemployment was 2 percent for people with no education, but it was 9 percent for those with a secondary education and 12 percent for university graduates. While in Thailand, unemployment rates among university graduates in 1970's and early 1980's ranged from 20 percent to 35 percent respectively. Furthermore (Todaro, 2000) the problem is becoming particularly acute in Africa where the educational system continues to turn out many more graduated than there are jobs to accommodate them.

2.1 Causes of Graduate Unemployment

Many factors are responsible for graduate unemployment in Nigeria. Among these factors are; rural-urban migration, defective educational system, low level of industrialization, consumption of foreign goods, etc. (Oluseyi, 2012). A cursory analysis of events taking place in the labour market will disclose that the persistent reoccurrence of factors giving rise to graduate unemployment in Nigeria tend to slow downwardly factors capable of producing job absorbing structures (Ashionye, 2014). Todaro (2000) again writes in this direction that the inhibiting or restraining factor lies deeply in between two contending extremities such as quality or scarcity of graduate unemployment data and its harnessing mechanism.

2.2 Some reflections about the need for control

The minister of finance and coordinating minister for the economy Dr. Ngozi Okonjo-Iweala (2014) hinted that a total of 1.8 million graduates enter the labour market every year and when compared with the total rate of unemployment as released by National Bureau of statistics; 14.6 percent from 2006 to 2011 reaching a record high of 23.9 percent in 2011 there is a frightening perception of the development and associated social implication such as crimes and poverty. Graduate unemployment when it becomes too high represents a source of internal disturbance, malignant tumour, distortion and poverty. The level of education and training within the disposal of unemployed graduates can afford them the sophistication they need in crime connivance and execution. This is confirmed by their form of definition as posited by Timamy (2007). They are pool of people above a specified age with one form of certificate and training from a higher institution without work, are seeking work during a period of reference.

2.3 Building blocks in control efforts

There is no common definition of graduate unemployment. Some border line exists which cuts across different economic background and can be useful in understanding and searching efforts to control the growth. Firstly, let us accept that divergent views and measures are tolerated in the definition of issues like terms of age limits used to define labour force, reference periods for job searching (that is, low frequently the person searches for work), criteria for seeking work, statistical treatment of people temporarily laid off from work and expecting to be recalled and people looking for a job for the first time (Sachs-Larrain, 1993). This classification opens up a veritable dimension in the structural variation embedded in the definition of graduate unemployment, a type that can answer such questions as:

- Where am I today
- Where do I want to be in the future
- What are my goals
- What skills do I have
- What skills do I need and
- How do I get to where I want to be (Miner and Luch, 1985)

2.4 Measures to control graduate unemployment oscillations

- Support efforts to establish analytical data tracking procedure to monitor the oscillations and directions of growth of graduate unemployment in Nigeria.
- Design measures such as economic policy to reduce the rate of growth.
- Evaluate the adequacy and effectiveness of training of university students to the demand and benefits of labour consuming organizations.
- Determine measures to control the unexpected positive relationship between level of graduate unemployment and social vices
- Restructure the college and university curriculum to emphasize periodically ethical values and norms of good society.
- Realign the economy towards job and value creation.

2.5 Construction of graduate unemployment data tracking mechanism

The graduate unemployment data tracking mechanism can be constructed through the following procedures

- Linking unemployed graduates by registration at the community levels such as LCDA's, NYSC, religious centres etc.
- Documentation of linked persons according to current state of domicile or origin.

- Classification of linked persons according to areas of specialization such as engineering, medicine, social sciences, arts.
- Verification, evaluation and confirmation of developed records
- Status enquiries, correspondence and periodic assessment and reinstatement.
- Job search education, interview counseling and mentoring
- Job placement and report
- Job seeker delinking or relinking

2.6 Categories of unemployed graduates under data tracking mechanism

Unemployed people: People who meet three conditions:

- i. Lack a paying job outside the home
 - ii. Are taking active measures to find work
 - iii. Can begin work immediately if it is offered
- Involuntary part time workers: People with a job but work irregularly or fewer hours than they are able and willing.
 - Discouraged workers: People able to work and who actively sought it for sometime but being unable to find it, have given up looking
 - Other non-working persons: Those not working because they are retired, on vacation, temporarily laid off, semidisabled, home makers, full-time students, or in the process of moving
 - Transitional self-employed: self-employed who are not working full time because they are just starting a business or are going through bankruptcy.
 - Under employed: Persons with a temporary full time job for which they are seriously over qualified. They seek a permanent job in which they can fully apply their skills and experience (The Economist, 1995).

2.7 Graduate Unemployment Data Tracking Enlightenment Procedures

The tracking mechanism operates through a direct contact relationship, linking the mechanism with job seeking persons, guardian or relations with a view to bring the job seeker into the tracking mechanism. The data tracking mechanism can also establish a link with the job seeker through advertisements, mails, telephone and dispatch riders. Routine calls and visits by the job seeker to the data tracking site can also be useful in maintaining relationship. The direct contact relationship is followed by work seminars comprising curriculum vitae preparation technique, interviews, examinations and self-presentation.

Finally, employed persons are tutored on how to delink and sustain engagement. Thus the mechanism maintains actual relationship many years after engagement and can be revised to direct contact relationship when disengagement takes place.

3. STUDY ASSUMPTIONS

This study is predicated on a general assumption that unemployed graduates mastermind, plan and execute some classes of crimes in Nigeria such as bank frauds, armed robberies, cyber fraud, cultism, kidnapping etc. These are the views of some authors who try to establish a kind of corollary position on the existence or otherwise of a kind of relationship between graduate unemployment and crimes in the society. Crimes differ in terms of the nature of planning, number of occurrence, timing, scope, rural or urban. Involvement of unemployed graduates in crimes in most cases portend bad image for the country. The oscillation in the common crimes often committed by unemployed graduates lends credence to the fact that some factors not directly connected to the person's nature may have served as a strong stimuli. This in earnest may assist in our assumption and thereby present a new research frontier for thorough investigation and decision. However we will extrapolate on the existing

data with the intention to confirm or reject any form of unexpected relationship between graduate unemployment and crimes in our selected areas of study.

4. METHOD

The study adopted survey method to develop the necessary data. The primary data constituted data raised with the aid of questionnaires administered in the chosen areas. The secondary data are generated from published texts, journals, seminar papers and newspapers. The respondents were required to react to questions bothering on graduates unemployment's, crimes and poverty. Such questions like marital status, family size, position in the family, family responsibility, years spent in the University, source of funding for university education, how many years spent before getting employment, areas of specialization, present income bracket, desire to change job, level of education and certificates obtained, type of college and university attended, type of job desired and how soon it is needed, are the research questions.

The test statistics used is Pearson Correlation Co-efficient. The purpose of a correlation coefficient is to show how much two variables go together or covary. It is adopted to determine the relationship between graduate unemployment and its impact on crimes. Positive relationship indicates that the higher the graduate unemployment's, the higher the rate of involvement in crimes and negative relationship entails that there is no relationship. When this occurs there is an indication of the existence of extraneous factor manipulating the tendency of graduates to get involved in crimes. Thus we may be compelled to stretch our study further to other factors that are likely to induce criminal tendencies such as family needs pressures, society and peer groups influence, inordinate ambition and desires to achieve undeserved status and income and undue exposure to idle material wealth etc.

4.1 Sample and Sampling Technique

Probability sampling techniques was applied to determine the relationship between unemployed graduates and crimes in the study areas of ten (10) local government areas of Imo State comprising Ehime-Mbano, Ikeduru, Ideato North, Ideato South, Owerri Municipal, Ahiazu, Abo-Mbaise Ngwa-Okpala, Oru West and Obowo. A total of two hundred (200) respondents were chosen from these localities. The choice of the localities was prompted by the large concentration of college and University graduates in these localities. Also there are large noticeable numbers of unemployed graduates and crimes commonly associated with educated persons. The crimes included in the analyses were bank frauds, drug peddling, cultism, armed robberies, cyber frauds, money laundering, oil bunkering and pipeline vandalism, drug counterfeiting and kidnapping.

The study relied on the sample size of those respondents to investigate the propensity or otherwise of unemployed graduates to commit crimes in the selected areas. It is pertinent to explain that the study further delved into the gender group with an intention to determine the level of involvement of male or female unemployed graduates in crimes. There is no discrimination between rural and urban areas in the chosen localities. This is caused by the nature of the crimes, timing, place and the rate of urbanization of the state.

5. DATA ANALYSIS AND RESULTS

The data developed in the course of the study were analysed with the aid of SPSS for window packages. We applied the Pearson Correlation Test Statistics to determine the relationship between graduate unemployment and crimes in the selected areas of the state. A time frame between 2003 and 2012-a period of ten years was considered appropriate. We were able to identify 207 unemployed graduates from the selected areas 2003 (25), 2004 (14), 2005 (24), 2006 (21), 2007 (10), 2008 (22), 2009 (19), 2010 (24), 2011 (22), 2012 (26) and number of crimes committed by graduates, 2003 (7), 2004 (6), 2005 (8), 2006 (6), 2007 (4), 2008 (9), 2009 (7), 2010 (5), 2011 (8), 2012 (96). The figures applied represented a total of 207 unemployed graduates and 66 crimes committed by graduates.

The study looked at the range of association from -1 to +1 with negative numbers indicating a negative relationship and positive numbers representing a positive relationship. We also accept the fact that a figure of 1.0 represents 100 percent reduction in errors and no relationship. Where there is a significant positive relationship we then conclude that graduate unemployment has the strength to influence crimes and could be responsible for the high unemployed graduate involvement in crimes in the selected localities. The proportion reduction in error is derived by squaring R^2 , the value of correlation coefficient. In this study R^2 tells how the percentage in one variable, crime (dependent) is accounted for or explained by the other variable, graduate unemployment (independent). The logic here is that if there is a strong association or relationship, then few errors are made predicting a second variable on the basis of knowledge of the first or simply said, the proportion of errors reduced is large.

5.1 Study Report

In our attempt to find out the reasons that might induce crimes among graduates we made some generalizations especially on the areas bothering on life styles, family responsibilities, years spent in the university, level of education, etc. The chi-square test statistic is applied to determine the extent of association between two variables which in this study include graduate unemployment and crimes. It is a measure of the discrepancy existing between observed and expected frequencies. We have made the following hypothesis “the rate of crimes in the selected areas is not influenced by the level of graduate unemployment. The response indicated, family responsibility dependence on family for education, spent many years before getting a job, defective academic curriculum, desire to change job, influence of the type of college or university, inability to secure job early, insufficient present earnings, influence of peer pressure, poverty, family neglect after graduation, plebeian psychology, greed and over ambition, favouritism and ethnicity, low capacity utilization of the industrial sector and corruption. The decision rule is therefore if the calculated chi-square value is less than the table value at 5 percent level of significance the null hypothesis will be accepted but if otherwise the null hypothesis will be rejected.

The rate of growth of graduate unemployment positively influence the level of graduate persons involvement in crimes in the selected area under study

Table 1.1 Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	No of Crimes Committed by Graduates ^b	.	Enter

a. Dependent Variable: No of Unemployed Graduates

b. All requested variables entered.

Table 1.2 Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.489 ^a	.239	.144	4.71829	2.113

a. Predictors: (Constant), No of Crimes Committed by Graduates

b. Dependent Variable: No of Unemployed Graduates

Table 1.3 ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	56.002	1	56.002	2.516	.151 ^b
	Residual	178.098	8	22.262		
	Total	234.100	9			

a. Dependent Variable: No of Unemployed Graduates

b. Predictors: (Constant), No of Crimes Committed by Graduates

Table 1.4 Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.765	7.054		1.384	.204
	No of Crimes Committed by Graduates	1.657	1.045	.489	1.586	.151

a. Dependent Variable: No of Unemployed Graduates

Table 1.5 Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	16.3922	24.6765	20.7000	2.49448	10
Residual	-6.39216	6.29412	.00000	4.44845	10
Std. Predicted Value	-1.727	1.594	.000	1.000	10
Std. Residual	-1.355	1.334	.000	.943	10

a. Dependent Variable: No of Unemployed Graduates

R is the square root of R-Squared and is the connection between the observed and predicted values of dependent variable. The correlation coefficient (r) value of 0.489 shows the existence of positive significant correlation between number of unemployed graduates and number of crimes committed by graduates in Nigeria. R-Square is the percentage of variance in the dependent variable number of unemployed graduates which can be predicted from the independent variables number of crimes committed by graduates. This value indicates that 23.9% of the variance in number of unemployed graduates' scores can be predicted from the variables number of crimes committed by graduates. Note that this is an overall measure of the strength of association, and does not reflect the extent to which any particular independent variable is associated with the dependent variable.

The value of R-square was 0.489, while the value of Adjusted R-square was 0.144. Std. Error of the Estimate - The standard error of the estimate, also called the root mean square error, is the standard deviation of the error term, and is the square root of the Mean Square Residual (or Error) was 4.718 indicates the existence of other variables and factors that can significantly influence the unemployed graduates aside number of crimes committed by

graduates unemployed while the Durbin Watson value of 2.113 indicates the existence of a optimistic autocorrelation in the behavioural pattern of the data analyzed. The regression coefficient constant value of 7.965 indicates the level of crimes committed by graduates unemployed that is autonomous to all influential variables while the beta value of 0.489 indicates the expected increase in crimes committed by graduates unemployed is due to a change in the level of unemployment of graduates in Nigeria.

The t-test statistic indicates the individual significance of the parameters used in the model. Each value is compared with the table value (t_{tab} at 5% = 1.697) and they all exert a significant in the functioning of the model. To this end, the hypothesis that the rate of growth of graduate unemployment does not positively influence the level of graduate persons involvement in crimes in the selected area under study is rejected because the result reveals that the rate of growth of graduate unemployment positively influence the level of graduate persons involvement in crimes in the selected area under study.

NPar Tests

Chi-Square Test

Frequencies

Table 1.6 The magnitude of family pressure influence the level of unemployed graduate involvement in crimes in the selected study area

	Observed N	Expected N	Residual
Strongly Agree	400	160.0	240.0
Agree	250	160.0	90.0
Undecided	35	160.0	-125.0
Disagree	65	160.0	-95.0
Strongly Disagree	50	160.0	-110.0
Total	800		

Table 1.7 Test Statistics

	The magnitude of family pressure influence the level of unemployed graduate involvement in crimes in the selected study area
Chi-Square	640.313 ^a
Df	4
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 160.0.

The second hypothesis part of the output gives the value of the chi-square statistic (640.313), the degrees of freedom (df) (4) with tabulated value of 9.49, and the p-value is given on the last line of the output. In this hypothesis, the p-value is .000. Under the table are important statements about the assumptions of chi-square. In this hypothesis, none of the cells (categories) have expected frequencies less than 5. Thus, the assumption has been satisfied. Decide whether to reject H_0 or not. If the p value (.000) is less than or equal to the significance (α) level, then we can reject H_0 . In this case, the p value (.000) is less than α (.05) so we reject H_0 and accept the alternative hypothesis (H_1). Therefore there is sufficient evidence to conclude that the magnitude of family pressure influence the level of unemployed graduate involvement in crimes in the selected study area.

NPar Tests

Chi-Square Test**Table 1.8 The level of societal pressure influence the level of unemployed graduate involvement in crimes.**

	Observed N	Expected N	Residual
Strongly Agree	270	160.0	110.0
Agree	345	160.0	185.0
Undecided	59	160.0	-101.0
Disagree	93	160.0	-67.0
Strongly Disagree	33	160.0	-127.0
Total	800		

Table 1.9 Test Statistics

	The level of societal pressure influence the level of unemployed graduate involvement in crimes.
Chi-Square	482.150 ^a
Df	4
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 160.0.

The third hypothesis part of the output gives the value of the chi-square statistic (482.150), the degrees of freedom (df) (4) with tabulated value of 9.49, and the p-value is given on the last line of the output. In this hypothesis, the p-value is .000. Under the table are important statements about the assumptions of chi-square. In this hypothesis, none of the cells (categories) have expected frequencies less than 5. Thus, the assumption has been satisfied. Decide whether to reject H_0 or not. If the p value (.000) is less than or equal to the significance (α) level, then we can reject H_0 . In this case, the p value (.000) is less than α (.05) so we reject H_0 and accept the alternative hypothesis (H_1). Therefore there is sufficient evidence to conclude that the level of societal pressure influence the level of unemployed graduate involvement in crimes.

NPar Tests**Chi-Square Test****Table 1.10 There is a relationship between poor economic growth and rate of unemployed graduate involvement in crimes.**

	Observed N	Expected N	Residual
Strongly Agree	320	160.0	160.0
Agree	270	160.0	110.0
Undecided	71	160.0	-89.0
Disagree	77	160.0	-83.0
Strongly Disagree	62	160.0	-98.0
Total	800		

Table 1.11 Test Statistics

	There is no relationship between poor economic growth and rate of unemployed graduate involvement in crimes.
Chi-Square	388.213 ^a

Df	4
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 160.0.

The four hypothesis part of the output gives the value of the chi-square statistic (388.213), the degrees of freedom (df) (4) with tabulated value of 9.49, and the p-value is given on the last line of the output. In this hypothesis, the p-value is .000. Under the table are important statements about the assumptions of chi-square. In this hypothesis, none of the cells (categories) have expected frequencies less than 5. Thus, the assumption has been satisfied. Decide whether to reject H_0 or not. If the p value (.000) is less than or equal to the significance (α) level, then we can reject H_0 . In this case, the p value (.000) is less than α (.05) so we reject H_0 and accept the alternative hypothesis (H_1). Therefore there is sufficient evidence to conclude that there is a relationship between poor economic growth and rate of unemployed graduate involvement in crimes.

NPar Tests

Chi-Square Test

Table 1.12 There is a relationship between defective academic structure and the level of unemployed

graduate involvement in crimes in the selected areas of study

	Observed N	Expected N	Residual
Strongly Agree	320	160.0	160.0
Agree	275	160.0	115.0
Undecided	45	160.0	-115.0
Disagree	85	160.0	-75.0
Strongly Disagree	75	160.0	-85.0
Total	800		

Table 1.13 Test Statistics

	There is a relationship between defective academic structure and the level of unemployed graduate involvement in crimes in the selected areas of study
Chi-Square	405.625 ^a
Df	4
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 160.0.

The last hypothesis part of the output gives the value of the chi-square statistic (405.625), the degrees of freedom (df) (4) with tabulated value of 9.49, and the p-value is given on the last line of the output. In this hypothesis, the p-value is .000. Under the table are important statements about the assumptions of chi-square. In this hypothesis, none of the cells (categories) have expected frequencies less than 5. Thus, the assumption has been satisfied. Decide whether to reject H_0 or not. If the p value (.000) is less than or equal to the significance (α) level, then we can reject H_0 . In this case, the p value (.000) is less than α (.05) so we reject H_0 and accept the alternative hypothesis (H_1). Therefore there is sufficient evidence to conclude that there is a relationship between defective academic structure and the level of unemployed graduate involvement in crimes in the selected areas of study.

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MICRO, SMALL AND MEDIUM SCALE ENTERPRISES: CATALYST FOR ECONOMIC DEVELOPMENT

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ABSTRACT

The growth-cyclical fluctuations in micro, small and medium scale enterprises have once more presented new frontiers in the search for positively related indigenous skills, entrepreneurship, technology and functional institutional and administrative framework. The study traces the operational disturbances of these enterprises to low productivity, high mortality, in accessibility and high costs of capital, structural in balance in policy guidelines and inability of these enterprises to adjust to economic and market shocks, weakness of policy and institutional support mix to provide fair adjustments. The approach of study is essential empirically using sample size drawn from industrial parks in Anambra State. We conclude that the relationship between these enterprises and economic development is unexpectedly negative meaning that factors that stimulate economic development have not impacted positively on the operations of these enterprises. We therefore recommend more positive change in attitudes and expectations, policy and programme reforms.

Keywords: Micro, Small and Medium Scale Enterprises, Economic Development, Entrepreneurship

1. INTRODUCTION

The Nigerian economy has not been free from substantial short-period fluctuations in economic activity. The growth vale in our economic income is largely restricted and impeded by the over reliance and excessively dependence on imported finished goods. It is the transmission of foreign ideas, culture and preferences that has created cyclical negative impulse on our desire to develop our agricultural sector both from micro, small, medium scale and large scale perspectives. Regrettably large number of key economic processes such as industrial productions, factory employment, fixed capital formation, financial markets, interest rates, exports, imports and human capital assets, etc. show less synchronous movements around their respective development processes.

These movements appear to be sufficiently retrogressive and temporarily and permanently, in some instances, self-reversing to justify our viewing them as reflecting the awkward growth cycle in entire economic activity. It is therefore important to highlight that different policy measures put in place to strengthen the benefits accruing from large internal market and possibly external demand from the West African sub-region, Europe and Asia for other have sectors have not served as a strong linkage to compel them to produce a high index of industrial production that will support their development. We have recorded significant statistical decrease in policy response to local growth stimuli in agriculture and other sectors due to poor development of our micro, small and medium scale enterprises.

Deflating ideas and knowledge of what constitutes the micro, small and medium scale or economic measures that can induce impetus to encourage their growth will continue to smack gross inertia on our march towards their development and growth. The mechanism for

transmission of favourable macro-economic inputs into their development process from local or abroad through backward integration and foreign technology acquisition must design, control and regulate structures and policies that will generate zero mobility of useable capital out of their operating system.

To have a proper understanding of how to mitigate the negative implications of macro-economic disturbances commonly associated with the developmental process of small and medium scale firms the characteristics of traditional small and medium scale enterprises must be well defined to include

- Localized market
- Low capital requirements
- Relatively simple technology
- One person entrepreneurial leadership, etc.

Commenting on the proper definition, the importance of small and medium scale enterprise to the growth of an emerging economy. Must be highly emphasized and integrated as a modifying factor capable of deleting contractionary influences. Small and medium scale enterprises in the country is higher than the weighted growth rate of the domestic component of inputs in their operating process. This is true of SMEs in view of their flexible nature and ability to with stand adverse economic conditions. They are more labour intensive than larger business organizations and as such have lower capital costs associated with job creations.

SMEs perform useful roles in ensuring income stability, growth and employment. Since they are labour intensive they are more likely to succeed in smaller urban centres and rural areas where they can contribute to the more even distribution of economic activity in a region and predominantly continue to serve raw material multiplier institutions. One could therefore hope to obtain more functions and importance of SMEs as we make efforts to substitute our supposedly weak stand and structures with proper sectoral output segregation.

2. LITERATURE REVIEW

It is generally argued that changes in the survival and growth rate of micro, small and medium scale enterprises in the country are often influenced by policy measures. The International Finance Corporation (2004) posits that a major factor that is believed to have worked strongly for the survival and growth of SMEs in the world is largely connected with its proper definition because there is no universal definition of SMEs. It differs from countries to countries due to internal economic dynamics of each country and conditions to attract financial supports. In the view of SME department of the international finance corporation SMEs can be categorized according to the following yardsticks.

- Up to 10 employees with total assets and annual sales of to &100,000 are known as micro enterprises up to 50 employees with total assets and annual sales up to \$3million are regarded as small enterprises up to 300 employees with total assets and annual sales of up to \$15 million are regarded as medium enterprise. While these definitions are admittedly subjective, efforts are on the way to review them so that they can be consistent with those adopted by other countries.

For the economic survival, it has been felt essential in nearly all countries to break up their characteristics into number of employees, turnover and balance sheet total and make them operate and compete within their categories. European countries have adopted this policy both in their legislation as a condition for financial support as stated below

Table 2.1: Definition of Micro, Small and Medium Scale Enterprises

Enterprise Category	Number of Employees (head	Turnover (equal or lower amount)	Balance sheet total (Equal or lower
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	Count equal or lower		amount)
Micro firms	10	£2 million	£2 million
Small firm	50	£10 million	£10 million
Medium scale firms	250	£50 million	£43 million

Source:

No real competition is possible between countries in the definition of micro, small and medium scale enterprises. Until most of the things they use and sell are set by the market there can be no reliable definition. For instance, National Board of Small-Scale Industries (NBSSI) in Ghana defines small-scale enterprise as one with not more than 9 workers, has plant and machinery (excluding land and building and vehicles) not exceeding 10 million cedis (US. \$9506 using 1994 exchange rate). The implication of fluctuations both in fixed asset value and foreign exchange rate makes this definition a subject of controversy.

From the perspective of this definition, some examination of the structure and pattern of operation of the SMEs should be a necessary preliminary to more detailed definition. As a first step, we look therefore, at the operating structures comprising assets and liabilities in a comparative framework where comparisons are made for different countries. Relying on this understanding four types of definitions are considered for this study.

- (i) Central Bank of Nigeria in 1993 defined small-scale enterprises as firms whose total cost excluding cost of land but including working capital is above N1 million but not exceeding N10 million (CBN, 2005).
- (ii) National Economic Reconstruction Fund (NERFUND) defines small-scale enterprises as firms whose fixed assets plus cost of new investment (excluding land) does not exceed N10 million.
- (iii) Companies and Allied Matters Act 1990 (CAMA' 90) in section 37 (2) defines a small company as a company with turnover not exceeding N 2 million and its assets (value) not exceeding N1 million.
- (iv) National Council on Industries (NCI) adopted at its 13th meeting in Markurd in 2001 a different form of definition which was later adopted by the Small and Medium Enterprises Equity Investment scheme (SMEEIS). This is stated as below:
 - (a) Micro-Enterprises: Defined as an enterprise having asset worth not more than N1.0 million (excluding land) and employing not more than 10 people
 - (b) Small enterprises: defined as enterprises having asset worth not more than N50 million and employing not more than 100 people.
 - (c) Medium Enterprises: defined as enterprises having assets worth not more than N200 million and employing not more than 300 people.

The *raison d'être* for this form of classification stems from the fact of the need to beyond asset structure and human capital investment evaluation and lay emphasis on status that delineate the broad changes that have taken place over the past couple of years in their operating patterns. With this in mind, we have no option than to look carefully the emerging competitiveness of the complementary infrastructures without which one will be poorly equipped to predict their survival and growth.

3. IMPORTANCE OF SMES IN ECONOMIC DEVELOPMENT

Logically, the first review to be explained is what is the significance of Micro, small and medium scale enterprises in the global context and whether there are striking contribution from its relative performance over the past couple of years.

According to Lanipekun (2004) in a dynamic and growing economy such as Nigeria small businesses are one of the most useful ingredients of economic growth. Deakins (1999) backed by an European study between 1988 and 1993 explained that small firms especially micro firms were responsible for creating about 3 million jobs where as other firms were net losers of jobs Daniel (1994), Daniels and Ngiwa (1992); Fisseha and Macpherson (1991) posit that SMEs are the potential sources of employment and income in many developing countries. In their views SMEs employ 22 percent of adult population in developing countries.

Presumably assuming that we are right in our speculations about the importance of micro, small and medium scale enterprises globally we can predict that with the present transformation programme in our country, this potential expectation is likely to gather further momentum in our economy. The development in the next few decades would indicate when this expectation would take place so that we can start to witness the curious spectacle for income and employment generation from them Markarfi (2006) observed in this regard that SMEs in Nigeria had the potential of driving economic growth in the desired direction if they get adequate support from various stakeholders.

Osa-afina (2003) disclosed that the importance of SMEs can be so much appreciated from its ability to stem the rural – urban population drift, expand the scope of industrial development and achieving a more effective utilization of local raw materials.

Gaining by these tentative analysis, the in controvertible issue of gender neglect may be resolved. As more women are involved in micro-enterprises the tendencies are thus towards more of a healthy competition between the various gender groups rather than that of a docile and dependent group being victims of nascent predators supporting this view Todaro (2000) said that many women run small business ventures called micro enterprises which require little or no start-up capital and usually involve the marketing of homemade food stuffs and handle crafts.

According to him women's restricted access to capital leads to high rates of return on their tiny investment while the extremely low capital-labour ratios confine them to low productivity undertakings the further revealed that studies in Latin America and Asia have found that where credit is available to women with informal-sector micro enterprise, repayment rates have been as high as or higher than those for men and because women are able to make more productive use of capital their rates of return on investments often exceed those of men. The corollary of this is that integration of the larger groups in the country provides greater resources and variety of demand for accelerated growth via greater efficiency and productivity. As new technology emerges and factor mobility made possible internally, the development of our SMEs become our attainable objectives. Our economic stability however depends on the convergent character of our economic fundamentals taking a cue from the successful history of the U.S. Weston and Brigham (1982) survey of the U.S. economy in the past can be a good lesson for us today. They revealed that small business is a key element of the U.S economy. First, of the approximately 8.5 million firms in the United States about 8.0 million are defined by the government as "small". Thus small businesses are quantitatively important, second, and of perhaps even greater significance small businesses often serve as the vehicle through which ideas for new products and services make their way to the consuming public many of the large electronics firms of the 1970s were new, small businesses in the 1950s. Third, the very existence of small businesses and the fact that new ones are continually being started, provides continuous stimulation to competition in the economy.

The economic significance of a country is measured by the share of that country in the intra-community trade, the national product of the community and the quotas in the monetary support arrangements. To achieve all to remain relevant in world economy and politics we have to consistently and continuously engage in viable economic policies that can review, develop or relate our micro, small and medium scale enterprises.

4. TAXONOMY OF SMES ORIGIN

Origin of micro, small and medium scales take many stages in the history of this country for analytical convenience, they can be classified in one way as pre-independence and post-independence.

The pre-independence thesis might have been influenced by what McClelland (1961) termed the achievement motivation theory. This theory provides good predictions of entrepreneurial success. People with strong achievement motivation like to make decisions themselves and receive clear feedback on how well they have done-to be able to say “I did it myself”. They tend to plan for the future and make decisions that will get their plans accomplished. They search out new information whenever possible. The trend and ingenuity set in motion by this concept thus might be associated with the development of pottery, mats, basket, hides and skin tannery, handloom in Nigeria before independence (Ashionye, 1996). The inter communal trade occasioned by this discovery thus directly contributed to the increasing attention being given to mass production of these products within and outside the enclave where it was originally produced.

The post-independence thesis boom was highly motivated by the sufferings associated the Nigeria civil war. Persons especially in the Brafran enclave were compelled to resort to forced economic dependence in almost everything. Crude oil was locally refined, guns and agricultural implements, clothing's, edibles like salt were all locally manufactured. The favourable moderate effect of all these transform to a certain specific people in Nigeria dealing on one form of products or the other. After the civil war and in 1974 to be precise the Federal government realizing the importance of small scale industries made deliberate effort to help the SMEs industry with the introduction of small-scale industries credit Scheme (SSICs) where each state was encouraged to set-up funds from which loans were made available to small-scale industries.

5. METHOD

The research data were developed through survey method. This was followed with the sourcing of information through the administration of questionnaires to the management and staff of micro, small and medium scale enterprises in Nnewi, Anambra State. The secondary information was generated from already published data such as textbooks, journals, seminar papers and newspapers. Majority of the questions concentrated on the competitiveness of the businesses, managerial competencies of the businesses, capital adequacy, raw material adequacy mortality rate, availability of information technology, availability of training, volume of turnover, market share quality of products, ability to adapt new technology and skills of workers.

The test statistic applied is chi square to determine the level of association. As a descriptive statistic it tries to explain the strength of the association between two variable. If at 0105 level of significance the following situations occur, should the derived values be lesser than critical value the null hypothesis will be rejected. Thus the hypothesis there is no significant relationship between, micro, small and medium scale enterprises and the economic development of the country. This implies that positive relationship means that the

productivity of these enterprises will definitely impact positively on the economic development.

6. STUDY ASSUMPTION

The underlying assumption of this study is that micro, small and medium scale enterprises do not contribute economically to the growth and development of the country. They are regarded as a form of business enterprises owned and emerged by unskilled persons (Western and Brigham, 1982); funded with capital raised from family members or societies (CBN, 1999) and always patronized by local market and operated with simple technology (Western and Brigham, 1982).

Micro, small and medium scale enterprises differs in operation, management and ownership according to the internal economic dynamics of different countries. In some countries such as Nigeria or India they are regarded as the bedrocks of the economy and can be looked upon as major sources of raw materials and second largest employer of labour after the public sector. More than eighty (80) percent of the business houses in Nigeria are classified as either micro, small or medium scale enterprises. Therefore the assumption that these business enterprises do not sufficiently contribute to the development of the economy stands at variance with the study presumptions.

Based on this assumption we should try to establish whether there is any statistical relationship between micro, small and medium scale enterprise and the economic development of the country. Sample and sampling technique Random sampling method was adopted to determine the samples. The choice of the area was influenced by the cluster of these enterprises in the area and level of business activities. A total of ninety eight respondents (98) were chosen from the industrial park area of Nnewi, Anambra State. It is pertinent to explain that those sampled included the management, supervisors and operating staff: Also some of their customers were interviewed to ascertain the level of product satisfaction, coverage and product delivery.

DATA ANALYSIS AND RESULTS

The various information (data) generated from the study were analysed with the aid of SPSS for window packages. Chi-square test statistic was applied to ascertain the strength of the association. The study looked at the range of association using 0.05 level of significance as a criterion to reject or accept decision. The null hypothesis was rejected if the calculated value is lesser than the critical value. The data indicate that there is a greater association using volume of turnover market share and raw material adequacy. The calculated value is 48.88 which was greater than the table critical value of 9.49 which revealed that the null hypothesis (H_0) which states that there is no statistical relationship between micro, small and medium scale enterprises and economic development.

On the adequacy of capital and quality of products result indicate that the calculated value is 38.31 while the critical value remains 9.49 which shows that the null hypothesis (H_0) which states that the scope of the factor inputs does not significantly represent the absorptive capacity of the economy was rejected. The implication is that the consistent reliance of the economy on the products of these business enterprises will definitely boost the economy. On the ability of these business enterprises to survive harsh economic background and market shocks was analysed using the mortality rate, managerial competencies and application of information technology. The data calculated is 33.61 as against the critical value of 9.49 which showed that the null hypothesis (H_0) which states that the productivity of the micro, small and medium scale enterprises is not embedded by their inability to adapt large

production factors was rejected. The implication of this analysis tend to explain their productivity and viability scope within their level of operation.

DISCUSSION

Studies on micro, small and medium scale enterprises have been conducted to ascertain either their productivity or viability (Delucca, 2000). There is always serious contention about their compliance to the dictates of managerial concepts. The argument has been that most of them suddenly experience liquidation due to unresolved ownership squabble, family fends, inadequate capitalization, high cost of capital and macroeconomic distortion (Okpechi, 2002). Again it is viewed that wrong policy application such as faulty accounting principles, loan diversion, negative cultural influence, unethical practices and corporate feudalism remain their bane; maintaining a strong grip and not permitting strong growth leverage.

The study revealed strong linkage between economic development and micro, small and medium scale enterprises in the country. The study points to demographic factors as only components affecting the growth of these business enterprise. This is traceable to the dependence of proprietors and families members on the cash-flows of the enterprise. However these variables constitute minor distractions especially when there is intervention is mechanism from the venture capital programmes. The results obtained from this study will definitely provide a sound background for future literature and analysis.

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RISK MINIMIZATION AND ROAD TRAFFIC CRASHES: EMPIRICAL EVIDENCE FROM ROAD SAFETY MANAGEMENT AUTHORITIES IN NIGERIA

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ABSTRACT

Aims: This study was designed with the aim to examining selected risk minimization techniques on road traffic crashes in Nigeria with special focus at the Federal Road Safety Corp, Lagos State Traffic Management Authority and Motor Traffic Department of the Nigerian Police Force. For this purpose, the researchers have been able to assess the significant influence of risk minimization techniques on motorists' driving behaviour and thus, examine the relationships that exist between the risk minimization techniques and road traffic crashes.

Study Design and Place of Study: This study employed a cross-sectional survey design. The study was conducted in Lagos Metropolis.

Methodology: The research commenced with the gathering of relevant literature. The study employed stratified random sampling technique and thus gathered data through the use of structured questionnaire. The sample population consisted of 152 respondents made up of Top, Middle and Lower ranked officers within the sampling units drawn from the directorate offices within Lagos State, Nigeria. The statistical instruments employed for empirical analysis of collected data were a combination of Kolmogorov-Smirnov T-test and multiple regression techniques.

Results and Discussion: The study was able to establish some level of significance between the various risk minimization techniques and road traffic crashes. The various risk minimization techniques appeared to have significant effects if aptly applied in curbing road mishap, and preventing incidences on our road.

Conclusion and Recommendations: The research work evidenced interlink between various constructs understudied. It therefore recommends that continuous investment in road network technology is imperatively crucial for road crashes identification, prevention, and minimization. Also, Government should ensure that risk minimization model be incorporated in the road safety scheme and ensure motorists and motoring public education and engagement towards its implementation.

Keywords: Risk minimization, road traffic crashes, Road Safety Management Authorities, Lagos, Nigeria

INTRODUCTION

Road mishaps had been critical issue on the minds of so many Nigerians, stakeholders and the government across all levels. On the part of the government, increasing efforts had been made to curtailing the number of road accidents over the years. Nonetheless, the happenings around road traffic crashes and enormous motor risks exposures in the country are today still seeking solutions. The National Highway Traffic Safety Administration (2012) gave a report that more than 3,000 people are killed and nearly half a million are injured each year in distraction-related crashes. In a related study conducted recently by Ajemunigbohun and Oreshile (2014), it was recorded that driver behavior contributed to 99% of the crashes investigated, with the six causal factors that accounted for most of the problem behavior in decreasing order such as: driver inattention, vehicle speed, alcohol impairment, perceptual errors, decision errors and incapacitation.

However, an earlier study by Hendrick et al (1991) had performed a study on unsafe driving acts in serious traffic crashes to determine the specific driver behaviour and unsafe driving acts that lead to crashes and the situational driver and vehicle characteristics associated with these behaviours. According to a study by the Federal Road Safety Corps, Nigeria (2013) on road traffic crashes (RTC); it was recorded that there were three main causes of these crashes namely: human factor, mechanical factor and environmental factor. This study thus shows that while human factor constitutes about 90% of the RTC (out of which drivers' actions or reactions make up 80%), 10% was said to be mechanical. According to Othman et al. (2009), crash risk results from interaction between three elements namely: road user(s), vehicle (s) and infrastructure.

Studies conducted in some few selected countries in the Asian continent (such as China, Japan, Singapore, among others) and the United State of America had revealed a number of road traffic crashes in relation to motorists, motorcyclists and other motorized-related equipment. According to the China Road Traffic Accidents Statistics (CRTAS, 2003), the number of people who died from road traffic accidents was 109381, with the number of seriously injured five times higher; accordingly, the studies of Zhang et al. (2006) and Yang et al. (2005) found that road traffic accidents were the largest reason for mortality accounting for 38.5%. In Singapore, motorcycles represent about 16.3% of motorized vehicle fleet and thus, a high percentage of motorcycles result in mixed traffic (Hague et al., 2012). Motorcycles, in Singapore, are over-represented in road traffic crashes; accounting for about 33% of total road traffic crashes, 49% of road fatalities, and 48% of injured victims (Singapore Police Force, 2008).

According to a report by Kopits and Cropper (2005) as cited in Wang et al. (2008); it had been projected that by the year 2020, a decline by about 28% in Road Traffic Injuries (RTI) mortality would be experienced in high-income countries while substantial rises in low and middle-income countries. It has thus been noted that the number of road traffic injuries has continued to rise in the world as a whole, through a time series analysis technique which revealed that road traffic fatalities and mortality rates show clear differences in the pattern of growth between high-income countries, on one hand, and low-income and middle-income countries, on the other (Bener et al., 2003; Jacobs et al., 2000). A study by the World Health Organization (2004) cited two main models for predicting future trends in road traffic fatalities: (i) the WHO Global Burden of Disease (GBD) project, using health data (Murray & Lopez, 1996); and (ii) the World Bank's Traffic Fatalities and Economic Growth (TFEC) project, using transport, population and economic data (Kopits & Cropper, 2003).

This study is aimed at ascertaining the significant influence of risk minimization techniques on motorists' driving behaviour; and thus, examine the significant relationship between risk minimization techniques and road traffic crashes. This article paper is designed as follows: introduction, theoretical and empirical framework, research methods, conclusion and recommendations, research limitations, implication and future studies.

Research Questions

For the purpose of this research, the following relevant research questions were set:

- i. Is effective implementation of risk minimization techniques significant to motorists' driving behaviour?
- ii. Is there any significant relationship between risk minimization techniques and road traffic crashes?

THEORETICAL AND EMPIRICAL FRAMEWORK

The multidimensional term 'Risk' has been described differently by numerous scholars. Olsson (2002) sees risk as the uncertainty of future outcome(s). According to Nyce (2007), risk is seen as the uncertainty about outcomes, some of which can be negative. Atkins and Bates (2008) argued that risk is a combination of the probability of an event occurring and its consequences. Vaughan and Vaughan (2008) see risk reduction/minimization as a risk control technique which consists of all techniques that are designed to reduce the likelihood of loss, or the potential severity of those losses that do occur. They further emphasized that risk minimization technique consists of loss prevention and loss control. Loss prevention, according to Fone and Young (2001), is a concentrated attack on loss frequency with the intended outcome of reducing loss to some tolerable level, while loss control, according to Trieschmann et al. (2005) involves making conscious decision regarding the manner in which those activities will be conducted.

Risk, in road traffic, according to the World Health Organization (2004) has been noted as a function of four elements. These prime risk factors have been grouped namely: (i) factors influencing exposure to risk such as economic factors, demographic factors, rapid motorization, land use planning practice which influence the travel mode choice; (ii) factors influencing crash involvement such as inappropriate or excessive speed, fatigue, drinking and driving, poor road user eyesight, defects in road design, lack of safety regulation; (iii) factors influencing crash severity such as the non-use of crash helmets, seat belts or child restraints, insufficient vehicle crash protection for occupants and for those hit by vehicles, presence of alcohol; and (iv) factors influencing severity of post-crash injuries such as delay in detecting crash, leakage of hazardous materials, lack of appropriate pre-hospital care, difficulty rescuing and extracting people from vehicles, presence of fire resulting collision; among others.

A number of studies explored thus gave numerous contributions into risk factors for road accidents among drivers which are: drivers' recklessness and negligence, mechanical defects in vehicle, drivers' overconfidence and fatigue, carelessness in road crossing by pedestrians, bad road (Aworemi et al., 2010; Bener et al., 2004; Othman et al., 2009; Asogwa, 1980); use of drug, alcohol, Indian hemp (Li et al., 2013; Hartman & Huestis, 2013; Lacey et al., 2009; Bedard et al., 2007); and medical condition and crash severity (Zhang et al., 2013; Laberge-Nadeau et al., 1996). A recent study conducted by Thomas et al. (2011) stated risk factors that are related to driver behavior and performance to include: driver risk adaptation, driver state (i.e. alertness, impairment, distraction, drowsiness), frequency with which the driver chooses to engage in a potentially risk behavior, environmental and roadway factors, and the type of vehicle being driven.

Quite a number of studies had argued that there are three main factors associated with road traffic accidents [such as Al-Dah, 2010; Thomas, 2006; Bener et al., 2005]. The studies of Savolainen and Mannering (2007); Pai and Saleh (2007); Quddus et al. (2002) gave their contributions as related to specific roadway, environmental and human-vehicle factors which influence the crash severity. In earlier studies conducted by Turner and Georggi (2001); Kim et al. (2000); and Yuan (2000), the problem of conspicuity and alcohol impairment were examined. Risks related to crashes have been found to have significant relationship with the rider-motorcycle characteristics such as rider age (Harrison & Christie, 2005), rider sex (Lin et al., 2003), riding experience (Sexton et al., 2004), riding exposure (Mannering and Grodsky, 1995), and engine capacity (Harrison & Christie, 2005).

Similarly, studies earlier conducted had shown that pedestrians and motorcyclists have the highest rates of injury in Asia (Yang & Kim, 2003; Wang et al., 2003; Suriyanwongpaisal & Kanchanasut, 2003); In Africa, injured pedestrians and passengers in mass transportation have been the main issue (Afukaar et al., 2003; Romao et al., 2003; Charles et al., 2007;

Greg, 2009; Agbonkhese et al., 2013); while in Latin America and the Caribbean, injuries to pedestrians had been recorded as their greatest problem (Hijar et al., 2003; Rodriguez et al., 2003; St. Bernard & Mathews, 2003).

Road signs are commonly used traffic safety mechanisms, mainly developed to provide crucial information in a short time to support safe drive; but the success depends on their comprehensibility by the drivers (Kirmiziloglu & Tuydes, 2012).

Road infrastructure is noted to form segment of economic infrastructure to do with public utilities and public works, road transport among others (Derek & Abubaker, 2014). Mutto et al (2002) earlier revealed that road infrastructure plays a crucial role in achieving voluntary driver compliance to road safety regulation. Wilde (2002) expressed that good road infrastructure without an increase in road safety regulation enforcement has proved inadequate in achieving driver compliance. Ministry of Infrastructure and The Environment (2013) cited road traffic act (1994) where it is noted that road users are required to observe all road signs giving orders or containing prohibitions.

NHTSA (2012) opined that driver education remains a standard for acquiring skills and integrating education training with graduated driver licensing systems and expanding beyond current classroom and behind-the-wheel training may have increased traffic safety benefits for young drivers. However, earlier research studies [such as Gregersen, 1996; Mayhew and Simpson, 1995] suggested that the best learning environment for the beginning driver is the real road system under the supervision of an experienced driver or instructor. Learner drivers can record a low risk of crash involvement when under supervision on-road. While it had been argued that there is little real world evidence to suggest that driving training accelerates the development of hazard perceptions skill, or other cognitive skills and that these skills can be developed through the experience of real world driving (Mayhew & Simpson, 1996; Williams & Mayhew, 1999); some other studies opined that improvement in driver training may be achieved in the longer term by concentrating on cognitive and perceptual skills, together with a greater emphasis on how factors such as beliefs and motivation shape driver behaviour (Twisk, 1994; Christie, 2001).

Speed restrictions are an important technique for improving safety on streets and highways. A study recently conducted by Wisconsin (2009) compared crashes on roads with sensible speed limits, or those accepted by the majority of drivers, with roads exhibiting posted speed limits considered unreasonable or insensible. The study indicated that roads with reasonable speed limits had four times fewer crashes than roads with unreasonable speed limits. Other studies [such as Robertson, 2000; Nicholas & Ravi, 1998] indicated that lowest risk of being in a crash occurs when a motorist travels at or near the 85th percentile speed. They thus imply that the 15% of motorists who exceed this limit cause many of roadway crashes. Mashrur et al. (1998) had earlier stated that speed should be consistent, safe, reasonable, and enforceable; and thus noted that unreasonably high limits create unnecessary risks.

World Health Organization (2004) affirmed that scientific analysis of accident data and the implementation of relevant safety measures could avert occurrence of traffic accident and curtail injury severity. Zhang et al (2013) opined that traffic safety hinges on road sign, road layout, vehicle performance, traffic regulations and their implementation effectiveness. Factor et al (2008) noted that social and cultural characteristics are significant determining factors affecting traffic safety no matter which social segment a driver belongs to.

RESEARCH METHOD

The study made use of a cross-sectional survey research design. The survey design was employed due to its ability to predict behaviour (Bordens & Abott, 2002); and assist in

collecting the same information about all the cases in a sample (Aldridge & Levine, 2001). In pursuit of the study objectives, the research instrument used was a structured and non-disguised questionnaire with close-ended questions, designed from literature review and previous studies. The use of questionnaire is advantageous due to its suitability to survey research (Babbie, 2005). The views of respective respondents to the understudied issues were coded to enhance the completion of the structured questionnaire which was drawn using a Likert-type scale measurement of 'Strongly Agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly Disagree'. More so, each response must be assigned a numerical code before it can be entered into SPSS (Pallant, 2011). Accordingly, Strongly Agree= 5 Agree = 4, Undecided = 3, Disagree = 2, and Strongly Disagree=1.

Three road safety management agencies comprised of: Federal Road Safety Corps, Lagos State Traffic Management Authority and Motor Traffic Department of the Nigerian Police Force were explored in a bid to getting the questionnaire filled. The choice of these agencies was due to high commitment displayed over the years towards road safety activities aside from being set up by law for such responsibility. This research employed a stratified sampling technique. Each stratum of the sample population was allotted 60 questionnaires which gives a total of 180 respondents. For the purpose of data analysis, it was discovered that 152 respondents were able to correctly fill and complete the questionnaire, which gives 84% response rate.

This study looks into the validity of the research instrument which comprises construct, content and predictive validity. However, while the construct validity confirmed the extensive use of well-grounded literatures, the content validity thus confirmed the distribution of a set of draft questionnaire to few selected experts on the field and some members of the academia in the field of transport management and risk management. These experts were able to go through the items on the instrument and came up with necessary suggestions which assisted the researchers to present the items to the respondents for better understanding. The third validity, (i.e. predictive), explains the soundness of the study via an approached adopted by Oyedijo (2012). This involved a relentless and in-depth discussion of the results of the study with sound-minded, knowledgeable and experienced road safety officers who are outside the sample population; and more so, their level of agreement with the result provided a high degree of evidence of the predictive validity.

Test of Hypotheses

A test of hypothesis has been described as a statistical technique that uses sample data to ascertain a hypothesis about the parameter of a population (Gravetter & Wallnau, 2000). Two hypothetical test techniques were employed in this research. For hypothesis 1, the Kolmogorov-Smirnov test was employed, while multiple regression technique was adopted in the test for hypothesis 2. The Kolmogorov-Smirnov One Sample Test is appropriate due to its non-parametric nature which assists to test the goodness of fit of; and thus, compares the distribution on an ordinal scale (Cooper & Schindler, 2006). The Kolmogorov-Smirnov is described as:

$$D = \max |F_0(X) - S_n(X)|$$

Where $F_0(X)$ = the specific cumulative frequency distribution under H_0 for any value of X and is the proportion of cases expected to have scores equal to or less than X . $S_n(X)$ = the observed cumulative frequency distribution of a random sample of N observations where X is any possible score. The H_0 is the specification of the null hypothesis. The null hypothesis is such that is set up as a logical counterpart of the alternative hypothesis such that if the null hypothesis is untrue, the alternative hypothesis must be true (Pagano, 1994). The decision

rule is such that null hypothesis (H_0) will be rejected once the calculated D (i.e. D_{cal}) is greater than the tabulated D (i.e. D_{tab}) under the divergence level of 0.05. The tabulated D from the Kolmogorov-Smirnov test table is always represented by (α/\sqrt{N}) ; where $\alpha=1.36$ and N =number of observation. The critical value of D for sample size of N must be greater than thirty-five (i.e. $N>35$ - for large samples).

For hypothesis 2, regression analysis was adopted in analyzing the data obtained. This was done in order to establish the relationship between risk minimization techniques and road traffic crashes. The regression analysis is suitable due to the fact it helps improve on the knowledge of the variables of interest (Mojekwu, 1996). The multiple regression analysis is computed via the use of statistical package for social sciences (SPSS). In order for the regression analysis to be conducted, a factor analysis was carried out so as to check for assessment of the suitability of the data, factor extraction, and factor rotation and interpretation.

RESULTS AND DISCUSSION

Table 1: Kolmogorov-Smirnov frequency table for Hypothesis 1

Table 1: Kolmogorov-Smirnov frequency table for Hypothesis 1					
Hypothesis	Rank of view of respondents				
	Strongly	Agree	undecided	Disagree	
Strongly					
Disagree		Agree			
F= Risk minimization techniques have no Significant influence on motorists' driving Behaviour					
	03	08	28	41	72
Fo(X) = Theoretical cumulative distribution of choices under Ho	0.2000	0.4000	0.6000	0.8000	1
Sn(X) = Cumulative distribution of observed choices	0.0197	0.0724	0.2566	0.5263	
1					
Fo(X) – Sn(X)	0.1803	0.3276	0.3434	0.2737	0

Source: Data Analysis

Hypothesis 1

Risk minimization techniques have no significant influence on motorists' driving behaviour. From the Kolmogorov-Smirnov frequency table for the hypothesis, the calculated D value is the point of greatest divergence between the cumulative theoretical distribution and cumulative observed which is 0.3434. The tabulated D from the Kolmogorov-Smirnov test table at $(\alpha/\sqrt{N} = 1.36/\sqrt{152})$ is given as:

$$D = \alpha / \sqrt{N} = 1.36 / \sqrt{152} = 1.36 / 12.3288 = 0.1103$$

In this case, since calculated D value (0.3434) exceeds the critical value of 0.1103, the null hypothesis (H_0) stating that risk minimization techniques have no significant influence on motorists' driving behaviour is rejected at $\alpha=0.05$ (see table 2). This, therefore, indicates that

risk minimization techniques, according to the respondents' view, have significant influence on motorists' driving behaviour. This result confirms the earlier of studies of Zhang et al. (2013); Factor et al. (2008); Fosgerau (2005); and Shinar et al. (2001); who noted that some of the most important factors associated with traffic accident incidence and injuries/fatalities are driving behaviours such as speeding, drunk driving, fatigue driving and not using protective devices

Hypothesis 2

In an attempt to examine the composition of risk minimization techniques among the sampling units, the following variables (i.e. road infrastructure, drivers' education, speed restriction and road safety enforcement) were investigated alongside road traffic crashes.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517 ^a	.267	.247	.964

a. Predictors: (Constant), RMF12, RMF11, RMF7, RMF1

b. Dependent Variable: RMF16

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	49.835	4	12.459	13.404	.000 ^b
	Residual	136.632	147	.929		
	Total	186.467	151			

a. Dependent Variable: RMF16

b. Predictors: (Constant), RMF12, RMF11, RMF7, RMF1

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Conf.
		B	Std. Error	Beta			Lower Bound
1	(Constant)	1.734	.810		2.140	.034	.1
	RMF1	-.110	.139	-.062	-.790	.431	-.3
	RMF7	.256	.075	.255	3.429	.001	.1
	RMF11	-.021	.099	-.016	-.217	.828	-.2
	RMF12	.413	.082	.396	5.006	.000	.2

a. Dependent Variable: RMF16

Standard multiple regression was used to assess the ability of risk minimization strategies to predict road traffic crashes in Nigeria. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. A measure of strength of association between the dependent and independent variables as well as the measure of the proportion of variance in the dependent variable ($F=13.4$) was significant at 5% level. This implies that the overall regression is significant.

About 26.7% of the total variation in the road traffic crashes observed in the study area was explained by the explanatory variables as shown by the R^2 value of 0.267. The remaining 73.3% not explained is attributed to the stochastic variable.

From the value of beta co-efficient; speed restriction has the largest beta value of 0.396. This means that the variable makes the strongest unique contribution to explaining the dependent variables (road traffic crashes), when the variance explained by all other variables in the model is controlled for. The Beta value of the contribution of road traffic management

authorities is 0.255 which is lower, indicates that, the variable made a less contribution. Both variables are significant at 5%. The remaining two variables (road infrastructure and driver education) are not significant and they contribute very small to the prediction of dependent variable. This result corroborate some earlier studies of Wisconsin (2009), Robertson (2000), and Mashrur et al. (1998), who had earlier stipulated that unreasonably high limits create unnecessary risks; while Zhang et al (2013), and Factor et al (2008) had earlier pushed for proper traffic safety and regulations and effective implementation.

CONCLUSION AND RECOMMENDATIONS

This study has been able to confirm the significant influence of risk minimization techniques on motorists' driving behaviour and thus, the significant and positive relationship that subsist between risk minimization techniques and road traffic crashes with the Road Safety Management Authorities [i.e. Federal Road Safety Corps, Lagos State Traffic Management Authority and Traffic Department of the Nigeria Police Force] as research grounds for its empirical analysis. According to a study conducted by the Federal Road Safety Corp, Nigeria (2013) on road traffic crashes (RTC); it has shown that human factor constituted about 90% of the RTC (out of which drivers' actions or reactions make up 80%). The study found that drivers' education, road sign, road infrastructure and road safety enforcement have a high level of significant influence, while speed restrictions added positive relationship to curtailing road traffic crashes.

Conclusively, this study reveals that periodic public education on speed limits, road marking enforcement, and road safety guidelines are essential elements to minimizing road traffic crashes. More so, this study presents evidence that advances in regulation of road traffic situations via proper risk control techniques may have positive impact on the number of crashes on our roads; which might in turn awake the minds of road users towards road risk factors and the need to be risk conscious as well as mindful of their risk attitude when on the road.

Having pondered these findings, this research recommends thus that:

- i. Continuous investment in road network technology is imperatively crucial for road crashes identification, prevention, and minimization;
- ii. Special Intervention Patrol (SIP) should be established, maintained and monitored to control traffic, rescue RTC victims and arrest erring traffic offenders;
- iii. Robust road infrastructure should be designed, monitored and maintained at all times so as to ensure high-level safety on our roads;
- iv. Road safety authorities should ensure that measures to curb road traffic crashes are driven down by demonstrative public enlightenment on major highways;
- v. Government should create awareness frequently on risk control measures and the need for motorists to maintain risk-free attitude;
- vi. Enforcement of road transport safety standardization scheme (RTSSS) on fleet operators;
- vii. Periodic enlightenment on road risk situations should be embarked upon to help curtail the number of risk occurrences on our roads;
- viii. Government should drive a policy to combat poor risk attitude among motorists and ensure that motor insurance is seen as a need among drivers; and
- ix. Government should ensure that risk minimization model be incorporated in the road safety scheme and ensure motorists' and motoring public education and engagement towards its implementation.

Research Limitations, Implications and Further Studies

There are a number of limitations to this research study. First, data were gathered from Road safety management authorities without taking into account the views of motorists regarding their risk-taking attitude. Secondly, the study was unable to capture some road crashes incidences and pictures. Thirdly, the views of insurance practitioners with respect to road risk factors were not considered and the use of insurance as a mechanism to managing the traffic crashes.

It is important to note that this research contributes significantly to knowledge in that it awakes the minds of the authorities concerned to make conscious effort in effective implementation of risk management techniques in averting incessant road crashes and the need to approach motorists' risk behavioural pattern with a hi-tech mechanism. It thus informs government of the need to review, on a continuous basic, the road infrastructural design in line with the influx of motor users and motoring populace in a bid to minimizing road traffic crashes.

This research enjoins further studies to investigate the perceived understanding of motorists with respect to the various risk minimization techniques in the study. More so, cost implication of these various techniques could be model to enable government and other relevant authorities see towards its implementation.

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A MULTI-PURPOSE THREE-PHASE QUALITY CONTROL CHART APPLIED TO THE LENGTH OF SERVICE AND RETIREMENT AT THE UNIVERSITY OF LAGOS

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ABSTRACT

Statistical quality control was originally designed for manufacturing of products. However, the method has been adopted in some other areas of human endeavour. For example, Shewhart's normal-distribution-based statistical process control chart has been used in the detection and monitoring of hospital-acquired infections, measuring and interpreting environmental impacts, and petroleum exploration. In this study an unconditional and non-parametric control chart was derived and applied to the length of service and retirement at the University of Lagos. The results showed easier computation and interpretation when compared with Shewhart's mean-control chart. The theoretical results tend to support the practice of the length of service and retirement at the University.

Keywords: manufacturing, statistical process control, shewhart's mean-chart, the ABALA variable-control chart

1.0 INTRODUCTION

Background to Statistical Quality Control Lowenthal (2010) gave a product-based definition of quality as "the totality of features and characteristics of a product or service that bears on its ability to satisfy given needs". Quality is all the features and characteristics of a product or service that contributes to the satisfaction of a customer's needs. These needs involve price, safety, availability, maintainability, reliability, and usability (Besterfield, 1986). He also explained quality control as the use of techniques and activities to achieve, sustain and improve the quality of a product or service. According to him quality control involves integrating the following related techniques and activities:

- i. Specification of what is needed
- ii. Design of the product or service to meet the specification
- iii. Production or installation to meet the full intent of the specification
- iv. Inspection to determine conformance to the specification
- v. Review of usage to provide information for the revision of the specification if needed

Utilisation of these activities provides the customer with the best product or service at the lowest cost and that the aim should be continued quality improvement.

Caswell (1982) defined statistical quality control (SQC) as a system in which sampling theory is applied to the practical problems of routinely controlling the quality of manufactured or packaged goods. That is, SQC involves the use of various statistical techniques to decide whether or not a manufactured product has met a pre-stated quality level and may be delivered to the customer. It is classified as parametric SQC or non-parametric SQC. Parametric SQC is based on the parameters of a probability distribution such as the populations mean (μ) and the population standard deviation (σ) of the normal probability distribution. Nonparametric (or distribution-free) SQC does not depend on such parameters of a probability distribution. Further, in an effort to explain statistical quality control, Stevenson (2005) divides it into two: statistical process control (SPC) during manufacturing and

acceptance sampling of the finished products. Furthermore, another classification of SQC is univariate quality control (i.e., controlling one variable at a time) and multivariate quality control. The variables usually controlled are individual observations, sample means (sample averages), ranges, proportions, number of defective items, standard deviation. SQC is a branch of quality control, as quality control involves SQC and quality assurance that involves monitoring or audit function.

In the United States of America modern quality control was originated by Walter Andrew Shewhart, then working at Bell Telephone Laboratories. Shewhart devised a control chart named after him in 1923. The modern quality control movement is very closely associated with an American mathematician and physicist, W. Edwards Deming.

The basic concept behind Shewhart's control chart is the distinction between two categories of variation. A process will either display controlled variation or it will display uncontrolled variation. If it displays controlled variation, then according to Deming, "it will not be profitable to try to determine the cause of individual variations". When a process displays controlled variation, its behaviour is indiscernible from what might be generated by a random or chance process.

On the other hand, when a process displays uncontrolled variation, then, "it will be profitable to try to determine and remove the cause of the uncontrolled variation".

Given this distinction, the control chart is a technique for detecting which type of variation is displayed by a given process. The objective is to give the user (manufacturer) a guide for taking appropriate action-to look for assignable causes when the data display uncontrolled variation, and to avoid looking for assignable causes when the data display controlled variation.

Shewhart looked upon the control chart as the voice of the manufacturing process-one can use the chart to understand how a process is behaving. Therefore, a process is said to be in-control only when it has demonstrated, by means of a reasonable amount of data, that it is performing consistently and predictably. Consequently, any process which is not performing as consistently as possible may be said to be out of control.

Shewhart created the control chart with 3-sigma (population standard deviation) limits. Shewhart's use of 3-sigma limit, as opposed to any other multiple of sigma, did not stem from any specific mathematical computation. Rather, he said that 3.0 seemed to be an acceptable and economic value, and that the choice of 3.0 was justified by empirical evidence that it works. This pragmatic approach is markedly different from the more strictly mathematical approach commonly seen in the journals of today. In fact, in order to have a practical and sensible approach to the construction of control charts, Shewhart deliberately avoided overdoing the mathematical detail.

What we need is guidance as to when assignable causes are troublesome enough to warrant attention. Shewhart's control chart, with its 3-sigma limits, provides this guidance.

Application of Statistical Quality Control to Other Areas of Study

Statistical quality control was originally designed for manufacturing of products. However, the method has been adopted in some other areas of human endeavour as exemplified in the following references:

Morton, Whitby, McLaws, Dobson, McElwain, Looke, Stackelroth, and Sartor (2002) in their "The application of statistical process control charts to the detection and monitoring of

hospital-acquired infections” said, among other things, that Shewhart and CUSUM charts were suitable for surgical infection surveillance.

“Plotting basic control charts: tutorial notes for health care practitioners” (Mohammed, Worthington and Woodall, 2008) showed the spread of the use of control charts in the healthcare sector.

Applying SQC methods can help firms measure and interpret their environmental impacts and associated costs much more meaningfully (Corbett and Pan, 2002).

Belt and Rice (2002) applied statistical quality control to petroleum exploration.

Grigg, Spiegelhalt and Jones (2008) applied control charts to monitor counts applicable to methicillin resistant *Staphylococcus aureus* reports in 173 UK National Health Service acute trusts. Hayati, Maghsoodloo, and Boggs (2002) used a control chart method to monitor occupational asthma. In the study peak expiratory flow (PEF), a lung function maker, from 45 workers was used. The average and range control charts provided a method to monitor the acute and chronic conditions of asthma and characterize the PEF variability estimated using variability index. It was reported that the results of the investigation were as good as, and, in some cases better than published clinical guide lines. The research also shows that the control chart method is an effective, simple and inexpensive tool for early intervention in workers suspected of occupational asthma. See also Banneyan (2001).

Tse, Chang, Su, Chow, Hsiung and Lu (2006): Statistical quality control process on raw materials and the final product of Traditional Chinese Medicine (TCM) is examined. It contains a statistical quality control (QC) method to assess a proposed consistency index of raw materials from various sites or final products manufactured at various sites. It is basically a 95% confidence interval lower limit index. If the constructed index is greater than a pre-specified QC lower limit, then, the raw material and or final products have passed the QC and hence, can be released for further processing or use; otherwise rejection is made. This is an example of a situation where only the lower limit of a control chart is used. There are also situations where only the upper control limits are needed, e.g. environmental pollution.

Data quality control is a necessary component of any weather station network used for estimating reference evapotranspiration (ET_o). The absence of quality control programme can result in poor quality ET_o data that severely limits the usefulness of irrigation scheduling. In 2005, statistical quality control criteria were developed for the California Irrigation Management Information System weather stations for assessing quality and reasonableness of hourly and daily weather data. A new version of control chart is based on means and standard deviations of the used data.

Baker, Lattimore, and Matheson (1996) The-at-the source emphasis of total quality management (TQM) has reduced the reliance on post-production statistical quality control approaches such as acceptance sampling. For social processes where the inputs are ill-defined and the outputs are difficult to measure, traditional quality control approaches have been rarely applied. The paper addresses the problem of monitoring use of illegal drugs, a critical social problem. In this case one must rely on the detection of drugs as a measure of drug abuse. The behaviour of interest is the detection of illegal drug use through urine-testing. The technique for monitoring this behaviour in a population of interest is single-attribute Bayes acceptance sampling. The method was applied to a population of probationers in Madison County, Illinois, USA. The method offered the probation office a lower cost of monitoring by reducing the amount of testing that must be done to monitor the use of drugs among their probation population.

Lyberg (1985) treats quality control in a wide sense: the meaning of total survey error and different quality characteristics, common quality problems in statistical agencies in Sweden. The title of the Swedish journal is Statistics Sweden. Quality control efforts are reviewed regarding specific error sources, error examination and error control. Tools such as preventive control, production control and evaluation are dealt with. Some quality control procedures are applied.

A control chart based on sample ranges for monitoring the covariance matrix of the multivariate processes was developed by Costa and Machado (2011).

1.1 The Problem Investigated

Various decision rules are made for various reasons and on various occasions. For example, what a pass mark or a cut-off point in an examination should be; how to determine employable applicants in an interview; determining who are to be retrenched based on age or length of service; who is to receive the proposed scholarship. In all these decision situations, subjectivity needs to be minimized.

1.2 The Objective of the Study

Setting control limits as guides or indices based purely on given and unconstrained data. That is, there is no assumption about the nature of the data. It is setting standards that are devoid of sentiments.

2.0 Literature Review

Stevenson (2002) defines quality as the ability of a product or service to consistently meet or exceed customer expectations.

Ishikawa (1994) says the interpretation of “quality” varies from company to company. For example, in the Bank of America quality means quality of branches, borrowers and policy-making; but in United Airlines quality refers to that of service. So quality is not for products alone, it is to be quality in general, including quality of management. Good quality means the best quality that a company can produce with its present production technology and process capability, and that will satisfy the customers’ needs, in terms of factors such as cost and intended use. When products are accompanied by good after-sales service, are of reliable quality and have good compatibility and long life times with little dispersion, the customer will probably buy them with confidence. Conversely the consumer will be unsure about buying products with short life times and poor reliability with which something goes wrong a few days or a few months after purchase.

Slack, Chambers and Johnston (2004) said that a Professor David Garvin classified various definitions into five approaches: the transcendent approach, the manufacturing-based approach, the user-based approach, the product-based approach and the value-based approach.

Nanda(2005)reports Crosby (a quality guru) saying that quality has to be defined as conformance to requirements, not as goodness or elegance. Deming (a guru of the Total Quality Movement) supports that quality should be viewed in terms of customer satisfaction. Juran (another quality guru) believed that quality has two meanings that dominate the use of the word. The two dominant definitions are:

- i. Quality consists of those product features that meet the needs of the customers and thereby provide product satisfaction.
- ii. Quality consists of freedom from deficiencies. Juran defines quality as fitness for use.

Hoyle (2008) Quality is determined by the extent to which a product or service successfully serves the purposes of the user during usage. Quality has many meanings including:

Note that there is the operation's view: quality is consistent conformance to customers' expectations versus the customer's view or perception that varies from customer to customer. Other aspects of product-and-service quality are found in Gupta (2011), Banjoko (2012), Gupta and Gupta(1994).

It is worthy of note that the Lagos State Government is working toward the quality of drinking water produced by both public and private organizations (*The Punch*, a Nigerian Daily News Paper of February 2, 2015).

3.0 Methods

A random sample of size 16 is taken from the study population. The sample is then subjected to the multi-purpose three-phase statistical quality control chart (MTPSQCC)

Order-Data-Control Chart Proposed

Suppose a sample with the following observations: $x_1, x_2, x_3, \dots, x_{n-1}, x_n$.

When these observations are ordered (Hogg and Craig, 1978; Randles and Wolfe, 1979), then, the result is:

$$y_1 \leq y_2 \leq y_3 \leq \dots \leq y_j \leq \dots \leq y_{n-1} \leq y_n \quad \dots \dots \dots (1)$$

It is this order statistics that is to be controlled.

The Process of Controlling of Order Statistics as Proposed in Alabi-Labaika (2012):

Let a measure of central tendency denoted by θ be a partitioning criterion. If θ is included in the order statistics, the data set becomes partitioned into two:

$$y_1 \leq y_2 \leq y_3 \leq \dots \leq y_i \leq \dots \leq y_b \leq \theta \leq y_{b+1} \leq y_{b+2} \leq y_{b+3} \leq \dots \leq y_{b+j} \leq \dots \leq y_{n-1} \leq y_n \quad \dots \dots \dots (2)$$

Define partition B as

$$B = y_1 \leq y_2 \leq y_3 \leq \dots \leq y_i \leq \dots \leq y_b \quad \dots \dots \dots (3)$$

for order statistics coming before θ where y_b is the observation coming immediately before θ in (3).

Define partition A as

$$A = y_{b+1} \leq y_{b+2} \leq y_{b+3} \leq \dots \leq y_{b+j} \leq \dots \leq y_{n-1} \leq y_n \quad \dots \dots \dots (4)$$

for order statistics where y_{b+1} comes immediately after θ in (2).

In that case θ lies between partitions B and A for all the cases considered in this section of the work.

Let the sample statistic to be controlled be denoted by $\hat{\theta}$ (sample mean for example) using partition ranges.

Definitions:

$R_u = y_n - y_{b+1}$ is the range for the upper partition

and $R_l = y_b - y_1$ is the range for the lower partition

Then, the control limits for $\hat{\theta}$ are: $\theta \pm R$

$$\begin{aligned} \text{Upper Control Limit } \hat{\theta} &= \theta + R_u \\ &= \theta + (y_n - y_{b+1}) \quad \dots \dots \dots (5) \end{aligned}$$

$$\begin{aligned} \text{Lower Control Limit } \hat{\theta} &= \theta - R_l \\ &= \theta - (y_b - y_1) \quad \dots \dots \dots (6) \end{aligned}$$

The last two equations (5) and (6) are the generalized control limits for any set of ordered data be they sample points or sample statistics and to be denoted as Ordered Data Control Chart Limits (ODCCL).

Now, Upper Control Limit₀ = $\theta + R_u$

which, on appropriate substitution, (e.g. for the sample mean \bar{x}) becomes

$$\begin{aligned} \text{Upper Control Limit } \bar{x} &= \bar{\bar{X}} + R_u \\ &= \bar{\bar{X}} + (y_n - y_{b+1}) \dots\dots\dots(7) \end{aligned}$$

$$\begin{aligned} \text{Lower Control Limit } \bar{x} &= \theta - R_l \\ &= \bar{\bar{X}} - R_l \\ &= \bar{\bar{X}} - (y_b - y_1) \dots\dots\dots(8) \end{aligned}$$

Equations 7 and 8 constitute the mean-based order-data-control chart limits (MBODCCL) which are special cases of the generalized counterparts in (5) and (6).

Comments on ODCCL

The ODCCL is non-parametric because it is not based on any parameter of an assumed probability distribution.

The quality control implication of the limits is that if a manufacturing process is in-control, all the test values will lie between the upper and lower control limits. Since the values are ordered, the implication is that the rejected values will be either at the lower end of the lower partition or at the upper end of the upper partition or both.

3.2.1.1 Adapting the MBODCCL to Individual Observations by replacing \bar{x} with x and $\bar{\bar{X}}$ with \bar{x}

By replacing \bar{x} with x and $\bar{\bar{X}}$ with \bar{x} MBODCCL can be adapted to a variable (x). So we apply the following equations:

$$\text{Upper Control Limit } x = \bar{x} + (y_n - y_{b+1}) \dots\dots\dots(9)$$

$$\text{Lower Control Limit } x = \bar{x} - (y_b - y_1) \dots\dots\dots(10)$$

Equations (7) and (8), (9) and (10) hereby called the Abraham Bisi Alabi-Labaika (ABALA, for short) Variable Control Limits and the resultant control chart is to be called the ABALA Variable Control Chart. This is to distinguish it from Shewhart's mean-chart and its extensions found in Alabi-Labaika (2005).

4.0 Results

To apply equations (7) and (8), a plastic-bottles factory in the Isolo industrial estate in Lagos was visited. The collected data are on Table1.

Table1. Sixteen Samples from the Factory Daily Output of Defective 75 cl. Plastic Bottles

S/N	Item	1	2	3	4	5	Total	Mean
1		43	76	94	202	290	705	141
2		9	27	32	52	149	269	54
3		16	17	37	39	71	180	36
4		32	37	46	78	259	452	90
5		10	34	48	62	136	290	58
6		36	40	54	57	116	303	61
7		21	30	52	59	104	266	53
8		20	27	38	64	140	289	58
9		13	17	35	46	104	215	43
10		20	31	32	46	53	182	36

11		29	50	65	126	155	425	85
12		91	124	139	164	168	686	137
13		21	27	154	174	181	557	111
14		20	48	60	100	206	434	87
15		58	67	123	142	199	589	118
16		39	71	71	80	91	352	70

The process : Ordering the sample means with the mean of sample means (77.39) gives:

36= y_1 , 36.4, 43, 53, 54, 57.9, 58, 61, 70= y_b , $\bar{x}=77.39$, 85= y_{b+1} , 87, 90.4, 111, 118, 137, 141= y_n

Using **ODCC**, **Upper Control Limit** $\bar{x} = \bar{\bar{X}} + R_u$

$$= \bar{\bar{X}} + (y_n - y_{b+1})$$

$$(R_u = y_n - y_{b+1} = 141 - 85 = 56)$$

$$= 77.39 + 56 = 133.39$$

Lower Control Limit $\bar{x} = \bar{\bar{X}} - (y_b - y_1)$

$$= \bar{\bar{X}} - R_l, (R_l = y_b - y_1 = 70 - 36 = 34)$$

$$= 77.39 - 34 = 43.39$$

The resulting control limits are (43, 133) rejecting sample means: 36, 36.4, 43, at the lower end and rejecting 137 and 141 at the upper end of the ordered data. The proposed variable quality-control chart (the ABALA variable-control chart) for the case study of 16 sample means is shown in Figure 1 here:

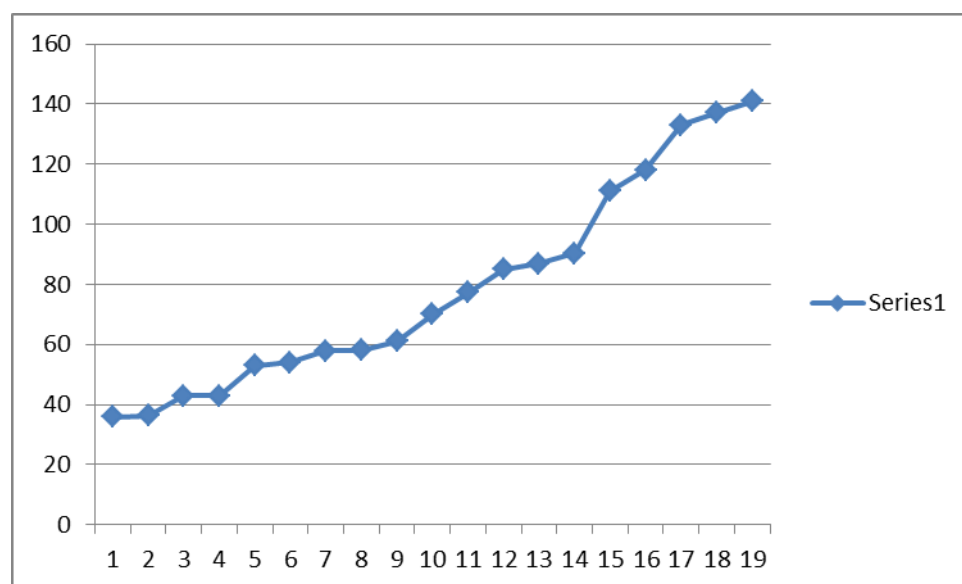


Figure 1. The ABALA graph of the sample number versus sample means.

In Figure 1 the graph falls below 43, the lower control limit, which means that the sample mean is not controlled. It falls in *the lower phase*. Hence, the hypothesis of acceptability of the process is rejected.

The area between the lower and the upper control limits is called *the middle phase* or *the acceptance region*.

A similar conclusion is reached looking at the upper part of the graph: the graph rises beyond the upper control limit (133), *the upper phase*, which means that the sample mean under test is not controlled. Hence, the multi-purpose three-phase concept. So the manufacturing process needs to be investigated for propriety.

5.0 Application of the ABALA variable-control chart to other areas of study

Retirement control limits and charts using age and length of service have been selected for study using the University of Lagos as a case study.

See the following example of the University-of-Lagos (Unilag.) 2016 retirees. The population of the 2016 retirees is 40. A random sample of size 16 was selected. The purpose of size 16 is for comparability with the fore-going case of plastic bottles.

s/n	Sample x, age in years	size, n=16	y, length of service(years)			
1	50		15			
2	50.81		16			
3	54		17			
4	55		17	LCL=29.625-7=22.625		
5	55		22			
6	56		22.625			
7	57		Ave=29.625			
8	57		31	UCL=29.625+6=35.625		
9	57	LCL=58.81-8=50.81	35			
10	58		35			
11	Ave=58.8125	UCL=58.81+5=63.81	35			
12	60		35			
13	62		35			
14	63		35.625			
15	63		36			
16	63.81		36			
17	64		36			
18	65		36			
19	65		37			

Interpretation: looking at the analysis, the average age is 58.8 or 59 years and the average length of service is 29.6 or 30 years.

Decisions: (1) Using age, the minimum is the lower control limit of 50.81 years which is approximately 51 years before retirement, and the maximum age before retirement is 63.81 years (the upper limit) which is approximately 64 years.

(2) Using the length of service, the minimum is the lower control limit of 22.625 years which is nearly 23 years of service before retirement, and the maximum number of years of service before retirement is 35.625 or 36 years approximately.

Comments on the decisions: These decisions are to be compared with the real system-operation:

(1) The maximum age before retirement is 65 years (in practice) versus 64 (in theory).

(2) The maximum length of service before retirement is 35 years (in practice) versus 36 (in theory).

6.0 The **Conclusion**, then, is that the result of the applied quality control chart is close to the real world. It is simple and highly objective.

7.0

7.0 **Recommendation:** The quality control chart developed and applied in this study, can, therefore, be used to initiate a system and to test an existing one.

7.1

8.0 **Other application** areas include school admission control limits such as “merit” and other admission-mark standards using entrance examination results and in hospitals for estimating or revising the prostate-antigen control limits.

9.0 **Implementation:** The researcher is ready to collaborate with any industrialist(s) or other interested individuals and groups for implementation.

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DETERMINATION OF PRICE LEVEL AND THE INTERACTION OF MONETARY AND FISCAL POLICIES IN NIGERIA

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ABSTRACT

This research was conducted to investigate the determination of price level and the interaction of monetary and fiscal policies in Nigeria. This study delves into monetary and fiscal policies with a view to elucidating their determination on price level. The data for this study were obtained from Central Bank of Nigeria's (CBN) annual statistical bulletin 1975-2013. The Econometric Ordinary Least Square (OLS) technique was employed in obtaining the numerical estimates of the coefficients in different equations. The results of the analysis revealed that the variables contributed a seventy-eight percent (78%) influence on the determination of price level and interaction of monetary and fiscal policies of cost of funds in the economy. It also shows that they must attempt to keep the money supply growing at an appropriate rate to ensure sustainable economic growth and to maintain internal and external stability

Keyword: Price level, Monetary policy, Fiscal policy

1 INTRODUCTION

In Nigeria, monetary policies have been used since the Central Bank Act of 1958. This role has facilitated the emergence of the active money market where treasury bills and other financial instruments which are used for open market operations and raising debt for governments have grown in volume and value becoming a prominent earning asset for investors and source of balancing liquidity in the market. There have been various regimes of monetary policy in Nigeria. Sometimes, the monetary policy is tight and at the other times it is mostly used to stabilize prices.

Today, monetary and fiscal policies are both commonly accorded prominent roles in the pursuit of macroeconomic stabilisation in developing countries but the relative importance of these policies has been a serious debate between the Keynesians and Monetarists. The Monetarists believe that a fiscal policy rather than a monetary policy exert greater influence on economic activities. Despite their demonstrated efficacy in other economies as policies have not been sufficiently or adequately used in Nigeria (Ajisafe and Folorunsho, 2002). Since the introduction of economic deregulation in Nigeria, price level has become one of the macroeconomic problems facing the economy. The Governments has introduced a lot of policy measures, such as stabilization policies; fiscal policies and monetary policies to control price level in the country. Prominent among the measures are monetary and fiscal policies. Meanwhile, the interest rate and government expenditure are the most frequently used instruments to achieve the stabilisation goal of the aforementioned monetary and fiscal policies. Despite the intensified use of the policies, the rate of price level in Nigeria is still very high. Several questions have come to the minds of Nigerians as to whether the government's economic policies are not effective in the curtailment of price level. In the light of this crucial question, we will attempt to see whether there is an interaction between a monetary and fiscal policy and also the determination of price level. The main purpose of this study is to examine the interactive impact of monetary and fiscal policies on the determination of price level in Nigeria since 1975 to 2013.

2 LITERATURE REVIEW

The motivation for this study arose from various studies on the Nigerian economy that have found diverse and, at times, contradictory empirical evidence on which direction policymakers should take and the magnitude of the effects of some variables on inflation and aggregate output. These findings have, at times, led to conflicting discussions on the direction of an economic policy, which create difficulties for policymakers in choosing an appropriate policy mix that will enable a faster growth of output in the economy and achieve lower inflation. A harmony between monetary and fiscal policy variables is necessary so they do not contradict one another.

Fiscal and monetary policies are the tools through which an economy is regulated by the government or the country's central bank. The objectives of monetary and fiscal policies in Nigeria are wide-ranging. These include increase in Gross Domestic Product (GDP) growth rate, reduction in the rates of inflation and unemployment, improvement in the balance of payments, accumulation of financial savings and external reserves as well as stability in the naira exchange rate (CBN, 2009). Generally, both fiscal and monetary policies aim at achieving relative macroeconomic stability.

Moreover, monetary and fiscal policies are the two most important tools for managing the macro-economy in order to achieve high employment rates, price stability and overall economic growth. An important issue that has exercised the minds of macroeconomists is the understanding of how the dependence, independence and interdependence between monetary and fiscal policies could lead the economy closer or further away from set goals and targets. In a poorly co-coordinated macroeconomic environment, fiscal policy might affect the chances of success of monetary policy in various ways, such as: its eroding impact on the general confidence and efficacy of the monetary policy, through its short-run effects on aggregate demand, and by modifying the long-term conditions for economic growth and low inflation. On the other hand, a monetary policy may be accommodative or counteractive to a fiscal policies, depending on the prevailing political and economic paradigms.

After the prosecution of the Nigerian Civil War in 1970, diverse monetary and fiscal policy measures were employed to reconstruct the economy and to put it on a sustainable growth trajectory. These efforts may have been bolstered or undermined by the nature of the interactions between monetary and fiscal policies in Nigeria. This paper hypothesises that the interactions between monetary and fiscal policies in Nigeria have been characterised by regime-shifts, which can be demarcated into two phases of accommodative and counteractive policies Adefeso, and Mobolaji, (2010). The paper employs a state space (SS) model with Markov-switching (Ms) properties to examine this behaviour. This exercise is justified because to the best of my knowledge, it does not only pioneer the application of the Ss-Ms model for the analysis of policy interactions in Nigeria, it inherently provides insights about the validity or otherwise of the fiscal theory of the price level in Nigeria.

Chukwu (2009) used quarterly data to explore the monetary and fiscal policy interactions in Nigeria between 1970 and 2008. The simulated generalised impulse response graphs generated from the VAR estimation provides the evidence of a non-Ricardian fiscal policy in Nigeria. The paper analyses the interaction between monetary and fiscal policies by applying a state-space model with Markov-switching to estimate the time-varying parameters of the relationship. The evidence indicates that monetary and fiscal policies in Nigeria should be set in such a way that the objective it is to achieve a well-defined goal.

Sanusi, (2002.) says that the ability of CBN to pursue an effective monetary policy in a globalised and rapidly integrated financial market environment depends on several factors which include, institutions appropriate cal framework, institutional structures, a conducive political environment which allows the banks to operate with reference to exercising its instruments and operational autonomy in decision making, the degree of coordination between monetary and fiscal policies to ensure constituency and complementary, the overall macroeconomic environment, the stage of development, depth and stability of the payments and settlement system, as well as the level and the availability of consistent, adequate, reliable, high quality and timely information to the Central Bank of Nigeria. As observed in the literature the relative impact of fiscal and monetary policies has been studied extensively. Ansari (1996), Chari et al. (1991), Clarida and Gali (1994), Chari and Kehoe (1998), Feldstein (2002) and Cardia (1991) have examined the impact of fiscal and monetary policies on various aggregates. However, the bulk of theoretical and empirical research has not reached a conclusion concerning the relative power of fiscal and monetary policies in the determination of price level.

Some researchers find support for the monetarists view, which suggests that a monetary policy generally has a greater impact on economic growth and dominates a fiscal policy in terms of its impact on investment and growth Ajayi (1974), Elliot (1975), Batten and Hafer (1983), while others argue that a fiscal policy stimulant is crucial for economic growth Chowdhury et al (1986). However Cardia (1991) found that a monetary policy and a fiscal policy play only a small role in varying investment, consumption, and output. Montiel (1989) applied a five-variable VAR model (money, wages, exchange rate, income and prices) to examine the sources of inflationary shocks in Argentina, Brazil and Israel.

The findings indicate that exchange rate movements among other factors significantly explained inflation in the three countries. Other studies which have reached similar conclusions are those taken by Elbadawl (1990) for Uganda, Nnanna (2002) for Nigeria and in their study of money supply, government expenditure, output and prices in Pakistan found that government expenditure and inflation are negatively related to economic growth in the long run while M2 positively, impact on economic growth.

Omoke and Ugwuanyi (2010) in their long run study of money, price and output in Nigeria found no cointegrating vector but found that money supply granger causes both output and inflation suggesting that monetary stability can contribute towards price stability. Also, Olukayode (2009) in his study of government expenditure and economic growth found that private and public investments have insignificant effects on economic growth during the review period 1977-2006. Ajisafe & Folorunso (2002), in their analysis, showed that the monetary rather than the fiscal policy exerts a great impact on economic activity in Nigeria using cointegration and error correction modeling techniques. The emphasis on the fiscal action of the government has led to greater distortion in the Nigerian economy.

3 METHODOLOGY

Functional and linear equations

The functional and linear equations which form the model from the theoretical and literature review in the previous chapter shows that there was a causal link between monetary and fiscal policies and the Nigerian economy.

In this section, we shall pursue this same objective further by specifying our model. The model is to verify the performance of monetary and fiscal policies on the Nigerian economy. The approach is to modify the model by specifying multiple regression equation is made up of the gross domestic product (GDP), as function of the independent variables (i.e. money

supply, interest rate and inflation). Also, it is obvious that money supply, interest rate, and inflation will influence gross domestic product in Nigeria. The model is specified as:

$$GDP = \beta_1 INF + \beta_2 M2 + \beta_3 INT + \epsilon$$

The variables (in abbreviations) used in the model above are clearly and fully presented below,

GDP = Gross Domestic Product (in Nigeria)

INF = Inflation Rate

M2 = Broad money supply

INT = Interest Rate

ϵ = Error Term

Autonomous income

$\beta_1, \beta_2, \beta_3$ Parameters.

B1, B2, and B3 are the rate of changes in Inflation Rate, Broad Money Supply and Interest Rate.

APRIORI ECONOMIC EXPECTATIONS OF THE VARIABLES

β_0 represents the constant variable, β_1 is the coefficient of money supply (MS) which is expected to be greater than zero (β_0) because it is positively related to the gross domestic product in Nigeria, 132 is the coefficient of interest rate (Int) which is expected to be less than zero ($\beta_2 < 0$) due to its negative relationship with the gross domestic product in Nigeria. Whilst (33 is the coefficient of Inflation rate (TNF) and) it is expected to have a negative relationship with the gross domestic product in Nigeria.

The apriori economic expectations of the variables is $\beta_1 > 0, \beta_2 > 0, \beta_3 < 0$

4 DATA ANALYSIS AND INTERPRETATION

TABLE 4.1: UNIT ROOT RESULT

Variable	DF	ADF Test critical value	ADF Test Statistics	P-values	Order of Integration	ADF lags
$\Delta GDP (c)$	5%	-2.936942	-0.116261	0.9406	I (1)	1
	10%	-2.606857				
$\Delta INFLR (c)$	5%	-2.936942	-3.999086	0.0035	I (2)	1
	10%	-2.606857				
$\Delta MS_2 (c)$	1%	-2.936942	-2.082275	0.2528	I (2)	1
	5%	-2.606857				

Source; Author's estimation using E-view 3.0

This reveals that some of the variables were stationary at first difference and some were at second difference. On these bases, the null hypothesis of non-stationary variables is rejected for all the variables and we therefore, conclude the variables are stationary. This further implies that the variables are integrated of order one, I (1) and two I (2).

4 DATA ANALYSIS AND INTERPRETATION

Considering the uncertain quality of data used in the study, the level of statistical significance chosen for testing the hypothesis is at 5%. The regression result shows there is an existence

of a linear and proportionate relationship between the GDP and the explanatory variables. The explanatory variables identified are the monetary policy variables of interest rate, inflation rate and broad money supply. The sign of the co-efficient estimates are rightly assigned, reflecting a positive relationship with economic growth and thus confirms to prior expectation. The statistical evidence emanating from the study of co-efficient of determination R^2 shows that the endogenous variables jointly explained over 78.7% of the total variation in the dependent variable (GDP). The value of the adjusted R^2 (0.768460) which is over 76.8 % re-affirms the goodness of fit and signifies that over 78.7% variations did not merely result from the use of multiple variables in the model. The F-statistics (41.9) of the model estimate is statistically satisfactory such that the hypothesis of the equation being equal to zero can be rejected. The joint influence of the explanatory variables was statistically significant at a 5 percent level of significance. Durbin Watson test of autocorrelation (1.39) indicates the presence of positive autocorrelation.

Specifically, at a 5% level of significance a liquidity ratio and cash reserve have a direct and an although insignificant yet a positive impact on growth except for money supply which exerts a significant positive impact on growth. In other words, inflation and interest rate were statistically insignificant and thus have no significant impact on growth, while money supply has a significant relation with economic growth in Nigeria. This confirms the hypothesis that there is a significant impact of monetary and fiscal policies on price level determination within the period under review.

The empirical evidence emanating from the study reveals that the equation shows a DOUBLE-LOG relationship between GDP, INF, INT, and M2, the variables are logged because they do not have the same magnitude. One percent change in INE will induce a (-0.98) unit change in GDP, it shows that inflation has a negative relationship with economic growth (GDP). One percent change in M2 will induce a 1.1 unit change in GDP; it shows that broad money supply has a positive relationship with economic growth. One percent change in 1NT will induce a 1.59 unit change in GDP.

Result of Data Analysis

4.4 HYPOTHESES TESTING

Table 4.2: Test of Research Hypotheses

Dependent Variable: GDP				
Method: Least Squares				
Variable	Coefficient	Std. Error	t - Statistic	Prob.
LOG(INFLATION)	-0.975229	0.350840	-2.779701	0.0088
LOG(MS2)	1.102263	0.292267	3.771431	0.0006
LOG(R)	1.594836	0.405918	3.928958	0.0004
C	-2.832479	3.061533	-0.925183	0.3614
R-squared	0.787234	Mean dependent var.		11.92077
Adjusted R-squared	0.768460	S.D. dependent var.		1.480916
S.E. of regression	0.712596	Akaike info criterion		3.720196
Sum squared resid.	17.26497	Schwarz criterion		3.910511
Log likelihood	-38.93043	Hannan-Quinn criter.		3.778377
Durbin-Watson stat	1.318002	F-Statistic		41.93324
		Prob. (F-statistic)		0.000000

Highlights: $R^2 = 0.79$: Explanatory capacity = 79%

At a 5% level of significance with a degree of freedom of 35(n-k), the tabulated value (ttab) is 2.03, while the calculated value (Tstat) for the two variables (inflation rate and money supply) is -2.78 and 3.77 respectively.

Since the calculated value is less than the tabulated value for inflation, it can be concluded that Interaction of monetary and fiscal policies determines the price level in the country. And the calculated value is greater than the tabulated value for money supply, it can be concluded that money supply has a significant impact on economic growth performance, therefore we reject H_0 Money supply had a direct relationship with economic growth which suggests that it encourages investment and productivity in goods and services. Inflation and interest rate had positive but insignificant relations with growth hence; a little reliance can be built on the result. This can be viewed that the expected transformations of the economy through the monetary instruments of liquidity ratio and cash reserve policies for the periods covered are not being realised.

Decision Rule:

If $t\text{-calculated} > t\text{-tabulated}$, we reject the null hypothesis $\{H_0\}$ and accept the alternative hypothesis $\{H_1\}$, and if otherwise, we select the null hypothesis $\{H_0\}$ and reject the alternative hypothesis $\{H_1\}$.

Level of significance = α at 5% = 0.025 Degree of freedom: $n-k$

Where:

n : sample size

K : Number of parameter

The t-test is summarised in the table below:

Table 4.3 summary of t-test

Variables {t-value}	t-tab	Remark
INFLATION {-2.78}	± 2.03	Significant
MONEY SUPPLY {3.77}	± 2.03	Not Significant
INTEREST RATE {3.93}	± 2.03	Not Significant

The t-statistics is used to test for individual significance of the estimated parameters $\{f_3, 1, 132, \text{ and } 133\}$. From the table above, we can deduce that INFLATION {-2.78} is not greater than 2.03 {going by absolute values} which represents the t-tabulated figure implying that INFLATION is not statistically significant. On the other hand, the intercept M_2 {3.77} and $1NT$ {3.93} are more than the t-tabulated figure {2.03} signifying that the intercept is statistically significant.

In this study, mathematical relationships between the variables were established. Available data on money supply (MS2), gross domestic product (GDP), inflation rate (INFLR) and interest rate (TNTR) were collected and used for the purpose of this analysis. Three multiple regression models were formed to capture the assumed relationship between these variables.

(a) The analysis shows the trend analysis of Nigeria's growth rate between the year 1975 and 2013. In it, Nigeria's economy has experienced different growth stages. The GDP growth rate recorded negative growth in the early 1980s (-2.7 in 1982, -7.1 in 1983 and -1.1 in 1984) after the outlier in 1981 with 550.53%. The growth rate increased steadily between 1985 and 1990 with 9.25% and 13.02% respectively, but fell sharply in 1986 and 1987 to 2.45% and -0.57%. The 1990s witnessed an unstable growth. However, the growth rate has been relatively high since 2001 in a fluctuating manner, except in 1991 when the negative growth rate of -0.8% was recorded.

(b) This shows the trend analysis of Nigeria's growth between GDP and inflation rate. The trend analysis result shows that in the year 1975 the inflation rate increased at the rate of 4.35% and fell in 1985 to 1.07%. There was a sharp increase in 1988 to 61.02% and a sharp decrease in the year 1990 to 3.64%. The growth rate of inflation rose again to the highest in 1994 to 76.79% and a sharp decrease occurred in 1999 to 0.22% which happens to be the lowest. It increased after that and kept fluctuating till 2008 at 15.05%.

(c) It also shows the trend analysis of Nigeria's growth rate between the GDP and the rate of interest. The interest rate growth rate experienced a consecutive 0% for 4yrs and became negative in 1975 (-14.29), went back to 0% for 2years. There was a sharp increase in 1978, 1982 to 16.67% and 32.26% respectively. It became negative in 1983 (-2.44%) and 1985 (-26.00%). It has been fluctuating since 1996 from positive to negative figures till 2008 when it became 1.88%.

(d) The analysis shows the trend analysis of Nigeria's growth rate between the GDP and the M2. The growth rate of money supply was at an increasing rate for the years 1971-1975. It fell in 1976 and 1977 with 39.23% and 33.76% respectively. It had a sharp decrease in 1978, 1981, 1986, 1989, to 1.1%, 7.03%, 4.23%, 3.54% respectively. Ever since it has been fluctuating and by 2008 it became 57.79%.

5. CONCLUSIONS RECOMMENDATIONS

Based on the findings made in the course of this study, particularly the results of the regression models, it is clear that the development of the Nigerian economy is highly dependent on the provision of the right environment for investment, which will no doubt encourage economic growth.

The following recommendations are hereby made:

- (1) Monetary and fiscal policies should be used to create a favourable investment climate by facilitating the emergence of market based interest rate and exchange rate regimes that attract both domestic and foreign investments, create jobs, promote non-oil export and revive industries that are currently operating far below installed capacity. In order to strengthen the financial sector, the Central Bank has to encourage the introduction of more financial instruments that are flexible enough to meet the risk preferences and sophistication of operators in the financial sector.
- (2) The government should also endeavour to make the financial sector less volatile and more viable as it is in developed countries. This will allow for the smooth execution of the Central Bank's monetary and fiscal policies. Laws relating to the operation of the financial institutions could be made a bit less stringent and more favourable for the operators to have room to operate more freely.
- (3) The Central Bank should find a way of reducing the level of deficit financing, improve funding of the informal sector and the small and medium enterprises (SMEs) and promote their integration into the formal sector while at the same time working with the government to improve the tax regime to make the tax capacity approach the tax potential so as to reduce tax evasion to the barest minimum and ensure that there is a proper balancing between capital and recurrent expenditures of government.

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IS THE NIGERIAN STOCK MARKET PREDICTABLE?

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ABSTRACT

The controversial debate on whether the future stock prices or returns can be predicted by current or past values of stock prices based on the efficient market hypothesis and random walk hypothesis has remained inconclusive empirically. The study examined the predictability of the Nigerian stock market in order to find out if present and past values of stock prices in the market have been able to predict changes in the stock market returns using current daily data from 2010-2015. The test revealed that movements in the prices of stocks traded on the floor of the Nigeria stock exchange are independent and random which means that future returns in the Nigerian stock exchange can be predicted by both past and present values of stock market prices. Thus, the study recommended that market information be allowed to flow unhindered and aggressive trading on a wide range of securities be encouraged so as to increase market depth.

Keywords: Predictability, Random, Non-parametric

1 INTRODUCTION

The most important role of the Nigerian Capital Market is the mobilisation and efficient allocation of capital for investment purposes. The market puts in place structures for the mobilisation of savings from numerous surplus economic units for the purposes of the productive process and thus enhances economic growth and development. However, because of certain problems inherent in or affecting the market, the performance of the capital market has always been questioned. Some of these problems include stringent listing conditions especially in the first and second tier markets. There is also a lack of awareness by the investing public, leading to low activity and insufficient funds in the market arising from the buy and hold attitude of majority of investors. Other problems are poor economic conditions making companies not to perform well in terms of product availability and dividend payment. This further leads to a loss of confidence by investors in the operating institutions as well as divestment of funds to some other areas outside the capital market where appropriate returns are envisaged. In doing this, the investors shy away from investment in the capital market resulting in the reductions of securities traded in the market. Since the amount of securities traded could determine the amount of funds mobilised, a reduction in securities traded thus creates insufficient funds. This affects the economic growth and development in the country since companies cannot raise sufficient funds for expansion, modernisation and optimum utilisation of their operational capacity. The main objective of the study is to test the predictability of the Nigerian capital market.

2 LITERATURE REVIEW

Some recent studies, however, have tested for the semi-strong and weak-form efficiency in developing countries, focusing primarily on the emerging Asian economies, the Latin American markets, African and the Middle East. Chan, Gup, and Pan (1992), for example, use unit root tests that show the weak-form stock market efficiency in Hong Kong, South Korea, Singapore, and Taiwan. Liu, Song and Romilly (1997) find that both the Shanghai and Shenzhen Chinese stock market indices are characterised by a random walk and are thus

weak-form efficient, although cointegration tests indicate joint inefficiency between the two markets, that is past returns from one market can be used to predict returns in another. Groenewold and Ariff (1998), carrying out unit-root tests on a set of ten stock markets in the Asia/Pacific region, found an evidence of violations of weak-form efficiency, yet they found the violations fairly mild in most markets. Ormos and Mihaley (2002) empirically tested the efficiency of the Hungarian Capital Market in its semi-strong and strong form. The study sought to examine whether the Hungarian Capital Market was efficient in the semi-strong form. The investigation was based on the capital market data over the period from 1991 to 2000, which was analysed by employing the event study method. The study concluded that the strong form of capital market efficiency does not completely hold true, thereby supporting that the Hungarian Capital Market is semi-strong form efficient. Hadi (2006) threw light on the types of Efficient Market Hypothesis. He undertook a detailed research that tested weak, semi-strong and strong forms of market efficiency. It is observed that accounting based research generally assumes that the market is efficient when it is in its semi-strong form. The reason behind this is that the financial reports are considered public information once they have been released to the market. He provided empirical evidence from the Jordanian market, which suggested that the security market reacted with mixed signals on releasing profitability, liquidity and solvency information.

In a test on Latin American stock markets, Urrutia (1995) finds that these markets generally fail to pass tests of the weakform efficiency in that they do not follow a random walk. However, he finds them weak-form efficient by means of a runs test, implying that investors are unlikely to be able to develop trading strategies to earn excess returns. El-Erian and Kumar (1995) find some departure from weak-form efficiency in Middle Eastern stock markets, but emphasise the serial dependence is on the weak form that it likely has little value in predicting future prices. Their finding is consistent with that of Butler and Malaikah (1992), who find statistically significant autocorrelation in the stock markets of Kuwait and Saudi Arabia.

Iqbal and Mallikarjunappa (2007) tested market reaction to quarterly earnings announcement of 149 companies listed on the Bombay Stock Exchange for September 2001 by employing both parametric and non-parametric tests. It is observed that runs test are not significant at 5% level, which signifies that abnormal returns occur randomly. On the other hand, the t-test rejects the existence of abnormal returns on a daily basis, which provides an opportunity to beat the market and earn abnormal returns. The study concludes that Indian stock market is not efficient in the semi-strong form. Yalama, Abdullah and Selik, Sibel (2008) investigated semi-strong form efficiency in Istanbul Stock Exchange Market (ISE-100), Foreign Exchange Market (FEM) and Inter-bank Money Market (IMM) in respect to changes in Currency and Circulation (CIC). The data consist of the daily frequency over the period 1990-2008 which was analysed by employing Toda Yamamoto Causality method. The study concludes that there is the causality relationship running from CIC to FEM and CIC to IMM. However, there is no causality relationship running from CIC to ISE-100. This result implies that in Turkey, money market is semi-strong form efficient while the capital market is not.

Two pieces of research that focus specifically on African markets are Dickinson and Muragu (1994) and Olowe (1999).

Dickinson and Muragu created a database of weekly prices over ten years of the 30 most actively traded equities on the Nairobi Stock Exchange. They failed to find evidence inconsistent with weak form efficiency in the stock exchange by means of both runs tests and Q-test statistics, but suggest that a number of studies must be carried out on any market using

a variety of methodologies to draw firm conclusions about a weak form efficiency. Olowe (1999) carried out tests using monthly data on 59 randomly selected securities from 1981-1992 on the Nigerian Stock Exchange. He finds the Nigerian market to be one that conforms to the weak form efficiency in joint Q-tests of partial autocorrelation coefficients for ten lags in the return data, though he argues that poor informational flows and inefficient communications systems cast doubts on the ability of the market to pass higher hurdles of efficiency.

Besides Olowe (1999) study, other empirical tests of the Weak form of the Efficient Market hypothesis have been conducted on the Nigerian Stock Exchange by Ekechi (2002), Inegbedion (2009), Aguegbo, et al. (2010) and Rapuluchukwu (2010). Results of the various tests are not consistent. While the studies conducted by Odukwe (1983), Ayadi (1983), and Rapuluchukwu (2010) concluded that the Nigerian Stock Market is efficient in the weak form, those conducted by Ekechi (2002) Inegbedion (2009), as well as Aguegbo, et al. (2010), indicate that the Nigerian Stock Market is not efficient in the weak form. But it is pertinent to note that all the studies that showed that the Nigerian Stock Market is efficient in the weak form utilised the All-Share Index of the Nigerian Stock Exchange, which is the aggregation of price gains and losses for all the securities traded on the floor of the Nigerian Stock Exchange, in their analysis; while the studies that showed that the market was not efficient in the weak form used a sample of selected securities.

3 METHODOLOGY

In this work however, to measure Random Walk Hypothesis in the Nigerian Stock Market, Augmented Dickey Fuller unit root test, Johansen co-integration test, Granger causality test and through the Adjusted R^2 test, F-test, T-test, were analyzed using Ordinary Least Square method with the aid of E-VIEW statistical software (Econometric view) while the non-parametric runs test was analysed with aid of the SPSS software. The functional relationship may then be represented as:

$$1. \quad SMP_t = f(SMP_{t-1}) \dots\dots\dots 1$$

$$SMP_t = \alpha_0 + \alpha_1 SMP_{t-1} + \mu \dots\dots\dots 2$$

Smp_t = current period

Smp_{t-1} = previous period

α_0 = equation constant

α_1 = equation parameters

μ = stochastic error terms

Stationarity in a time series data is a desirable property for an estimate AR model. This is because a model whose co-efficients are non-stationary will have a non-declining effect on the current values of the dependent variable as time progresses which is counter-productive, empirically defective and could lead to spurious regressions. In this spanning, the Augmented Dickey-fuller (ADF) and Philips-Perron (PP) unit root test were employed to handle the problem of data stationarity.

$$Y_t = B + \alpha Y_{t-1} + U_t \dots\dots\dots (3),$$

Where B and α are parameters of the model and U_t is a white noise disturbance term.

If and only if, $-1 < \alpha < 1$, then $\alpha = 1$, then Y_t is a non-stationary series.

$$\Delta Y_t = B + R Y_{t-1} + U_t \dots\dots\dots (4)$$

Where $R = (\alpha - 1)$ and the null hypothesis can be tested as

$H_0: R = 0$

$$\Delta Y_t = B + R Y_{t-1} + \sum_{i=1}^p \Delta Y_{t-i} + U_t \dots\dots\dots (5)$$

4 DATA ANALYSIS AND INTERPRATION

Table 4.1: Descriptive Statistics of the Stock Market Returns

	STOCK MARKET RETURNS	STOCK PRICE
Mean	0.000373	29531.38
Median	0	26678.53
Maximum	0.369183	43039.42
Minimum	-0.36789	19732.34
Std. Dev.	0.019023	7144.339
Skewness	0.006897	0.405968
Kurtosis	218.8136	1.697524
Jarque-Bera	2557771	129.3664
Probability	0	0
Observations	1318	1318

Source: Author's Computation

The summary statistics of the variables as reported above gives the various descriptive statistics of the variables used for the study. The result shows that all the average values for the variables were positive. This implies that the entire firms listed on the Nigerian stock exchange received positive returns from stocks traded on the capital market and their stock price on the average could be said to be rising given the positive mean value of their stock price during the entire study period.

Table 4.2: Unit root Test

VARIABLE	ADF	Critical value (1%)	Critical value (5%)	Critical value (10%)	Remark	Level of integration	Order of Integration
Stock Market Price	-18.35466	-3.4382	-2.8642	-2.5682	Stationary	2	I(1)
Stock market returns	-17.79255	-3.4382	-2.8642	-2.5682	Stationary	1	I(0)

Source: Author's Own computation

Table 4.2 above shows the absolute ADF value of stock market price and stock returns being > than 5% critical value at any level of stationarity, we reject H_0 Otherwise we accept.

Since ADF values of stock market price (-18.35466) is > (-2.8642) at 5% critical value at first difference and stock market returns ADF value of (-17.79255) is > (-2.8642) at 5% critical value at level, we reject the null hypothesis (H_0) that the movements in the prices of stocks traded on the floor of the Nigerian stock exchange are independent and random.

Table 4.3 Co-Integration Test

EIGEN VALUE	LIKELIHOOD RATIO	5% CRITICAL VALUE	1% CRITICAL VALUE	HYPOTHESISED NO. OF CE _s
0.702290	2146.888	15.41	20.04	None **
0.346859	558.4355	3.76	6.65	At most 1 **

Source: Author's Own computation

*(**) denotes rejection of the hypothesis at 5% (1%) significance level L.R test indicates 2 cointegrating equation(s) at 5% significance level.

Since Likelihood Ratio of stock market price (558.4355) is $>$ (3.76) at the 5% critical value and stock market returns Likelihood Ratio (2146.888) is $>$ (15.41) at the 5% critical value, we reject H_0 that the movements in the prices of stocks traded on the floor of the Nigerian stock exchange are independent and random. This means that the stock market returns can be predicted by the movement in the stock market prices in the long run.

Table 4.4: JOHANSEN CO-INTEGRATION TEST

Dependent Variable: Stock Market Returns

Variable	Coefficient	Standard Error	T-statistic	Prob.
C	0.000304	0.000247	1.229574	0.2191
PRICE	2.95E-05	9.53E-08	309.8108	0.0000
PRICE(-1)	-2.91E-05	1.11E-07	-261.6992	0.0000
PRICE(-2)	-4.79E-07	9.53E-08	-5.031031	0.0000
R-squared	0.987775		F-statistic	
35362.22				
Adjusted R ²	0.987747		Prob(F-statistic)	
0.000000				
Durbin-Watson stats	1.617522			

Source: Author's Computation

Adjusted R-squared test

Since the Adjusted R-squared of the regression (0.987 or 98.7%) is $>$ than 50% significance level, we reject H_0 that the movements in the prices of stocks traded on the floor of the Nigerian stock exchange are independent and random. This implies that 98.7% of total changes in the dependent variable (Stock market returns) can be predicted by changes in the explanatory variables (present and past values of stock prices) even after adjusting for the degree of freedom.

F-statistic test

Since Prob (F-statistic) of the regression (0.00000) is $<$ than 0.05 significance level, we reject H_0 that the movements in the prices of stocks traded on the floor of the Nigerian stock exchange are independent and random. This implies that the independent variables can jointly significantly predict the changes in the dependent variable, hence past and present stock prices have a joint influence on the stock market returns.

T-statistic test

From the table 4.4 result above, since the probability of PRICE (present value of stock price) (0.0000) is $<$ 0.05, the probability of t-statistic of PRICE(-1) past one year's value of stock price (0.0000) is $<$ 0.05 and the probability of PRICE(-2) past two year's value of stock price (0.0000) is $<$ 0.05, we hereby reject H_0 that the movements in the prices of stocks traded on the floor of the Nigerian stock exchange are independent and random. This implies that that the variables can significantly predict changes in the stock market returns in Nigeria.

Table 4.5 RUNS TEST

Runs Test

	STOCK MARKET RETURNS	PRESENT STOCK MARKET PRICE	PAST STOCK MARKET PRICE
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Test Value ^a	.00	26672.57	26671.57
Cases < Test Value	614	659	659
Cases >= Test Value	704	660	660
Total Cases	1318	1319	1319
Number of Runs	546	18	18
Z	-6.142	-35.395	-35.395
Asymp. Sig. (2-tailed)	.000	.000	.000

Test statistic: Z (absolute value) = Returns (-6.142), Stock Market Price (-35.395) and Past Stock Market Price (-35.395)

Since the test statistic Z of stock market returns (-6.142), Stock Market Price (-35.395) and Past Stock Market Price (-35.395) are all greater than the critical value (1.96), we reject H_0 that the movements in the prices of stocks traded on the floor of the Nigeria stock exchange are independent and random. Hence, a stock market returns can be predicted from the present and past values of stock prices since they are not independent or random.

Table 4.6 Granger Causality Test between Stock Market Return and Stock Market Price

Null Hypothesis	F-Values	P-Values	Inferences
STOCK PRICE does not Granger Cause STOCK RETURNS	44.8568	0.00000	Rejected
STOCK RETURNS does not Granger Cause STOCK PRICE	31.6888	3.6E-14	Accepted

Source: Author's Computation

In order to evaluate the hypothesis of the study we also adopted the granger causality test in order to find out if a bidirectional relationship exists between stock market returns and stock market price.

4 CONCLUSION AND RECOMMENDATIONS

The rejection of the null hypothesis which states that the movements in the prices of stocks traded on the floor of the Nigerian stock exchange are independent and random can be related to the reality in the Nigerian stock exchange. For example as a result of the global financial crisis, the volume, value of deals, market capitalisation and the All Share Index (ASI) of the Nigerian stock exchange all significantly nosedived from year 2008. For instance, the aggregate number of deals declined by 51% from 3,535,631 (in 2008) to 1,739,365 (in 2009). Besides, Total Annual Market Capitalisation fell from N13, 294.6 billion (in 2007) to N9, 563.0 billion (in 2008) representing 28% decrease. In other words, the market was bearish, representing a downward market trend (Olokoyo et al. 2014).

Although the capital market is gradually coming up, investment in the NSE has still not significantly improved because the confidence of investors in the capital market is yet to be restored as a result of the fear that future returns are not certain because of the crash of past prices. For example, the number of deals increased slightly by 10.7% from 1,739,365 in 2009 to 1,925,478 in 2010. Also, the total annual market capitalisation witnessed a slight rise of 41% from N7, 030.8 billion (in 2009) to N9, 918.2 billion (in 2010) only to decline from N9, 918.2 billion (in 2010) to N9, 672.6 billion (in 2011) by almost 3%, an indication of a loss of investors' confidence. Most investors in the Nigerian capital market have not shifted their

attitude by resuming purchasing stocks despite the fact that the world economy is gradually recovering (Olokoyo et al. 2014).

- i. To enhance informational efficiency of the Nigerian stock exchange especially in this era where the loss of the global financial crisis have dominated the minds of investors, there is the need to ensure strong and adequate supervision by the regulatory authorities. This would prevent any stock price bubble while at the same time it would ensure that information about stock price is a true reflection of the value of shares. Also, there is the need for a greater development of the Nigerian stock market through appropriate policies which would enhance the informational efficiency of the market.
- ii. Furthermore, the regulatory authorities need to ensure that the effectiveness of support institutions are in line with international best practices since it is easier to attract investors into markets that have strong, transparent and effective institutions.
- iii. The investor must examine the behaviour of the conditional variance of the returns to estimate the riskiness of the asset at a certain period in time. This can make capital market financing expensive and this perhaps explains why the money market has become more attractive than the capital market as a source of business finance in Nigeria as found by some previous studies.
- iv. Market operators culpable for insider trading offences should be punished to ensure availability of information on securities to the market allowing the free interplay of demand and supply to determine security values as current market values of securities on the NSE reflect available security information.
- v. Laws to protect investors and guard against manipulation of information in the Nigerian capital market should be promulgated and enforced.
- vi. It is also recommended that market information be allowed to flow unhindered and aggressive trading on a wide range of securities should be encouraged so as to increase market depth.

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DEMAND FOR REINSURANCE AND SOLVENCY OF INSURANCE BUSINESS IN NIGERIA: AN EMPIRICAL ANALYSIS

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ABSTRACT

The importance of reinsurance in the insurance business cycle cannot be overemphasized. The benefits of reinsurance include increased capacity, technical expertise, allocation of risks and limitation of financial distress. However, as an insurer gathers more underwriting experience, it is expected that less reinsurance is demanded. Hence, frequent demand may be sign of insolvency because it simultaneously reduces the variability of cash flows and financial leverage. The purpose of this research is to investigate if the excessive use of reinsurance is an indication of insolvency in the Nigerian insurance industry. Using purposive sampling techniques, ten (10) general insurance companies were selected from forty-nine (49) operating in Nigeria. Returns on assets (ROA), Returns on equity (ROE) and size were used as indicators to measure the level of solvency while product diversification, claims ratio, combined ratio, reinsurance price, liquidity ratio and expense ratio were used as indicators to measure demand for reinsurance by primary insurers. The findings of the study reveal that there is significant relationship between the solvency and demand for reinsurance. Though, product diversification, combined ratio and reinsurance price are more significant than loss ratio, liquidity ratio and expense ratio. It is recommended that primary insurer should be more concerned about its concentrated business mix, combined ratio and the price (premium) of reinsurance. These can make demand for reinsurance to be more frequent.

Keywords: Reinsurance, solvency, primary insurer, cedant

1.0 INTRODUCTION

The fear of the existence of possible condition of an adverse deviation from a desired outcome underpins the demand for insurance and explains the reason why insurance has grown steadily in importance (Vaughan & Vaughan, 1998). What distinguishes insurance industry from others industries according to De Casteris (2005), is that it operates on an inverse cycle. That is to say, insurers receive payment before delivering the underlying service. Therefore, insurance companies need to form an expectation about the future before risks can be accepted (Lelyveld, Liedorp & Kampaman, 2009). This is however hinged on the fact that if too much risks are accepted, premium received may be insufficient to cover the required pay outs which may lead to financial distress (Lelyveld, Liedorp & Kampaman, 2009). Therefore, insurance companies often transfer part of the risk to another carrier called reinsurer.

Reinsurance according to IAIS (2006) is an insurance contract between one insurer (reinsurer) and another insurer (cedant) to indemnify against losses on one or more contracts issued by the cedant in exchange for consideration. In other words reinsurance is the purchase of insurance by an insurer. The purpose of reinsurance according to (Cass, Peter, Gary & Robert, 1997) is to reduce the financial cost to insurance companies arising from the potential occurrence of specified insurance claims, enhancing innovation, competition and efficiency

in the marketplace. Benefits of reinsurance to primary insurer include increased capacity, stabilization, technical expertise, increased allocation of risks and reduction of adverse shocks (Cass et al 1997; Group of Thirty 2006; Plantin 2006).

As good as reinsurance business is, frequent demand by insurance companies may be due to solvency problems that insurance companies are faced with. This view is supported by Burca & Batrinca (2014) who assert that the process of risk transfer to reinsurer might be expensive because the cost of reinsurance might be higher than the actuarial rate of the transferred risk especially for insurance company that have spent reasonable year with considerably underwriting experience. Hence, the use of reinsurance may signal the extent of risk faced by insurance companies (Chen, Hamwi and Hudson, 2001).

When an insurance company cedes risks to a reinsurer the ceding firm simultaneously reduces the variability of its cash flows and its financial leverage (Curak & Kramaric, 2014). Therefore, the decision to reinsure can be viewed as both a risk management and solvency decision (James & Joan, 2003).

1.1 Statement of Research Problem

Prior studies have discussed extensively on the benefits of reinsurance to insurance companies, notably to motivate insurance companies in increasing underwriting capacity, limit the expected costs of financial distress and stabilize sources of funding (Mayers & Smith, 1990; Jeans- Baptiste & Santomero, 2000; Cole & McCullough, 2006 & Adams, 1996). Maximizing the expected utility (Aase, 2004, Kaluszka & Okolewski, 2008). Reduction in direct insurer's ruin by assuming catastrophe risks and enhances the effectiveness of the direct insurer's operations by providing many kinds of services, increased capacity, stabilization and financial results management (Swiss Re, 2000).

Though few work had be done on the negative effect of reinsurance demand might have on the solvency of insurance companies (Chen et al, 2001; Hoerger, Sloan & Hassan, 1990 & Froot, 2001) but no known work had been done to study weather excessive demand for reinsurance may be a sign of insolvency for insurance companies operating in Nigeria. This paper aims to remedy this situation. By ceding premium to reinsurer, insurance company tends to diversify its underwriting risk and improves its solvency. But this may lead to a negative effect on the long run. Demand for reinsurance should be reduced because it is expected that insurance companies should have gathered more underwriting experience and accumulated funds that will allow it assume more risk than when it started.

The purchase of reinsurance leads to shortage of capital primary insurer possesses (Chen et al, 2001) which further affect its solvency. Hence, the shortage of capital in reinsurance and resulting capacity shortfall drives-up the price of reinsurance. Hoerger, Sloan & Hassan (1990) also assert that bankruptcy cost can make reinsurance to be demanded by an insurance company even if an insurance company is risk neutral. Froot (2001) further buttresses that primary insurer pays several times the actuarial price of the risk transferred. The higher the default risk of the reinsurance contracts, the higher the likelihood of greater financial burden placed on the primary insurer (Yueyun, Chen et al, 2001). This makes transferring risks to reinsurers expensive and shows the negative effect of transferring risk to reinsurer despite the advantages.

A less solvent insurer tends to use more reinsurance because of its inability to raise needed capital in financial markets (Chen et al, 2001). Therefore, overuse or abuse of reinsurance by some primary insurer can be considered as a signal that the primary insurer is in trouble.

1.2 Objective of the study

The broad objective of the study is to find out if excessive demand for reinsurance by primary insurer is an indication that the solvency of an insurance company is threatened.

- (i) To find out if there is any significant relationship between solvency of Nigerian insurance companies and demand for reinsurance.
- (ii) To identify various factors that may determine demand for reinsurance by Nigerian insurance companies.
- (iii) To identify joint effects solvency factors will determine demand for reinsurance by Nigerian insurance companies.
- (iv) To investigate the relative effects solvency factors will determine demand for reinsurance by Nigerian insurance companies.
- (v) To find out the most effective solvency factor(s) that may threatened Nigerian insurance company and subsequently determine demand for reinsurance.

1.3 Research Questions

- (i) Is there any significant relationship between solvency of Nigerian insurance companies and demand for reinsurance?
- (ii) What are the various factors that may determine demand for reinsurance by Nigerian insurance companies?
- (iii) How will joint effects solvency factors determine demand for reinsurance by Nigerian insurance companies?
- (iv) How will relative effects solvency factors determine demand for reinsurance by Nigerian insurance companies?
- (v) What is the most effective solvency factor(s) that may threatened Nigerian insurance company and subsequently determine demand for reinsurance?

1.4 Statement of Hypotheses

1. Ho: There is no significant relationship between solvency of Nigerian insurance and demand for reinsurance.
2. Ho: There is no significant relative effect of solvency factors on the demand for reinsurance by Nigerian insurance companies.

2.0 LITERATURE REVIEW

2.1 Conceptual Framework

Adequate understanding of the concept of reinsurance is widely recognized as important in insurer's risk and capital management. It has become increasingly important as a result of the insurance companies' concern about the inadequate capacity of bearing large losses (Burca & Batrinca, 2014). Grossman (1972) defines reinsurance as the transfer of part of the risks or hazards that a primary insurer assumes by way of insurance contract or legal provision on behalf of an insured to a second insurance carrier, the reinsurer who has no direct contractual relationship with the insured. Swiss Re (2006) and Meir & Outville (2003) identify two forms of reinsurance arrangements which are facultative reinsurance and obligatory reinsurance. Facultative reinsurance is an arrangement where primary insurer is free to choose which particular individual risks it wants to reinsure. The reinsurer, on its part, is also free to accept or refuse any risk offered to it, hence the term facultative (Redja, 2008). While in obligatory reinsurance, the direct insurer is obliged to cede to the reinsurer a contractually agreed share of the risk as defined in the reinsurance treaty and reinsurer is obliged to accept that share (Swiss Re, 2006).

The essence of reinsurance according to Curak & Kramaric (2014) is to stabilize loss experience, increase underwriting capacity, provide protection for catastrophic losses, provide technical assistance in the underwriting activities and claims handling. Relatedly, Lelyveld, Liedorp & Kampman (2009) further posit that reinsurance market also acts as an intermediary by balancing risk over time. This however increases the efficient allocation of risks in the economy at large (Group of Thirty, 2006). Finally, Plantin (2006) argue that reinsurance might provide effective monitoring of insurers.

Solvency of insurance companies is crucial for an insurance system to function (Fazzolari, 2009). Solvency according to (Charumathi, n.d) refers to insurance company's ability to pay claims. Therefore, solvency depends on whether sufficient technical reserves have been set up for the obligations entered into and whether the company has adequate capital as security (Kansal, 2004). From this view, Pentikainen (1976) argues that solvency can be viewed from two major perspectives: management point of view and supervisory point of view. Irrespective of the perspective, (Fazzolari, 2009) posits that solvency of insurance company is closely connected to evaluation of liabilities, assets, the level of the premium of long term policies and reinsurance.

Solvency of an insurance company according to Hoerger et al (1990) can be tested through random fluctuation of claims, losses of investment, fluctuation of the basic probabilities of claims and their trends and miscellaneous risk like catastrophic losses. Solvency ratio is an important indicator to measure the financial health of an insurance company and indicates the ability of the firm to survive on the long run (Charumathi, n.d). According to Kramer (1996), solvency ratio means the ratio of the amount of available solvency margin to the amount of required solvency margin.

Previous studies have examined many factors that may affect insurance company's solvency. Some of factors include organizational age, premium growth, investment yields, underwriting results, expense ratio, loss reserve exposure and realized and unrealized (Kim, Anderson & Amburgey, 1995; Sharpe & Stadnik, 2008). Other include claims ratio (Hoerger et al, 1990), combined ratio (Browne & Hoyt, 1995), liquidity ratio (Kramer, 1996; Plantin, 2006), reinsurance price and net of reinsurance underwriting portfolio (Cummins, Doherty & Lo, 2002), surplus ratio (Harrington & Nelson, 1986) and cash flow simulation (Chen & Wong 2004).

Generally, Brown, Mark & Hoyt (1995) posit that competition among insurance companies assures that premiums are lower when an insurer has a higher probability of insolvency. Though, Yueyun (2005) presumes that less solvent insurance companies uses more reinsurance especially when there is difficulty in raising needed capital.

2.2 Theoretical Review

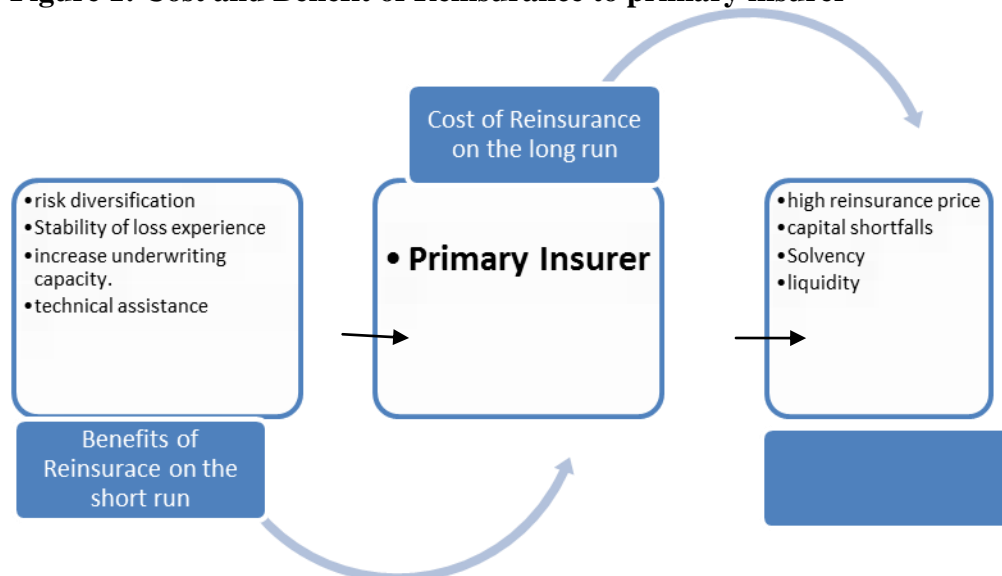
Various theories have analyzed the importance reinsurance to insurance companies. Some researchers opine that it provides stability (Blezenko, 1986), reduces volatility (Adams, 1996), increases risk diversification (Allen & Gale, 2000) and improves capacity of insurance companies (Group of Thirty, 2006; Platin, 2006 & Santomero, 2000). Chen, Hamwi & Hudson (2001) query that frequent demand of reinsurance by insurance company poses fundamental questions to primary insurer like: how does reinsurance affect the probability of solvency of an insurance company? And does the use of reinsurance raise the frequency of insolvency of an insurance company?

Therefore, this research work is aligning with the theory that believes that incessant demand for reinsurance introduces the risks that threaten financial stability of insurance companies. (Krenn and Oschischnig, 2003 & Cole and McCullough, 2006)

Hoerger, Sloan & Hassan (1990) in their findings posit that insurance companies will reinsure in order to lower the risk of bankruptcy. In essence, they proved that given bankruptcy cost, reinsurance may be demanded even when the insurance company is risk-neutral. The finding reveals that insurer's surplus, size and volatility of losses affect the amount of reinsurance an insurance company purchases. Incessant demand for reinsurance according to Lelyveld, Leiedorp & Kampam (2009) introduces credit risk for an insurance company.

Doherty and Tinic (1981) ascertain that apart of capacity building which reinsurance is formally known for, demand for it may be due to capital structure of the insurance company. Hence, there is a strong positive relationship between capital structure, solvency and primary insurer's demand for reinsurance (Dionne and Triki, 2004). To buttress further, Graven & Tennant (2003) and Adams (1996) ascertain that reinsurance is used to a larger extent by smaller insurance companies and those with a higher financial leverage.

Figure 1: Cost and Benefit of Reinsurance to primary insurer



Developed by the researcher.

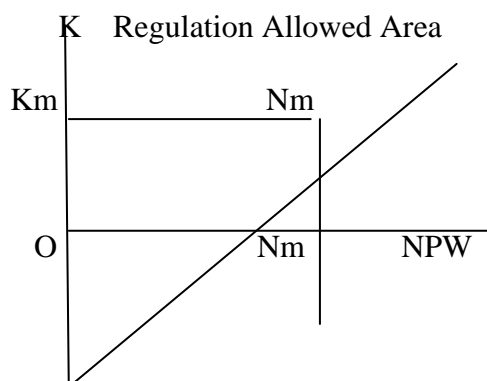
2.3 Effect of solvency on the demand for reinsurance

Chen (2005) asserts that reinsurance purchase by an insurance company signals a higher risk of insolvency. The reason according to him is based on the fact that a less solvent insurance company uses more reinsurance than others because of difficulty of raising needed capital in the financial market.

Relatedly, the use of reinsurance might raise the insurance company's risks of being insolvent when its reinsurance contracts are not recovered (Yueyun et al, 2001). The higher the default risk of the reinsurance contracts, the higher the likelihood of greater financial burdens been placed on the primary insurer (Yueyun et al, 2001). Therefore, overuse or abuse of reinsurance by primary insurers can be considered as a signal that such insurers are in trouble thus attracting the attention of regulation (Yuenyen et al, 2001).

Chen et al (2001) illustrated the insolvency risk of an insurer form by using the diagram below

Figure 2



Adapted from Chen et al (2001).

The diagram above shows that insurer's probability of insolvency is affected by the size of its capital, net premium written and direct premium written (K, NPW, DPW). As a result, an insurer probability of insolvency can be expressed as $S = S(K, NPW, Rein)$.

Factors that may affect demand for reinsurance

Kadar, Adams & Andersson (2010) and Adams, Hardwizk & Zou (2008) find negative and statistically significant correlation between profitability and reinsurance. Insurers that are more profitable are able to better absorb large unexpected losses and are able to face financial pressures and therefore it is expected that more profitable insurers will demand less reinsurance.

Loss volatility is another factor that determines demand for reinsurance. The hypothesis that high loss volatility raises the demand for reinsurance was proven by Hoerger, Sloan & Hassan (1990). It is expected that if an insurer has a positive loss development, then it is likely to demand more reinsurance in an effort to mitigate potential financial constraints. Therefore, higher loss volatility, which is expected to affect the probability of bankruptcy, affects the insurer in a way that it demands more reinsurance contracts.

Financial strength of the reinsurance companies could be influential factor of the reinsurance demand in addition to the reinsurance price. Although, reinsurance provides insurers with underwriting risk transfer, it exposes insurance companies to credit risk. As the financial strength or capital of reinsurance companies increases, the credit risk related to reinsurance for insurance companies will be lower.

3.0 RESEARCH METHODS AND MODEL SPECIFICATION

3.1 Population and Sample

The population of the study is the forty nine (49) general insurance companies operating in Nigeria. Ten (10) insurance companies were used for this study. The ten companies were further divided into market leaders and market laggards based on total gross premium written in 2012 and made available in Nigeria Insurance Digest (2013) a publication of Nigeria Insurers' Association. The assumption is based on the fact that the more capital an insurance company has, the solvent it is and the more the risk it can assume. Market Leaders are Leadway Assurance Co. Limited (1st), Custodian & Allied Insurance Plc (2nd), NEM

Insurance Plc (5th), Mansard Insurance Plc (6th) and STACO Insurance Plc (7th). The laggards are Royal Exchange Assurance Plc (14th), Niger Insurance Plc (15th), LASACO Assurance Plc (29th), OASIS Insurance Plc (34th) and Great Nigeria Insurance Plc (34th).

Data used for this study were derived from the audited financial statements of insurance companies between 2004 and 2013. Panel data methodology was adopted using Pooled OLS Model. There are ten (10) cross-sectional units (insurance companies for the periods of ten (10) years, thus, a total of 100 panel observations.

3.2 Model Specification

Variables in measuring solvency of an insurance company

- (i) Profitability; Selim & Aymen (2014) assert that insurance companies with high profitability generally have sufficient funds that may be transformed into capital. If the behaviour of an insurance company is consistent with pecking order theory, performance should positively affect solvency level. Titman & Wessels (1988) posit that ROA (Return on Asset) can be an indicator of profitability.

$$\text{ROA} = \frac{\text{Profit after tax}}{\text{Total Assets} - \text{Goodwill}}$$

- (ii) Return on Equity (ROE): The cost of holding capital according to Estrella (2004) is an important determinant of capital levels. ROE in insurance according to Ayuso et al (2004) and Jokipii and Milne (2008) is measured as follows.

$$\text{ROE} = \frac{\text{Profit after tax}}{\text{Paid up share capital}}$$

- (iii) Size: Mayers & Smith (1990) and Adams (1996) argue that small insurance companies are expected to use more reinsurance than the bigger insurance companies in order to enhance their risk-bearing efficiency. Size of insurance companies according to Curak & Kramaric (2014) is measured as; **Natural logarithm of total gross written premium.**

Variables in measuring demand for reinsurance by primary insurer

- (i) Product diversification; Cole & McCullough (2006) posit that insurer that is less concentrated in terms of business mix is expected to reinsure more. Indicator for product diversification according Curak & Kramaric (2014) is

$$\frac{\text{premium ceded to reinsurer}}{\text{gross insurer's premium}}$$

- (ii) Loss Ratio or Claims ratio: Reinsurance is generally used to stabilize underwriting profits. According to Hoerger et al., (1990), an increased volatility of claims gives rise to increased reinsurance demand.

$$\text{Loss ratio} = \frac{\text{Claims}}{\text{Written Premium}} * 100$$

- (iii) Combined ratio:
$$\frac{\text{Loss} + \text{Expenses}}{\text{Written Premium}} * 1000$$

- (iv) Reinsurance price: If reinsurance price (premium) increases, demand for reinsurance will decrease. It is determined by **log of reinsurance premium ceded – recovery.**

- (v) Liquidity ratio: An insurer with relatively liquid assets has more stable finances and thus expected to use less reinsurance (Plantin, 2006). Liquidity ratio=

$$\frac{\text{Current Asset}}{\text{Current Liability}}$$

- (vi) Expense ratio:
$$\frac{\text{Underwriting Expenses (Acquisition Cost + Maintenance)}}{\text{Net Premium Written}}$$

3.2 Method of Analysis

The paper made use of both descriptive and analytical tools. The descriptive statistics approach was used to analyze the means and further shows the normality of the distribution. A preliminary estimation of the correlation coefficients of the variables was carried out in order to determine the explanatory variables that would finally appear in the regression model.

The demand for reinsurance (dependent variable) comprises demand for reinsurance, loss ratio, combined ratio, reinsurance price, liquidity ratio and expense ratio. Solvency (explanatory variable) comprises return on asset, return on equity and sizes of the companies. As regards the estimation of the parameters of the panel regression models, **Pooled OLS Model** or **Constant Coefficient Model** was adopted as the estimating technique. There were 10 cross-sectional units (insurance companies) for the periods of 10 years, thus, a total of 100 panel data observations. In Pooled OLS Model, the 100 panel data observations were pooled or stacked together and a “grand” regression model is estimated, neglecting the cross-section and time series nature of the data. The reason is that the model does not intend to distinguish among the various insurance companies.

The following models have been considered:

Model I (**General- Combined dependent variable**)

$$DDRIN_{it} = \beta_0^D + \beta_1^D ROA_{it} + \beta_2^D ROE_{it} + \beta_3^D SIZ_{it} + \mu_{it}^D$$

The superscript **D** indicates the coefficients in relation to **DDRIN**

Individual dependent variable:

Model II $DDR_{it} = \beta_0^d + \beta_1^d ROA_{it} + \beta_2^d ROE_{it} + \beta_3^d SIZ_{it} + \mu_{it}^d$

The superscript **d** indicates the coefficients in relation to **DDR**

Model III $LOSSR_{it} = \beta_0^L + \beta_1^L ROA_{it} + \beta_2^L ROE_{it} + \beta_3^L SIZ_{it} + \mu_{it}^L$

The superscript **L** indicates the coefficients in relation to **LOSSR**

Model IV $COMR_{it} = \beta_0^C + \beta_1^C ROA_{it} + \beta_2^C ROE_{it} + \beta_3^C SIZ_{it} + \mu_{it}^C$

The superscript **c** indicates the coefficients in relation to **COMR**

Model V $REP_{it} = \beta_0^R + \beta_1^R ROA_{it} + \beta_2^R ROE_{it} + \beta_3^R SIZ_{it} + \mu_{it}^R$

The superscript **R** indicates the coefficients in relation to **REP**

Model VI $LQR_{it} = \beta_0^{Lq} + \beta_1^{Lq} ROA_{it} + \beta_2^{Lq} ROE_{it} + \beta_3^{Lq} SIZ_{it} + \mu_{it}^{Lq}$

The superscript **Lq** indicates the coefficients in relation to **LQR**

Model VII $EXPR_{it} = \beta_0^E + \beta_1^E ROA_{it} + \beta_2^E ROE_{it} + \beta_3^E SIZ_{it} + \mu_{it}^E$

The superscript **E** indicates the coefficients in relation to **LQR**

Definitions of Variables

Variables	Definitions
Dependent Variable in each model:	
DDRIN	- Combined demand for reinsurance
DDR	- Demand for reinsurance
LOSSR	- Loss ratio
COMR	- Combined ratio
REP	- Reinsurance Price
LQR	- Liquidity ratio

<i>EXPR</i>	-	Expense ratio
Explanatory Variables:		
<i>ROA</i>	-	Return on Assets
<i>ROE</i>	-	Return on Equity
<i>SIZ</i>	-	Size of each company
LER	-	Life Expectancy Rate
<i>u_{it}</i>	-	Error term with respect to each model

Results of Descriptive Statistics

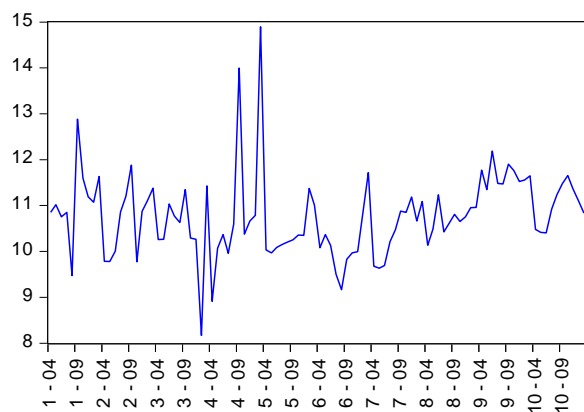
	ROA	ROE	SIZ	DDR	LOSS R	COM R	REP	LQR	EXP R	DDRI N
Mean	0.086 958	0.330 249	9.385 76	0.200 217	0.228 58	0.532 28	8.283 6	3.706 38	0.448 4	10.76 404
Median	0.047 455	0.240 11	9.441 59	0.166 235	0.203 03	0.500 78	8.471 93	2.429 85	0.282 22	10.76 343
Maximum	1.153 53	3.239 01	10.62 07	0.608 73	1.276 32	1.664 25	10.93 01	25.10 85	7.413 23	14.89 504
Minimum	- 0.237 25	- 1.318 03	7.014 12	0.005 66	0.011 22	0.147 67	- 7.593 85	0.340 54	0.021 69	8.169 162
Std. Dev.	0.174 1	0.505 344	0.568 53	0.138 471	0.140 48	0.246 97	1.807 03	3.398 43	0.920 07	0.911 194
Skewness	3.631 289	3.284 452	- 0.848 82	0.942 699	4.300 81	1.621 01	- 6.821 06	3.327 03	6.478 61	1.119 318
Kurtosis	19.94 234	21.10 504	5.244 3	3.404 614	32.25 27	7.419 21	60.97 75	18.52 35	45.82 16	7.646 917
Jarque- Bera	1415. 782	1545. 596	32.99 51	15.49 349	3873. 77	125.1 67	1478 1.2	1188. 56	8339. 9	110.8 556
Probability	0.000 000	0.000 000	0.000 000	0.000 432	0.000 000	0.000 000	0.000 000	0.000 000	0.000 000	0.000 000
Sum	8.695 773	33.02 493	938.5 76	20.02 174	22.85 76	53.22 78	828.3 6	370.6 38	44.84 03	1076. 404
Sum Sq. Dev.	3.000 779	25.28 191	31.99 93	1.898 234	1.953 63	6.038 33	323.2 7	1143. 39	83.80 56	82.19 726
Observations	100	100	100	100	100	100	100	100	100	100

Source: E-view version 8

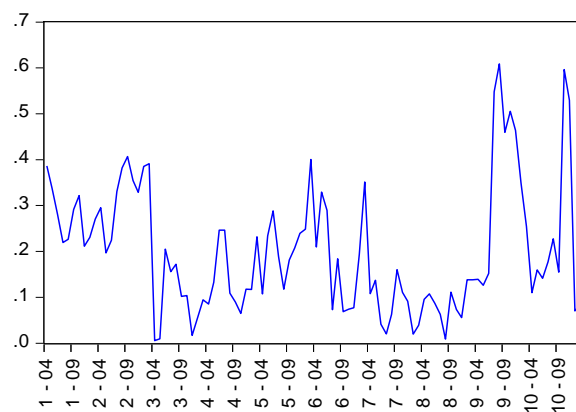
The table above shows the various descriptive parameters such as mean, median, maximum, minimum, standard deviation, skewness and kurtosis. The Jarque Bera statistics show all the variables are normally distributed as shown by the probability values.

Panel data Graph

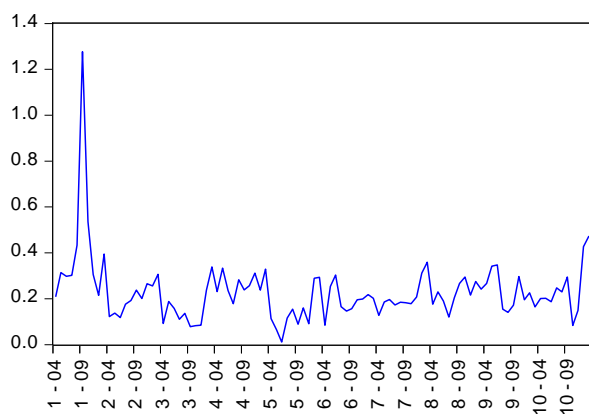
DDRIN



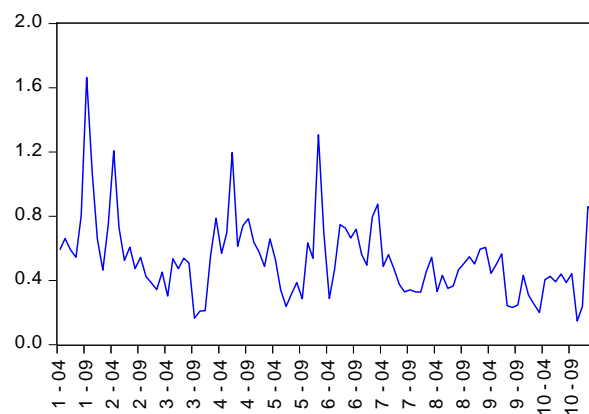
DDR



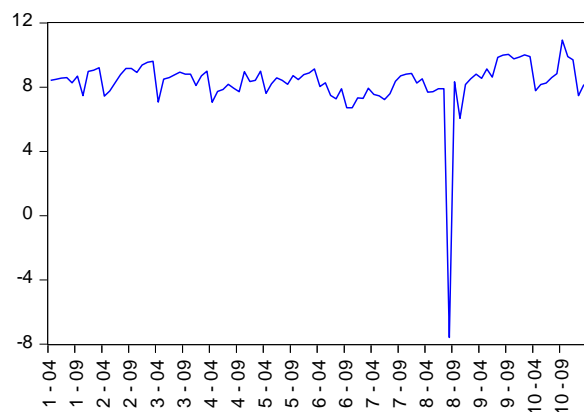
LOSSR



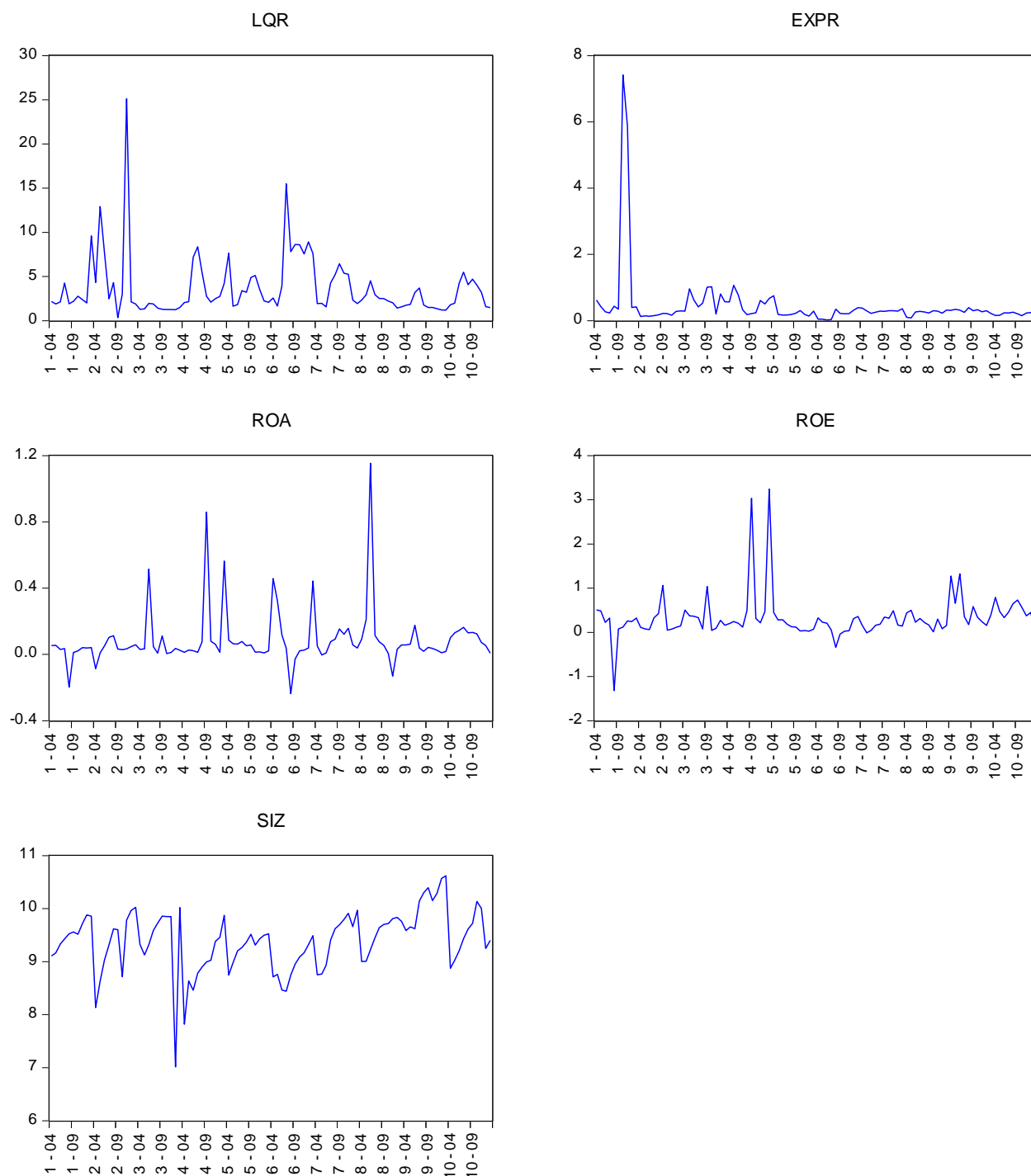
COMR



REP



The above graphs show that the



The above panel data graphs show that the variables are stationary. This means that the mean and variance of each of the variable are time invariant, that is, the mean and variance are constant over time.

Test of Hypothesis

There is no significant relationship between solvency of Nigerian insurance and demand for reinsurance.

Table 1

$$\mathbf{\widehat{DDRIN}_{it} = 1.409 + 0.726\widehat{ROA}_{it} + 1.018\widehat{ROE}_{it} + 0.654\widehat{SIZ}_{it}}$$

Dependent Variable: DDRIN

Method: Panel Least Squares

Date: 08/03/15 Time: 10:39

Sample: 2004 2013

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.409078	0.637675	2.209710	0.0295
ROA	0.725733	0.264186	2.747047	0.0072
ROE	1.018221	0.091300	11.15245	0.0000
SIZ	0.954167	0.067927	14.04700	0.0000
R-squared	0.830548	Mean dependent var	10.76404	
Adjusted R-squared	0.825253	S.D. dependent var	0.911194	
S.E. of regression	0.380905	Akaike info criterion	0.946643	
Sum squared resid	13.92849	Schwarz criterion	1.050850	
Log likelihood	-43.33217	Hannan-Quinn criter.	0.988818	
F-statistic	156.8440	Durbin-Watson stat	1.017025	
Prob(F-statistic)	0.000000			

Hypothesis Two

There is no significant relative effect of solvency factors on the demand for reinsurance by Nigerian insurance companies

Table 2.1

Model II - Estimated equation:

$$DDR_{it} = -0.568 - 0.025ROA_{it} - 0.004ROE_{it} + 0.082SIZ_{it}$$

Dependent Variable: DDR

Method: Panel Least Squares

Date: 08/03/15 Time: 11:02

Sample: 2004 2013

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.567513	0.221402	-2.563270	0.0119
ROA	-0.024756	0.091726	-0.269893	0.7878
ROE	-0.004536	0.031700	-0.143089	0.8865
SIZ	0.082186	0.023584	3.484793	0.0007
R-squared	0.115458	Mean dependent var	0.200217	
Adjusted R-squared	0.087816	S.D. dependent var	0.138471	
S.E. of regression	0.132251	Akaike info criterion	-1.169055	
Sum squared resid	1.679067	Schwarz criterion	-1.064848	
Log likelihood	62.45274	Hannan-Quinn criter.	-1.126880	
F-statistic	4.176927	Durbin-Watson stat	0.773592	
Prob(F-statistic)	0.007958			

Table 2.2

Model III - Estimated equation:

$$\text{LOSSR}_{it} = -0.039 - 0.061\text{ROA}_{it} + 0.007\text{ROE}_{it} + 0.02\text{SIZ}_{it}$$

Dependent Variable: LOSSR

Method: Panel Least Squares

Date: 08/03/15 Time: 11:08

Sample: 2004 2013

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.039173	0.237389	0.165016	0.8693
ROA	-0.061022	0.098349	-0.620458	0.5364
ROE	0.007180	0.033988	0.211237	0.8331
SIZ	0.020493	0.025287	0.810393	0.4197
R-squared	0.011943	Mean dependent var	0.228576	
Adjusted R-squared	-0.018934	S.D. dependent var	0.140477	
S.E. of regression	0.141800	Akaike info criterion	-1.029617	
Sum squared resid	1.930301	Schwarz criterion	-0.925411	
Log likelihood	55.48087	Hannan-Quinn criter.	-0.987443	
F-statistic	0.386783	Durbin-Watson stat	1.109572	
Prob(F-statistic)	0.762765			

Table 2.3

Model IV - Estimated equation

$$\text{COMR}_{it} = 1.937 - 0.188\text{ROA}_{it} + 0.016\text{ROE}_{it} - 0.149\text{SIZ}_{it}$$

Dependent Variable: COMR

Method: Panel Least Squares

Date: 08/03/15 Time: 11:11

Sample: 2004 2013

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.937418	0.392569	4.935231	0.0000
ROA	-0.188490	0.162640	-1.158940	0.2494
ROE	0.015577	0.056207	0.277136	0.7823
SIZ	-0.148512	0.041817	-3.551431	0.0006
R-squared	0.125782	Mean dependent var	0.532278	
Adjusted R-squared	0.098463	S.D. dependent var	0.246968	
S.E. of regression	0.234494	Akaike info criterion	-0.023591	
Sum squared resid	5.278815	Schwarz criterion	0.080615	
Log likelihood	5.179571	Hannan-Quinn criter.	0.018583	

F-statistic 4.604154 Durbin-Watson stat 1.191112
 Prob(F-statistic) 0.004700

Table 2.4

Model V - Estimated equation

$$\widehat{REP}_{it} = 1.096 - 0.437\widehat{ROA}_{it} + 0.283\widehat{ROE}_{it} + 0.760\widehat{SIZ}_{it}$$

Dependent Variable: REP

Method: Panel Least Squares

Date: 08/03/15 Time: 11:13

Sample: 2004 2013

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.096297	2.969695	0.369162	0.7128
ROA	-0.437184	1.230333	-0.355338	0.7231
ROE	0.283198	0.425191	0.666049	0.5070
SIZ	0.759853	0.316339	2.402019	0.0182
R-squared	0.065534	Mean dependent var	8.283600	
Adjusted R-squared	0.036331	S.D. dependent var	1.807027	
S.E. of regression	1.773898	Akaike info criterion	4.023414	
Sum squared resid	302.0845	Schwarz criterion	4.127620	
Log likelihood	-197.1707	Hannan-Quinn criter.	4.065588	
F-statistic	2.244140	Durbin-Watson stat	1.825015	
Prob(F-statistic)	0.088083			

Table 2.5

Model VI - Estimated equation

$$\widehat{LQR}_{it} = 12.373 + 1.02\widehat{ROA}_{it} - 0.789\widehat{ROE}_{it} - 0.905\widehat{SIZ}_{it}$$

Dependent Variable: LQR

Method: Panel Least Squares

Date: 08/03/15 Time: 11:15

Sample: 2004 2013

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.37279	5.671625	2.181525	0.0316
ROA	1.019950	2.349732	0.434071	0.6652
ROE	-0.788928	0.812043	-0.971534	0.3337
SIZ	-0.905048	0.604155	-1.498039	0.1374
R-squared	0.036333	Mean dependent var	3.706377	
Adjusted R-squared	0.006218	S.D. dependent var	3.398432	
S.E. of regression	3.387850	Akaike info criterion	5.317446	

Sum squared resid	1101.843	Schwarz criterion	5.421653
Log likelihood	-261.8723	Hannan-Quinn criter.	5.359621
F-statistic	1.206476	Durbin-Watson stat	1.564090
Prob(F-statistic)	0.311640		

Table 2.6

Model VII – Estimated equation

$$\widehat{EXPR}_{it} = -0.123 - 0.320\widehat{ROA}_{it} + 0.022\widehat{ROE}_{it} + 0.063\widehat{SIZ}_{it}$$

Dependent Variable: EXPR

Method: Panel Least Squares

Date: 08/03/15 Time: 11:17

Sample: 2004 2013

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.122778	1.560420	-0.078683	0.9374
ROA	-0.320455	0.646476	-0.495696	0.6212
ROE	0.021904	0.223416	0.098042	0.9221
SIZ	0.063054	0.166220	0.379343	0.7053
R-squared	0.004790	Mean dependent var	0.448403	
Adjusted R-squared	-0.026310	S.D. dependent var	0.920066	
S.E. of regression	0.932091	Akaike info criterion	2.736405	
Sum squared resid	83.40419	Schwarz criterion	2.840612	
Log likelihood	-132.8203	Hannan-Quinn criter.	2.778580	
F-statistic	0.154022	Durbin-Watson stat	1.042091	
Prob(F-statistic)	0.926867			

4. DISCUSSION OF FINDINGS

Table 1 tests whether there is no significant relationship between solvency of Nigerian insurance and demand for reinsurance. The estimated regression equation shows that there is a positive relationship between *DDRIN* (demand for reinsurance, loss ratio, combined ratio, reinsurance price, liquidity ratio and expense ratio) and each of the explanatory variables; *ROA*, *ROE*, *SIZ*. Based on the t-statistic and P-value, each of the explanatory variables is statistically significant. The Adjusted R-square shows that 82.5% of the variation in dependent variables, *DDRIN*, is determined by the explanatory variables. The F-statistic shows that the overall regression is significant. This implies that the explanatory variables (*ROA*, *ROE*, *SIZ*) are the main determinants of the dependent variable *DDRIN*. This result shares convergent views with (Curak & Kramaric, 2014) who assert that when an insurance company cedes risks to a reinsurer the ceding firm simultaneously reduces the variability of its cash flows and its financial leverage.

Tables 2.1-2.6, test whether there is no significant relative effect of solvency factors on the demand for reinsurance by Nigerian insurance companies. Each dependent variable will be calculated as against the explanatory variable in order to find out the most important of the independent variables.

Though, table 2.1 shows that there is a negative relationship between *DDR* and each of the explanatory variables; *ROA* and *ROE*, but positive relationship with *SIZ*. The F- statistic shows that the overall regression is significant. This implies that *ROA*, *ROE* and *SIZ* are the main determinants of demand for reinsurance. The demand according to Cole & McCullough (2006) is backed by product diversification approach by insurance companies. In essence, an insurer with less concentrated business mix is expected to reinsure more.

However, table 2.2 depicts that there is a negative relationship between *LOSSR* and *ROA* and a positive relationship between *LOSSR*, *ROE*, and *SIZ*. The F-statistics shows that the overall regression is insignificant. In other words, an increased in volatility of claims irrespective of the size, return on asset and return on equity of an insurance company can give rise to increased reinsurance demand (Hoerger et al, 1990).

Table 2.3 shows that F-statistic that the overall regression is significant. This implies that the *ROA*, *ROE*, *SIZ* have significant effect on the dependent variable *COMR*. Therefore, the ration of management expenses over gross premium written will determine whether an insurer will demand for reinsurance or not. Chen et al

Table 2.4 shows that there is a negative relationship between *REP* and *ROA* and a positive relationship between *REP* and *ROE*, *SIZ*. Based on the t-statistic and P-value, *SIZ* is statistically significant while *ROA* and *ROE* are statistically insignificant. The F-statistic shows that the overall regression is significant. This implies that the explanatory variables *ROA*, *ROE*, *SIZ* have significant effect on the dependent variable *REP*. Therefore, premium charged by the reinsurer can determine whether reinsurance will be demanded or not.

However, the estimated regression equation in table 2.5 shows that there is a negative relationship between *LQR* and *ROE*, *SIZ*; and a positive relationship between *LQR* and *ROA*. Based on the t-statistic and P-value, all the explanatory are statistically insignificant. The F-statistic shows that the overall regression is insignificant. This implies that *ROA*, *ROE*, *SIZ* do not have significant effect on the dependent variable *LQR*. This result contradicts with view of Plantin (2006) who asserts an insurer with relative assets has more stable finances and expected to use less reinsurance.

Table 2.6 shows that there is a negative relationship between *EXPR* and *ROE*, *SIZ*; and a positive relationship between *EXPR* and *ROA*. The Adjusted R-square shows that 0.4% of the variation in dependent variable, *EXPR*, is determined by the explanatory variables. The F-statistic shows that the overall regression is insignificant. This implies that the explanatory variables *ROA*, *ROE*, *SIZ* do not have significant effect on the dependent variable *EXPR*.

5. IMPLICATIONS OF FINDINGS, LIMITATIONS AND SUGGESTION FOR FURTHER STUDIES

Based on the analysis, there is a joint significant relationship between variables for demand for reinsurance (demand for reinsurance, loss ratio, combined ratio, reinsurance price, liquidity ratio and expense ratio) and solvency (Return on Asset, Return on Equity and Size). This finding is in consonance with the view of Lelyveld, Leiedorp & Kampam (2009) who posits that size and volatility of losses may affect the amount of reinsurance an insurance company purchases. This view is further shared by Doherty and Tinic (1981), Dionne and

Triki (2004) and Adams (1996) who believe that there is a strong positive relationship between capital structure, solvency and primary insurer's demand for reinsurance.

This study further finds out that there is a strong combined relationship between solvency and demand for reinsurance, not all individual explanatory variables have significant effect on the dependent variable. In this case, product diversification, combined ratio and reinsurance price are more significant than loss ratio, liquidity ratio and expense ratio. Therefore, apart from the fact that reinsurance can be purchased in order to stabilize loss experience, increase underwriting capacity, provide protection for catastrophic losses, provide technical assistance in the underwriting activities and claims handling. It can also be bought when a primary insurer is insolvent which can be through excessive product diversification, high combined ratio, high reinsurance price, high loss or claims ratio, high liquidity ratio and high management expenses.

Due to high reliance on secondary data for this study through annual reports of insurance companies in Nigeria, the financial results gathered may be prone to manipulation and may be susceptible to corporate governance misconduct. The number of observation (ten companies) out of forty nine may also be a major limitation. Therefore, larger insurance may be included in subsequent studies in order to have a more reliable and dependable results.

6.0 CONCLUSION

This study reveals that the level solvency that primary insurer possesses may determine the demand for reinsurance. Though, the role of reinsurance in the supply of insurance services cannot be overemphasized, it is unconnected to the fact that it strengthen the financial viability of primary insurers on the short run. Hence, a less solvent primary insurer tends to use more reinsurance because of its inability to raise needed capital (Yueyun, 2001). Therefore, primary insurance must be solvent in the running of it business and raise enough capital internally and externally. Capital can be raised through diversification of related business, adherence to strict indemnity ethics and public initial offer. Efforts must also be geared at improving corporate governance in order to reduce management expenses with may add more to the bottom line of a primary insurer.

Conclusively, on the long run, primary insurers' demand for reinsurance is a function of the level of diversification, loss ratio experience, combined ratio experience, reinsurance premium, expense ratio experience and the level of its liquidity.

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REINSURANCE UTILISATION AND DEPENDENCE ON THE FINANCIAL PERFORMANCE OF NON-LIFE INSURERS: EVIDENCE FROM NIGERIA.

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ABSTRACT

This study was conducted to establish the effect of reinsurance utilisation and dependence on the profitability of non-life insurance firms in Nigeria. Reinsurance is used by primary insurers as a device to cushion the effect of underwriting and solvency risks. However, an overdependence on reinsurance could cause depletion in the income of the primary insurer. This study examines whether reinsurance usage by non-life insurers in Nigeria positively or negatively affect their financial performance. The impact of Reinsurance utilisation and dependence (independent variables) were tested on two selected key performance indicators (KPI), Premium Growth Rate and Loss Ratio (dependent variables). 16 insurance companies in the non-life sector were engaged in this study due to accessibility of data. Secondary data taken from the annual reports of the insurance firms over the 10 year period from 2004 to 2013 were used for this research. These data were analysed using descriptive statistics, coefficient of determination (R^2), and linear regression. In addition, two hypotheses were tested and two models were developed for the linear regression analysis. The results show that there is a significant positive relationship between reinsurance utilisation and premium growth rate. Similarly, a significant positive relationship exists between reinsurance dependence and profitability (loss ratio). Based on these findings, it was recommended that non-life insurers should embrace more of reinsurance facilities particularly for risks of high loss potentials in order to enhance the stability of premium growth of the portfolios. In addition, Insurance firms in Nigeria should harness their claims management activities in order to minimize cost and exposure to underwriting risks.

Keywords: Reinsurance, Primary Insurer, Financial Performance, Premium Growth Rate, Loss Ratio.

1.0 INTRODUCTION

Insurance service providers rely on reinsurance business for financial stability. This is supported by studies performed previously in America, Australia, Canada and Pakistan (Iqbal and Rehman, 2014a; Chen, Hamwi, and Hudson, 2001; Cummins, Dionne, Gagne, and Nourira, 2008; Carneiro and Sherris, 2005; Tan and Weng, 2012). While the outcomes of some of these studies highlight the significance of reinsurance to the survival of insurance companies, there seems not to be a universal agreement by earlier studies on the direction of reinsurance contribution to financial performance of ceding companies.

Chen, Hamwi, and Hudson (2001) observe that though reinsurance can be used as a tool to improve the solvency of insurance companies, they further opine that it could as well increase the insolvency risks of these insurers. Similarly, reinsurance can significantly contribute to the performance of insurance firms (Iqbal and Rehman, 2014a). The study further reveals that an over dependence on reinsurance can limit an insurer's performance and exposes it to counterparty credit risk. This is the risk that the reinsurer will fail to honour its side of the contract. It therefore becomes critical that reinsurers remain financially adequate in order to perform their key role to primary insurers.

Reinsurance is defined as the insurance for insurers (Swiss Re, 2004). It could be considered broadly as the transfer of risks from one insurer (primary insurer or Cedant) to another insurer (the Reinsurer) through an agreement under which the reinsurer agrees, in return for a reinsurance premium to indemnify the cedant for some or all of the financial consequences of certain loss exposures covered by the primary insurer's policy (Iqbal and Rehman, 2014a). Reinsurance provides quite a number of benefits to the ceding company. According to Cummins et al (2008) insurers are motivated to seek reinsurance by the same factors that inspire other business organisations to buy insurance.

Specifically, reinsurance reduces volatility of underwriting results of primary insurers, provides them with expertise in key areas of insurance business (product development, pricing, underwriting, and claims management), relieves them of any capital strain, and allows for efficient risk and capital management (Swiss Re, 2004). In addition to these benefits, reinsurance contributes to the growth of the insurance industry and the general development of the economy. (Swiss Re, 2004; Iqbal and Rehman, 2014b).

Insurance has been found to be highly beneficial to the social, financial, and economic developments of a nation. According to Grant (2012) insurance should be perceived not only as a protection mechanism, but more importantly as a partnership that allows individuals and businesses to spread their wings and go where they might otherwise not have dared to go. As a device that enables risk to be transferred from the insured (the supposed risk bearer) to an insurer (the entity that accept to bear the risk) insurance fosters the economy by accumulating funds from premium and transferring same to deficit economic sectors for financing real investments (Oke, 2012).

The performance of these and other functions of insurance depends highly on the amount of financial security and solvency that accrues to insurance firms through the fundamental roles of reinsurance. Reinsurance contributes in no small measure to the stability of insurance business. Aside from offering technical assistance to ceding companies, reinsurance protects them from capital depletion, stabilises their earnings, and provides capital for alternative uses (Coutts and Thomas, n.d; Cummins, Dionne, Gagne, and Nour, 2008). More precisely, reinsurance aids the management of the underwriting and actuarial risks that primary insurers are exposed to (Swiss Re, 2004; Curak, Utrobicic, and Kovac, 2014). This according to Veprauskaite and Sherris, (2012) usually reflects in the solvency, earnings and economic value of insurance companies.

The objective of this study is to examine the relationship between the reinsurance practice and performance of non-life insurance firms currently operating in Nigeria. Specifically the research aims at observing the effect of the Ratio of Ceded Reinsurance (RCR) and the Ratio of Reinsurance Recoverable to Policyholders' Surplus (RRPHS) on the Premium Growth Rate (PGR) and the Loss Ratio (LR) of the selected firms. The indicators used as independent

variables for this present study were selected by Iqbal and Rehman (2014a) and Iqbal and Rehman (2014b) under the Corporate Demand Theory and used for a related study in Pakistan. The study hypothesizes that reinsurance utilization (Ratio of Ceded Reinsurance (RCR)) is not significantly related to profitability (premium growth rate) of Nigerian insurers, and that reinsurance dependence (Reinsurance Recoverable to Policyholders' Surplus (RRPHS)) is negatively related to premium growth rate (Loss Ratio) of Nigerian insurers.

The rest of this article is organized in this order. The second section contains the review of relevant literatures while the third section discusses the methodology. Data analysis is contained in the fourth section followed by the findings and discussion in section five. Section six details the conclusion and recommendation.

2.0 LITERATURE REVIEW

The usage of reinsurance by primary insurers can significantly improve their performance. This is the outcome of a study conducted by Iqbal and Rehman (2014a) to investigate the impact of reinsurance utilisation on the performance of non-life insurers in Pakistan. With data retrieved from the financial statements of 22 insurance firms in Pakistan, the authors find a positive relationship between reinsurance utilisation and the performance of primary insurers. The results specifically show an existence of reduced loss ratio and expense ratio and an expansion in firm size attributed to the usage of reinsurance. In another study by Iqbal and Rehman (2014b) to examine the relationship between profitability and reinsurance utilisation and dependence by private sector non-life stock insurers of Pakistan. The authors utilise secondary data gathered from 22 insurance companies and conclude that reinsurance utilisation has a significant but positive relationship with the profitability of insurance firms. In addition, the results show that reinsurance dependence and exposure has no effect on insurance companies' profitability.

According to Curak, Utrobicic, and Kovac (2014) the determinants that influence the decision of primary insurers operating in developed economies on reinsurance purchase include leverage, size, underwriting results, investment returns, and ownership structure. This raises further questions about the motivating factors that promote the demand for reinsurance in underdeveloped insurance markets. The answer to this fundamental question is provided by the authors through the outcome of a study carried out to investigate firm specific factors that influence the demand for reinsurance by insurance companies in Croatia. They gathered data from 19 insurance companies between 2006 and 2011. The study reveals that leverage, foreign ownership, investment return, and share of non-life insurance positively affect reinsurance purchase. The study however finds a negative relationship between reinsurance demand and size.

In earlier study carried out by Carneiro and Sherris (2005), econometric test is used to examine factors that determine the demand for reinsurance by Australian insurers, the authors collected a panel data set from the annual reports of 98 Australian insurers for the period from 1996 to 2001. The result of the study reveals an existence of a positive relationship between insurance company's leverage and the demand for insurance. The study further finds that the influence of size, taxes, return on investments, and company structure on reinsurance demand are not significant.

However, Cummins, Dionne, Gagne, and Nourira (2008) in their study carried out to analyse the costs and benefits of reinsurance to primary insurers suggest that the demand for reinsurance by primary insurers is inspired by the same purposes that encourage individuals and businesses to purchase insurance. Applying data gathered from the U.S. property and Liability insurance firms over a period of nine years (between 1995 and 2003), the authors

find that insurers benefit largely from participating in reinsurance activities. They note that reinsurance helps limit insurers' insolvency risk by stabilising loss experience, protecting against catastrophes, increasing underwriting capacity, reducing liability on specific risks, and minimizing rate of claims dispute. In contrast, the study reveals that it is quite expensive to transfer risks to reinsurers. The cost of reinsurance transaction significantly increases an insurer's cost of producing insurance service.

Chen, Hamwi, and Hudson (2001) use data collected from 980 property and liability firms in the U.S. to investigate the effect of ceded reinsurance on solvency of primary insurers. The results of the analysis indicate that usage of reinsurance by primary insurers could trigger the tendency of insurer's insolvency. The study further supports this assertion by showing that a less solvent insurer is likely to seek more reinsurance protection because of his perceived difficulty to raise capital in the financial market.

The performance of United States property and liability reinsurers is measured by Chen and Hamwi (2000). The study focuses on a comparative analysis of the primary insurers and the professional reinsurers using the 1996 data obtained from all the firms in operating in the U.S. property and liability sector. Furthermore, the study adopts the usage of certain financial ratios to measure the operating performance of the companies. The results indicate that both categories of insurers perform well but at varying respects. Primary insurers generate higher return from underwriting activities compared to investment. Whereas, reinsurers perform better in return on investment than in underwriting profitability.

Primary insurers are constantly confronted by the risk that reinsurers will default in the bid to fulfill their part of the contract. It is this risk that Gatamel and Lemoyne De Forges (2013) examined in their study – understanding and monitoring reinsurance counterparty risk. The authors conclude that monitoring of reinsurers' default risk should not be entirely based on market discipline. They also add that insurance companies must expand their expertise in order to understand their level of exposure to reinsurance counterparty risks.

Tan and Weng (2012) conducted a study on enhancing insurer value using Reinsurance and Value-at-Risk criterion. The authors build on the findings of previous researchers to develop a more reliable optimal reinsurance model to be used by primary insurers to achieve better result. The study leads to the development of a model that will assist primary insurers to understand the required measure of risks that should be ceded to reinsurers considering the cost of reinsurance and their motive for profitability.

In a related study, Veprauskaite and Sherris (2012) analyse the reinsurance optimization in life insurance using a modified mean-variance criteria. The purpose of the study is to determine the optimal measure of reinsurance policy including type, mix and retention limit suitable for life insurers given consideration to the cost of reinsurance and the need for profitability. Data used for the research includes 425,000 life insurance policies from an unnamed large life insurer in Australia. The results of the study show that optimal reinsurance arrangement for a life insurer depends on some factors which include number of retention limit, claim variance and predetermined risk appetite.

Meier and Outreville (2003) find that reinsurance price is one of the factors responsible for the fluctuations in the prices and profits (underwriting cycle) and hence, loss ratio of primary insurers. This is revealed in their study conducted in the property and liability insurance sector across three developed insurance markets including France, Germany and Switzerland.

The research show that a decrease in the price of reinsurance will result to expansion in the underwriting capacity of primary insurers.

Yan and Hong (2015) use data gathered from the annual statement of the National Association of Insurance Commissioners (NAIC) for the years 1995-2000 to examine the presence of asymmetric information across three different reinsurance markets in the United States. The outcome of the study shows the existence of asymmetric information in the private passenger auto liability and homeowner's reinsurance markets but not in the product liability reinsurance market. In addition the study identifies the potency of retention limits as a means of cushioning the effect of asymmetric information challenges. However, long term contractual relationship has not been considered as a tool for dealing with the problem of asymmetric information.

Financial performance of insurance firms has been immensely assessed by previous researchers. The outcome of most of these studies attests to the relevance of profitability to the survival of business concerns. According to Kearney (2010) the global economic crisis has brought the profitability of insurance firms in doubt. Nevertheless, Nigerian insurers are advised by Borokini cited in Anaesoronye (2010) to take underwriting function very seriously in order to remain profitable.

Generally, financial performance of business organisations is measured with the use of financial ratios. Abate (2012) defines financial ratio as a class of financial metrics that are used to assess a business' ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. To measure the profitability of business, Al-Shami (2008) and Malik (2011) agree on a number of ratios for the measurement of financial performance. These include Return on Assets (ROA), Return on Equity (ROE) and Return on Invested Capital (ROIC). ROA is an indicator of how profitable a company is relative to its total assets. It shows how efficient the management uses its assets to generate earnings. Whereas ROE measures how much profit a company generates with shareholders investment. ROIC is a measure used to asses a company's efficiency in allocating the capital under its control in profitable investments.

However, for the specific purpose of insurance business, Greene and Segal (2004) posit that the performance of insurance companies in financial terms is normally expressed in net premium earned, profit from underwriting activities, annual turnover, return on investment, and return on equity.

Mehari and Aemiro (2013) assess the firm specific factors that determine the performance of insurance companies in Ethiopia. They utilized data gathered from nine insurance firms in Ethiopia from 2005 – 2010. The study shows that while business size and leverage positively affect the performance of insurance firms, loss ratio has a negative relationship with insurance companies' performance. The authors therefore conclude that insurers' size, Loss ratio, tangibility and leverage are among the important determinants of insurance companies' performance in Ethiopia.

In a related but more recent research, Lee (2014) uses ordinary least square (OLS) regression model, fixed effect model (FEM) and random effect model (REM) to examine the effects firm specific factors and macroeconomic variables on the profitability of property and liability insurance companies in Taiwan. The study engages data collected from 15 Taiwanese property and liability insurers over a period of Eleven years, from 1999 to 2009. The outcome of the study indicates that reinsurance utilisation, underwriting risk (Loss

Ratio), and input cost significantly affect the profitability of insurance firms. The author therefore suggests that a reduction in the value of these three key indicators among others will translate to the profitability of insurance business in Taiwan.

Burca and Batrinca (2014) conducted a similar study in Romania with use of econometric model. The aim of the study is to investigate the determinants of financial performance in the Romanian insurance market. The secondary data use for the study is obtained from 21 Romanian insurers from 2008 – 2012. The results of the data analysis shows that financial performance of Romanian insurance firms could be affected among other factors by growth of gross written premiums, underwriting risk (Loss Ratio), leverage, company size, and solvency margin.

A similar study performed in Kenya by Mwangi and Iraya (2014) employed multiple linear regression analysis to assess the determinants of financial performance of general insurance underwriters in Kenya. The authors obtained three years data form varying numbers of insurance firms. Data were generated from 22 insurers in 2010, 23 insurers in 2011, and 25 insurers in 2012. The result of the analysis shows that while earning asset and investment yield positively affect insurer's profitability, loss ratio and expense ratio are negatively correlated to financial performance of general insurers. However, growth of premium and size of insurer are not significant in their influence on financial performance of Kenyan general insurers.

3.0 DATA AND METHODOLOGY

Secondary data is used for this study. The data is obtained from the audited annual financial reports of selected Nigerian insurance firms and therefore represent the most pragmatic view of the insurance companies. The data is generated from the financial reports published by the insurance firms, as well as on their respective websites and the portal of African Financials (a free annual reports portal dedicated to African companies).

The population of the study includes insurance companies in Nigeria offering non-life policies. There are about 41 of these companies operating in Nigeria at present (CIIN, 2013). Since the population of this study is a finite one, Yamane (1964) formula for determining sample size from a finite population was employed in the selection of the study's sample size at 5% level of significance.

The formula states that;

$$n = \frac{N}{1+N(e)^2}$$

Where:

n = required sample size

N= population

e= maximum margin of error at 5%

$$n = \frac{41}{1+41(0.05)^2}$$

$$n = 37$$

Although the recommended sample size is 37 companies, only sixteen (16) of these companies were selected as sample because they had complete record of the data needed for the study (2004-2013) and they represent 39% of the total population. A percentage considered appropriate for this study base on the position of Amadi (2005) that a sample of 0.05 proportion of the population is satisfactory in making inference. Purposive sampling

technique was considered in selecting the sample. The data was generated for a ten year period that is, from 2004 to 2013 giving a 160 data set.

The data generated for this study include Ratio of Ceded Reinsurance (RCR), Ratio of Reinsurance Recoverable to Policyholders' Surplus (RRPHS), Loss Ratio (LR), and premium growth rate (PGR).

The LR and the PGR are used as proxies for dependent variables in this study. The LR shows what percentage of claim is being settled with premium received by the insurance company. It is calculated by dividing loss adjustments expenses by premiums earned. Higher loss ratios may indicate that an insurance company needs better risk management strategy. A lower rate of this ratio indicates a better financial health for an insurer. Malik (2011) used LR to study the determinants of insurers' profitability in Pakistan and found a significant negative correlation between LR and profitability. Cummins et al. (2008) and Iqbal and Rehman (2014) have also used LR as an indication of profitability. PGR is measured as a year to year change in the new premium of insurance companies. The proxy use for this variable is sales growth (percentage change in premiums) of insurance companies. The insurers with a high premium growth rate will have low profitability due to increased underwriting risk and related provision for solvency margin. Lee (2014); Ahmed et al (2011).

The independent variables include the RCR and RRPHS. The RCR measures the degree to which an insurance company utilizes reinsurance to its obligation to its policyholders. It is measured as ratio of gross written premiums ceded in reinsurance to total assets. It has been used in previous researches to measure the rate of reinsurance use among ceding companies. (Cole and McCullough, 2006; Cummins, Dionne, and Nour, 2008; Iqbal and Rehman, 2014; Burca and Batrinca, 2014). The RRPHS is an indication of the volume of insurance company's dependence on its reinsurers to settle claims and it indicates the rate of the insurer's exposure to the failure of the reinsurer to deliver. Its normal range is from 50% to 150% (Smith, 2011 cited in Iqbal and Rehman, 2014a). This ratio is used by Iqbal and Rehman (2014a) to measure the relationship between reinsurance and performance primary insurers, the result is significant.

The linear regression models developed for this study are as follows:

$$PGR = a + \beta_1 (RCR) + e \dots\dots\dots (i)$$

$$LR = a + \beta_1 (RRPHS) + e \dots\dots\dots (ii)$$

4.0 DATA PRESENTATION AND ANALYSIS

4.1 Hypotheses Testing

Tables 1 and 2 contain the results of the panel data regression analysis, which are attached in Appendix.

HYPOTHESIS ONE

Reinsurance utilisation (Ratio of Ceded Reinsurance (RCR)) is not significantly related to premium growth rate (percentage change in premiums) of Nigerian insurers.

- Reinsurance utilisation was derived by the formula below:

$RCR = \text{Reinsurance Outward} / \text{Gross Premium}$

Premium growth rate was derived by the formula below:

$$\text{Premium Growth Rate} = \left\{ \frac{\text{Premium of current year} - \text{Premium of previous year}}{\text{Premium of previous year}} \right\}$$

$$PGR = -3.805 + 40.439 RCR \dots\dots\dots (i)$$

Equation 1 shows that a significant positive relationship exists between RCR and PGR because the p-value is 0.036 is less than the level of significance for the study (0.05). The positive value of the co-efficient of Ratio of Ceded Reinsurance (RCR) indicates that for every 1% increase in RCR, there will be a corresponding increase of 404.4% in Premium Growth Rate (PGR) in the insurance industry. This shows that a direct relationship exist between RCR and PGR. This indicates that for the insurance industry to generate profit through premium accumulation there must be constant utilization of reinsurance.

This result is in agreement with the conclusion of Iqbal and Rehman (2014a) that a positive relationship exist between reinsurance utilization and the performance of primary insurers (reduced loss ratio and expense ratio). Iqbal and Rehman (2014b) show a similar relationship taking ROA and ROE as proxies for profitability. This outcome is further justified by the findings of Lee (2014) that reinsurance utilization is among the key determinant of insurers' profitability. However, while Iqbal and Rehman (2014a) and Iqbal and Rehman (2014b) suggests a direct relationship between the two variables as a condition for profitability, Lee (2014), points to inverse relationship.

The co-efficient of determination (R^2) is 0.277. This implies that only about 27.7% of the variance recorded in the dependent variable (PGR) can be explained by the independent variable (RCR) leaving about 72.3% to be explained by other factors like Expense Ratio (ER), Loss Ratio (LR), Broker and Agents' Commission, Cost of Overheads, and other Sundry Expenses. The R^2 value shows the success recorded in PGR contributed by RCR. The result revealed that reinsurance utilization is significantly related to premium growth rate of Nigerian insurers. The significance of reinsurance utilization shows that RCR has significant impact on the premium growth rate of insurers currently operating in Nigeria.

Hypothesis Two

Reinsurance dependence (Reinsurance Recoverable to Policyholders' Surplus (RRPHS)) is negatively related to profitability (Loss Ratio) of Nigerian insurers

- Reinsurance dependence was derived by the formula below;
RRPHS = Reinsurance Inward / (Asset – Liability)
- Profitability (Loss Ratio) was derived by the formula below;
LR = Claims /Gross Premium

$$LR = 0.278 + 0.150 \text{ RRPHS} \dots\dots\dots (ii)$$

The result for equation 2 shows that a significantly positive relationship exist between reinsurance dependence and profitability (Loss Ratio) since the p-value 0.014 is less than the level of significance for the study (0.05). All other variables being kept constant, the positive value of the co-efficient of the Ratio of Reinsurance Recoverable to Policyholders surplus (RRPHS) shows that for every one percent increase in RRPHS, the (Loss Ratio) LR increases by 15%. LR being the proportion of actual claim amount paid from the gross premium collected is an indicative of the degree of profitability and the lower it is, the better for the insurer. These results show that a direct relationship exist between LR and RRPHS. It also implies that for the insurance industry to lower its cost of claims by 15%, the rate of dependence on reinsurance must be reduced by 1% thereby increasing its profitability. This result contradicts the findings of Iqbal and Rehman (2014b) which show that reinsurance dependence and exposure has no effect on insurance companies' profitability (ROA and ROE).

The co-efficient of determination (R^2) is 0.363. This indicates that about 36.3% of the variations recorded in LR are explained by RRPHS. It means that about 36.3% of the dependent variable (**LR**) can be explained by the independent variables (**RRPHS**), leaving about 63.7% to be explained by other factors like loss reserving, claim forecasting, loss adjustment, litigation, and recovery opportunities through subrogation.

5.0 CONCLUSION AND RECOMMENDATION

The objective of this study was to establish the influence of reinsurance usage on the financial performance of Nigerian non-life insurers. Profitability is an important determinant of organisational performance. It is more important in insurance business because it measures the ability of the firm to perform its basic roles to policyholders, shareholders and other stakeholders. The outcome of the study shows that reinsurance utilisation contributes significantly to the profitability of non- life insurers in Nigeria. The results reveal that profit oriented insurers requires reinsurance to lower the underwriting and solvency risks likely to cause fluctuations in their portfolios. The results further show that for a non-life insurer to lower its loss ratio, thereby creating room for profitability, it must reduce its dependence on reinsurance. However, non-life insurance firms in Nigeria should be moderate and strategic in utilising and depending on reinsurance.

Based on the findings of this study, the researcher hereby makes the following recommendations:

- i. Nigerian non-life insurers should embrace more of reinsurance facilities particularly for risks of high loss potentials. This will enhance the stability of premium growth of the portfolios.
- ii. However, while considering the utilisation of reinsurance, non-life insurers should take their underwriting function very seriously in order to minimize the rate of adverse selection. This is necessary because a sound underwriting function will reduce the extent of reinsurance dependence.
- iii. In addition, Insurance firms in Nigeria need to harness their claims management activities in order to minimize cost and exposure to underwriting risks.

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Appendixes

Table 1 Model Summary of the relationship between Reinsurance utilization and Premium growth rate

N	16
Constant (a)	-3.805
RCR(b)	40.439
R ²	.277
F-Statistics	5.365
p-value	.036

Table 2. Model Summary of the relationship between Reinsurance dependence and profitability (Loss Ratio)

N	16
Constant (a)	0.278
RRPHS (b)	0.150
R ²	0.363
F-Statistics	7.973
p-value	.014

AUDIT COMMITTEE EFFECTIVENESS AND AUDIT REPORT LAG IN NIGERIA

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ABSTRACT

The purpose of this paper is to examine the relationship between audit committee effectiveness and audit report lag in Nigeria. A cross-sectional data of companies for the year 2012 was collected from the Nigerian Stock Exchange Factbook. There are basically five variables upon which data was gathered. These variables are audit report lag, audit committee independence, audit committee size, audit committee financial expertise and audit committee frequency of meetings. The secondary source of data was adopted in this study. Data for audit report lag was got by computing the number of days between the date of financial year end and the date of the auditor's report. Data for the explanatory variables were got from the annual reports and accounts of the companies sampled. The cluster sampling and simple random sampling techniques were adopted in arriving at a sample size of one hundred and thirty two companies. The data collected were analysed using the Ordinary Least Square (OLS) regression technique. The result in this study suggests that there is a significant relationship between audit committee size, audit committee independence and audit report lag, while a non significant relationship between audit committee financial expertise, audit committee frequency of meetings and audit report lag was also reported. The implication of this result is a policy shift on the part of the Financial Reporting Council (FRC) of Nigeria towards ensuring independence of audit committee members and reduction in their size.

Keywords: audit report lag, audit effectiveness, audit committee, financial reports, agency theory

AUDIT COMMITTEE EFFECTIVENESS AND AUDIT REPORT LAG IN NIGERIA INTRODUCTION

Audit report lag which affects the timeliness of audited annual financial reports is considered to be a crucial and an essential factor affecting the usefulness of information made available to various users. Thus, accounting information is required to be made available within a short period of time from the end of the reported period; otherwise, it loses some of its economic value. Therefore, reducing audit delays and improving timeliness of audit reports is recognized by users of accounting information and regulatory and professional bodies (e.g. Institute of Chartered Accountants of Nigeria) as an important characteristic of accounting information.

Goh (2009) opines that audit committee characteristics proxied by audit committee independence, audit committee size, audit committee financial expertise and frequency of audit committee meetings, goes a long way in determining audit timeliness. Audit committee independence simply means the proportion of independent audit committee members, that is, audit committee members not appointed by the directors of a company. Audit committee size is the number of members making up the audit committee.

The Companies and Allied Matters Act (2004) provides that the maximum number of persons making up an audit committee of a company should be six (6). The code of corporate governance of Nigeria requires listed companies to include in their audit committee at least one member knowledgeable in accounting or finance, which tends to show the extent of audit

committee financial expertise. Frequency of audit committee meetings on the other hand simply means the number of times meetings are held during the financial year.

In Nigeria, few studies (Enofe, Ediae & Okunega, 2013; Emeh & Appah, 2013) have been conducted to investigate the association between audit committees and audit report lag. Besides the studies being few in number, the methodologies of these studies, on audit committee and audit delay with respect to financial reporting in Nigeria, poses questions about their sample impartiality. Taking a sample size of thirty-five (35) or fifty (50) out of one-hundred and ninety-eight (198) companies listed on the Nigerian Stock Exchange, makes the sample size too small to be representative of the population and therefore their results could not be reliable. The important point here is that covering only about 25% of the population is grossly inadequate. Therefore, the sample size of this study is one-hundred and thirty-two listed companies, making up 67% of the population.

Based on the observed gap in previous studies (Enofe, Ediae & Okunega, 2013; Emeh & Appah, 2013), the general objective of this study is to examine the association between audit committee effectiveness and audit report lag amongst listed companies in Nigeria. However, the specific objective of the study is to examine whether the characteristics of audit committee effectiveness such as audit committee independence, audit committee size, audit committee financial expertise and frequency of audit committee meetings would affect the audit report lag.

To achieve this objective, the paper is divided into five sections. The next section presents the review of literature on the dependent and explanatory variables and theory underpinning the study. Section three examines the materials and methods used in the study. Section four presents the results and discussion, while the final section concludes the study.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This section presents the theory underpinning the study and reviews the literature on both the dependent and independent variables. This section also presents the development of the hypotheses to be tested in the study.

Theoretical Framework

This work relies on agency theory (Jensen & Meckling, 1976; Fama, 1980; Jensen, 1986) to build a comprehensive framework to test hypotheses and explain empirical findings in this study. The reason for choice of the agency theory is because according to Jensen & Meckling (1976), under a contract in which one or more persons (principals) engage another person (the agent) to perform some service on their behalf, delegation of some decision making authority to the agent is needed to enable the agent to achieve the desired result.

According to Emeh et al (2013) agency problems may arise between the principal and the agent. To limit these problems, both principle and agent have to increase investment in information systems and control mechanisms to reduce agency costs associated with information asymmetry. This agency cost is usually the cost of monitoring the activities of the agent by the principal, otherwise referred to as monitoring cost. In order to achieve the objective of monitoring the agent, the principal delegates some oversight duty to its committees, amongst which is the audit committee.

According to Emeh et al (2013) the roles of audit committees could be explained within the framework of agency theory, whereby the contract between the principle and agent allows the agent to conduct the business on behalf of the principal. The role of the audit committee as a

governance mechanism is to reduce information asymmetry between inside and outside board members, thus diminishing agency problems (Emeh et al, 2013). To perform these duties, the committee must be an effective monitor, thus giving rise to the governance recommendations and regulations such as the Blue Ribbon Committee, 1999; Cadbury Committee, 1992; Sarbanes – Oxley act 2002. Emeh et al (2013) recommends that quoted companies should ensure members of their audit committee are people with high level of integrity, which are also knowledgeable and experienced in financial management and accounting.

According to Carcello & Neal (2000) an effective audit committee can fulfill its oversight role when it is independent of management, has members who are knowledgeable in finance and accounting, has large size and holds many meetings. It is expected that effective audit committee would contribute to shorten the audit lag. Thus,

$$\text{ARLAG} = f(\text{ACIND}, \text{ACSIZE}, \text{ACEXP}, \text{ACFOM})$$

Where:

ARLAG = audit report lag

ACIND = audit committee independence

ACSIZE = audit committee size

ACEXP = audit committee financial expertise

ACFOM = audit committee frequency of meeting

Audit Report Lag

The important role of audit report lag in determining the timeliness of accounting information has been well documented. Prior literature (Abdulla, 1996; Owusu-Ansah, 2000; McLell & Giroux, 2000) argues that timely reporting is considered as an important mechanism to reduce insider trading, rumors, uncertainty and information asymmetry. Therefore, the shorter the time between the end of the accounting year and the publication date, the greater the benefits that could be derived from the financial statement.

It is interesting to note that the first study conducted to determine the factors affecting audit report lag was by Dyer & McHugh (1975). This study used three company attributes such as firm size, year-end closing date, and profitability, as more explanatory factors of audit report lag. It found that only company size had a negative impact upon audit lag. Behn (2006) studied the determinants of audit report lag by clustering the impediment factors in reducing past and future audit report lags into three groups for both the client side and the audit team side. These include impediments related to personnel, audit process and technology.

In Malaysia, Abdulla (2007) investigated the roles of the composition of board of directors, audit committee and board duality on the timeliness of reporting. He used data from listed companies on the Main Board of Kuala Lumpur Stock Exchange in respect of the financial years 1998 and 2000. Statistically, he reported that the majority of firms issued the audited financial statements within the range of 70 days and 140 days with the average, 105 days. The study concluded that board independence and the separation of the roles of board chairman and chief executive officer (CEO) were significantly association with timelier reporting. Unfortunately, this study failed to find evidence on audit committee independence as an important explanatory variable for reporting timeliness. The author justified the latter result by two reasons. First, audit committees in Malaysia were still developing. Second, companies formed audit committee to satisfy the listing requirement rather than maintaining the audit committee to improve the firm's financial reporting processes.

Afify (2009) investigated the impact of corporate governance characteristics, namely, independence, duality of Chief Executive Officers (CEOs), and existence of an audit

committee, on audit report lag. 85 Egyptian companies which were listed on the Cairo and Alexandria Stock Exchange were used as study sample. This study reported that on average, the audit report lag for Egyptian listed companies took more than 67 days, while the range was from a minimum interval of 19 days to a maximum interval of 115. From the regression model, the study revealed that board independence and existence of an audit committee were negatively associated with audit report lag. On the other hand, the study failed to find significant association between ownership concentration and audit report lag.

In fact, prior research on the association between audit committee and audit report lag only used two variables of audit committee (existence and independence) and ignore other important variables of effective audit committee. Previous studies contended that the mere presence of an audit committee did not imply the ability of the audit committee to effectively execute its duties.

Leventis, Weetman & Caramanis (2005) opine that despite the fact that prior models were able to explain a significant amount of audit reporting lag, a substantial portion of audit reporting lag is still unexplained. Moreover, Afify (2009) suggested that future studies examined audit committee, namely, audit committee size, frequency of audit committee meetings, and audit committee financial expertise to assess such impact on audit report lag deserved to be studied. In Nigeria, Emeh et al (2013) taking into cognisance audit committee independence, frequency of meetings, financial expertise and size, found out that only audit committee independence and audit committee financial expertise are significantly associated with timeliness of financial reports in Nigeria.

Audit Committee Effectiveness

Prior studies revealed that audit committee was associated with financial reporting quality (Enofe et al, 2013). Logically, financial reporting quality would be enhanced by a high audit quality. Abbott, Parker, Peters & Raghunandan (2003) pointed out that audit committee members may suffer from a loss of reputation and/ or face the possibility of litigation in the event of audit failure; therefore committee members have strong incentives to demand a high quality audit (Stewart & Munro, 2007). It is worthy to note that audit quality has previously been measured by using the size or specialist audit firm (DeAngelo, 1981; Craswell, Francis & Taylor, 1995). Therefore, it is expected that big and specialist audit firms have great resources and quality staff thus audit work could be performed efficiently and effectively.

More recently, Sharma, Boo & Sharma (2007) conducted an experimental study by manipulating corporate governance strength as strong, moderate and weak to test the impact on audit risk, audit planning and the level of substantive testing. The manipulations related to both board and audit committee characteristics; the latter including audit committee composition, meeting frequency and interaction with the external auditors. The study found that the client's corporate governance structure influenced audit risk, planned audit hours and the level of substantive testing. From the above discussion, it is suggested that audit report lag may be sensitively affected by effective audit committee.

Audit Committee Independence

A number of researches have been conducted to investigate the audit committee independent with many variables. With regard to the financial reporting quality, Beasley & Salterio (2001) found that companies with fewer independent audit committees committed fraud while their counterparts did not. Abbott, Parker & Peters (2004) investigated the impact of audit committee independence on the likelihood of financial misstatement and report lag; the study found that independence of the committee was negatively related to misstatement and audit

report lag. Another study had also been conducted by Abbott & Parker (2000); they found that firms were less likely to be sanctioned by Securities and Exchange Commission for fraudulent or misleading financial reporting.

Klein (2002) investigated the association between audit committee independence and abnormal accruals. The study revealed that audit committee independence was negatively associated with abnormal accruals. Saleh, Iskandar and Rahmat (2007) assessed the independence of audit committee where earning management was found to be reduced in companies with fully independent audit committee members.

Some studies have focused on the impact of audit committee independence on audit aspects. Scarborough, Rama & Raghunandan (1998) found that audit committee independence was associated with a stronger internal audit function. Abbott et al (2000) examined the relationship between independent audit committees and audit quality. This study found that firms with independent audit committee members were more likely to hire industry-specialist external auditors. This result also has been proven by Chen, Moroney and Houghton (2005).

Other studies also investigated the association between audit committee independence and internal control system. Krishnan & Yang (2009) found that companies with independent audit committee were significantly less likely to have internal control problems. Goh (2009) investigated the association between audit committees and board of directors with remediation of material weakness in internal control. He found that the independent audit committees were more likely to remediate materials weakness in a timely manner.

The above studies have asserted that audit committee with independent directors' conducts its duty to review financial reporting process, internal control system and audit process more effectively. In other words, involving independent directors in the audit committee would improve the quality of audit, the quality of financial reporting and subsequently the timelessness of financial reporting. Therefore, the existence of a large number of independent directors in audit committee would reduce the audit report lag. Thus, the following hypothesis was generated:

H01: There is no significant relationship between audit committee independence and audit report lag

Audit Committee Size

There have been some studies looking at the role and importance of audit committee size. Abbott et al. (2004) investigated the audit committee size with the likelihood of incidence of financial misstatement. They found that a minimum audit committee size was not significantly associated with the decrease in the incidence of fraud. A study was conducted by Archambeault, DeZoort, & Hermanson (2008) to investigate the impact of audit committee size on suspicious auditor switching. The study reported that there was a negative association between audit committee size and suspicious auditor switching.

Felo, Krishnamurthy and Solieri (2009) found that audit committees with large membership were associated with financial reporting quality. Saleh et al. (2007) predicted the size of audit committee is negatively related to the magnitude of earnings management for Malaysian companies. The result was consistent with their predication.

Goh (2009) in his study on audit committees, boards of directors and remediation of material weaknesses in internal control, found out that audit committee size affects firms' timeliness in remediation of material weakness in internal control. The results revealed that companies

with large members of the audit committee were more likely to remediate material weakness in a timely manner. However, as earlier stated in the introductory part of this paper, the Companies and Allied Matters Act (2004) provides that the maximum number of persons making up an audit committee of a company should be six (6). Taking into cognisance Goh (2009) findings, this study will show whether the above Nigeria Companies and Allied Matters Act (2004) provision is adequate.

Following from the above, a large audit committee increases the resources available to the committee and increase the quality of oversight. It is also expected that a large audit committee with a variety of knowledge can address complicated issues and recommend to the board and management with meaningful advice regarding the quality of financial reporting and internal control systems. Thus, it is predicted that a large number of audit committee members would help the company to enhance its effectiveness and reduce the audit report lag. The following hypothesis is thus, developed:

Ho2: There is no significant relationship between audit committee size and audit report lag

Audit Committee Financial Expertise

A number of studies have been carried out to assess the role of audit committee expertise. DeZoort & Salterio (2001) examined the association between audit committee expertise and the ability of such committees to resolve auditor and management disputes. They reported that audit committee with expert members was more likely to support auditors in their disputes with management. As stated earlier in the introductory part of this paper, the code of corporate governance of Nigeria qualifies an audit committee member as an expert once he is knowledgeable in accounting or finance.

Abbott et al (2004) investigated the relationship between audit committee expertise and financial reporting restatement. They reported that firms with financial experts on audit committees were less likely to experience financial reporting restatement or fraud. Davidson, Goodwin-Stewart, & Kent (2005) opine that there is a significant and positive stock price reaction when new members of audit committee have financial expertise. In their study on audit committee characteristics and audit report lag, Sultana, Singh & Zahn (2015) result tend to be in consonance with that of Abbott (2015) when they found out that there is a positive and significant relationship between audit committee members with financial expertise shorter audit report lag.

Based on the above, it is assumed that audit committees with members possessing knowledge in accounting and finance would help to reduce errors and mistakes in the preparation of financial reports and consequently, the audit work and time will be reduced. Hence, the following hypothesis is proposed:

Ho3: there is no significant relationship between audit committee financial expertise and audit report lag

Frequency of Audit Committee Meetings

A number of studies have been conducted to examine the impact of audit committee meetings on financial reporting output and audit processes. Beasley et al (2000) studied the relationship between the number of audit committee meetings and the likelihood of having fraudulent financial reports. The results showed that companies committing frauds held one meeting per year, while non-fraud companies held two meetings or more per year.

Archambeault et al (2008) found that companies with an audit committee that met less frequently were more likely to commit a suspicious auditor switch compared to companies

with an audit committee which met more frequently. Abbott et al. (2003) found companies with audit committees that met at least four times a year were more likely to have a lower non-audit services ratio compared to those with audit committees that met fewer than four times a year.

Experimentally, Stewart & Munro (2007) examined the impact of audit committee existence, the frequency of audit committee meetings and the auditor's attendance at meetings on external audit aspects. These external audit aspects included audit risk, audit efficiency, audit testing, auditor-client conflict resolution, audit quality and audit fees. The study found that frequency of meetings were significantly associated with reducing audit risk, increasing partner hours and resolving conflicts with management and improving the overall level of audit quality. These results in extant literature, therefore, generate the hypothesis that:

Ho4: there is no significant relationship between frequency of audit committee meetings and audit report lag

MATERIALS AND METHODS

Research Design: The survey research design was adopted in this study. The reason is that the researcher wants to cover as many companies as possible and data were collected at a particular point in time; therefore the researcher was involved in a cross-sectional survey research design.

Sources of Data: In this study, there are basically five variables upon which data was gathered. These variables are audit report lag, audit committee independence, audit committee size, audit committee financial expertise and audit committee frequency of meetings. The secondary source of data was adopted in this study. Data for audit report lag was obtained by computing the number of days between the date of financial year end and the date of the auditor's report. Data for the explanatory variables were obtained from the annual reports and accounts of the companies sampled (Pucheta-Martinez & Fuentes, 2007; Emeh et al., 2013).

Population and Sample selection: The research population comprised the 198 companies listed on the Nigerian Stock Exchange (NSE). The sample size is 132 companies. The reason for taking a sample size of 132 companies is to ensure robustness of the study and representativeness of the sample. The sample was arrived at by using the Yamani formula as follows:

$$n = N / 1 + N(e)^2$$

Where n = sample size sought

N = population

e = error limit (0.05 on the basis of 95% confidence level)

The sample size is therefore:

$$n = 198 / 1 + 198(0.05)^2 = 132$$

The cluster sampling technique was adopted in this study. This was complemented with the simple random sampling technique. The reason for the choice of the cluster sampling technique is that the population of study is distributed in twelve clusters/sectors. For each company in a given sector to have equal chance of being selected, the simple random sampling technique was then introduced. The next step in the sampling was to number the companies in each of the clusters in the adequate range of 001 to 198. After which, a computer package (Excel) was programmed to select 132 random numbers within the specified ranges in proportion to the cluster's share of the total population. The numbers thus generated were used to choose the companies included in the study sample.

Measurement of Variables

Endogenous Variable:

Audit Report Lag – was taken as the period (in days) between a company's fiscal year end and the date of the auditor's report (Emeh et al., 2013).

Exogenous Variable:

Audit Committee Independence - was taken as the proportion of audit committee members not appointed by the directors (Pucheta-Martinez et al., 2007; Emeh et al., 2013).

Audit Committee Size – was taken as number of audit committee members (Goh, 2009; Emeh et al., 2013).

Audit Committee Financial Expertise – was taken as proportion of audit committee members who are knowledgeable in accounting and finance (Goh, 2009; Emeh et al., 2013).

Frequency of Audit Committee Meetings - was taken as a dummy variable; coded one (1) if the company holds at least four meetings during the fiscal year (Stewart & Munro, 2007; Emeh et al., 2013).

Model Specification

Based on the agency theory underpinning this study, the relation below was derived earlier under the theoretical framework of the study.

$$\text{ARLAG} = f(\text{ACIND}, \text{ACSZE}, \text{ACEXP}, \text{ACFOM}) \dots\dots\dots (1)$$

Where:

ARLAG = audit report lag

ACIND = audit committee independence

ACSZE = audit committee size

ACEXP = audit committee financial expertise

ACFOM = audit committee frequency of meeting

Assuming a linear relationship, we can write the above relation (1) in an explicit functional form as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots \beta_n X_n \dots\dots\dots (2)$$

Where $\beta_0; \beta_1; \beta_2 \dots \beta_n$ are parameters to be estimated

Y = the dependent variable (IFRS adoption decision)

X_1, X_2, X_n = independent variables

Thus equation (1) and (2) becomes:

$$\text{ARLAG} = \beta_0 + \beta_1 \text{ACIND} + \beta_2 \text{ACSZE} + \beta_3 \text{ACEXP} + \beta_4 \text{ACFOM} + U \dots\dots\dots (3)$$

Where $\beta_0, \beta_1, \beta_2, \beta_3$ and β_4 are parameters to be estimated. The apriori expectation is that;

$$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0 \text{ and } \beta_4 > 0$$

Note that 'U' is the error term and β_0 is the constant term.

RESULTS AND DISCUSSION

This section contains the presentation, analysis and interpretation of the data collected for this research work. For robustness purpose, the regression analysis were conducted using the pooled OLS and the Panel fixed effects OLS. The results are presented and interpreted below.

Table 1: Regression result

Dependent Variable: ARLAG				
Method: Least Squares				
Included observations: 127 after adjustments				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.870146	1.241687	3.9222	0.000*
ACSZE	0.980096	0.481498	2.035513	0.044*

ACIND	-2.09776	0.949601	-2.209095	0.029*
ACFOM	-0.02438	0.082738	-0.294621	0.769
ACEXP	0.033221	0.181438	0.183097	0.855
ARL(-1)	0.248246	0.09731	2.551081	0.012*
R-squared	0.174134	Mean dependent var		2.901575
Adjusted R-squared	0.132841	S.D. dependent var		1.47718
S.E. of regression	1.375571	Akaike info criterion		3.529155
Sum squared resid	227.0633	Schwarz criterion		3.685921
Log likelihood	-217.101	Hannan-Quinn criter.		3.592847
F-statistic	4.217006	Durbin-Watson stat		1.909055
Prob(F-statistic)	0.000692			

Source: Eviews 7.0 Software

Regression equation

$$\text{ARLAG} = 4.870 + 0.980 \text{ ACSIZE} - 0.2099 \text{ ACIND} + 0.033 \text{ ACEXP} - 0.024 \text{ ACFOM} - 0.248 \text{ ARL}_{-1} + u$$

(1.242) (0.481) (0.949) (0.181) (0.082) (0.097)
 {0.000}* {0.044}* {0.029}* {0.855} {0.769} {0.012}*

N.B: () standard error, { } p-values, *significant

The table above shows the regression result conducted to examine the effects of the independent variables on the dependent variable. The one period lag of Audit report lag is also included in the model as we suspect that past period lag may also influence the present period reporting lag. The regression is conducted using the White Heteroskedasticity-Consistent Standard Errors & Covariance to control for possible heteroscedasticity in the model.

From the table above, coefficient of determination of the model also referred to as the R^2 is 0.174 which shows that the model explains about 17.4% of the systematic changes or behaviour of audit report lag while other factors not included and captured by the stochastic error term explains a larger proportion of 82.6%. The Adjusted R^2 which adjusts the degrees of freedom for inclusion of successive variables into the model is 13.2 %. From the table above, the F-stat value of 4.217 and the associated p-value of 0.00 is less than 0.05 and hence we accept the joint statistical significance of the model and that significant linear relationship exist between the dependent and independent variables. The Durbin Watson statistics of 1.9 is approximately 2 and hence indicates that the presence of first order serial correlation is unlikely in the model.

The evaluation of the slope coefficients of the explanatory variables reveals the existence of positive relationship (0.980) between audit committee size and audit report lag which is also significant at 5% ($p=0.044<0.05$) and this result implies that the larger the audit committee size, the more the audit report lag. The regression result also shows that audit committee independence measured as the proportion of independent directors in the audit committee has a negative effect on audit report lag as indicated by the negative slope coefficient of -0.2099 which is statistically significant at 5% as the probability value is less than 0.05 ($p=0.029<0.05$). The results suggest that increases in the number of independent directors on the audit committee could reduce audit report lags.

The regression result also shows that audit committee financial expertise has a positive effect on audit report lag as indicated by the positive slope coefficient (0.33). What the result indicates is that the higher the percentage of audit committee members with finance and

accounting knowledge the higher the audit report lag. Though it was not statistically significant at 5% as the probability value is greater than 0.05 ($p=0.181>0.05$).

Audit committee frequency of meeting has a negative effect on Audit lag as indicated by the slope coefficient (-0.024) and this suggest that the higher the number of Audit committee meetings, the lower the audit report lag. The result is however not significant at 5% level as the probability value is less than 0.05 ($p=0.769<0.05$). Finally, one period lag of Audit report lag appears to exert a significant negative effect on current audit report lag as indicated by the slope coefficient (-0.248) and probability value ($p=0.012<0.05$).

DISCUSSION OF FINDINGS

We find that the effect of Audit committee size on Audit report lag appears to be positive and significant. This implies that larger audit committees tends to result in audit delays and this is because in a large audit committee issues are expected to be more keenly debated across several perspectives. The finding is consistent with Dylar & McHugh (1975) and Goh (2009), but is at variance with Abdulla (1996) which found a negative and insignificant effect.

Secondly, the effect of Audit committee Independence on Audit report lag appears to be negative and significant in this study. This is in line with prior expectation as more independent audit committee members are assumed to be free from any form of management influence and as such will proceed to deal with financial reporting issues with strictness and over-tuning the influence of conflict of interest in the boardroom which spills over to management delay and then culminates into influencing total audit delay. The finding is consistent with that of Emeh et al (2013) but is in consonance with the findings of Dylar & McHugh (1975).

Thirdly, the effect of Audit committee frequency of meeting on audit report lag is observed to be negative and not significant. This suggests that the more frequent the audit committee meetings, the lesser the audit report lag. This appears logical as audit committees that are able to meet frequently will be able to perform their duties over the financial reporting system thoroughly and timely, and the finding is in tandem with that of Stewart & Munro (2007).

Fourthly, the influence of audit committee financial expertise on audit report lag was found to be positive and not significant in this study. This result is in tandem with that of Emeh et al (2013). This result is not surprising because the higher the percentage of audit committee members with finance and accounting knowledge the longer the deliberations on audit matters as it pertains to accounting and financial matters, which invariably will result in audit report lag.

These results are in tandem with the prediction of the agency theory which indicates that audit committees are important mechanism to ensure the agent works to maximize the shareholders' wealth. Take for example, from the result of this study, the more independent the audit committee members the shorter the audit report lag, given the negative relationship between both. Likewise, the higher the audit committee frequency of meetings, the shorter the audit report lags, also given the negative relationship between both. By these results, audit committee in internal corporate governance has reduced the information asymmetry which would lead to decrease in the agency problems in organisations. By doing so, it was suggested that audit committee should possess some crucial characteristics such as independent members, smallness in size and frequent meetings to perform its duties more effectively.

CONCLUSION

The objective of the study is to examine the association between audit committee effectiveness and audit report lag in the Federal Republic of Nigeria. However, the specific objective of the study is to examine whether the characteristics of audit committee effectiveness such as audit committee independence, audit committee size, audit committee financial expertise and frequency of audit committee meetings would affect the audit report lag. In achieving this objective, the agency theory was used to develop the hypotheses tested in this study. The conclusion in this study was based on the overall result of the analysis carried out on the 132 companies sampled. Based on the overall result, the following conclusion is reached: There was evidence that there is a positive and significant relationship between audit committee size and audit report lag; there is also, a negative and significant relationship between audit committee independence and audit report lag; a positive and non significant relationship exist between audit committee financial expertise and audit report lag; and a negative and non significant relationship exist between audit committee frequency of meetings and audit report lag.

Policy implication of findings

The positive and significant relationship between audit committee size and audit report lag implies that larger audit committees tends to result in audit delays, this, therefore, requires a policy shift on the part of stakeholders, for example, the Nigerian Financial Reporting Council (FRC) in managing the size of the audit committee. Therefore, the Nigeria Companies and Allied Matters Act, 2004 provision of a maximum of six (6) members in an audit committee need to be reviewed.

The negative and significant relationship between audit committee independence and audit report lag suggest that increases in the number of independent directors on the audit committee could reduce audit report lags. Therefore, there is need for a policy shift in this respect on the part of policy makers in forestalling audit report lags.

The positive and non significant relationship between audit committee financial expertise indicates that the higher the percentage of audit committee members with finance and accounting knowledge, the higher the audit report lag. Therefore, there is need on the part of policy makers in sensitizing members of the audit committees on the need to reduce audit report lags.

The negative and non significant relationship between audit committee frequency of meetings and audit report lag, suggest that the higher the number of audit committee meetings, the lower the audit report lag. This appears logical as audit committees that are able to meet frequently will be able to perform their duties over the financial reporting system thoroughly and timely. Therefore, this policy of meeting frequently on the part of audit committees should be sustained.

Policy Recommendations

In achieving reduction in audit delays in order to achieve the objective of making the financial statements readily available for making timely decisions, the Nigerian Stock Exchange, Securities and Exchange Commission, the Financial Reporting Council, the Central Bank of Nigeria and other stakeholders in the Nigerian business environment should:

1. Ensure the size of an audit committee is reduced from the present six (6) as provided by the Nigeria Companies and Allied Matters Act (2004) to a manageable size that will reduce audit report lags given the positive and significant relationship between audit committee size and audit report lag in Nigeria.

2. Stakeholders especially the FRC of Nigeria should ensure besides reduction in the size of audit committees, most of the members, at least 80%, should be independent in order to forestall audit report lags, given the negative and significant relationship between audit committee independence and audit report lag in Nigeria.
3. There is need on the part of policy makers in enlightening members of the audit committees on the need to be time conscious in discharging their responsibilities without much ado over knowledge wrangling, given the result that the higher the percentage of audit committee members with finance and accounting knowledge, the higher the audit report lag. To be specific, a knowledge in accounting or finance, which was taken as a measure for expertise in this study, should be at a minimum level of a first degree or higher diploma.
4. An interesting and expected result in this study is that the higher the number of audit committee meetings, the lower the audit report lags. It, therefore, behooves policy makers to ensure more incentive is given to members of the audit committee to meet more frequently, since audit committees that are able to meet frequently will be able to perform their duties over the financial reporting system thoroughly and timely. Therefore, the Nigeria Companies and Allied Matters Act (2004) should be amended to capture the need for audit committees to meet more frequently.
5. Since audit committee in internal corporate governance has reduced the information asymmetry which would lead to decrease in the agency problems in organizations, it was suggested that audit committee should possess some crucial characteristics such as independent members, smallness in size and frequent meetings to perform its duties more effectively.

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APPENDIX

DATA USED TO RUN THE REGRESSION

S/N	NAME OF COMPANY	ARLAG	ACIND	ACSIZE	ACEXP	ACFOM
A	AGRICULTURAL:					
1.	The Okomu Oil Palm Plc	1month.3days	3	6	3	0
2.	Presco Plc	2.4	3	6	2	1
3.	Ellah Lakes Plc	1	3	6	0	1
4.	Livestock Feeds Plc	1.5	3	6	0	1
B	CONGLOMERATES:					
5.	A.G Leventis NG. Plc	2.1	3	6	1	1
6.	Chellarams Plc	4	3	6	0	1
7.	johnHolt Plc	2	3	6	3	1
8.	Scoa Nig. Plc	1.3	3	6	0	1
9.	Transaction Corp. of Nig. Plc	1.5	2	4	0	0
10.	UAC of Nig. Plc	6	3	6	0	0
C	CONSTRUCTION/REAL ESTATE:					
11.	Cappa & D' Alberto plc	2.2	3	6	0	1
12.	Costain (West Africa) Plc	3.3	3	6	0	1
13.	G. Cappa Plc	2.1	3	6	0	1
14.	Julius Berger Nig. Plc	1.2	2	4	0	0
15.	Roads Nig. Plc	4	3	6	3	1
16.	UACN Prop Dev. Co. Plc	3	3	6	0	1
D	CONSUMER GOODS:					
17.	Union Dicon Salt Plc	4	2	4	0	1
18.	DN Tyre & Rubber Plc	2.3	3	6	0	0
19.	Champion Breweries Plc	1.4	3	6	0	0
20.	Golden Guinea Breweries	2.2	2	4	0	1
21.	Guinness Nig. Plc	3.3	3	7	0	1
22.	International Breweries Plc	2.4	2	4	0	1
23.	Jos International Breweries Plc	2.6	3	6	0	0
24.	Nigerian Breweries Plc	3.1	3	6	0	0
25.	Premier Breweries Plc	4.2	3	6	0	1
26.	7-up Bottling Company Plc	2.3	3	6	0	0
27.	Dangote Flour Mills Plc	5	2	5	0	1
28.	Dangote Sugar Refinery Plc	3.1	3	6	0	1
29.	Flour Mills of Nig. Plc	2.1	3	6	0	1
30.	Northern Nig. Mills Plc	1.2	3	6	0	1
31.	National Salt of Nig.	3.1	2	6	2	0
32.	PS Mandrids Plc	2	3	6	0	0
33.	UTC Nig. Plc	1	3	6	1	1
34.	Cadbury Nig. Plc	1.6	3	6	1	1
35.	NESTLE Nig. Plc	1.2	3	6	0	1
36.	Beta Glass Plc	1	2	4	0	1
37.	Nigerian Enamelware Plc	2.4	3	6	0	0
38.	Vital Foam Nig. Plc	3.1	2	4	0	0
39.	Vono products Plc	3.2	3	6	0	0
40.	PZ Cussons Nig. Plc	4	3	6	0	1
41.	Unilever Nig. Plc	2	1	2	0	1
E	FINANCIAL SERVICES:					
42.	Access Bank Plc	1.2	3	6	0	1
43.	Diamond Bank Plc	1	2	4	0	1
44.	Eco Bank Nig. Plc	2	3	6	2	1
45.	Fidelity Bank of Nig. Plc	2	3	6	3	1
46.	First Bank of Nig. Plc	1.4	3	6	0	1
47.	FCMB Plc	1.3	3	6	0	1
48.	GTB Plc	1	2	4	0	1
49.	Skye Bank Plc	2	3	6	0	1

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50.	Stanbic IBTC Bank Plc	1	3	6	0	1
51.	Union Bank of Nig. Plc	3	3	6	0	0
52.	UBA Plc	4	2	4	0	1
53.	Wema Bank Plc	2	3	6	0	1
54.	Zenith Bank Plc	3	3	6	0	1
55.	Custodian and Allied Insurance	2	3	6	0	0
56.	Egurity Assurance Plc	1	2	4	0	0
57.	Golden Link Insurance Plc	3	3	6	0	0
58.	Guinea Insurance Plc	4	3	6	0	0
59.	Intercontinental Wapic Insurance	3.2	2	4	2	0
60.	Confidence Insurance Plc	4	3	6	0	1
61.	AIICO Insurance Plc	2	2	4	0	0
62.	International Energy Insurance	1	2	4	0	1
63.	LASACO Assurance Plc	3	3	6	0	1
64.	Law union & Rock Insurance Plc	2	3	6	0	1
65.	Linkage Assurance Plc	2	2	4	0	0
66.	NEM Assurance Comp. Plc	3	2	4	0	1
67.	Niger Insurance Plc	4	2	4	0	0
68.	Oasis Insurance	2	3	6	3	0
69.	Prestige Assurance Plc	2	3	6	0	0
F	HEALTHCARE:					
70.	Ekocorp Plc	1	3	6	0	0
71.	Morison Industries Plc	3	2	4	0	0
72.	Evans Medical Plc	7	2	4	0	1
73.	Fidson Healthcare Plc	4	2	4	0	0
74.	GlaxoSmithKline (Nig) Plc	6	2	4	0	1
75.	May & Baker Nig. Plc	3	3	6	0	0
76.	Neimeth Int. Pharma Plc	2	3	5	0	0
77.	Nigeria-German Chemical Plc	4	3	6	0	1
78.	Pharma-Deko Plc	6	2	4	0	1
G	INFORMATION/COMMUNICATION:					
79.	Omatek Venture Plc	5	3	6	0	1
80.	NCR (Nigeria) Plc	1.2	2	4	0	1
81.	Triple Gee & Company Plc	3.2	3	6	0	1
H	INDUSTRIAL GOODS:					
82.	African Paints (Nig) Plc	5	3	6	0	1
83.	Ashaka Cement Nig. Plc	1.2	2	4	0	1
84.	Berger Paints Nig. Plc	3.2	3	6	0	1
85.	Chemical and Allied Plc	2.2	3	6	0	1
86.	Cement Company of Northern	2.4	3	6	3	1
87.	DN Meyer Plc	5	2	4	0	0
88.	Stokvis Nig. Plc	4	3	6	0	0
89.	First Aluminum Nig. Plc	4	3	6	2	1
90.	IPWA Plc	2	2	4	0	1
91.	Lafarge Cement WAPCO	3.2	3	6	0	1
92.	Cutix Plc	3.1	3	6	0	0
93.	Avon Crown caps Plc	4	2	4	0	0
94.	Nigerian Wire and Cable	2	3	6	0	1
95.	Nigerian Wire Industry	1	3	6	0	0
96.	Poly Products Nig. Plc	4	3	6	0	0
97.	Waglass Plc	2	3	6	3	0
I	NATURAL RESOURCES:					
98.	BOC Gases Plc	1	3	6	0	0
99.	Alumanco Plc	4	3	6	0	1
100.	Aluminum Extension	2	3	6	2	1
101.	HALLMARK Papers Prod.	1.3	2	4	0	1
102.	Thomas Wyatt	1.5	3	6	0	0
J	OIL AND GAS:					
103	JAPPAUL Oil And Maint.	1.2	3	6	0	1

104.	OANDO Plc	2	2	4	0	1
105.	Afroil Plc	5	3	6	0	0
106.	Conoil Plc	3	3	6	0	0
107.	Eternal Oil and Gas Plc	4	3	6	0	0
108.	Forte Oil Plc	3	3	6	0	1
109.	Mobil Oil Nigeria Plc	1	2	4	0	1
110.	Mrs. Oil Nig. Plc	2	3	6	0	0
111.	Total Nig. Plc	7	3	6	4	1
K	SERVICES:					
112.	Lennards Nig. Plc	2.1	3	6	3	0
113.	RT Briscoe (Nig) Plc	7	3	6	0	0
114.	Red Star Express Plc	5	2	4	0	0
115.	Trans-Nationwide Express	4	3	6	0	0
116.	C&I Leasing Plc	4	3	6	2	1
117.	Tantalizers	3	3	6	0	0
118.	Ikeja Hotel Plc	2	3	6	0	1
119.	The Tourist Company of Nig.	3	3	6	0	1
120.	Academy Press (Nig) Plc	6	3	6	0	1
121.	Studio Press (Nig) Plc	4	2	4	0	0
122.	University Press Plc	5	3	6	1	1
123.	Interlinked Tech. Plc	3	2	4	1	0
L	ALTERNATIVE SECURITIES MARKET:					
124.	Afrik Pharmaceuticals	2	3	6	0	1
125.	Rokana Industry Plc	4.2	3	6	0	0
126.	West African Aluminum Product	3.1	2	4	1	1
127.	Amino International Plc	1.4	3	6	0	0
128.	Capital Oil Plc	1.1	3	6	0	1
129.	Rak Unity Petrol	3.2	2	4	0	0
130.	Union Ventures & Petrol	3	3	6	2	1
131.	Juli Plc	6	1	3	0	1
132.	Adswitch Plc	5	3	6	0	1

WORKPLACE DIVERSITY MANAGEMENT: A CORPORATE PERFORMANCE DRIVER

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ABSTRACT

Diversity has gradually grown into a significant topic in human resources management due to numerous dynamics which are producing aspirations of added diversity in people management. It is a developing certainty that organizations must tackle openly. Demographic developments also signify a public understanding where diversity is achieving additional outstanding position. Organization management must value the resultant advantages of diversity and this necessitates a great deal of endeavour and understanding which both the employees and the organizations merit. To improve on diversity management, organization management may emphasise several actions which in truth values and breathes diversity all through. This paper puts forth a few possibilities including: valuing diversity, achieving people commitment, dedication to diversity management, encouraging inclusion, offering assistance in family spirit, augmenting people empowerment, careful analysis of prospective markets, building a unique recruitment and selection scheme, excellent orientation programmes for new employs, trainers and mentors with elevated compassionate and social abilities, internal training of human capital when it becomes difficult to fill certain positions, clear performance management plans, career development, regular and careful measurement of the specific diversity assemblages in organization departments, instant correction of workforce assessments that are not performance based, plainly devised organization strategy which incorporates diversity, diverse and developed top management team, sustenance of a communication and behaviour approach. Except organization management is concerned with the best interest of the employees, effective diversity management becomes impossible therefore, they must somewhat wheel their focus increasingly to provide for organization members.

Keywords: Workplace, Diversity, Management, Corporate, Performance, Driver

1. INTRODUCTION

Diversity is a topic that could be extremely compelling and poignant for all stakeholders. It concerns subjects of being diverse and similar, motivation and perspiration, grief and happiness, advantage and disadvantage, culture and religion, tolerance and justice, revulsion and hostility. The challenges and prospects of diversity affect all countries globally one way or the other. At present, subjects of cultural recognition, religious safeguard, racial superiority, domination of minority groups, and inequitable reward to diverse groups of people arising from their marginal positions or gender, and other such crucial problems affect different countries globally.

Both in the society and the workforce differences have and will always subsist. It is now increasing at a rising rate. Every person has an ethical responsibility to be conscious of these disparities and to value every individual as a distinctive person. Consequently, valuing diversity and developing into diversity supporters entail every individual accepting, esteeming, appreciating disparities and studying or investigating them to maximize workforce efficiency and achieve organizational competitiveness.

Kossek and Lobel (1996) affirms that the human resource management (HRM) perspective of workforce diversity involves the advancement and execution of organizational schemes that: augment the numerical representation of traditionally eliminated clusters; authorize a varied workforce to contribute completely to organizational management and guarantee the inclusion of an assorted workforce in all facets of organizational life. Yakura (1996) observes that the business case for human resource diversity approach connects recruitment, selection, development and retention of a diverse workforce to business objectives, labour market modifications, globalization and competitive advantage. The significance of diversity management arises from the fact that workplace diversity is a subject of apprehension across organizations since it portends possible advantages or tests to them, and consequently openly manipulates their performances.

This paper aims to emphasize the significance of organization management exhibiting more concern regarding accepting differences in organization members in order to enhance the management of retention of the good persons and attracting additional fresh ones in as much as their lasting achievements depends on it, above their economic resources and operating capabilities.

2. DIVERSITY MANAGEMENT

The concept of diversity management originated in business management and depicts the heterogeneity of workers and recognizes methods of taking advantage of it to the benefit of everybody involved and the success of the business. In contemporary times, organizations are now openly executing diversity management as part of their human resource management strategies.

Stotz and Wedel (2009) asserts that diversity management is the planning and execution of organizational schemes and procedures aimed at managing people in order that the prospective benefits of social diversity in a working milieu are maximized and its prospective weaknesses are reduced. Diversity management in addition to valuing the personality assortment of employees also emphasizes its respect for all parties concerned.

Worman (2005) indicates that at the workplace, people are diverse in their sensitivities, ambitions and motivations; consequently, they react differently to the incentives of their superiors in directing their performance. Worman (2005) grouped the diversity constituents in three categories: social diversity (age, ethics, gender etc); value diversity (emotional divergences in personality and attitude) and informational diversity (education, serviceable term in the organization). The European Commission (2005) observes that diversity is a comprehensive expression founded on identifying all sorts of divergences. It involves appreciating everybody as entities and distinguishing that individuals from diverse environments can bring new thoughts and insights that have the potential to ensure more proficient products, services and better work done. It entails a broad idea that envelops all sorts of disparities that exceed the conventional understanding of equal opportunity.

Diversity management implies recognizing individual's dissimilarities and distinguishing them as precious; it boosts good management practices by stopping discrimination and encouraging inclusiveness. Non-diversity at the organization level eliminates segments of the population with threats of social gaps, stereotyping and fundamentalism leading to civil unrest and political confrontations. Globally, thriving businesses foresee and exploit the speedily growing percentage of minority groups. Diversity goes beyond ethnicity, race and gender; it is otherness, or those human attributes that are unlike our own and outside the group to which we belong but are present in other individuals and groups.

3. FACTORS RESPONSIBLE FOR INCREASED WORKPLACE DIVERSITY

One major antecedent of the rise of workplace diversity is globalization which has brought about the elimination of hurdles between markets allowing a free flow of products, services, skills and ideas. Bellini (2005) observes that with globalization, several organizations are faced by the demands of new competitors, new consumers and diverse human resources.

Next is women's work. Arising from the swell in the number of active women, the family structure including the duties of members, size, education and consumption models have been transformed. Previously male dominated occupations now have females joining and there is the initiation of fresh regulations and process alterations.

In addition there is the migration factor. A combination of two developments - the push from developing countries and the pull from developed countries - make the global workforce increasingly diverse. Dass and Parker (2006) affirms that developed countries of the world like America and Western Europe are faced by low birth rates, reducing the groups of young people, and reducing proportions of workers to retirees. These countries require importation of immigrants to work in order to maintain their existing heights of economic activities. Cox (1993) asserts that in contrast, developing countries are witnessing a totally reverse trend, with unparalleled escalation in the numbers of young people arising from elevated birth rates, enhanced medical situations, and reduced infant mortality. This generates very large groups of young unemployed people who require emigration to find jobs for themselves and to support their families, since their countries are unable to sustain them. Moreover, organizations are now further accepting conventionally barred workers because of global progress in equal rights legislations.

Political diversity also constitutes a factor in diversity. Kochan et al (2003) contends that workers in most organizations have diverse political ideas, and ultimately attachments which originate disagreements among them, particularly when they are obliged to make decisions on vital national actions. Next is status diversity which has to do with expatriates against locals. Kirton and Greene (2005) notes that business growth at the international level added to the mobility of human resources bring about the presence of expatriate and local staff members working alongside with all the diverse working conditions and promotion outlooks that may result in aggravations and altercations.

Furthermore, work settings are now being adjusted to include older workers and senior profiles. Productivity targets and career plans are being reassessed. This is because of the aging population and the improvements in health care which is adding to the number of older people staying active. Besides, Page (2007) indicates that there are corporate structure changes like outsourcing and global operations increasing workforce diversity. Because of the demands of competition, many organizations are moving their production facilities to developing countries in order to benefit from cheaper labour or proximity to raw material sources.

4. DIVERSITY AS A PROSPECT FOR ORGANIZATIONS

During the 19th century, most philosophies (fascism, communism, national socialism etc.) attempted to repress diversity and centred on a general aim arising from the apprehension that countries and their cohesions grow weaker with the particular problems of diverse groups.

Coleman (2009) notes that arising from the supposition that divergences imply limitations and homogeneity results in strong attachments they employed domination, brutality and even

annihilation to circumvent diversity but were unsuccessful in enforcing universal benchmarks and expunging the divergences. Pelled (1996) suggests that at the organization level, opposition to diversity generally emanates from the overriding group aspiring to maintain its supremacy and by management because of the additional expenditures diversity typically generates for training, conflict resolution and process adjustment.

Diversity management is no longer a choice rather it is an obligation compelled on organizations that must tackle it and employ it stylishly to boost originality, reciprocated understanding of divergences and capability to enlarge its operations to new markets. Managing diversity centres on exploiting the workers' aptitude to add to organizational goals. Diversity management in general involves taking practical actions relating to organization climates that can reduce the intimidations of diversity and increase the exploitation of its prospects. Therefore Thompson and Gooler (2010) affirms that it obliges the recognition that while diversity denotes divergences, it includes resemblances. With contemporary trends towards team work constantly rising, driving people to work more and better together would be mutually beneficial to organizations and the people since every employee would manage teams better gaining from the pluses of the team and improving its minuses.

Naturally, this necessitates exploiting divergences among the people and the team evading being driven by members' dissimilarities. Without correct management, workplace diversity may offer a wider syndicate of proficiencies but reduce team cohesion and radiate internal conflicts. Organizations that successfully manage diversity would: better manage people recruitment and retention; acquire improved interpersonal communication between its human resources; enhance originality and innovation and enhance people performance for the contentment of all stakeholders.

Diversity constitutes a developing certainty that organizations must tackle openly. It should be recognized, accepted and handled as a means of prosperity, originality and cross cultural acknowledgment since organizations usually have heterogeneous human resources, profile of consumers and suppliers. Ciroma (2010) suggests that managing diversity rather than being simply a social, moral or conscience matter openly influences organization performances and results.

Kandola and Fullerton (1994) conveys that diversity management rests on the principle that exploiting the divergences generates a dynamic milieu where each person feels respected, their capacities are totally exploited, and organizational objectives are achieved.

Fajana (2000) affirms that diversity management appreciates the advantages to be achieved from dissimilarities and is separate from equal opportunity, which not only aspires to legislate against discrimination but presupposes that individuals should be incorporated into the organization, and frequently depends on affirmative action.

Not valuing diversity results in futile marketing efforts, damaged relationships, and disagreements, lost talents, misinterpretations, loss of time, money, and efficiency. Some of the corollaries can comprise harmful tensions between people of diverse gender, race, ethnicity, age, religion, abilities, etc. loss of output due to enhanced conflict; failure to attract and retain talented human resources of all types; grievances and legal actions resulting in misplaced outlays in recruitment and training.

In sum, diversity management in economic terms implies tapping prospects. In terms of markets: it means customers and their requirements have become critical and are seen with respect to proffering products and services; without which misplaced market opportunities

and delayed identification of fresh consumer requirements become more numerous. As regards talents and performance of own staff: (which is the most important organization resource) it ultimately involves its own people with their resourcefulness, vigour, driving force, zeal and contacts which will often imply reflecting on the extraordinary. Organizations will resultantly be unable to avoid familiarizing its management and staff with the imminent transformations.

5. EFFECTIVE DIVERSITY MANAGEMENT

Several researchers have dealt with the subject of diversity management from diverse positions. Kandola and Fullerton (1998) affirms that the fundamental notion of managing diversity admits that the workforce comprises a varied population of individuals. The variety involves discernible and non-discernible distinctions. It is based on the principle that connecting these dissimilarities will generate a fruitful setting where everyone feels valued, their abilities are completely employed and organizational goals are achieved. Diversity management involves guaranteeing that everyone exploits their prospects and their inputs to the organization. It denotes valuing individual differences and the diverse attributes they bring to their jobs which bring about the growth of a more compensating and fruitful environment.

Kandola and Fullerton contend that many organizations practising flourishing diversity policies implement schemes that among others : initiate equal rights and benefits for both part-time and fulltime workers; permit flexibility in dress prerequisites; tolerate time off to care for dependants beyond legal requirements; offer assistance to employees' partners; acquire specialized equipment, e.g. braille keyboards; engage helpers or signers for those requiring them; train trainers in equal opportunities; eradicate age criterion from selection decisions; offer child care support and permit career breaks for staff.

In the same vein, the Economic Commission (2005) depicts the features of a diversity oriented organization to include: **strong and positive mission** and values where efficient flourishing diversity management is a compulsory long-term goal; existence of **objective and fair procedures** in the organization which are frequently reviewed to guarantee that power does not sit within informal arrangements, and no single group of workers controls at whichever stage; **experienced workforce** know of the results of biases and prejudices on their decision making, and managers handle the diversity efficiently while emphasizing superiority in personal and group performance; **active flexibility** which implies that the diversity-oriented organization will demonstrate augmented flexibility, both in its working moulds and its practices, rules and modus operandi; **individual focus** which implies the need for organizations to resist averaging out cluster disparities or parallels by forming separated groups; **culture** which empowers and is attained through sincerity, stimulating trust between all individuals through a lack of bigotry and favouritism.

Fink, Pastore and Riemer (2003) anticipated a framework of managing diversity that differentiates between non-compliant organizations at its smallest end, and pro-active ones at its utmost end, with the - compliant and - reactive ones in between. The framework suggests that diversity would go from a liability to an asset for organizations that move their diversity management from non-accommodating to pro-active. The non-accommodating organizations would eventually face the threats imposed by diversity, while for the pro-active ones many employees at various levels are involved in decision- making. The pro-active organizations are those that will profit from their management of diversity and mature their opportunities. The framework does not suggest however, that the different diversity management practices are mutually exclusive.

Diversity management strategies in addition to discerning the existence of disparities among employees also realize that with correct management the disparities will facilitate more proficient and efficient work performances. It focuses on identifying the dissimilarities between people rather than centring wholly on questions of prejudice.

Thomas and Ely (2001) observes that several organisations have begun the ground works for progressively more varied markets and their work forces and management are symbolized by a considerably superior mental attachment and identification with the organizations; organization cultures are typified by an environment of trust and open dialogues where issues of supremacy and subordination are honestly tackled resulting in growth in earnings rates.

Thomas and Ely categorized three stages which organisations usually navigate ranging from anti-discrimination, to legitimization and then learning and effectiveness. The Anti-discrimination stage involves affirmative action which is founded on an ethical command for increased diversity and reasonableness. It however did not entail that the diversity or uniformity would alter the method of doing things but rather the insentient anticipation of integration to existing organisational culture. The limitation of integration was the restrain and subsequent suffering of organisation capability and drive for innovation for conflict resolution and learning. It is also frequently deficient of a foundation for constructing persuasive arguments from the standpoint of the organisation.

The legitimization stage exemplified the supposition of sameness and organization expanded approaches to recognize diverse market sectors. The segmentation strategy was weakened by the propensity of the whole organisation not actually gaining greatly from the various ways of thinking and performance. In these segments many organization members employ their own approaches and while the disparities are pleasant; the dilemma was that the fresh knowledge was not fabricated into a system that methodically intervenes in entrusting the knowledge to successors. There is therefore, the risk of knowledge being excessively fragmented and not totally incorporated resulting in over simplifications and labelling.

The learning and effectiveness stage indicates a foremost paradigm transformation. Increasingly organisations are beginning to view diversity as a main resource and therefore deliberately and openly employing persons of dissimilar characteristics and conditions. Consequently, the growth of market schemes are being founded on exhaustive analysis of the different understandings and knowledge of diverse organization members. Their proficiencies and capabilities are employed to the fullest in policy making on latest products and services, procedures and methods of structuring and functioning etc.

Moreover, they are persuaded to divulge distinctive, private and professional experiences in an ambience of trust, approval and admiration thereby gradually developing a learning organisation. Organisations internalise disparities among employees with a view to achieving learning and development.

There is massive untapped prospect in turning diversity into a resource, especially in view of the observed economic and social stagnation in Nigeria. The long-standing competitive drawbacks for organizations who fail to embrace the new prospects and make subsequent internal modifications will include loss of customers to those that not only produce high standard products and services at good prices but project characteristics that genuinely esteem all potential disparities and similarities including religion and gender. It implies a profound transformation in organisational culture which may involve changes in the benchmark upon which prospects, endorsements, promotions and acknowledgments are based: a benchmark

based on which decisions are made founded on the knowledge and competence of employees and autonomous of gender, religion, etc.

6. TOWARDS IMPROVED DIVERSITY MANAGEMENT

Broadly speaking, diversity management necessitates realizing one or both of recognizing and exploiting individuals' differences and unifying people. Bearing in mind the constancy of individual differences organization would endeavour to unify its people. Therefore the majority of its diversity management activities must explore assistance to organization members, observation and acknowledgment of their differences, added to exploitation of these differences. To perk up on diversity management, organization management may emphasise several actions which in truth value and breathe diversity all through. This paper puts forth a few possibilities:

One is Valuing Diversity which entails devotion of both time and efforts and can be facilitated by: employing diverse individuals; searching for mutual positions; promoting open expression of differences; acceptance of risks taking; tolerance and institution of reciprocated sustenance among organization members. Next is Achievement of People Commitment. Commitment facilitates performance. Rijamampiana and Carmichael (2005) opine that there are three levels of employee commitment namely: obligation, belonging and ownership. They suggest that organizations are required to first and foremost build a mind-set of ownership among the employees by agreeing not only to split both the positive and negative organization results with them but to do same in a clear and just manner.

Another is dedication to diversity management which can be achieved principally by seeking the common good of every one, rather than organization good alone through: promotion of reciprocal acclimatization of organization members to realize their mutual interests by exploiting change; accepting indistinctness and clarifying diversity; enduring diversity and assisting organization members in acknowledging it as a reality of life.

Added to these is encouragement of inclusion. The cultivation of reciprocal admiration requires endorsing inclusion and belongingness amongst employees which entails having the right to speak out and to sponsor individual claims. Organization management must have great assurance of the capacity of all their members to adjust to transformations and be integrated in the group.

Moreover there is assistance in family spirit. This is achievable through the establishment of an ambience of sharing proficiency and promoting trust; assistance in building trust among organization members; elucidating and making organization vision and objectives clear and also aiding communication.

Similarly organizations can augment people empowerment by designating down the chain of command, additional tasks and powers, and boosting the employees chances of learning and developing the autonomy amongst them.

Added to the foregoing is a careful analysis of prospective markets followed by building a unique recruitment and selection scheme that embraces fresh sales pitches, interview techniques and evaluation centres aimed at expanding the understanding and consciousness required for the selection procedures, to possess the capability for identifying talented and unique individuals. The selection panels must be diverse and skilled in diversity appreciation and talent identification. The evaluation centre should be methodically re-described to reflect the diverse cultural and life perspectives on the other side of the recruitment line.

This must be trailed by the growth and sustenance of an excellent orientation programme for new employees. This is a vulnerable procedure and must be tackled with care because handling organization identity is a similarly insightful subject which is frequently intensely rooted in the subliminal. Because good talent can be lost promptly due to unintended errors, it becomes imperative to engage and instruct trainers and mentors who have elevated compassionate and social abilities added to a broad range of life know-how in the area of diversity.

Moreover, where it becomes difficult for instance to fill certain positions due to an important scarcity of diverse groups (like women) who fail to meet the prerequisites, organizations could invest in training their own human capital. The recruitment could involve seeking applicants from uncommon locations, recruiting uncommon persons and training them in extraordinary ways to achieve expectantly uncommon organizations of the future. It goes beyond the simple issue of obtainable talent, to the construction of systems and associations. Furthermore, a tremendously transparent performance management scheme built in consultation with diverse aspects and opinions in the organization is necessary for superior diversity management. Career development is also quite important. It encompasses a combination of organization actions aimed at further growing employees' careers in the organization and actions aimed at avoiding jeopardizing the careers.

Moreover, the particular diversity assemblages of departments and teams in the organization as well as the diverse capabilities, talents, experiences, personal characteristics and occupations must be regularly and carefully measured so as to assist in the possible formation of inventive ideas especially in the area of customer and client relations. In addition, once there is any recognition of workforce assessment that is not performance based but based on prejudice or depreciation arising from personal attributes, it must be tackled and corrected instantly.

Furthermore plainly devised organization strategy which incorporates diversity is critical and similarly significant to the expansion and sustenance of a well-built organization culture. More so, to prove that diversity fulfils organization requirements and constitutes a fundamental component of its distinctiveness, the top management team must be developed with authentic exemplar performance and the team itself must be really diverse rather than simply having a few token from the minority groups.

Besides, a fundamental organization goal should be to sustain a communication and behaviour approach in an environment of genuineness, indicating obvious attempts at diversity and inclusion founded on performance. Moreover, organizations must address the attitude issue. Organization change must be stimulated by the desire for and recognition of the necessity for change with the intention of seizing those forthcoming prospects in a progressively more diverse market place.

7. DIVERSITY MANAGEMENT IN THE FUTURE OF HUMAN RESOURCES MANAGEMENT

Diversity has progressively developed into an important topic in human resources management. Organizations that aim to be actual international players cannot circumvent the incorporation of diverse expertise into their management teams. The subsequent developmental stages of the global economy will usher in better public consciousness of the notion of globalisation and its effects. Arising from the current stage of cost management, downsizing and staff cuts, the issue of management recruiting will be tracked more intensively in the nearest future. Before long, human resources managers will once again

boast superior requirements for highly capable managerial staff, irrespective of disparities in their nationality, sex and culture etc.

Again, organizations that effectively manage diversity tend to be more attractive to new employs and in addition diversity goes well with positive public relations work since the concept is founded on the fundamental principles of value, equal treatment, fairness and justice. Organizations that discriminate will in future lose money, competitive edge and advantage since organizations must now compulsorily function only with careful consideration of social interests. Organizations require all employees to display optimum performance in the workplace for its long term success. Consequently, they have no choice but to locate means of respecting all employees in their own merits, despite their disparities with the others. In addition, diversity seems innate to the younger generation and these days, the trademarks of international organizations principally include multi-cultural messages. This development in communications will increase since in future diversity will be even easier to sell and organizations will be able to utilize diversity management in projecting themselves as contemporary and progressive both internally and externally.

8. CONCLUSION

This paper concludes that diversity develops into a burden for organizations when it is obligatory and synchronized; whereas where it is managed appropriately it constitutes an important benefit. This serves as a challenge for positive organization management, particularly in a country like Nigeria with its diverse peoples, cultures, ethnicities, languages, religions etc. Organization management must value the resultant advantages of diversity rather than merely enduring and managing it and this necessitates a great deal of endeavour and understanding which both the employees and the organizations merit. Except organization management is concerned with the best interest of the employees, effective diversity management becomes impossible. Therefore, they must to some extent glide their spotlight more and more to provide for organization members. This they can do by showing better visibility and accessibility; being more worried by employee requirements, concerns and desires more than their own; accommodating and assisting employee success and being closer to the action. Invariably, irrespective of disparities all organization members are on the same team.

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E- PAYMENT AND THE NIGERIAN PUBLIC SECTOR: CHALLENGES AND PROSPECTS

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ABSTRACT

Public sector is about public/social services to the citizens. Therefore, E-administration is the process of administering policies through the internet through the use of Information and Communication Technology to deliver services to Government ministries, departments and agencies in the Nigerian Public Sector. Different works shall be examined such as journals, articles, newspapers, editorials and other relevant publications on e-administration. Data shall also be sourced primarily through oral interviews from those who are into public services in ministries and department. By the year 2007, the government of Nigeria introduced the process of electronic money transfer to ministries, agents and departments. Until recently most organizations received their emoluments directly into their personal account through the Central Bank of Nigeria. It was discovered that through the use of e-administration through e-payment system, there were accruing advantages which makes the citizens to be connected with governance. The government became more efficient and robust, cost of governance and transaction were scaled down and transparency was enhanced. For citizens to enjoy more of Government and its e-administration, there should be improvements in the country's electricity generation since all the laptops, desktops, and electronic gadgets in use need power.

Keywords: e-administration, public sector, accountability, e- payment, e- governance

INTRODUCTION

The essence of good governance is to establish a room for public probity, accountability and transparency so as to ensure the principles of justice, equity and fairness within the constitutional jurisdiction. However, it is the role of democratic government to accommodate the above principles for the betterment of its citizens as well as to foster national development (Okene,2005) pointed out that "good governance as the responsible use of political authority to manage a nation's affair."

E-governance is the use of internet technology as a means of exchanging information, providing services and transacting with citizens, businesses, and other arms of government. It is the use of information and communication technology to enhance access to, and delivery of government services for the benefit of all (Akunyili, 2010). It is also said that e-governance is a process whereby the use of information and communication technology and service is deployed and employed by the government in the delivery of services to members of the public and the use of same in the internal running and linkages among different government department and agencies. It's the art of using tools offered by information technology in various aspects of the process of governance with objective of achieving efficiency, transparency, and accountability, and user friendliness in all the transactions with the citizens and business conduct with the government (Danfulani, 2014). Revolution in Information and Communication Technology (ICT) brought about expression in digital technology like personal computers, the internet, mobile phones, lap tops and other electronic gadgets.

Governments in developing countries are increasingly exploring methods and systems to modernize and improve public financial management. For example, over the years, there has been an introduction of the Integrated Financial Management

The survival of global economic system depend on e-administration, passing of information through electronic system such as e-banking , e-commerce, electronic money transfer likewise Nigeria Public Sector is not left out from this International practices, through the use of Government Integrated Financial Management Information System(GIFMIS).All members of the world community had shifted from the manual financial management system, by accepting and embracing the new Government integrated financial management information system. (Ibrahim &Dauda, 2014). The objective of this work is to identify how effective the e- payment system tool employed by Nigeria Government i.e. the Nigerian public sector in respect to public service delivery as well as Government modernization and improved public financial management. Though, the scope of this instrument varies across countries, but it represents an enormous, complex, and strategic reform process (cheine, 2009).

METHODOLOG0079

The sources of information for this work is through secondary sources, data and information are gathered through the newspaper, published and unpublished academic journals, news headlines . Primary sources shall also be use through oral interviews with administrators within the southwest region of Nigeria, who are charged with the responsibility of discharging government directives and policies in the Nigeria public sector.

CONCEPTUAL FRAMEWORK

Integrated Financial Management Information System(IFMIS) is an information system that tracks financial transactions and summaries to produce financial information. It is a form of accounting system that is configured to operate according to the needs and specifications of the environment in which it is in stall (Brown, 2008). It is the automation of financial operations especially in the public sector.In detail, IFMIS is the computerization of public financial management process from budget preparation and execution, to accounting and reporting, with the help of an integrated system for the purpose of financial management (Lianzuala&Khuwlniring, 2008).

The public sector reforms of Obasanjo and Yar'adua's administration in Nigeria, such as the Bureau of Public Procurement, Public Financial Management, introduce measures such as Integrated Personal and Payroll Information System (IPPIS), e-payment, anti- craft agencies such as Economic Financial Crimes Commission (EFCC), Independent Corrupt Practices and other Related Offences Commission (ICPC) all these are aimed at enhancing public accountability and probity in governance. Abubakar (2010) observed that accountability is the” responsibility to account for stewardship of an authority or the people”, the United Nations Manual on Government Accounting and Budget Execution (1952) defines accountability as "a legal liability involving the establishment of a pattern of control over receipts and expenditures that permits a determination either by the executive or by the legislative arm of government (or both), that public funds are spent for public purposes".It was observed that accountability is the responsibility to account for stewardship of authority on the people.

Nigeria boarded the ship of e-governance like any other developing nation in the year 2007, and since then, virtually all facet of life has experienced unprecedented transformation. At the initial stage of e-activities in Africa, Nigeria was assessed low compared to countries like Kenya, South Africa, Egypt, Ghana, Tanzania and Malawi, with the deregulation of the sub-sector and direct capital investment by foreign firms, Nigeria government in other to be part of the global exploit in internet payment system, adopted a national policy on information technologies and it is prepared to integrate agriculture, health, and education. Data and

Research satellite were launched since 2003 to serve as a platform for the path of exploring ICT for governance, many government Agencies, departments and Ministries were communicating within and outside their organizations using e-channels of communication.

Rodin Brown (2008) identified certain basic features of the Integrated Financial Management System as follows:

- Standard data classification for recording financial events.
- Internal controls over data entity, transaction process and reporting.
- Common processes for similar transactions and a system design that eliminates unnecessary duplication of data entry

Benefits derived from the use of integrated financial management information system are as follows:

- It ensures accountability of the use of public economic resources.
- It improves the effectiveness and efficiency of public expenditure programme
- It ensures easy tracking of financial events through the use of an automated financial control system.
- Government is able to exercise improved control over expenditure, transparency and accountability in the budget cycle as whole (Hendriks, 2012).
- It makes available financial and non-financial information such as timely, accurate and consistent information on budget decision, treasury management, data for accounting and auditing process. It provides access to all users within the network to extract the specific information that they need, such as day to day management decision and preparation of cash flow.

In Nigeria, many government agencies, ministries and departments have websites which states in full their missions and other relevant information that is related to them. (Dan Fulani, 2014) states some of the benefits derived from using the Integrated Payroll and Personnel Information System (IPPIS) which is being implemented by the three tiers of government in Nigeria. The three tiers of government include The Federal government, The State government and The Local government. How at ease the payment of personnel enrolment, the check on irregularities in workers' salaries have been drastically reduced, examples were given of the discovery of ghost workers after screening two hundred and fifteen (215) ministries, departments and agencies. About 45,000 ghost workers were discovered which led the Federal Government to make a savings of one hundred billions, Naira (N100b) in salaries, not on other payments such as payment to contractors, purchase of stores and public procurement.

Another benefit of the Integrated Financial Management Information System (IFMIS) is the use of management tool, it assists in improving control over expenditure, transparency and accountability (Hove and Wyne, 2010).

(Hendricks, 2012) observed that in South Africa that e-governance had been in full process through the integrated financial management information system. It was found to have made detection of corrupt practice to be easy, by detection of excessive payments, fraud and theft according to Norvalo, 2008. Integrated financial management information system (IFMIS) in South Africa started in 1994 through three phases. Apart from the GIFMIS used in Nigeria which required all government payments to be made into contractors' account for construct payment and government agencies, ministries and parastatal accounts with the central bank of Nigeria (CBN). The IPPIS is an integrated personnel payroll information system which had been adjoined to work effectively and enhanced the payroll system in Nigeria (Abubakar, 2014). IPPIS is a world bank assisted project under the Economic Reform of

Government Project (ERGP) that was based to establish a reliable and comprehensive database for the public service in Nigeria. It has the ability to facilitate manpower, planning, to assist in the provision of information for decision making. It helps in the elimination of credentials falsification and facilitate easy storage, update and retrieval of personnel record for administrative and pension purposes. IPPIS facilitates staff remuneration as well as help the government ministries, agencies and departments to detect ghost workers' syndrome for the attainment of public probity in governance (Asma'u and Ibrahim, 2014). IPPIS was to facilitate automation and storage of personnel records, prevent wastage and leakages by ensuring staff remuneration is based on factually correct information and ensure prompt payment of salaries directly to employees account with appropriate deduction and remittance of third party payments for example, taxes in respect of payee, withholding tax and value added tax, staff pension deductions, cooperatives contribution, union dues etc).

The Integrated Tax Administration System (ITAS)

It is used to facilitate payment of tax by business owners in Nigeria, the Federal Inland Revenue Services (FIRS) has improved on their services structure by the creation of risk management department that automate their audit-case selection criteria and the implementation of the Electronic filling platform. Through the electronic filling platform the log in page is used by the tax payers to enter e-filling platform. Once logging in has been successful the tax payer have access to different menu depending on what is required, whether to check past returns submissions, or to fill in new tax returns.

- To check whether the TIN (Tax Identification Number) supplied by the third party is valid.
- To upload supporting document files.
- Taxpayer can view or print the remittance of documents that have been created (Tribune Business, 2015).

CHALLENGES OF E-PAYMENT AND PUBLIC SECTOR

The Challenges of e-governance is peculiar to different countries, but the common aspect is that the benefits derived from e-governance in different aspect of government administration in checking corruption, though e- governance have not fully solve this problem, because of the following challenges:

- i. The complexity of the IFMIS programme which is not easy to understand.
- ii. Misalignment between the Human Relation Management product procurement and the Payroll product development resulted in challenges in relation to the duplication of captured data in IFMIS (Maake, 2012)
- iii. Inadequate ICT infrastructure, budgets and staff with sufficient functional capabilities.
- iv. Most of the government administrators interviewed in Nigeria stated that most of the time Personnel Emolument of staff are not received as at when due, it create additional delay in payment of salaries.
- v. It has not been easy to make correction, anytime there is an error or a mistake, since it is difficult to trace the source of problem.
- vi. In Nigeria around December, 2014 it was difficult for government to pay the federal civil servant salaries for more than 3 month, the Accountant General for the Federation attributed the non-payment of

- salary to the inadequacy ICT platform for e-payment system, the explained non-payment for past three months was not as result lack of fund (TVC News, 2014).
- vii. There are no means of correcting any failure in transaction immediately such a failure in operation occur, sometimes because of low power overloading and offloading. Once these inadequacies are not corrected it lead to delay in salary payment or non-payment of personal emoluments of civil servants.
- viii. Bank reconciliation has been difficult since bank statements were not receive from the Central Bank of Nigeria (CBN) by agencies, ministries and departments who payment were made on their behave by the CBN.

According to (Diamond & Khemani, 2006, Robin-Brown, 2008) highlighted through the study carried out by them in some African countries such as Tanzania, Kenya, Rwanda, Ghana, Uganda and Malawi, that many of the citizens of these countries are resistance to change, this constitute to low level of implementation of IFMIS in this developing countries. Likewise in Nigeria, some government agencies are yet to be on the platform of the IPPIS that is, Integrated Personnel Payroll Information System of the Federal Government, reason given were some of the challenges stated, though all Ministries, Agencies and Departments are all currently on the platform of GIFMIS.

CONCLUSION AND RECOMMENDATIONS

It is the role of a democratic government to accommodate and ensure good governance which give room for probity, accountability and transparency, also should allow principle of Justice, equity and fairness in a constitutional jurisdiction. Though, corruption is one of the explanations for insolvable problem of hardship, poverty, diseases and hunger with staggered development tragedy in Nigeria. The public Sector reform of the two former Presidents, General Olusegun Obasanjo and Musa Yar'adua administration, such as the Bureau of public procurement, public financial management measures like the government Integrated Financial Management Information System, e-payment, anti- corruption agencies were established, all these efforts are aimed at enhancing public accountability probity in governance (Abubakar, 2010).

Though, implementation of e-governance might be difference from country to country, in Nigeria the government should educate the public on the advantage of e-payment system especially the IPPIS that it is effective and enhance the payroll system, therefore a sensitization work ship should be conducted to educate all stakeholders. According to Fatimal Mede (2014) about 257,516 employees started with IPPIS in 2007, these employees were drawn from 308 Ministries, Departments and agencies which include 123 non-care agencies, 17 teaching Hospitals and Medical centres, 10 from Agriculture and Veterinary Science. Citizens should be aware that IPPIS is part of the transformation agenda which aimed at creating a centralized data base system to aid government's manpower planning and decision making.

Power supply is one of the problems of Nigeria as a nation once there is a regular supply of power the problem of e-governance would be almost eliminated.

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MANDATORY IFRS REPORTING AND STOCK PRICE INFORMATIVENESS: A STUDY OF NIGERIAN QUOTED COMPANIES

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ABSTRACT

The main objective of this paper is the analysis of the mandatory IFRS adoption by Nigerian firms in 2012 on stock price informativeness. Using a sample of 129 quoted Nigerian companies during the 2011 to 2014 period and adopting the OLS regression analysis and the dependent variable – stock price informativeness. The result shows that, Nigerian quoted companies show a significant raised in stock price informativeness due to more disclosures in their financial statements and enhanced information comparability, after the mandatory adoption of IFRS, hence controlling set of firm-risk and market variables, seem to have a joint effect on the share prices, leading to an increase in foreign direct investment. Mandatory IFRS adoption increases analysts' ability to incorporate industry-level information into stock price. The main limitation of the study is that the sample represents only selected Nigerian firms. The findings of the study may have implications for the firms' management staff, global potential investors and market regulators, as they reveal what information influences the cost of equity capital in the market. The results are consistent with the financial principle stating that the greater the market information, the higher the volatility of the share price of a company. As a result of this research, one is able to figure out that with the adoption of IFRS reporting format stock price movement should be anticipated by companies more than the pre-IFRS era.

Keywords: Financial disclosure, IFRS, information environment, IFRS mandatory adoption; stock return synchronicity

1. INTRODUCTION

International Financial Reporting Standards (IFRS) were designed for the provision of accurate, comprehensive, and timely financial statement information, and to reduce international differences in accounting standards by standardizing reporting formats (Ding, Y., Hope, O.-K., Jean, T., Stolowy, H.2007).The effect of IFRS adoption and reporting in the capital market is the improved comparability of firms across markets/stock exchanges around the world, which improves capital allocation efficiency (Armstrong, C.S., Barth, M.E., Jagolinzer, A.D., Riedl, E.J., (2010). Stock price informativeness indicates the amount of firm specific information impounded into share price (Chang H., Fernando G.D., and Liao W. 2009). Stock price synchronicity is inverse measure of stock price informativeness which been used extensive in capital market research (Johnston 2009). Improved disclosure should reduce information asymmetry, (Easley & O'Hara 2004).If the benefits from IFRS adoption are realized, investors will face lower costs of obtaining information. The resulting increased comparability of financial statements may reduce the need for adjustments to financial statements prepared using different standards. The adoption of IFRS in Nigeria in 2012 represents a watershed in the annals of accounting development and represents a significant regulatory reporting change without historical precedent. The globalization of economic activities necessitates increasing integration of national economies and markets which has resulted in an increased demand for high quality, internationally comparable financial information (Herbert, W.E & Tsegba, N. 2013).

This paper investigates the stock return synchronicity and differences in accounting standards prior to mandatory IFRS adoption and how firm-specific information is incorporated into stock prices around IFRS adoption and thereafter. Ernst & Young (2007) reported increased disclosure and improved comparability as a result of IFRS adoption and reporting by quoted companies as per the information from their clients. Increased transparency which could improve the quality of financial reporting and comparisons across firms over international borders has been cited as one of the major benefits of IFRS reporting (Barth, M; Landsman W., Lang, M. 2005)

This study is important for three reasons. First, such research has not being conducted in Nigeria to investigate the relationship between IFRS adoption and stock price informativeness. Second, currently the importance of improving stock price informativeness is inevitable in Nigeria, for sustainable investment in capital markets. Third, relationship between IFRS reporting and stock price informativeness have resulted to mixed research findings (Beuselinck, 2009; Ferreira & Laux 2007; Hutton et al. 2009). In covering this research gap, this paper makes key contributions to the literature on mandatory IFRS adoption and stock Price informativeness. It provides evidence on the reaction of the Nigerian stock market and investment analysts both local and international to the adoption of IFRS as compared to the pre-IFRS era and therefore has potential implication for regulators and policy-makers and the extent to which improved disclosure and transparency affects stock price informativeness. Therefore this study gives new insight of the relationship between IFRS adoption and stock price informativeness from Nigerian capital market point of view- which is the objective of this study.

The research questions the study attempts to provide answer includes (i) to what extent has the adoption of IFRS reporting improve the stock price informativeness in Nigeria's capital market? (ii) Is there any significant relationship between IFRS reporting and stock price movement in Nigeria's capital market?

The rest of the paper is organized into four sections: Review of related literatures, research methods; results, analysis and discussion; and conclusion.

LITERATURE REVIEW

IFRS reporting and Financial Report Quality

The IFRS is a global GAAP, principles-based and globally accepted standard published by the International Accounting Standard Board (IASB) to support those who adopted it in the preparation and presentation a high quality, transparent and comparable financial statements that will aid easy interpretation by various users and the global community of investors (Okpala, E.K. 2012). Bhattacharjee, S. & Islam, M.Z. (2009) listed the benefits derivable from the adoption of IFRS as- better financial information for shareholders; better financial information for regulators; enhanced comparability; improved transparency of results; increased ability to secure cross-border listing; better management of global operations. From the theoretical point of view it has been argued that disclosure reduces information asymmetry, and consequently reduces firms' cost of equity capital through reduced bid-ask spreads (Loureiro & Taboada 2012). Another inherent benefit of IFRS adoption is better disclosure quality which reduces potential investors' estimation risk regarding the parameters of a security's future stocks' return. It is assumed that investors attribute more systematic risk to an asset with low information than to an asset with high information (Loureiro & Taboada 2012). Increased disclosures based on IFRS reporting format makes financial information more qualitative and acceptable by global investors. This increase in the sensitivity of market variables to accounting information suggests that accounting disclosure by these firms has become more informative to equity investors under IFRS. Existing literatures document

improvements in accounting quality following mandatory IFRS adoption (Barth et al., 2008) to reduce information asymmetry between managers and shareholders and it can be evidenced by proper assets and earnings management and high forecasting capability by the investors about firm's future earnings. Another investor-perceived benefit of IFRS for economies with a higher demand for capital is the option to improve their communications with outside investors through principles-based accounting standards. Barth et al. (2006) explains that accounting quality could be improved with elimination of alternative accounting methods that are less reflective of firms' performance and are used by managers to manage earnings. They find that after IFRS adoption, firms have higher variance of changes in net income, a higher ratio of variance of changes in net income to variance of changes in cash flows, higher correlation between accruals and cash flows, lower frequency of small positive net income, and higher frequency of large losses.

The proponents of IFRS advocated that, publicly traded companies must apply a single set of high-quality accounting standards in order to contribute to better functioning capital markets (Quigley 2007). IFRSs are more capital-market oriented and comprehensive, particularly in terms of disclosure requirements, than local GAAPs (Daske et al., 2008). A fundamental question is whether IFRSs have changed the information available to market participants in a way that is beneficial, that is, are markets more efficient when IFRSs are applied? It is expected that IFRS information provided by firms to market participants may differ significantly from information based on prior national GAAP, due to differences between requirements of national standards and IFRS. Greater disclosure frequency, in particular, can make earnings manipulations more difficult or can help uncover existing earnings management.

Several models have predicted that stock price informativeness is higher in countries where firms are more transparent (not opaque) and where the cost of private information is lower hence stock price comovement (Veldkamp, 2006; Jin and Myers 2006). Empirical evidence on stock price informativeness is consistent with the view that more transparent environments, with better investor protection and lower cost of private information have more informative stock prices (Jin and Myers 2006). In addition, more stock price informativeness facilitates corporate investment (Durnev *et al.* 2004), is associated with better capital allocation (Wurgler 2000), and is positively correlated with the sensitivity of investment to stock prices (Chen *et al.* 2007).

The regulators of the IFRS implementation in Nigeria are: Financial Reporting Council of Nigeria (FRCN), Central Bank of Nigeria (CBN), Nigerian Stock Exchange (NSE) and Securities and Exchange Commission (SEC). All listed companies were expected to submit their financial statements at the end of fiscal year 2012 using the IFRS format. Based on the foregoing, the following hypothesis is proposed:

H₀, Mandatory IFRS adoption has not improved stock price informativeness in the Nigeria's capital market.

H₁, There is no significant relationship between mandatory IFRS adoption and the movements in stock prices in Nigeria's capital market.

2. RESEARCH METHODS

The survey research method was adopted in this study. The reason is that the researcher wants to reach to data on all firms operating in the NSE and data was collected at a particular point in time, hence the research involved cross-sectional survey research design. The research population comprised of all the firms whose shares are active in the stock market. A survey of the sampled firms was carried out in respect of the topic. The sample size is 129

firms. The reason for taking a sample size of 129 firms is to ensure robustness of the study and representativeness of the sample.

Research Design

To examine the relation between firm-specific informativeness of stock prices and the mandatory adoption of IFRS, the following model is applied:

$$\begin{aligned} \text{SYNCH}_{i,t} = & \beta_0 + \alpha_1 \text{ADOPT}_{i,t} + \alpha_2 \text{POST_ADOPT}_{i,t} + \alpha_3 \text{Log}(\text{NREV}_{i,t}) \\ & + \alpha_4 \text{ADOPT}_{i,t} * \log(\text{NREV}_{i,t}) + \alpha_5 \text{POST_ADOPT}_{i,t} * \log(\text{NREV}_{i,t}) \\ & + \alpha_6 \text{INSTIT}_{i,t} + \alpha_7 \text{ADOPT}_{i,t} * \text{INSTIT}_{i,t} + \alpha_8 \text{POST_ADOPT}_{i,t} * \text{INSTIT}_{i,t} \\ & + \alpha_9 \text{Log}(\text{MCAP})_{i,t} + \alpha_{10} \text{HERF}_{i,t} + \alpha_{11} \text{NIND}_{i,t} + \alpha_{12} \text{TURNOVER}_{i,t} \\ & + \alpha_{13} \text{GDPG}_{i,t} + \alpha_{14} \text{ACCESS}_{i,t} + \chi_j \text{IND}_j + \epsilon_{i,t} \end{aligned} \quad (1)$$

Where:

SYNCH = synchronicity of firm-level stock returns with market-wide and industry-level returns.

ADOPT = dummy variable equal to 1 if a firm observation is from the 2012 calendar year and 0 otherwise

POST_ADOPT = dummy variable equal to 1 if a firm observation is from 2013 or later calendar year and 0 otherwise.

Log (NREV) = log of number of analysts revisions of one-year ahead forecast of annual earnings

INSTIT = the proportion of institutional holdings in a firm at the beginning of the fiscal year

MCAP = the market value of equity of the firm at beginning of the fiscal year.

HERF = a revenue-based index of industry-level concentration.

NIND = the average number of firms used to calculate the weekly industry-level return index.

TURNOVER = yearly shares volume traded as a fraction of common shares outstanding

GDPG = inflation-adjusted country growth in gross domestic product-2012

ACCESS = index that reflects access to equity capital market as of 2012

IND = industry fixed effect (the capital market reaction based on sectors' performance)

i, j, c = respectively firm *i*, industry *j* and country *c* subscripts.

3. RESULTS

Table 1 shows the highlight of the market capitalization between 2010 and 2013. In the year 2013 there was increase in market capitalization indicating quick response by investors due to the disclosures in the 2012 IFRS reports, despite several delays and defaults by most firms the rise in the market value indicate convergence of investors based on the new reporting format which is globally accepted. The periods-2010 and 2011 represent years preceding the mandatory adoption of IFRS in Nigeria (period 1), 2012 is the year of adoption when mandatory IFRS adoption was effective and firms gradually started to produce IFRS-relevant information (period 2) and 2013 is the first year after adoption or the year of full IFRS-compliant financial statements (period 3).

Table 1

YEARS	MARKET CAPITALIZATION-equity	% change
2010	N7.92 trillion	
2011	N6.54 trillion	-17.42%
2012	N8.98 trillion	37.31%
2013	N13.23 trillion	47.33%

Source: Researcher's computation

The dependent variable in model 1-(see table 2), SYNCH shows first a decreasing pattern in 2012 (from -1.15 in 2010-11 to -1.21 in 2012) and then an increasing pattern in the 2013 time period (-1.29).

Table 2: Descriptive Statistics-PERIOD Analysis

variable	Period	Mean	Median	Standard deviation
SYNCH	1	-1.15	-1.17	1.07
	2	-1.21	-1.21	1.00
	3	-1.07	-1.02	1.04
NREV	1	9.09	2	18.76
	2	11.43	2	23.45
	3	10.23	2	18.84
INSTIT (%)	1	3.43	0.00	9.65
	2	4.65	0.00	10.23
	3	9.87	1.22	14.31
MCAP	1	643	78	2877
	2	969	101	3067
	3	1132	132	4109
HERF	1	2.13	2.77	2.01
	2	2.16	2.44	2.33
	3	2.22	2.32	2.11
NIND	1	17.65	10	23.55
	2	17.65	10	23.55
	3	17.65	10	23.55
TURNOVER	1	2.28	1.44	6.76
	2	2.27	2.01	5.43
	3	3.22	1.77	9.67
PRIVATE	1	5.75	0.00	21.32
	2	6.78	0.00	21.67
	3	6.28	0.00	21.66
GDPG (%)	1	2.7	2.55	1.44
	2	3.6	2.12	1.13
	3	4.3	4.10	2.96
ACCESS	1	3.28	0.561	2.430
	2			
	3			

Table 3 presents descriptive statistics for the firm-year observations of the sample. The mean value of SYNCH (-1.12) is higher than the median value (-1.130), indicating that the distribution of this variable is right-skewed. The mean (median) number of earnings forecast revisions by analyst is 9.34. The mean percentage of institutional holdings in a firm is 6.44%. The mean firm size (as measured by the market value of equity or MCAP) is 9.2 trillion Naira. The mean value for HERF is 1.345. The mean number of firms used in calculating the weekly industry returns is 18.22. The average share turnover, which is the annual trading volume relative to shares outstanding, is 2.78. The mean real annual GDP growth rate over the period of our study (2010-2013) is 3.2 %. The average ACCESS index value is 3.28 (on a scale of 1-7).

Table 3: Descriptive Statistics-Firm to year analysis.

Variable	N	Mea	Std	P5	P25	Media	P75	P95
SYNCH	129	-	1.005	-1.765	-1.765	-1.130	-0.546	0.134
NREV	129	9.34	16.65	0.00	0.00	1	7	32
INSTIT (%)	129	6.44	11.66	0.00	0.00	0.00	9.06	31.43
MCAP(Ntri	129	9.2	26.67	5	23	7.98	34.8	32.89
HERF	129	1.345	1456	-1.98	1.023	2.112	3.567	4.670
NIND	129	18.22	23.77	2	4	10	206	100.67
TURNOVE	129	2.780	8.99	0.053	0.575	1.678	3.234	8.45
PRIVATE	129	0.092	3.760	-4.23	0.00	0.00	0.000	6.890
1GDPG	129	3.2	1.12	0.123	1.321	2.116	2.657	3.870
ACCESS	129	3.28	0.561	2.430	3.431	3.349	4.123	5.32

Source: Researcher's computation through SPSS

Correlations

Table 4 shows the Pearson/Spearman pairwise correlations between the dependent and independent variables in model (1). The highest (absolute) pairwise Pearson/Spearman correlation among the control variables is 0.32/0.45 (between variables NREV and MCAP), hence firms have more following by financial analysts.

Table 4: Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12
SYNCH(1)	1.00	-0.12 0.00	0.11 0.00	0.21 0.00	0.01 0.12	0.31 0.00	-0.03 0.01	0.05 0.00	0.06 0.00	0.10 0.00	-0.03 0.00	-0.019 0.00
ADOPT(2)	-0.13 0.00	1.00	-0.24 0.00	0.06 0.00	-0.03 0.00	-0.01 0.26	-0.01 0.42	0.00 1.00	0.00 0.57	-0.12 0.00	0.00 0.87	0.00 1.00
POST_ADOPT(3)	0.11 0.00	-0.24 0.00	1.00	-0.01 0.40	0.14 0.00	0.10 0.00	-0.01 0.11	-0.02 0.00	0.03 0.00	0.21 0.00	0.01 0.31	0.00 0.47
NREV(4)	0.21 0.00	0.03 0.01	0.02 0.11	1.00	0.10 0.00	0.32 0.00	0.11 0.00	- 0.05 0.00	0.11 0.00	-0.05 0.00	-0.04 0.00	0.11 0.00
INSTIT %(5)	0.03 0.00	-0.05 0.00	0.12 0.00	0.23 0.00	1.00	0.12 0.00	0.09 0.00	0.03 0.00	0.04 0.00	0.05 0.00	-0.03 0.00	-0.01 0.20
MCAP(6)	0.00 0.00	-0.01 0.24	0.10 0.00	0.45 0.00	0.15 0.00	1.00	0.10 0.00	-0.05 0.00	0.05 0.00	-0.01 0.33	-0.03 0.00	0.01 0.17
HERF(7)	-0.02 0.00	0.00 0.53	-0.01 0.28	0.18 0.00	0.11 0.00	0.15 0.00	1.00	0.10 0.00	0.03 0.00	-0.21 0.00	-0.02 0.03	0.28 0.00
NIND(8)	-0.01 0.25	0.00 1.00	-0.03 0.00	-0.02 0.01	-0.01 0.50	-0.04 0.00	-0.10 0.00	1.00	0.00 0.50	-0.05 0.00	-0.04 0.00	0.11 0.00
TURNOVER(9)	0.25 0.00	0.03 0.00	0.05 0.00	0.24 0.00	0.14 0.00	0.17 0.00	0.07 0.00	0.05 0.00	1.00	0.04 0.00	-0.03 0.00	-0.06 0.00
GDPG(10)	0.12 0.00	-0.11 0.00	0.19 0.00	-0.03 0.00	0.06 0.00	0.00 0.73	-0.17 0.00	-0.10 0.00	0.10 0.00	1.00	0.00 0.00	-0.42 0.00
PRIVATE_D(11)	-0.04 0.00	0.00 0.54	0.02 0.04	-0.04 0.00	-0.04 0.00	-0.04 0.00	-0.03 0.00	-0.04 0.00	-0.05 0.00	0.00 0.47	1.00	0.00 0.66
ACCESS(12)	-0.11 0.00	0.00 1.00	-0.01 0.31	0.12 0.00	0.07 0.00	0.01 0.20	0.23 0.00	0.10 0.00	-0.12 0.00	-0.40 0.00	-0.01 0.32	1.00

Pearson and Spearman correlations are above and below the diagonal, respectively. Two-tailed p-values are reported below the correlation coefficients

Source: Researcher's computation through SPSS

The correlation between the dependent variable SYNCH and ADOPT is negative and statistically significant at the 0.01 level, suggesting that there is less stock return synchronicity (i.e., there is more firm-specific information in stock prices) during the first year when IFRS were mandated. **Regression Results: Effects on Synchronicity**

Table 5 reports regression results of model (1) for our sample with variable SYNCH (stock return synchronicity) as the dependent variable.

The first specification ignores the role of analysts and institutions and focuses on the main effects of our test variables ADOPT and POST_ADOPT. The second and third specifications introduce the main and interaction effects of analysts and institutions activities, one at a time. The last specification represents a complete model that considers both the role of financial analysts and institutions in the regression model. As reported in Table 5, the explanatory power of alternative specifications of model (1) range between 0.241 and 0.291.

Table 5: Multivariate Regression Analysis of Stock Return Synchronicity Determinants

Dependent Variable: SYNCH	Parameter estimate	t-stat	Parameter estimate	t-stat	Parameter estimate	t-stat	Parameter estimate	t-stat
Constant	-2.496	-21.99*	-2.451	-13.69*	-3.139	-22.11*	-2.981	-14.7*
ADOPT	-0.170	-10.00*	-0.178	-3.56*	-0.199	-9.31*	-0.18	-5.00*
POST_ADOPT	0.140	6.33*	0.102	3.89*	0.43	5.11*	0.115	3.87*
Log(NREV)			0.064	4.86*			0.064	5.43*
ADOPT X Log(NREV)			-0.009	-0.67*			-0.014	-1.07*
POST_ADOPT X Log(NREV)			0.046	3.43*			0.054	3.65*
INSTIT					-0.654	-7.45*	-0.740	-8.22*
ADOPT X INSTIT					0.345	2.11*	0.321	2.31*
POST_ADOPT X INSTIT					0.411	3.77*	0.221	2.01*
MCAP	0.241	32.03*	0.189	16.34*	0.245	32.00*	0.115	14.65*
HERF	-0.030	-4.18*	-0.024	-3.87*	-0.018	-4.02*	-0.019	-4.54*
Log(NIND)	0.111	5.07*	0.108	5.54*	0.112	6.87*	0.103	5.79*
TURNOVER	0.005	2.13*	0.002	2.33*	0.004	2.11*	0.003	1.94*
GDPG	0.054	4.54*	0.032	4.19*	0.045	4.56**	0.045	4.76*
ACCESS	-0.228	-9.34*	-0.210	-11.13*	-0.201	-10.76*	-0.205	-12.43*
Industry Fixed effect		YES		YES		YES		YES
OBS		129		129		129		129
ADJ-R ²		0.241		0.289		0.285		0.291

Significance levels * (1%) and ** (5%) .

Source: Researcher's computation through SPSS

4. DISCUSSION

The result of the empirical analysis in table 5 shows that the coefficients on the main effects of ADOPT and POST_ADOPT- the coefficient on ADOPT is negative and statistically significant at the 0.01 level, indicating that stock return synchronicity declined with the mandatory adoption of IFRS. In terms of economic magnitude, a mandatory switch to IFRS reduces stock return synchronicity by approximately 6.81% (the coefficient of -0.170 on the ADOPT variable divided by the coefficient of -2.496 on the intercept in column (1)). Since the firm-specific informativeness of stock prices varies inversely with stock return synchronicity, the findings indicate that the firm specific information in stock prices increased in the first year of the mandatory adoption of IFRS. In contrast, the coefficient on POST_ADOPT is positive and statistically significant at the 0.01 level, indicating that stock return synchronicity increased (and the firm-specific information in stock prices decreased) in the year after the mandatory adoption of IFRS. This represents approximately 5.61% increase (compared to the pre IFRS period; computed by dividing the coefficient of 0.140 on the POST_ADOPT variable by the coefficient of -2.496 on the intercept in column (1) in stock return synchronicity in the POST-IFRS adoption years. Hence the null hypothesis is rejected and the alternative hypothesis is accepted that the Mandatory IFRS adoption has improved stock price informativeness in the Nigeria's capital market. For the second hypothesis (there is no significant relationship between mandatory IFRS adoption and the movements in stock prices in Nigeria's capital market).

CONCLUSIONS AND RECOMMENDATION

One of the primary motivations behind IFRS adoption is to improve the business information environment and hence investment efficiency. In light of the mandatory adoption of IFRS, regulators, practitioners, and academics are interested in stock price behaviour and assessing the economic benefits at the firm-level and at the economy-level of adopting such uniformity in financial reporting. In this paper, the extent to which IFRS, by ameliorating firm opacity, contribute to stock price informativeness in the year 2012 when IFRS was mandatorily adopted and in the post-IFRS adoption year 2013 was examined. Using a sample of 129 firms over the period from 2010 to 2013, we find that the stock return synchronicity decreased in 2012 (the year of mandatory IFRS adoption), but subsequently increased in the post-adoption year to levels higher than the pre-adoption period. In terms of economic magnitude, a mandatory switch to IFRS reduced stock return synchronicity by approximately 6.81% and then increased synchronicity by approximately 5.61% relative to pre-IFRS adoption year. Subsequently, more timely information under IFRS leads to less 'surprises' in the future and therefore greater synchronicity in the post-IFRS adoption period.

The findings of this paper have implications for policy making. The results show that the Mandatory adoption of IFRS in Nigeria created stock price informativeness in the capital market leading to frequent movements in stock prices. Apart from the adoption of IFRS the listing of some banks shares in international stock exchanges the growth in the GDP over time has further created information for foreign investors willing to invest in Nigeria. This, therefore calls for dual policy shift to first sustain the GDP growth and enforce the proper implementation of IFRS by all companies listed in the NSE (including Second tier Securities Market firms).

It is recommended that the regulators (FRCN, NSE and SEC) should ensure proper monitoring of the application of the IFRS format to avoid subversion and window dressing by business managers who will likely want to use potential loopholes in the mandatory adoption of IFRS to distort facts and figures. Also it is recommended that other sectors in the capital market should brace up and meet up with the banking sector whose shares are in high demand

and accounted for over eighty percent of stock price movement in the period under review. They should use the opportunity of the increased growth in Gross Domestic Product coupled with the IFRS reporting format to attract foreign buyers of their shares. Local stock broking firms should be ready to render to act as intermediators across international borders.

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MANDATORY IFRS ADOPTION AND ACCOUNTING QUALITY OF NIGERIAN BANKS

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ABSTRACT

This study examined the impact of mandatory adoption of International Financial Reporting Standard (IFRS) on the quality of accounting information of Nigeria banks. The study adopted the Survey research design involving the collection of data from accounting academics in selected private universities in Nigeria. Primary and secondary data were employed and copies of Questionnaire were administered to respondents. Data were also gleaned from the annual report of 15 Nigeria banks listed on the floor of the stock exchange market. Two hypotheses were formulated and tested using Simple regression and paired T-test at a significant level of 5%. Findings revealed a significant relationship between IFRS adoption and quality of accounting information. The study also contributes to knowledge as it gives an insight into the possible outcome of future research covering a wider spectrum. Consequently, the study recommended that accountants should be mandated to and probably sponsored by their various institutions/organizations to attend workshops, conferences and trainings on IFRS periodically.

Keywords: Accounting information, decision making, IFRS, multinational companies, quality

1.0 INTRODUCTION

The Nigeria banking sector according to Umoren (2015) forms one of the pillars of economic development as it aids intermediation of funds between the surplus and the deficit economic units which enables stimulation and promotion of investments, economic growth and development. For there to be any meaningful investment in the banking sector, quality accounting information regarding share price and other performance indicators must be made available. Investors often only rely on the financial accounting information supplied by management in the financial statement to enable assessment of the risk and value of a firm before making decision on whether or not to invest (Umoren, 2015). The primary objective of financial statement according to the International Accounting Standard Board (IASB) framework is the provision of information about the financial position, financial performance and changes in financial position of an enterprise (Oseni, 2013). In addition to stating the financial position of an organization, the financial statement also provides such information as the value added, changes in equity and cashflow of an organization within a defined period to which it relates (Iyoha and Faboyede, 2011). This information provided by the financial statement is paramount to a wide range of users as it serves investment and economic decision making purpose (Okpala, 2012) such that the quality of decision (investment or economic) to be made is premised on the reliability and quality of the accounting information provided.

Before the global convergence to International Financial Reporting Standards (IFRS) by countries of the world, the preparation and presentation of financial reports was subjected to different procedures which collectively was termed Generally Accepted Accounting Principle (GAAP). Different countries had their

own accounting standards, and these standards were set, issued and regulated by each country's local body. The Nigerian Accounting Standard Board (NASB) for instance

happened to be the local body in Nigeria responsible for setting, issuing and regulating accounting standards from 1982 till 2011 when the Financial Reporting Council Bill was signed into law (Umoren, 2015). The differences in accounting standards of countries degenerated into lack of harmonization of accounting information since accounting procedures adopted varied from country to country (Oseni, 2013). In lieu of the problem of harmonization, the desire for high quality financial reporting led to the formulation of acceptable global standards known as the International Accounting Standards (IAS) which was initiated in 1973 by International Accounting Standard Committee (IASC) (Garuba and Donwa, 2011). In 1997, after almost 25 years of achievement, the International accounting standard committee concluded that to continue performing their role as standard setters effectively, they must find a way to bring about a convergence between the national accounting standards and practices and high-quality global accounting standards.

The IASC therefore recognized a need for a change in its structure, and the outcome of this change was a renaming of the standards-setting body from IASC to IASB in 2001 with a mandate to set globally acceptable accounting standards known as International Financial Reporting Standard.

Similarly, the emergence of Multinational Corporations necessitated the use of similar and globally acceptable accounting principles and standards in the preparation and presentation of accounting information. This therefore brought about the world-wide recognition of International Financial Reporting Standards (IFRS) issued by the International Accounting Standard Board (IASB) in 2001. Following this, Nigerian banks in 2012 were mandated to adopt International Financial Reporting Standards in the preparation and presentation of their financial statements. By this adoption, it is evidenced that expectations are high on IFRS that it would enhance the financial statement (Umoren, 2015). However, there has been increasing debate on the impact of IFRS adoption globally, some authors such as Ball (1995); Ball, Robin and Wu (2000); Ball, Robin, and Wu (2003); Schipper (2005); Ball (2006); Soderstrom and Sun (2007); Zeff (2007); Leuz and Wysocki (2008); Jamal et al (2010) Hail, Leuz and Wysocki (2010a); Hail, Leuz and Wysocki (2010b) and Abdul-Baki, Uthman and Sanni (2014) opine that IFRS leads to competition and argue that a single global set of financial reporting standard is not optimal. Some of these authors argue that the potential IFRS adoption benefit would ultimately be wiped out by the differential or tax implementation. On the other hand, authors such as Diamond and Verrecchia (1991); Baiman and Verrecchia (1996); Leuz and Verrecchia (2000); Easley and O'Hara (2004); Barth, Konchitchki, and Landsman (2006); Assidi and Omri (2012); Okpala (2012); Oseni (2013); Umoren and Enang (2015) that IFRS has a positive impact on the quality of accounting information.

The objective of this study therefore is to contribute to this debate by investigating the impact of IFRS since its adoption in Nigeria (2012) on the financial statement of Banks. This study also seeks to examine the significant difference in the performance of banks under IFRS and under Nigeria GAAP using ROA and ROE as a performance measurement tool. To the best of the researcher's knowledge, there is no literature on this yet using ROA & ROE as a performance tool. The rest of this paper is organized as follows: Section 2 contains the review of different literature. Section 3 contains the methodology of the study. Section 4 reveals the analysis of the result while Section 5 concludes the paper.

2.0 LITERATURE REVIEW

2.1 IFRS Adoption and Quality Accounting

International Financial Reporting Standards (IFRS) is a body of perspective rules and guidelines with global reach and appeal which provides guidance on how multi-national and business in the global world could actualize their goal of proper book-keeping, transparency, uniformity, comparability and enhancing public confidence in financial reporting (Tendeloo and Vanstraelen, 2005). In lieu of this, failure of companies and businesses to apply IFRS in the preparation and presentation of their financial statement would result to inconsistencies, lack of transparency and accountability, distortion of reports etc. This would invariably degenerate into poor financial reporting practices and the dissemination of accounting information that is below standard or of less value to stakeholders.

According to Umobong and Akani (2015) there is no uniform definition of accounting quality despite the fact that accounting quality is a concept that numerous research papers have and still refer. Barth et al. (2008) define accounting quality as the ability of accounting measures to reflect the economic position and performance of a firm. In the words of Watts (2003), other definitions of accounting quality focus more on the reliability of financial information. With the sole aim of investigating the differences in the quality of accounting information pre and post IFRS adoption by manufacturing firms in Nigeria over a five year period, Umobong and Akani (2015) embarked on a research on IFRS adoption and accounting quality of quoted manufacturing firms in Nigeria. With the use of multiple regression analysis and t-test to analyse data gathered, the findings of the study indicate a decline in accounting quality under IFRS using earnings management, value relevance and timely loss recognition as independent variables. .

Okpala (2012) carried out a study on “Adoption of IFRS and financial statement effects: The perceived implications on FDI and Nigeria economy”. Stratified random sampling method was adopted and primary data was used to elicit responses with 123 structured questionnaires administered. The result of this study showed that IFRS adoption has neither made much impact in making timely and accurate reports available nor has it in any way made the financial statement more reliable. The findings of a research carried out by Onalo, Lizam and Kaseri (2015), on International financial reporting standards and the quality of banks financial statement information: Evidence from an emerging market-Nigeria indicates that IFRS adoption engenders higher quality of banks financial statement information especially when compared to local GAAP. Ames (2013), Lin, Riccardi and Wang (2012), Paglietti (2009), Paananen and Lin (2009) amongst others discard the assertion that there is a positive significant relationship between IFRS adoption and high accounting quality. In lieu of these inconsistencies regarding the impact of the adoption of IFRS on accounting quality, there is a need to further investigate the relationship between the adoption of IFRS and quality of accounting information. It is based on this that this study

H₁: There is a significant relationship between IFRS adoption and quality of accounting information of banks

2.3 Performance of Banks under Nigerian GAAP and under IFRS

Performance measure involves the comparism between actual results and established standard in order to determine the variance and take corrective actions. At international and local level, there have been instances where ratios have been used as a measure of performance. Liu and O’Farrell (2009) engaged financial ratios in the comparism of strengths and weaknesses of firms in the US and China. Kumbirai and Webb (2010) employed financial ratios to measure the profitability, liquidity and credit quality performance of five large South African based commercial banks. Regarding adopting ratios for examining the effects of IFRS mandatory adoption on various variables, a good number of studies have been carried out. Blanchette, Racicot and Girard (2011) embarked on a study with the sole objective of providing empirical

evidence of the impact of IFRS on the financial ratios of Canadian companies by comparing financial ratios computed under IFRS with those obtained under Canadian GAAP. Data was collected from audited financial statements prepared under IFRS and Canadian GAAP, while Least-square regression was also used to analyse the relationship between IFRS and Canadian GAAP. Their findings revealed that IFRS impact on financial ratios is driven by fundamental difference in application.

Abdul-Baki, Uthman and Sanni (2014) carried out a study on “Financial ratios as performance measure: A comparison of IFRS and Nigerian GAAP”. The study was conducted through the comparison of ratios that were computed from IFRS based financial statements and Nigerian GAAP based financial statement. A One-Sample Kolmogorov-Smirnov Test was conducted to test for data normality. Mann-Whitney U test was employed in testing whether there is any significant difference between the pairs of ratios when the normality test showed a non-normal distribution of the data set. The result of the Mann-Whitney test revealed that there is no significant difference in the financial ratios used in measuring performance under the Nigerian GAAP and IFRS. It was revealed that the non-existence of a significant difference between Nigerian GAAP and IFRS based financial ratios implies that the fact that a company is IFRS compliant in the disclosure of accounting information may not be attributable to a short term performance evaluation of the achievement of the company based on a number of financial ratios computed from IFRS.

Okafor and Ogiedu (2011) carried out a study on “potential effects of the adoption and implementation of international financial accounting standards (IFRS) in Nigeria”. Copies of Questionnaire were administered and data were analyzed using a non-parametric test known as Chi Square. Findings from these study revealed that International financial reporting standards have potential for producing greater benefits than the Generally Accepted Accounting Principles and can equally improve business performance. Abata (2015) carried out a study on “The impact of international financial reporting standards (IFRS) adoption on financial reporting practice in the Nigerian banking sector” with a specific objective of determining whether the quantitative differences in the financial reports prepared by Nigerian listed banks under Nigeria GAAP and IAS/IFRS are statistically significant or not. With the use of one sample t-test to test the hypothesis formulated, it was revealed that the quantitative differences in the financial reports prepared under Nigerian GAAP and IAS/IFRS are statistically significant. The analysis also revealed a better performance (in terms of profitability) under IFRS than under Nigerian GAAP.

H₁: There is a significant difference in the performance of banks under IFRS and under Nigeria GAAP

3.0 RESEARCH METHODOLOGY

The purpose of this study is to examine the impact of mandatory adoption of International Financial Reporting Standard (IFRS) on the quality of accounting information of banks in Nigeria. The Nigerian banking sector was selected as the focus of this paper because of the criticality of its role in the Nigerian economy (Abata, 2015). The survey research method for the purpose of this study was employed with reasons lying in the fact that it focuses on obtaining subjective opinion of respondents and aims at drawing an accurate assessment of the entire population by studying samples derived from the population usually in the form of questionnaire (Osuala, 2005). Primary and secondary sources of data were adopted in the course of this study. The primary data was obtained from the group of respondents

through a properly constructed questionnaire which was analysed and used to test hypothesis one. The questionnaire was constructed using a five-point Likert scale and was divided into

three sections, Section's A and B were on questions pertaining to the two (2) hypotheses while Section C comprises personal information of the respondents. For the purpose of ensuring the validity of the questionnaire, as recommended by Bryman and Bell (2007), the questionnaire was reviewed by experts both within and outside the field of accounting (Okpala, 2012; Okafor & Ogiedu, 2011). Pilot survey was adopted for the reliability test and it yielded correlation coefficient of 0.88. It was structured in line with the research questions and hypothesis of the study (Okpala, 2012).

There are currently twenty-one (21) commercial banks in Nigeria out of which fifteen are listed on the floor of the stock exchange market (African market, 2015). Due to data availability, the paper therefore focused on the annual reports of these banks (Abata, 2015) which was analysed and used to test for hypothesis two (2). The data covered a period of 6 years from 2009-2011 (Pre-adoption) and 2012-2014 (Post-adoption). Information was elicited from accounting academics of the three (3) private universities in Ado-odo, ota, Ogun state. A total of 45 copies of the questionnaire were administered and 41 were gathered. The data collected were analysed with the use of both descriptive and inferential statistics. Simple regression analysis which was used to test hypothesis one is a parametric test used to test the extent of the relationship between one independent variable (IFRS adoption) and one continuous dependent variable (quality of accounting information). Paired sample t-test on the other hand is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups.

3.1 Variables

All the variables for the purpose of this study were measured using interval scale. The main variables for this study are IFRS adoption as independent variable and accounting quality as the dependent variable. This study is a comparative analysis that assesses accounting quality pre- and post- IFRS adoption in Nigeria banking industry hence, for the purpose of this study, IFRS would be proxied using knowledge/skill, disclosure and transparency. Accounting quality on the other hand would be proxied using the characteristics of financial statement which are Reliability, Relevance/Timeliness and Understandability as suggested by Barth et al. (2006). To test hypothesis two, performance of banks would be proxied using return on asset and return on equity.

3.2 Model Specification

$$Y = f(x_1, x_2, x_3) \dots \dots \dots (1)$$

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \mu \dots \dots \dots (2)$$

Where:

X= Independent variable = Adoption of IFRS

x_1 = Knowledge and skills

x_2 = Disclosure

x_3 = Transparency

Y= Dependent variable = Quality of Accounting Information

y_1 = Timeliness/Relevance

y_2 = Reliability

y_3 = Understandability

β_0 = Intercept

μ = Error term/Stochastic variable

4.0 RESULTS

Hypothesis one: *There is a significant relationship between IFRS adoption and quality of accounting information of banks*

Table 1 **Model Summary^b**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df 2	Sig. Change	
1	.424 ^a	.180	.113	1.468	.180	2.703	3	37	.059	1.998

a. Predictors: (Constant), Adoption of IFRS has brought about the application of knowledge and skills in the preparation of financial statement, The adoption of IFRS has help improve transparency of accounting information, Adoption of IFRS has enhanced the disclosure off accounting information

b. Dependent Variable: Quality of accounting information

Table 2 **ANOVA^a**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17.478	3	5.826	2.703	.059 ^b
	Residual	79.741	37	2.155		
	Total	97.220	40			

a. Dependent Variable: Quality of accounting information

b. Predictors: (Constant), Adoption of IFRS has brought about the application of knowledge and skills in the preparation of financial statement, The adoption of IFRS has help improve transparency of accounting information, Adoption of IFRS has enhanced the disclosure off accounting information

Table 3 **Coefficients of examined variables**

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig	95.0% Confidence Interval for B	
	B	Std error				Lower Bound	Upper Bound
(Constant)	4.264	2.167		1.968	.057	-.127	8.655
Adoption of IFRS has enhanced the disclosure off accounting information	.468	.409	.199	1.143	.260	-.362	1.298
The adoption of IFRS has help improve transparency of accounting information	.444	.299	.251	1.486	.146	-.161	1.049
Adoption of IFRS has brought about the application of knowledge and skills in the preparation of	.333	.436	.118	.763	.451	-.551	1.217

financial statement							
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Dependent Variable: Quality of accounting information

The table above shows the regression effect of IFRS mandatory adoption on the quality of accounting information of banks. The R square value in table 4.1.1 is 0.18 which when expressed in percentage terms indicates that the model (IFRS mandatory adoption) explains 18% of the variance in quality of accounting information of banks. The ANOVA Table shows the statistical significance of the result. The model herein reaches statistical significance at 10% (Significance= 0.059; $p < 0.1$). Table 4.1.3 which is the co-efficient table shows which of the variables included in the model contributed to the prediction of the dependent variable. The Beta value with the highest beta coefficient from the co-efficient table above (Table 4.1.3) is 0.251. This implies that the variable “transparency” makes the strongest but statistically insignificant (with a significant value of 0.267) unique contribution to explaining the dependent variable (quality of accounting information). The lowest beta coefficient on the other hand is 0.118 indicating that the variable “knowledge and skills application” makes the weakest and statistically insignificant (with a significant value of 0.451) contribution explaining the dependent variable.

Hypothesis two: *There is a significant difference in the performance of banks under IFRS and under Nigeria GAAP*

Table 4 Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error
Pair 1 ROAI	.0250	36	.04240	.00707
ROAG	.0079	36	.02514	.00419
Pair 2 ROEI	-.0099	36	.69614	.11602
ROEG	-.0184	36	.47872	.07979

Field Survey, 2015

Table 5 Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 ROAI & ROAG	36	.050	.771
Pair 2 ROEI & ROEG	36	-.014	.934

Field Survey, 2015

Table 6 Paired Samples Test

	Paired Differences				t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
				Lower Upper			

Pair 1	ROAI – ROA G ROEI	.0171 1	.04819	.00803	.00080	.03341	2.13 0	35	.040
Pair 2	– ROEG	.0085 8	.85051	.14175	– .27919	.29636	.061	35	.952

Field Survey, 2015

A paired sample t-test was conducted to evaluate whether or not there is a significant difference in the performance of banks under IFRS and Nigeria GAAP. The result of the comparison of the return of asset (which is one of the performance measurement tool) under Nigeria GAAP and under IFRS revealed a significant value of 0.040 which is lower than the cut-off value of 0.05 therefore signifying a significant difference in the performance of banks under Nigeria GAAP and under IFRS. The paired sample statistics in table 4.2.1 shows a higher return of asset (ROA) with a mean value of 0.0250 under IFRS compared to the return of asset with a mean value of 0.0079 under Nigeria GAAP. The return of equity (ROE) under Nigeria GAAP and under IFRS on the other hand revealed a significant value of 0.952 which is higher than the cut-off value of 0.05, which therefore indicates that there is no significant difference in the performance of banks under Nigeria GAAP and under IFRS. From the table above (Table 4.1.1), the Return of Equity under IFRS has a mean value of -0.0099 and a standard deviation value of 0.69614 While the mean value under Nigeria GAAP is -0.0184 and a standard deviation value of 0.47872 indicating a statistical significant decrease in performance of bank under Nigeria GAAP using ROE as a performance measurement tool. The mean decrease in performance of banks under Nigeria GAAP was with a 95% interval ranging from -0.27919 to 0.29636. The eta squared statistics for pair one (1) is 0.133 indicating a small effect size while the eta squared statistics for pair two (2) is 0.106

4.3 Discussion of findings

The main aim of this study is to examine the impact of mandatory adoption of International Financial Reporting Standard (IFRS) on the quality of accounting information of Nigeria firms. This study engaged two objectives which are: To determine the significant relationship between IFRS adoption and quality of accounting information; To determine the significant difference in the performance of banks under IFRS and under Nigeria GAAP.

4.3.1 Significant relationship between IFRS adoption and quality of accounting information
Hypothesis one states that “there is a significant relationship between IFRS adoption and quality of accounting information. To test this, Regression analysis was ran and as a result, the null hypothesis was rejected, while the alternate hypothesis which states that “there is a significant relationship between IFRS adoption and quality of accounting information of banks. This empirical finding is consistent with the result of a research carried out by Onalo, Lizam and Kaseri (2015), on International financial reporting standards and the quality of banks financial statement information: Evidence from an emerging market-Nigeria where it

was revealed that IFRS adoption engenders higher quality of banks financial statement information especially when compared to local GAAP.

4.3.2 Significant difference between the internal auditors' competence and the quality of accounting information.

Hypothesis two states that “there is no significant difference between the performance of banks under IFRS and under Nigeria GAAP. To test this, paired sample t-test was ran and the result showed a significant difference in the return of asset of banks under IFRS and under GAAP. There was no significant difference in return on equity under IFRS and under Nigeria GAAP. This empirical finding is consistent with the result of a research carried out by Abdul-Baki, Uthman and Sanni (2014) carried out a study on “Financial ratios as performance measure: A comparison of IFRS and Nigerian GAAP”. The result of the Mann-Whitney test revealed that there is no significant difference in the financial ratios used in measuring performance under the Nigerian GAAP and IFRS.

5.0 CONCLUSION AND RECOMMENDATIONS

The review of several studies has shown a significant relationship between the adoption of IFRS and the quality of accounting information of banks in Nigeria. The result of this study is also in tandem with the result of the studies carried out by various authors suggesting that there is a significant relationship between the adoption of IFRS and the quality of accounting information of banks in Nigeria. The reason for this may perhaps lie in the fact that Nigerian GAAP has from the scratch complied with IAS and IFRS (NASB, 2009). As such with the mandatory adoption of IFRS, most accountants with little trainings find it easy to comply with IAS/IFRS in the preparation and presentation of accounting information. In addition, many authors have augured that adoption of IFRS would enhance the transparency and disclosure of accounting information. These and many more are possible reasons for the significant relationship between IFRS adoption and quality of accounting in information. Conclusively, the result of this study adds to the body of literatures that have examined the impact of IFRS on various financial ratios specifically return on assets and returns on equity. This study similarly gives an insight into the possible outcome of future research covering a wider spectrum. The study recommends that accounting academics/accountants should be mandated by their various institutions/organizations to periodically undergo trainings (e.g. MCPE, conferences and workshops) on IFRS. This is because data collated showed that most respondents are of the opinion that IFRS is difficult to understand. This might be because some of them got chartered before the adoption of IFRS and they never went for trainings on IFRS.

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TABLES CAPTION

Table 1	Model Summary
Table 2	ANOVA
Table 3	Coefficients
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Table 5	Paired Samples Correlations
Table 6	Paired Samples Test

MANDATORY IFRS INTRODUCTION AND FINANCIAL STATEMENTS COMPARABILITY: EVIDENCE FROM NIGERIAN LISTED COMPANIES

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ABSTRACT

The study examines whether mandatory introduction of International Financial Reporting Standards (IFRS) enhances financial statements comparability of companies listed on the Nigerian stock exchange. The study specifically investigates the relationship between SAS and IFRS introduction based on key performance indicators of listed companies in Nigeria in terms of liquidity, profitability, gearing, reported earnings and market value. A survey study research method was employed where 20 listed firms' published financial reports for 2011 under SAS was compared with 2012 under IFRS. Mean, standard deviation and Pearson Correlation Statistic methods were used for the analysis. The findings revealed that the adoption of IFRS in Nigeria enhanced credible and qualitative financial statements that would engender economic growth and development. The study therefore recommends that government should empower significantly the financial reporting council of Nigeria (FRCN) to monitor and enforce standards and training to smoothen the introduction and compliance with IFRS.

Keywords: Financial Reports, IFRS, Introduction, Key Performance Indicators, SAS

1. INTRODUCTION

The Federal Executive Council of Nigeria gave approval for the convergence of Nigerian SAS with IFRS from January 1, 2012. The adoption was organised such that all stakeholders use IFRS by January 2014. According to the IFRS adoption Roadmap Committee (2010), Public Listed Entities and Significant Public Interest Entities are expected to adopt the IFRS by January 2012. All Other Public Interest Entities are expected to mandatorily adopt IFRS for statutory purposes by January 2013 and Small and Medium-sized Entities (SMEs) are also to mandatorily adopt IFRS by January 2014. Nigerian listed entities were required to prepare their opening balances for January 1, 2012 on the first IFRS full financial statements in accordance with the provision of IFRS as at 31st December, 2012 (Masud, 2013).

The IFRS Adoption Roadmap Committee, (2010) declared that it would be in the interest of the Nigerian economy for listed companies to adopt globally accepted, high quality accounting standards, by fully converging Nigerian national accounting standards with International Financial Reporting Standards (IFRS) over the earliest possible transition period, given the increasing globalization of capital markets. The Nigerian Statement of Accounting Standards (SAS) and IFRS are in many ways different in terms of guidance and application of the standards, although, some of these standards are similar or comparable in certain areas. Most of the SAS under NG-GAAP are found to be similar to Financial Reporting Standards (FRS) under UK-GAAP. The International Accounting Standards (IASs) issued by IASB have equivalent Statement of Accounting Standards (SASs) issued by NASB. However certain standards issued by the NASB do not have equivalent IAS and vice versa (Adesina, 2011).

Most of the Nigerian Statement of Accounting Standards (SASs) issued by the NASB are outdated and considered insufficient to provide the necessary guidance in the preparation of

qualitative financial statements. In Nigeria, companies cook figures and manipulate financial statements; tax avoidance is the norm of the day while persistent earnings management is left unchecked by the authorities because of weak and ineffective regulation (Masud, 2013). These problems coupled with many issues, necessitated the present government to introduce series of economic reform programmes in the various sectors of the economy in order correct the aberration. These reforms are the adoption of International Financial Reporting Standards (IFRS) that replaced Nigerian Accounting Standards Board (NASB), the body responsible for the issuance of SAS with the Financial Reporting Council (FRC) and the establishment of the IFRS Academy.

This paper therefore examines whether mandatory introduction of International Financial Reporting Standards (IFRS) enhances financial statement comparability. The study specifically investigates the relationship between SAS and IFRS introduction based on key performance indicators of listed firms in Nigeria in terms of liquidity, profitability, gearing, reported earnings and market value. Prior research documents that the adoption of international accounting standards is associated with higher accounting quality (Ashbaugh & Pincus 2001; Barth, Landsman & Lang, 2008). However, this research suggests that much of the improvement occurs for firms domiciled in countries in which domestic standards differ significantly from international standards. Thus, the benefits of IFRS adoption is primarily relating to improvements in the comparability of financial statements, information quality, reduction in the cost of doing business and attracting foreign direct investment.

2 LITERATURE REVIEW

This chapter discusses IFRS introduction and financial statements disclosures. It also presents the theoretical and empirical underpinning of this study.

2.1 IFRS Introduction and Financial Statements Disclosures

Management of corporate companies uses financial statements' disclosures to attest to the accuracy and validity of reported financial information. Private companies are not required to disclose certain financial information regarding the company. However, listed companies are mandatorily required to disclose certain information regarding the company in order to fulfil the requirements of the Securities and Exchange Commission (SEC) and other regulatory bodies (Bae & Welker, 2008). In Nigeria the information disclosure requirements in the financial statements under SAS were grossly inadequate to effectively bridge the information inequality between companies and the users of the financial statements. However, reporting under the IFRS regime requires companies to make more disclosures in order to meet objective of financial statements, which is to show a true and fair view of a company's activities. It is therefore envisaged that the companies will disclose more of their financial information with the transition from the SAS to IFRS.

2.2 Theoretical Framework

The theory underpinning this study is hinged on the rational choice theory. Rationality explains that a company will not adopt an accounting standard if adopting it will make it worse off. The rational choice theory implies that all action is fundamentally rational in nature and a company will calculate the possible costs and benefits of any action before making decision of what to do (Coleman, 1990; Scott, 2000). The rational choice theory analyses the actions and behaviour of an individual or a company as rational aims to maximize one's utility (Munch, 2002). Rational choice theory attempts to explain why people or companies do what they do, given certain choices; as to whether to adopt IFRS or make do with their domestic accounting standard. Relating the rational choice theory to economic benefits expected to be derived by a company on adoption of IFRS, proponents of

IFRS (Li, 2010; Barth, Landsman & Lang, 2008) argue that the standards reduce information costs to an economy, particularly as it is cheaper for capital market participants to become familiar with one set of global standards than the several local standards.

2.3 Empirical Review

Quite numbers of studies have dealt with IFRS in Nigeria and its environs. In the study of Onafalujo, Eke and Akinlabi (2011) on the “Impact of International Financial Reporting Standards on Insurance Management in Nigeria”, the paper stated that IFRS is a global agenda to foster common benchmark in financial information across borders with the aim of generating economic development. In a related study by Okafor and Killian (2011) on Potential Effects of the Adoption and Implementation of IFRS in Nigeria, the study found that International Financial Reporting Standards have the potential for yielding greater benefits than current GAAP. In a study carried out by, Isenmila and Adeyemo (2013) on “A Perception Based Analysis of the Mandatory Adoption of IFRS in Nigeria” shows that there is a statistical significant difference in the perception of the stakeholders about the desirability of the mandatory adoption of IFRS.

A prior study by Lantto and Sahlstrom (2009) on the impact of IFRS adoption on key financial ratios of Finnish listed firms shows that the adoption of IFRS changes the magnitude of the key accounting ratios of Finnish companies. Profitability ratios increase by 9-19% and the price- earning (PE) ratios decrease by 11%, gearing ratios increase by 2.9% while equity ratios decrease by 0.2%. Punda (2011) based his study on Lantto and Sahlstrom (2009) and examined the effects of IFRS adoption on key financial ratios of UK listed firms. He reported a substantial change in the key performance indicators of these firms post IFRS adoption. All the three profitability ratios significantly increased. Blanchette, Racicot and Girard (2011) however examined the impact of transition from Canadian GAAP to IFRS on financial ratios in the areas of liquidity, leverage and profitability. They reported a significantly higher volatility to most of the ratios under IFRS when compared to those derived under pre-changeover Canadian GAAP. In Nigeria, Tanko (2012) reported that firms in Nigeria (some selected banks) under IFRS tend to exhibit higher values on a number of profitability measures such as EPS.

Prior studies further document a general improvement in information quality for firms voluntarily adopting IFRS with corresponding commitment to high quality implementation (Daske, Hail, Leuz, & Verdi, 2009), as well as for firms adopting IFRS by mandate within settings with high enforcement regimes (Daske, Hail, Leuz, & Verdi, 2008; Li, 2010). Defond, Hu, Hung and Li. (2011) reports evidence of increased foreign mutual fund ownership flows following mandatory IFRS adoption for firms domiciled in countries with greater enforcement that enhanced comparability.

For the purpose of this study, key performance indicators (KPIs) refer to profitability, liquidity and gearing measures, as proxies for financial statements comparability, mostly used by firms to determine their financial strengths, weaknesses and ability to honour their obligation as they fall due. Reported earnings and market value are used as proxies for information quality. The above and prior findings with regard to IFRS on the firms’ level, lead to the following hypotheses that:

H₁: there is no relationship between SAS and IFRS introduction

H₂: IFRS is not associated with information quality

3 METHODS

The study is descriptive and the research followed a survey quantitative methodology. Secondary method of data collection was employed for the purpose of this research. The research population comprised 24 categories of listed companies in Nigeria. The categories are used for the study to ensure that the entire activities of listed companies are represented in the study. 20 categories, representing 83%, were covered based on the availability of financial reports in compliance with the provision of IFRS in 2012. Stratified random sampling technique was employed in selecting the sample. This technique minimizes bias as well minimizing the incident of over lapping associated with simple random methods. The reason for the technique is that the population of the study is grouped into 24 categories; and to ensure companies in each category have equal chance of being selected, a simple random sampling technique was introduced. Four of the categories (i.e. Engineering Technonology, Footwear, Machinery Marketing and Textiles) could not meet up with compliance date of 2012. A company was then picked randomly from each of the 24 categories as indicated in the appendix. The financial reports of 20 listed companies that prepared and presented 2011 under SAS and 2012 under the IFRS were used for the analysis.

Data was collected from the audited financial statements of twenty listed companies in Nigeria directly from their websites. The twenty listed companies are as indicated in the appendix. The financial ratios were calculated from financial statements prepared under the SAS and compared with those calculated under the IFRS. An empirical analysis was performed on the differences followed by test of mean and standard deviation between each series of ratios to ascertain whether there were differences in SAS and IFRS. A Pearson correlation coefficient was used to analyse the relationship between the IFRS and SAS ratios. The ratios used to assess the companies' financial statements comparability are the Profitability, Liquidity and Gearing while reported earnings and market value were used to assess information quality.

4 RESULT AND DISCUSSION

4.1 Result

The result of data analysed for financial statements comparability and information quality, based on the two hypotheses using mean, standard deviation and Pearson product moment correlation is shown as Table 1, 2, 3 and 4 for 20 listed companies used in this study.

Table 1: Descriptive analysis of pre-adoption (SAS) period

Factor(s)	Variable(s)	Mean	Standard deviation
Profitability	OPM	11.315	17.376
	ROCE	16.095	16.27
	ROE	15.271	21.574
Liquidity	WCR	1.475	0.730
	ATR	0.941	0.603
Gearing	DER	26.825	27.445
	DR	30.650	28.863

Source: Author's computation from SPSS 15

Table 2: Descriptive analysis of post-adoption (IFRS) period

Factor(s)	Variable(s)	Mean	Standard deviation
	OPM	12.099	23.397

Profitability	ROCE	16.075	20.007
	ROE	15.362	20.395
Liquidity	WCR	1.425	0.753
	ATR	0.850	0.551
Gearing	DER	22.038	20.193
	DR	27.600	24.360

Source: Author's computation from SPSS 15

Table 3: Pearson correlation for financial statements comparability under pre-adoption (SAS) and post-adoption period (IFRS)

Factor(s)	Variable(s)	Pearson Correlation	Sig. (2-tailed)
Profitability	OPM	0.621 ^{**}	0.003
	ROCE	0.835 ^{**}	0.000
	ROE	0.793 ^{**}	0.000
Liquidity	WCR	0.917 ^{**}	0.000
	ATR	0.739 ^{**}	0.000
Gearing	DER	0.937 ^{**}	0.000
	DR	0.882 ^{**}	0.000

^{**} Correlation is significant at the 0.05 level (2-tailed).

Source: Author's computation from SPSS 15

Decision: The mean and standard deviation are highly significant in the desired direction of the study due to its corresponding and relative effect on the Pearson correlation level of significance. There was also a strong and positive correlation between the variables for financial statements comparability under SAS and IFRS periods. The statistical significance between the variables considered was regarded as strong because the correlation was greater than 50% (0.5). Therefore, the null hypothesis H_1 is rejected, and shows that there is strong relationship between SAS and IFRS introduction.

Table 4: Pearson correlation for information quality under pre-adoption (SAS) and post-adoption period (IFRS)

Factor(s)	Variable(s)	Pearson Correlation	Sig. (2-tailed)
Reported Earnings	PBIT	0.996 ^{**}	0.000
	PAT	0.995 ^{**}	0.000
Market Value	EPS	0.422	0.000
	NAPS	0.712 ^{**}	0.000

^{**} Correlation is significant at the 0.05 level (2-tailed).

Source: Author computation from SPSS 15

Decision: The calculated variables for measure of information quality are greater than 0.5 level of significance, except earnings per share (EPS) that the market price fluctuated. The null hypothesis is therefore rejected and it is concluded that IFRS is highly associated with information quality because of its statistical significance between the variables considered.

4.2 Discussion of Result

The research work borders on mandatory IFRS introduction and financial statements comparability from listed companies in Nigeria. The result of the hypotheses tested revealed that there is a significant relationship between SAS and IFRS introduction which enhances credible and qualitative financial statements engendering growth and development. The research also revealed that mandatory IFRS introduction improves the quality of financial information as it will boost the confidence of investors. However, the earnings per share (EPS) has weak correlation in terms of market price fluctuation which has consequential effect on the 'EPS' of Nigerian listed companies under pre and post adoption periods as against Tanko (2012) that reported that firms in Nigeria exhibited higher values on EPS under IFRS.

4.3 Findings

The research findings are summarised as follows:

- (i) There is a significance relationship between SAS and IFRS introduction
- (ii) IFRS is associated with information quality
- (iii) The mandatory IFRS introduction will increase the level of confidence of investors in the capital market
- (iv) IFRS will engender economic growth and development of listed companies in Nigeria
- (v) The mandatory IFRS is an effective tool for enhancing the uniformity, credibility and comparability of financial statements of listed companies in Nigeria

5 CONCLUSION AND RECOMMENDATION

In this study, attempts were made to examine mandatory IFRS introduction and financial statements comparability as evident from Nigerian listed companies. Based on the findings, it could therefore be concluded that mandatory IFRS introduction enhances comparability of financial statements and improves financial information quality, as relatedly corroborated by Ashbaugh and Pincus, (2001); Barth, Landsman and Lang, (2008).

The contribution of this research to literature and knowledge is enormous because it has helped to fill the gaps between SAS and IFRS. It is therefore recommended that the government should empower the financial reporting council of Nigeria (FRCN) to monitor and enforce standards and training to smoothen the introduction and compliance with IFRS.

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APPENDIX

Correlations

Operating Profit Margin (OPM)

Descriptive Statistics

	Mean	Std. Deviation	N
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Pre-adoption period(SAS)	11.3145	17.37600	20
Post-adoption period(IFRS)	12.0995	23.39708	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.621** .003 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.621** .003 20	1 1 20

** . Correlation is significant at the 0.05 level (2-tailed).

Return on Capital Employed (ROCE)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	16.0950	16.27014	20
Post-adoption period(IFRS)	16.0750	20.00739	20

Correlation

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.835** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.835** .000 20	1 1 20

** . Correlation is significant at the 0.05 level (2-tailed).

Return on Equity (ROE)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	15.2710	21.57369	20
Post-adoption period(IFRS)	15.3620	20.39496	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.793** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.793** .000 20	1 20

**. Correlation is significant at the 0.05 level (2-tailed).

Working Capital Ratio (WCR)**Descriptive Statistics**

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	1.4750	.73044	20
Post-adoption period(IFRS)	1.4245	.75307	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.917** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.917** .000 20	1 20

**. Correlation is significant at the 0.05 level (2-tailed).

Acid Test Ratio (ATR)**Descriptive Statistics**

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	.9405	.60269	20
Post-adoption	.8500	.55062	20

period(IFRS)			
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Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.739** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.739** .000 20	1 20

** . Correlation is significant at the 0.05 level (2-tailed).

Debt Equity Ratio (DER)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	26.8250	27.44529	20
Post-adoption period(IFRS)	22.0375	20.19254	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.937** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.937** .000 20	1 20

** . Correlation is significant at the 0.05 level (2-tailed).

Debt Ratio (DR)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	30.6500	28.86315	20
Post-adoption period(IFRS)	27.6000	24.36002	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.882** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.882** .000 20	1 20

**. Correlation is significant at the 0.05 level (2-tailed).

Profit before Interest & Taxes (PBIT)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	12542497	30028170.28 6	20
Post-adoption period(IFRS)	14942392	38332413.50 5	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.996** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.996** .000 20	1 20

**. Correlation is significant at the 0.05 level (2-tailed).

Profit After tax (PAT)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	10571523	28968720.10 9	20
Post-adoption period(IFRS)	12251096	34678467.06 0	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed)	1 	.995** .000

	N	20	20
Post-adoption period(IFRS)	Pearson Correlation	.995**	1
	Sig. (2-tailed)	.000	
	N	20	20

** . Correlation is significant at the 0.05 level (2-tailed)

Earnings per Share (EPS)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	5.2640	9.50870	20
Post-adoption period(IFRS)	2.5437	4.95731	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation	1	.422
	Sig. (2-tailed)		.064
	N	20	20
Post-adoption period(IFRS)	Pearson Correlation	.422	1
	Sig. (2-tailed)	.064	
	N	20	20

Net Asset per Share (NAPS)

Descriptive Statistics

	Mean	Std. Deviation	N
Pre-adoption period(SAS)	315.9505	535.78761	20
Post-adoption period(IFRS)	435.0558	762.38372	20

Correlations

		Pre-adoption period(SAS)	Post-adoption period(IFRS)
Pre-adoption period(SAS)	Pearson Correlation Sig. (2-tailed) N	1 20	.712** .000 20
Post-adoption period(IFRS)	Pearson Correlation Sig. (2-tailed) N	.712** .000 20	1 20

**. Correlation is significant at the 0.05 level (2-tailed).

LISTED COMPANIES ON STOCK EXCHANGE AS AT 31/12/2014

S/N	Category	Company Selected	No of Companies
1	Agriculture	ALPCOT AGRIC	5
2	Airlines	AS AIRLINE SERVICES	1
3	Automobiles	R.T BRISCOE PLC	6
4	Banking	UNITED BANK FOR AFRICA	21
5	Breweries	GUINNESS NIGERIA PLC	7
6	Building Materials	DANGOTE CEMENT	8
7	Chemical & Paints	BERGER PAINTS PLC	7
8	Commercial/Services	CHELLARAMS PLC	3
9	Computer & Office Equipment	NCR PLC	6
10	Conglomerates	UAC	8
11	Construction	JULIUS BERGER	8
12	Engineering Technology	ANNUAL REPORTS NOT AVAILABLE	1
13	Food, Beverages & Tobacco	NIGERIAN BREWERIES PLC	14
14	Footwear	ANNUAL REPORTS NOT AVAILABLE	2
15	Healthcare	MAY AND BAKER PLC	10
16	Industrial/Domestic Products	ALUMINIUM MANUFACTURING	12
17	Insurance	EQUITY ASSURANCE	17
18	Machinery Marketing	ANNUAL REPORTS NOT AVAILABLE	3
19	Managed Funds	FIRST CAPITAL INVESTMENT	4
20	Packaging	BETA GLASS PLC	8
21	Petroleum Marketing	TOTAL NIGERIA PLC	9
22	Printing & Publishing	UNIVERSITY PRESS PLC	4
23	Real Estate & Property	UACN PROPERTY DEVELOPMENT	1
24	Textiles	ANNUAL REPORTS NOT AVAILABLE	6

Source: Nigériasite.com: Stocks listed on Exchange (2015)

TOTAL QUALITY MANAGEMENT AND PERFORMANCE OF TELECOMMUNICATION FIRMS IN NIGERIA

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ABSTRACT

This study examines the link between Total Quality Management and performance of telecommunication firms in Nigeria. The research instrument utilized for the study was completed by 122 respondents drawn from two leading telecommunication firms (MTN and Globacom) in Nigeria. Utilizing the regression technique, results of data analysis indicate that TQM practices such as process improvement and employee empowerment significantly influence firm performance. Top Management commitment was found not to have a relationship with organizational reputation. It is suggested that employee contribution not only to work processes but also to decision making, encouragement to set objectives for themselves and motivation towards their work enhance their understanding and commitment to their job and the organization at large.

Keywords: *Total Quality Management, Telecommunication, Process Improvement, Firm Performance, Employee Empowerment*

1 INTRODUCTION

Total Quality Management (TQM) can be viewed as a strategic attempt of a firm's management directed towards the harmonization and continuous improvement in all functional aspects of an organization with the aim of satisfying customers' need (Oakland, 2014). It is also an important management tool that supports the achievement of business excellence (Bateman & Snell, 2007; Satish and Srinivasan, 2010). Service Industry could arguably be one of the most important industries in the provision of valuable activities which generate customer satisfaction. The development of Service industry has influenced global business practices and transformed it through competitive dimensions, customer expectations and technological inclusions. Through the aid of TQM top executives can now fully inspires members of their organisation to be innovative and committed to their daily work and practice self-training as possible means to achieving better organization performance but also improved customer satisfaction. However, there is a need to understand the different characteristics of services for a more productive implementation of TQM in a service organization. TQM practices in service organizations includes: customer focus; top-management commitment; training and education, continuous improvement and innovation; performance measurement; benchmarking; quality information; employee involvement; employee encouragement; and supplier management (Talib, 2013).

Prior Studies on total quality management had different independent measures and were conducted in different contexts which justify the need for the proposed study. However, there is still a gap in investigating TQM practices in the Nigerian Telecommunication industry in a manner that ensures robust opinions drawn from more than one firm. In resolving this situation, two leading firms MTN and Globacom Nigeria constitute the respondents base for this research work. The present study identifies that the Nigeria Telecommunication industry presently plays a very sensitive role in the nation's economic development. For instance, the industry's contribution to GDP has significantly risen from 1.91% in 2006 to 8.69% in 2013 (Nigerian Communication Commission, 2014). Possible expectations are that the industry's

impact will yet rise especially with the on-going five-year Strategic Management Plan (SMP) being implemented by the Nigerian Communications Commission (NCC). However, it is worrisome to identify the high rate of porting activities in the sector, especially in the year 2013. According to the Nigerian Communication Commission (2013) data report, a total number of 84,777 lines were ported from other networks (incoming) while 72,655 lines were ported to other networks (outgoing). Table 1 (see appendix) reveals the breakdown of these figures among network providers. Although, one may be posed to appreciate the active competition in the industry, there may also be indications that customers tend to switch from one subscriber base to another because of dissatisfactions. These facts could also reveal possibilities of inadequate implementation of total quality management practices among network service providers. A situation that reveals a need for investigations into the quality management practices of the Nigeria Telecommunications industry, with special focus on the mobile (GSM) market segment

Therefore, this research intends to investigate how total quality management practices, such as: top management commitment, process improvement, benchmarking, and employee empowerment has influenced performance outcomes within Nigeria's telecommunications industry. It is expected that outcomes from this research would have significant implications on telecommunication industry players since it would direct them on proper policy measures that will yield better stakeholder satisfaction.

The broad objective is further broken down as, to: (1) Identify the effect of top management commitment on organization reputation. (2) Determine how process improvement covaries with customers' satisfaction. (3) Examine the extent to which employee empowerment influences organization effectiveness. (4) Explore the impact of employee empowerment on customers' satisfaction.

2. LITERATURE REVIEW

2.1 Top Management Commitment and Organizational Reputation

Lange, Lee and Dai (2011) in a review of past literature posited that the description of organizational reputation reflects a "generalized awareness or visibility of the firm, perceived predictability of organizational outcomes and behaviour and perception of the overall organization as good, attractive and appropriate". Pfarrer, Pollock and Rindova (2010) measured firms' reputation based on whether they appeared among the top twenty-five firms listed in fortune's "Most Admired Companies" and Wall Street Journal/Harris Interactive "Corporate Reputation" list. In another study, Bear, Rahman and Post (2010) investigated the impact of Board diversity and Gender composition on CSR and Firm reputation. The outcome of their study showed that diversity of board resources was not statistically significant with firm reputation. According to Helm (2011) employees of the firm could be very instrumental in top management's pursuit of enhanced corporate reputation depending on how satisfied with their job and their affective commitment to the organization. Sequel to the above literature revived, the following hypothesis is hereby proposed

H₁: Top management commitment does not have a significant effect on organization reputation

2.2 Process Improvement and Customer Satisfaction

Customer satisfaction is thought to be the key accomplishment components for every profit masterminded relationship. As Dimitriadis (2006) asserted, satisfied customers tend to be less affected by contenders, less esteem sensitive, and stay dedicated longer. Botha and van Rensburg (2010) contended that organizations targeting process improvement must go beyond traditional approaches, and rather integrate the concept of customer experience

management. Meanwhile, process improvement, rather than product/service improvement is referred to in this present research because process improvement is the actual activity that makes any product/service worthwhile. Drawing from Davenport's (1993) perspective, we suggest that process improvement involves organizational attempts to be innovative with the ordering of work activities across time and place with the end of enhancing customer and organizational value. Goetsch and Davis (2010) agree that process improvement is a strategic element of Total Quality Management. Michel, Bowen and Johnston (2009) suggested that improvement can enhance a firm's efforts to reduce failures on service recovery. Further to the above, the following hypothesis is hereby proposed

H₂: Process improvement does not covary with on customer's satisfaction

2.3 Employee Empowerment and Organizational Effectiveness

According to Bowen and Lawler (1992) employee empowerment occurs when they are: informed about the firm's performance, rewarded as performance improves, allowed to contribute to the firm's performance and empowered to make important decisions in the firm. Empirical evidence does exist for the relationship between employee empowerment and organizational effectiveness. Wang, Chich-Jen and Mei-Ling (2010) scaled organizational effectiveness based on firm's innovative degree, market share compared to competitors and the firm's staff turnover. Meanwhile, Zhang and Bartol (2010) emphasized that empowered employees would increasingly be creative on their job. Qurantul-Aim (2011) observed that employee motivation as a tool for empowerment can result in higher levels of organizational growth, prosperity and productivity. Relating empowerment to a technological advanced work environment, Kuo, Ho, Lin and Lai (2010) observed that work design and employee empowerment yield positive and direct influence on commitment of employees. More critically, Pieterse, van Knippenberg, Schippers and Stam (2009) revealed that when followers are psychologically empowered they tend to exhibit innovative behaviours through the guidance of transformational leaders. Therefore, the following hypothesis is envisaged

H₃: Employee empowerment does not influence organizations effectiveness

2.4 Employee Empowerment and Customer Satisfaction

According to Goetsch and Davis (2010) employee empowerment could take the form of committing them to think and make decisions that concern their job. Ro and Chen (2011) further highlighted that being customer oriented, provision of reward systems, communications about service standards and trainings on services serve as strategies of employee empowerment. This claim can be empirically buttressed from Webster and Sunderam's (2009) study that found that service providers's communication style is a significant determinant of customer satisfaction. Naeem and Saif (2010) studied the effect of employee empowerment and customer satisfaction in the Pakistan Banking sector. Drawing samples from a foreign bank with employee empowerment and a local public bank with no employee empowerment, their regression model did not reflect any relationship between employee empowerment and customer satisfaction. In another investigation of the effect of empowerment and job satisfaction on customer's perception of service quality, Gazzoli, Hancer and Park (2010) reported that a significant impact exist among the variables. It is on this note that the following hypothesis is proposed

H₄: Employee empowerment has no impact on customer satisfaction

3. RESEARCH METHODOLOGY

The method for carrying this study is the use of survey design. This method of research design was found suitable for the research since it sought to gather responses from samples through the use of questionnaires. The study is based on two major telecommunication firms in Nigeria: MTN & Globacom Nigeria. These two firms are quiet central to the Nigerian

telecommunication industry because they occupy the largest and second largest positions in the GSM sub-sector of the industry (Nigeria Communication Commission, 2015). It is believed that responses gathered from these two mobile giants will provide necessary insight towards advancing knowledge about Quality Management issues in the industry.

The design of the research instrument benefitted from earlier works such as that of Beaumont and Sohal (1999), Information and Technology Services (2010), and Wang, Chich-Jen, and Mei-Ling, (2010). Information derived through self-administered questionnaire formed the basis for the study. The total sample size of 160 respondents was determined for this research consisting of top management, functional managers, unit and departmental executives of each of the telecommunication firms under study. The questionnaire used for the research was divided into sections 'A' and 'B'. Section A comprises of items which are personal information about the respondents, while Section B consist of questions on specific measures of TQM and organizational performance. Cronbach Alpha reliability index was 0.851 which surpasses the minimum 0.7 (Pallant, 2005).

3. RESULT AND DISCUSSIONS

160 questionnaires were administered but 122 questionnaires were returned representing 76.25% response rate while 38 questionnaires representing 23.75% were not returned. The 76.25% questionnaires returned is reasonable enough for the research work to be based. The distribution shows that the majority of respondents in this research are male consisting 88 (72.1%) of the total respondents while female were 34 (27.9%) of the total population of the respondents. 88 respondents (72.1%) are single, 33 respondents (27.1%) are married and 1 respondent (0.8%) are either divorced, widows or widowers. Also, 61 respondents (50%) have worked for less than 5 years in the industry, 44 respondents (36.4%) have worked for between 6-10 years, 15 respondents holding (12.4%) are between 11-15 years, 1 respondent (0.8%) have worked for above 16 years. The implication of this is that the industry have, in the past five years had tendencies of high rate of labour turnover. 68 respondents holding (55.7%) are under 25 years, 35 respondents holding (28.7%) are between 26-35 years, 15 respondents (12.3%) are between 36-45 years and only 4 respondent (3.3%) are 46 years and above. This reflects that the youthful age is actively engaged by the Nigerian Telecommunications industry, such that as employees increase in age their chances of retention in the industry are narrowed. 8 respondents (6.6%) are of the Executive Management Cadre, 32 respondents (33.3%) occupy Senior Managerial positions and 58 respondents (60.4%) holding the position of functional manager, including supervisory roles.

Table 2 Results of Regression Analysis

Variables Independ. Depend	B	Std. Error	t-value	p-value	R ²	Adj R.	F
Top Mgt. Commit → Org. Reputation	.13	.06	1.46	.147	.018	.01	2.14
Cust Satis. → Process Imprv.	.36	.09	4.16	.000	.127	.12	17.32
Org Eff. → Emp. Empow	.49	.05	6.08	.000	.237	.23	36.98
Cust Sats. → Emp. Empow	.22	.06	2.45	.000	.048	.04	6.01

Regression analysis was used to measure all the objectives in this study. The result from the table shows that the extent to which the top management commitment has any effect on Organizational reputation is 1.8% (i.e, R Square= 0.18). This relationship is not found to be significant ($p > 0.1$, $\beta = .13$). Therefore, the conclusion is to accept the null hypothesis which suggests that there top management commitment does not impact on organizational reputation. Prior research works found that different dimensions of top management commitment have a relative impacts on organization reputation across various firms (Hetland

and Sandal, 2003; Laohavichien, Fredendall, and Cantrell, 2009). However respondents that make up the framework of the present study suggested that top management commitment to quality management practices does not necessarily increase organizational reputation. This might therefore suggest that whatever perception customers and the larger stakeholders' community of the firm have about the firm could be a result of a more direct relationship with sales persons or customer care personnel of the firm. It will therefore mean that, at best, top management should ensure that organizational policies and motivational strategies targeted at enhancing quality relationships are put in place to guide firm's staff who directly relate with customer.

Also, in testing whether or not process improvement covaries with customer satisfaction the result from the table indicate that process improvement actually has an effect on customer satisfaction ($R^2 = 0.127$; 12.7%). The relationship is found to be positive ($\beta = 0.36$, $t = 4.16$, $p < 0.05$) indicating that the null hypothesis should be rejected. Therefore, organizations are admonished to take up initiatives that aim at increasing success and reducing failures along the organizational value chain. PI must be adopted as a process of identifying and improving production/service quality continuously by reducing waste, simplifying the production line, while yet maintaining high quality standards for customer benefits (Nadia and Amit, 2005; Ogunnaike, Ibidunni and Adetowubo-King, 2014). Telecommunications firms must reduce chances of customer dissatisfaction, evidenced through increasing rates of customers porting out of one network to others. Therefore, consistent with the suggestion of Sadıkoğlu and Zehir (2010) there must be continuous searching for developing new or improved methods in the process of converting inputs into customer beneficial outputs.

More so, results from regression analysis reveal that employee empowerment influences organizational effectiveness ($R^2 = 0.23$, 23%; $\beta = 0.49$, indicating positive relationship; $t = 6.08$; $p < 0.05$). Therefore again, the null hypothesis has been contradicted and thus, should be rejected. Consistent with study carried out by Falola, Ibidunni and Olokundun (2014) the issue of the employees' contribution as discussed in this study not only to work processes but also to decision making, encouragement to set objectives for themselves, motivated towards their work and family life enhance their understanding and commitment to their job and the organization at large.

Predictions about the degree of possible impact of employee empowerment on customer satisfaction is also found to be evident and positive ($R^2 = 0.48$, that is, 4.8%; $\beta = 0.219$). Although, and quiet surprisingly, this relationship is quiet weak the evidence of relationship is established ($p < 0.05$; $t = 2.45$). In the same vein, null hypothesis is rejected. Accordingly, Employee empowerment provokes the employees to come up with excellent ideas and participate in quality improvement plans and programs which alerts the individual employees about "who is our customer", "what are their requirements", how to satisfy them becomes the main agenda for each employee. Therefore, they begin to target satisfying each individual customer, rendering quality based products and services and performing the operations within limits of the quality requirements. Ultimately the end customer is satisfied.

4. Managerial Implications

This research aimed at investigating the relationship between total quality management and performance of the Nigerian telecommunication industry. Top management commitment, continuous improvement on work processes and employee empowerment were matched against significant aspects of firm expectation such as organizational reputation, customer satisfaction and organizational effectiveness. Generally, indications are that quality management practices, though relating with significant aspects of organizational outcomes,

yet needs more intensified support from top management, and indeed, all members of firms operating in telecommunications industry.

Investigations into quality management should be a continuous task, since the success of organizational value chain depends largely on firm's commitment to its quality procedures. This research work is found to be relevant at this time when competitiveness in the telecommunications industry has become stiffer, as evidenced in the Nigerian Communications Commission (2013) reports of porting activities in the industry. We suggest that firms should be more conscious about tracking customers' feelings and interests about their products and services. Again, telecommunication firms, in the spirit of stewardships to stakeholders, should adopt international best practices without compromising standards as the offer products and services. Their adoption of the tenets of TQM should not be merely to build on quality but to achieve highest quality standards.

CONCLUSION AND FURTHER STUDY

This study has revealed that Total quality management still remains a very crucial area of research especially in developing economies. TQM in the Nigerian telecommunication industry remains an aspect that should be closely monitored. True adoption of quality management measures and initiatives will eventually be highly beneficial to telecommunications providers. Customer satisfaction, for example, will result in loyalty, retention and the willingness to suggest the firm's products to friends. Whatever perception investors have about a firm's reputation will again determine whether or not such firm will enjoy continued support of investing parties. The Nigeria telecommunication industry is a promising one, therefore, it calls for close measurement and stiffer monitoring of advances towards higher quality standards.

This study was limited to cover telecommunication firms, and only two among the existing players in the industry. Further research can attempt to investigate and seek opinion based on wider industry coverage. Again, whereas in this study the focus was on gathering opinion from the firms, studies that reflect comparative opinion of customers and firms can be carried out. This could help gain a clearer picture about what kind of policies to design to guide quality initiatives, how to determine whether or not firms are actually offering quality.

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Appendix

Table 1 Total Numbers Ported in Nigeria Telecommunication Industry As At 2013

	Incoming	Outgoing	
MTN	4,908	29,452	34,360
GLO	9,830	10,139	19,969
AIRTEL	46,457	26,019	72,476
EMTS	23,582	7,040	30,622
Total Porting Activities Through All Networks	84,727	72,650	157,427

Source: Nigerian Communications Commission (2013)

MODELLING RELATIONSHIP BETWEEN HUMAN CAPITAL MANAGEMENT AND ORGANIZATIONAL SUCCESS: *Evidence from Nigerian State Universities*

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ABSTRACT

The management of human capital has become an essential and controversial aspect in any competitive environment. Consequent upon the competitive nature, a quite number of institutions especially the state universities have suffered and experienced high brain drain, job dissatisfaction and labour turnover due to their inability to manage human capacity. However, the need to develop talents is no longer hidden, what remains controversial is the best method of human capacity management especially in the state owned universities. Thus, this study examines the relationship between human capital management and organizational success of using three state owned universities, southwest, Nigeria. These universities (Ekiti State University (EKSU), Lagos State University (LASU), Tai Solarin University of Education (TASUED) were chosen for their uniqueness. Survey research design was adopted with 398 respondents. Self-administered questionnaire was adopted and the responses obtained was analyzed with the adoption of Structural Equation Modelling (SEM). However, the results indicate that adequate leadership practices; learning capacity; workforce optimization; knowledge accessibility; workplace culture and; mentorship are important factors in determining the degree at which employees are engaged and retained on their jobs and thereby increase their productivity level. Managers and policy makers should take these factors into consideration while formulating their employment policies in order to have formidable, efficient, and productive workforce.

Keywords: Human Capital, Leadership Practices, Knowledge Accessibility, Learning Capacity, Workforce Optimization

1.0 INTRODUCTION

Employees are the sustenance of every organization. No organization can subsist if there are no employees. These employees have contributed directly in their own way to increasing productivity and organizational success. They (employees) obtain various skills through knowledge, capability, experience, trainings, teachings and so on which ultimately helps to increase productivity in due course benefitting the organization. This knowledge is often enriched by the relationships between the management and employees (social capital) and engenders the entrenched/institutionalized knowledge influenced by an organization (organizational capital). The strength of relationship that exist among these variables (human, intellectual, social and organizational capital) are undermined. Knowledge, awareness and proficiency which employees cultivate within the organization eventually lead to increase performance (Barrett and O'connell, 2001) and it is often refer to as human capital. Human capital is well-defined as the shared collection of talents, abilities, traits, knowledge, capability and proficiency of employees in increasing performance and promoting the productivity of the organization. Human capital plays a central role in increasing the productivity, efficiency and output of an organization through the acquisition of necessary skills, knowledge and expertise Brentwell (2012). Human capital is characterized by human factor which includes the following; the shared intelligence, abilities, talents and expertise that gives the organization its distinctive advantage. Johnson (2002) articulating the prominence of human capital believed that all innovations and inventions are human revolutions. Therefore there is no physical and organizational capital without intellectual

capital and no intellectual capital without humans (employees). Pfeffer (1994) sees human capital development as a resilient exponent to the role of human in strategic milieu. Weatherly (2003) established the fact that the development of human capital in today's competitive environment has been supplanted with a new mirage known as human capital management.

Human Capital management denotes the process of handling and managing employees to contribute essentially in the overall productivity of organization (Bontis and Serenko, 2009). Human Capital Management is defined as the procedure for obtaining, training, rewarding, managing, and retaining personnel in order to meaningfully contribute to continued existence of organizations (Collins and Clark, 2003; Johnson, Neave and Pazderka, 2002). The human capital management comprises five dimensions (Leadership practices, Knowledge accessibility, Learning capacity, Workforce optimization, Employee engagement) define by Bassi & McMurrer (2007). While Brentwell (2012) added mentorship programmes and workplace culture to the drivers /dimensions of HCM. Studies (Molina and Ortega, 2002; Kannan and Akhilesh, 2002; Khandekar and Sharma, 2003) see human capital management as a systematic way of identifying and improving the existing competencies and capabilities of an employee to achieve corporate objectives. The fundamental aim of every organization should be to acquire and train its workforce in order to become indispensable resources and ensure maximum contribution towards the organization.

The thrust of human capital management is that of educating, developing and managing how organizations acquire, organize, deploy, motivate talents (Becker and Gerhart, 1996) and retain their workforce for higher performance (Bassi and McMurrer, 2008). For this research, the focus is on the management of its human capital within the educational sector. It is evident that to subsist in an environment where educational institutions are hunting for the best personnel, the quality of the human element becomes an essential factor. The growth of every Nigerian University depends on the strength of investment in human capital for development. Evidently, the Educational system has not been tailored to meet developmental needs and have suffered decay due to poor planning and mismanagement of funds. Emphasis in Nigerian institutions has been on verbal activity rather than skill acquisition and problem solving activities. Unfortunately, Nigerian institutions especially the state universities underestimate and undervalue the necessity to train, develop and manage human capital. This could be the reason for increased brain drain, low commitment, incessant strike, high job dissatisfaction, absenteeism and turnover rates. It is essential to note that when the management of state universities is defective, there is tendencies for many factors to emerge which will adversely affects job performance. However, university management must have the capability not only to manage competencies, but must intensify efforts to motivate and retain employees at workplace via consistent training and development, promotional opportunities, appropriate communication style, healthy ethical attitude, change management, proper managerial style and other motivational factors (Taiwo, 2010; Wagner and Harter, 2006).

It is a common knowledge that Nigerian state universities have not featured in the first 1000 universities in the world. The Nigerian (state) universities system appears to have been crippled by both internal and external factors such that the mandates of these institutions are hardly realized. This sentiment is validated by poor funding performance of our universities on the ranking tables. It can be depicted that in Nigeria, the total federal allocation to education has been on the decline. This implies that the lots of education have actually gone from temple to abattoir, hence the allocation of a diminishing fraction of the Gross Domestic Product (GDP) to education perpetually brings about a huge danger to the country's long-

term growth and developing prospects. The lingering under-funding in the educational sector especially in Nigerian state universities had embraced a collection of cost-sharing procedures to subsist which has ultimately influence the strength of capacity development. In some public universities, grants and allocations were never paid which invariably gives room for multiple payment for students. This multiple fee includes: school fees, acceptance fees, course registration, accreditation and certification, sports, identity cards, medical fees, library fees, laboratory and transcript. These fees vary from one public institution to another. The rationale for these chronic charges is a clear indication of government's insensitivity and failure to sufficiently fund all levels of education. This makes research, publication, teaching and community service highly defective in Nigeria. The work environment in many of these state universities is terrible, exceptionally intolerable. This could be the reason why Nigeria universities has failed to attain any remarkable and noteworthy position in world global ranking.

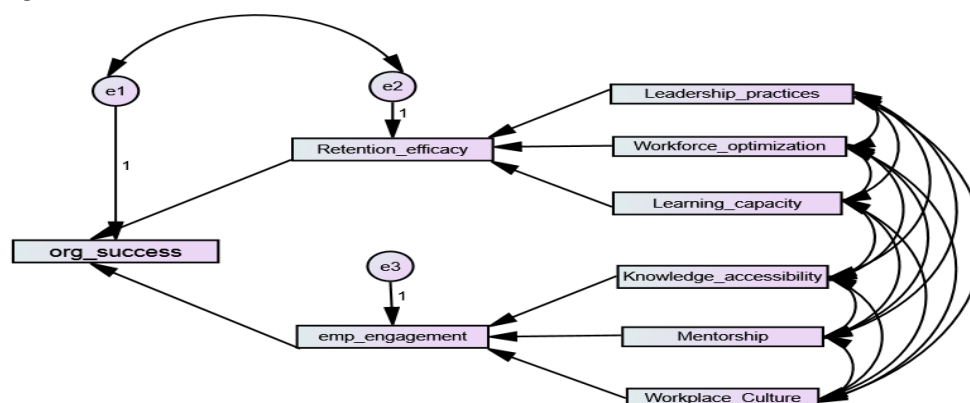
Several studies (Bontis and Serenko, 2009); Bhattacharya, Gibson and Doty, 2005; Collins and Clark, 2003;) conducted in advance world of America, Europe, and in some parts of Asia have shown that effective practice of human capital management leads to cost efficiency and career progression. But despite extensive research on the quality of human capital management, it is still so unfortunate that most of these studies have been conducted mostly in Western countries with distinct organizational culture, workplace climate, capacity development, employer-employee relations and employment pattern. The effects of human capital management has not been largely studied in the University system and its effects on retention efficacy and engagement has not been widely researched in the developing nations like Nigeria. The literature reveals that human capital management is measured by using different methodologies but still the scientists are not able to have a universal frame work for the measurement of human capital management. The present study is an effort in this direction.

This therefore necessitated the need for specific research questions for the study as follows:

1. To what extent has Leadership practices (H_1), Workforce optimization (H_2), and Learning capacity (H_3) been impactful on retention efficacy (direct) and organizational success (indirect)?
2. To what extent has Knowledge accessibility (H_4), mentorship (H_5) and workplace culture (H_6) influence employee engagement (direct) and organizational success (indirect)?

Research questions are depicted in figure 1 (schematic model).

Figure 1: Schematic Model



Source: Proposed model by the researchers, 2015

2.0 LITERATURE REVIEW

2.1 Human Capital

Human capital is the collection of skills, capabilities, attributes, traits including creativity, exemplified in the ability to perform some functions or tasks in order to facilitate cost efficiency and yield economic value. Human capital is the collection (Bontis and Serenko, 2009) and organization of resources which include knowledge, aptitudes, talents, capabilities, involvement, shrewdness, training, and intelligence acquired by individuals or group of individuals (Collins and Clark, 2003).

2.2 Concept of Human Capital Management

Human Capital Management (HCM) is concerned with the process of acquiring, organizing, examining and reporting on data that enlighten the direction of value-adding people management, strategic investment and operational decisions at corporate level and at the level of front line management. It is, as emphasized by Kearns (2005), ultimately about value. HCM is concerned with a determined measurement, not just measurement. The defining characteristic of HCM is the use of strategy to guide an approach to managing people that regards them as assets and emphasizes that competitive advantage is achieved by strategic investments in those assets through employee engagement (Seleim, Ashour and Bontis, 2007), retention, talent management (Bontis and Serenko, 2009) and learning and development programmes (Nafukho, Hairston and Brooks, 2006). HCM provides a bridge between Human Resource and business strategy. Human Capital Management Human capital management was assessed through a scale developed by Bassi and McMurrer (2007) based on human capital management frame work. Human capital management assessed the following dimensions or drivers of human capital management (HCM).

2.2.1 Leadership Practices and Retention Efficacy:

The concept of leadership has become a fundamental issue in today's environment. The style of leaders make the difference between success and failure. The growth and collapse of many leaders is a replication of how adaptive, flexible, and insightful they are with the changing environment. It could be task oriented, democratic, laissez faire and "laid back" or authoritarian (Sosik, Godshalk and Yammarino, 2004). The apparatuses of effective leadership are multidimensional and are largely recognized to be depending on the particular leadership style or situation, bearing in mind the complexity of tasks, the level of a leader's authority, aptitude, maturity and capabilities of the employees (followers). A lot of leaders' believe that the purpose of influencing and inspiring others is to acquire social recognition and prestige. Leading employees require the ability to influence their behavior positively and to assist them in recognizing their potentials (Kupers & Statler, 2008). This can be achieved by creating mutual and cordial relationship with them. Everyone wants to feel important and valuable in every system (Kelly, 2007). The retention of human talent is a dependent factor on leadership practices which include Managers' and leaders' communication channel, performance feedback, administrative and managerial skills, demonstration of work ethics and values, efforts and ability geared towards building confidence. It can therefore be hypothesized that:

H₁: Leadership Practices has positive effect on retention efficacy

2.2.2 Learning Capacity and Retention Efficacy:

Learning capacity has become one of the organizational resources that is concerned with the overall ability to learn, change, innovates, and continually improves. This driver largely concentrate on the degree of innovation, training, development, value & support and systems (Bontis and Serenko, 2009). The learning capacity offered influences on individual's expectation of career success which in turn influences the individual's beliefs about his ability and finally the outcomes of career decision making, goal attainment and high retention rates (Sosik, Godshalk and Yammarino, 2004). The management of organizations must

encourage learning by offering challenging assignments, inspiring the protégé by being a role model, coaching for vocational skills, develop the protégés identity, help him to set career goals and support him to achieve work-life balance (Scandura, 2007). It can therefore be hypothesized that:

H₂: Learning capacity has positive effect on retention efficacy

2.2.3 Workforce Optimization and Retention Efficacy:

The success of every organization in enhancing and optimizing the commitment of its employees by creating indispensable processes for performing the task efficiently, providing necessary training for skill development, providing good working conditions, establishing responsibility, and making rational choices and decisions, creating adequate incentives/welfare packages that will motivate, stimulate and retain their employees to perform better with higher commitment (Johnson, Neave and Pazderka, 2002) and dedication (Black and Lynch, 2000). The employer may provide these benefits of his own initiatives because he believes that they will secure greater goodwill and efficiency from the workers, and that as a result labor disputes may be reduced. The employee's efforts can be complimented through training benefits, security benefits, work-related and status related benefits. It can therefore be hypothesized that:

H₃: Workforce Optimization has positive effect on retention efficacy

2.2.3 Knowledge Accessibility and Employee Engagement:

The historic transition to a knowledge society concurrent with the rapid development of new technologies means that the world of ours is meant for the society that can maximize and transfers knowledge from one generation to another as this will determine their reckoning in the global world (Drucker, 2010). Failure to create effective method, process and channels for the transfer and improvement of past knowledge could be a determinant factor for employee engagement. According to Bassi and McMurrer (2005), knowledge accessibility passes on understanding of subjects, facilitates personal development, encourages wise choices, and helps the protégé to make transitions. To be effective, organizations must establish processes that gives access to knowledge, promote knowledge transfer while simultaneously fostering a commitment to the organization which influences their performance (Rousseau and Shperling, 2004). We therefore hypothesized:

H₄: Knowledge Accessibility has influence on employee engagement

2.2.5 Workplace Culture and Employee Engagement

Organizational culture is the customary way of thinking and behaving that is shared by all members of the organization and must be learned and adopted by newcomers before they can be accepted in the organization. This implies culture can be learned, shared and transmitted. It is also a combination of assumptions, values, symbols, language and behaviour that manifest the organization's norms and values. Managers transmit organizational culture to all members of the organization so that they are sure that all employees have the same understanding of their culture; thereby they are expected to internalize the organizational culture so that they all function at the same level (Denisson, 2006; James, 2004). Work organizations are characterized by a variety of dimensions related to organizational climate. These dimensions embody criteria such as means emphasis, goal emphasis, reward orientation, task support and social support (Peterson, 2005). Although an organization may have its "own unique culture", in larger organizations there are sometimes conflicting cultures that co-exist owing to the characteristics of different management teams. We therefore hypothesized:

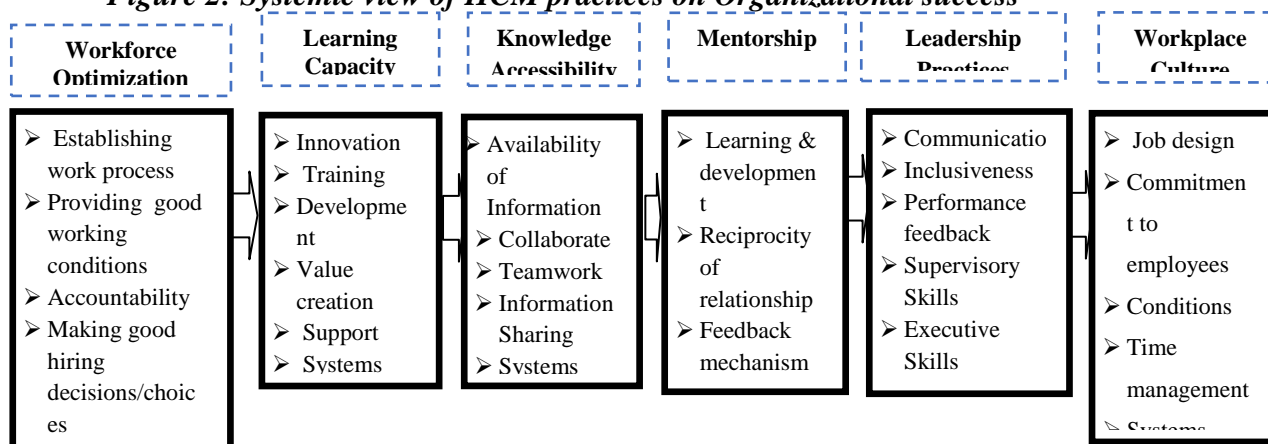
H₅: Workplace culture has influence on employee engagement

2.2.6 Mentorship and Employee Engagement

Mentorship plays a predominant role in understanding, defining and explaining specialized behavior for employees. Mentorship embodies the value of self- initiation and self-regulation. Employee can contribute to an organization by utilizing knowledge gained from others only if the employee remains with the organization (DeLong, 2004; Rousseau and Shperling, 2004). Mentoring relationships in the workplace may assist organizations in addressing this dilemma. Research suggests that providing skill-building opportunities to protégés is positively related to personal learning in the workplace (Lankau and Scandura, 2002). Yet, an unintended consequence of knowledge transfer via mentoring is the potential for increased job mobility for protégés and the resulting negative effect on organizational retention efforts (Ramaswami and Dreher, 2007). We therefore hypothesized and show the constructs for the variables in Fig. 2 below:

H₆: Mentorship has influence on employee engagement

Figure 2: Systemic view of HCM practices on Organizational success



Source: Wright, P.M. Gardner, T.M. Moynihan, L.M. & Allen, M.R. (2005) HR practices and firm performance: Examining causal order, *Personnel Psychology*, pp 406-466.

3.0 METHODS AND INSTRUMENTS

Survey research design was adopted for this study because of its features amongst which include; feasibility and economical in nature. The survey data was obtained from three hundred and ninety-eight (398) respondents from Ekiti State University, Lagos State University (LASU), Tai Solarin University of Education (TASUED). Structured questionnaire was utilized as research instrument in collecting data for this survey. The first path sought to establish the demographic status of the respondents while the remaining items focused on essential research variables in the study. However, these variables were developed having reviewed literature and supported by empirical evidences. Each of the items of the questionnaire was scaled on 5-point Likert scale. Data analysis procedure was carried out using IBM SPSS AMOS 21. Responses were analyzed in SPSS data format, while Structural Equation Modeling (SEM) was adopted in order to identify the relationships that exist between variables studied.

4.0 RESULTS AND DISCUSSION

As depicted in Table 1, the sample for the survey comprises of two hundred and forty eight (248) males, indicating that 62.3 percent of the respondents were males; and one hundred and fifty (150) females, indicating that 37.7 percent of the respondents were females. The demography of the sample indicates that 62.1 percent are below 40 years while 37.9 percent of the respondents belong to 40 years and above. Significant proportions of the respondents

are married (78.1 percent), while insignificant had been married at a time (10 respondents are divorcees) with 21.9 percent of the respondents been unmarried. Similarly, a significant proportion had been on the payroll of these. With reference to the respondents' demography, the sample may be considered as a rich data for this survey. This can be depicted in table 1 below.

Table 1: Respondents' Demographic Characteristics

Demographic Var.		Percentage (N=398)
Gender:	Male	62.3
	Female	37.7
Age:	Below 30 years	13.1
	30 – 39 years	49.0
	40 – 49 years	30.6
	50 years & above	7.3
Marital Status:	Single	21.9
	Married	78.1
Tenancy (Overall):	0 – 5 years	32.7
	6 – 10 years	51.8
	11 yrs and above	15.5

Source: Field Survey, 2015

As cited in Adeniji, Osibanjo, and Abiodun (2013), various indicators of goodness-of-fit are adopted in research models (Bentler and Wu, 2002; Kaplan, 2000). However, it is argued that the greater number of the indices, the assured probability of a good fit. Therefore, for a model to be accepted, the Normed Fit Index (NFI) \Rightarrow .90; while the Comparative Fit Index (CFI) cut-off value \Rightarrow .90 (Bentler and Bonett, 1980). Essentially, in order to avert the disagreement and illogical results of chi-square tests, other indices of model fit such as Root Mean Squared Error of Approximation (RMSEA) and CFI are argued to be informative measures of how close the model corresponds with the data. The model fit summary for the survey is illustrated in Table 2.

Table 2: Model Fit Summary

Model-fit Index	Score
Chi-square/Degree of Freedom	.235
Goodness-of-fit (GFI)	.962
Comparative Fit Index (CFI)	.955
Incremental Fix Index (IFI)	.961
Normed Fit Index (NFI)	.912
Root Mean Square Error of Approximation (RMSEA)	.000

Source: Survey, 2015

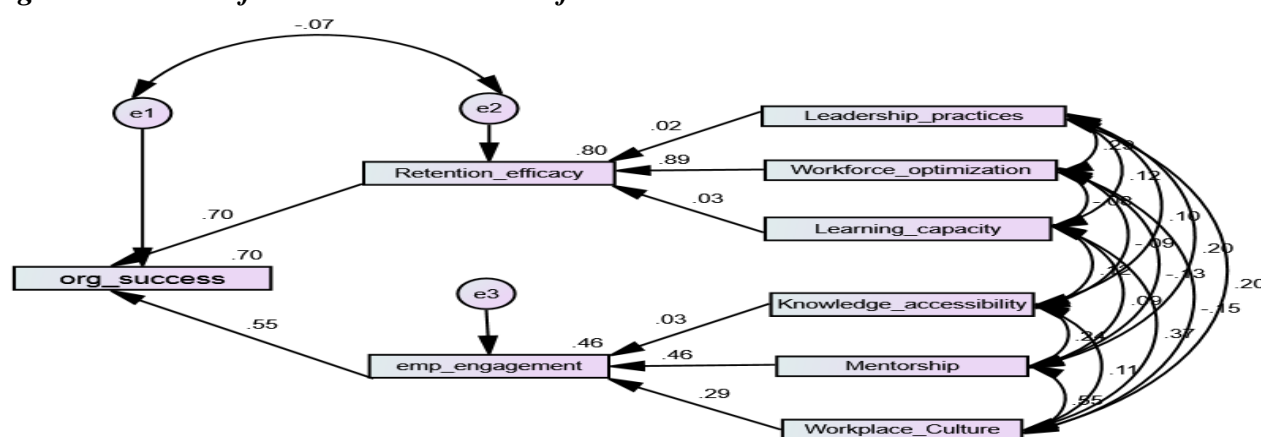
The goodness of fit of a model explains the degree in which it fits the observed and expected values. In comparing the scores obtained from the analysis with the recommended cut-off value, it could, therefore be concluded that the research model is perfect and acceptable fit.

Table 3: Standardized Estimates of Covariance among Exogenous Variables

			Estima	S.E	C.R.	P	Label
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			te	.			
Retention_efficiency	<-- -	Leadership_Practices	.020	.07 1	.399	.69 0	H ₁ _Accept
Retention_efficiency	<-- -	Learning_Capacity	.032	.05 1	.778	.43 7	H ₂ _Accept
Retention_efficiency	<-- -	Workforce_Optimization	.890	.04 4	11.04 1	***	H ₃ _Accept
emp_engagement	<-- -	Knowledge_Accessibility	.031	.09 4	.451	.65 2	H ₄ _Accept
emp_engagement	<-- -	Workplace_Culture	.295	.07 0	3.757	***	H ₅ _Accept
emp_engagement	<-- -	Mentorship	.461	.09 9	5.742	***	H ₆ _Accept

Figure 3: Results of the Structural Model of the Data Collected



The model described in Figure 3 adequately fits the full dataset and is clear and easily interpretable. Path coefficient scores of the study variables as depicted in Figure 3, retention efficiency appears to be strongly and positively influenced by leadership practices (.02); workforce optimization (.89); learning capacity (.03); while employee engagement appears to be positively influenced by knowledge accesibility (.03); mentorship (.46); workplace culture (.29); ultimately, retention efficiency and employee engagement significantly lead to organizational success (.70). It is evident that among all the tested variables, workforce optimization tends to be one of the best determinants of employee retention and engagement. Evidently, this corroborate with previous studies (Bontis and Serenko, 2009; Wright, Gardner, Moynihan and Allen, 2005; Saenz, 2005; Shah and Bandi, 2003; Molina and Ortega, 2002) that sees optimum utilization of skills and capacities as contributory factors to higher performance. Osibanjo, Salau and Falola (2014) also indicated that organization can only survive when employees performance are efficiently optimized with good workplace climate. Our findings also support (Bontis and Serenko, 2009; Seleim, Ashour and Bontis, 2007) the assertion that the survival of every organization is a dependent factor on the level of learning capacity; leadership style (Sinclair, et al., 2005); access to knowledge (Athley and Burnside, 2007); mentorship (Frank and Taylor, 2004) and employees involvement.

CONCLUSION AND MANAGERIAL IMPLICATIONS

The survey examined the relationship between human capital management and organizational success using three state owned universities, southwest, Nigeria. Essentially, the proposed variables in the model were analyzed using Structural equation modelling and it was observed that strong positive association exists among the proposed variables. Further, it was

discovered that leadership_practice, learning_capacity; workforce_optimization are major determinants of employee retention, knowledge_accessibility; workplace_culture and; mentorship in the workplace increases employee quality of work and engagement; employee engagement tends to increase the degree of efficiency/success, and also, proper implementation of retention strategies is an important factor in facilitating organizational success. It can therefore, be concluded, based on the findings that adequate leadership practices; learning capacity; workforce optimization; knowledge accessibility; workplace culture and; mentorship are important factors in determining the degree at which employees are engaged and retained on their jobs and thereby increase their productivity level. Managers and policy makers should take these factors into consideration while formulating their employment policies in order to have formidable, efficient, and productive workforce.

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SKILL MANAGEMENT AND UNIVERSITIES COMPETITIVENESS: AN EMPIRICAL EVIDENCE OF NIGERIAN PRIVATE UNIVERSITIES

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ABSTRACT

This paper examines the effect of academia' skill management on universities competitiveness in Nigeria private universities. A descriptive research method (Structural Equation Model {AMOS 22} was applied to analyse the two hundred and seventy four (274) copies of valid questionnaire completed by faculty members of the selected universities in South-West Nigeria using stratified and simple random sampling techniques. However, the results show close relationships between the dependent and independent variables. The study indicated that efficient skill management of faculty have positive significant implications on institutions competitiveness. This suggests that skill attraction, skill development, skill utilisation and skill retention have significant effects on teaching, research and innovation excellence and subsequently enhance university's competitiveness.

Keywords: Skill Attraction, Skill Development, Skill Utilisation, Skill Retention, Competitiveness

INTRODUCTION

The management of employee skill affects various sectors and the educational sector has not been exempted from this growing challenge (Gardner, 2002, McGrath, 2002). The bane of this challenge is centered on the scarcity of skilled employees which has resulted in stiff competition around the globe (Brewster, 2007). Skill management is one of the strategic human resource management practices that focuses on the effective identification and productive utilisation of employees' distinctive skills for the actualization of organisational strategic goals (Chuai, Preece and Iles, 2013). As noted by Jerusalem and Hausdorf (2007) skill management is the identification, attraction, development, deployment and retention of highly skilled employees for productive engagement, involvement and commitment to the organisation's objectives. Similarly, Silzer and Dowell (2010) posited that skill management is an integration of processes, programmes, and strategies specifically designed by the organization to attract, develop, deploy, and retain skilled employees to achieve strategic objectives and meeting future needs of the organisation.

Skill management in the academia is a strategic driving force for quality teaching, excellent research, innovation and sustainable competitive advantage (Foster, 2005; Ordonez, 2004). Obviously, university system is expected to be an independent institution with responsibilities of creating and transferring autonomous knowledge towards raising total graduates, excellence future leaders. Also the university is tasked with the responsibility of instilling capital development and economic prosperity of any nation via robust teaching and learning pedagogy, research and professional services (Dill and VanVught, 2010; Alden and Lin, 2004). It is a non-debatable fact that universities with distinctive and highly skilled faculty members will be better positioned to attain a sustainable competitive edge (Thomas and Quinn, 2007). Evidently, universities are expected to be the repository of knowledge and specialized skills for nurturing the human

resource required of any nation and meeting the aspirations of the people (Njoku, 2008). Meanwhile, the academic staff are expected to be actively involved in teaching and conducting good research that will proffer solutions to the local, national and international issues of concern, impact the host community and as well drive enterprise (Njoku, 2008, Salmi, 2009).

The issue of concern in Nigeria universities is the shortage of skilled and qualified academic staff coupled with the establishment of new universities. Elegbe (2012) and Adeniji, Falola and Salau (2014) posited that the number of universities in Nigeria are increasing geometrically, yet the universities are struggling and hunting for qualified faculty to be engaged. Presently, Nigeria has a total of forty-one (41) accredited federal universities, twenty-five (25) state universities and sixty-one (61) private universities without sufficient senior academic staff (NUC, 2015; Ahunaya and Osakwe, 2012). Elegbe (2010) and Jamila (2010) opined that Nigerian universities required about 60,000 academic staff to compete favourably with their counterparts in the developed world. This shortfall is greatly affecting university education standard (Hatun, 2015; Pienaar, 2008). Besides, it is important to note that no Nigerian university is ranked among best 2000 University in the world in both Times Higher Education-QS Ranking, Academic Ranking of World Universities (SJTUR), Webometrics Ranking, Professional Ranking of World Universities, Newsweek Ranking among others. All these among others has called for effective skill management in Nigerian Universities. There had not been enough empirical investigation that measures the relationship between skill management and universities' competitiveness in Nigeria. Sequel to the above, this study becomes necessary to examine the effects of skill management strategy on universities' competitiveness. The significance of this study stemmed from its objectives as follows:

- To examine how skill attraction can enhance teaching excellence and university competitiveness
- To analyse the extent to which skill development impact teaching and research excellence for university competitiveness
- To evaluate the extent to which skill utilisation promote research and innovation
- To investigate whether skill retention can promote innovation and university competitiveness

LITERATURE REVIEW

SKILL ATTRACTION AND TEACHING EXCELLENCE

Skill attraction is a strategy tool that organisations are using to engaging and involving highly talented and skilled persons to drive optimal performance toward the realization of organisation's sustainable competitive advantage. The skill attraction strategy involves identifying and selecting the right skill that reflects the philosophy, and core values of a particular university (Armstrong, 2010). The survival of any university depends on its ability to attract skillful faculty members that will be committed to teaching and research (Ballesteros and Inmaculada, 2010). Similarly, skill attraction in the academic world is a process of searching for and luring the skilled and competent faculty to join a particular university (Ballesteros et al, 2010). At this level, the available skill needed for immediate and future needs of the university are given wide publicity and suitable candidates are encouraged to join the institution (Mearns and Sheil, 2013). By implication, skill attraction remains a strategic tool that any university can use in upholding quality teaching.

SKILL DEVELOPMENT AND RESEARCH EXCELLENCE

The skill development of academic staff remains a sine-qua-non essential for universities survival and competitiveness (Adeniji, Falola and Salau, 2014). The central idea underlying faculty skill development in the institution of higher learning is to keep them current and versatile for effective performance (Peretomode, and Chukwuma, 2012). The need for faculty to improve and update their knowledge and skills to keep abreast of the trends of knowledge development in their discipline is more crucial in Nigerian Universities to adequately prepare employable candidates, bridge the gap between town and gown through rigorous research among others (Peretomode, and Chukwuma, 2012; Gardner, 2002). Therefore, the willingness of university management to provide relevant learning and development via conference supports, research grants, research clusters, collaborations and academic linkages will help in positioning the universities for competitive advantage (McCauley and Wakefield, 2006; Mohman, Ma and Baker, 2009)

SKILL UTILISATION AND RESEARCH EXCELLENCE/COMPETITIVENESS

Effective utilization of the faculty members in the universities remains essential for good research output and universities' competitiveness (Flynn, 2003). Universities and other institutions of higher learning must therefore seek to understand how best their human resources can be utilised for sustainable competitive advantage (McCowan, 2008). Consequently, effective utilisation of human resources describes a system that is characterized by strategic deployment of skills and knowledge (Buchanan, 2010). Skills acquired are said to be productively engaged where existing skills are being harnessed and the resources invested in fostering the skills are being optimized (Tettey, 2009). Skill utilization could also be described as ability of the university's management to productively engage academic staff for quality teaching, research and innovation which will invariably enhance the universities' competitiveness (OECD, 2011; Tettey, 2009).

SKILL RETENTION, RESEARCH EXCELLENCE AND UNIVERSITY COMPETITIVENESS

The greatest cherished asset of an organisation is its human resources, thus retaining academic staff with distinctive capabilities is crucial for any university rapid growth and sustainable competitiveness. Obviously, the strategic retention of skilled faculty members for an appreciable period of time is germane for the universities' quest for competitiveness (Armstrong, 2010). Meanwhile, Zhou and Volkwein, (2004) posited that high level of academic staff turnover could constitutes a major step back to the quality of services and the image of the institution. Thus, it has been discovered that highly skilled academic staff hardly stay for long in a university before moving to another university or other sectors (Adeniji, Falola and Salau, 2014). This mobility has been tagged as "brain drain" and this could have serious effects on academic staff retention in both public and private universities (Naris and Ukpere, 2010, Samuel and Chipunza, 2009). Besides, Ng'ethe, Iravo and Namusonge (2012) posited that promotional opportunities, training and development, autonomy, recognition, leadership, distributive justice, salary, work environment among others are the intrinsic and extrinsic factors that determine the academic staff retention in universities system. Therefore, it is through retention of highly skilled academic staff that the universities can actualize their strategic goals via provision of quality teaching, research, innovation among others (Gaiduk, and Gaiduk, 2009; Osibanjo, Adeniji, Falola, and Heirsmac, 2014).

RESEARCH MODEL

This study focuses on the effectiveness of skill management and universities competitiveness in selected universities in South-West, Nigeria. However, as obtained in the reviewed of relevant literature, we propose the research model shown in figure 1

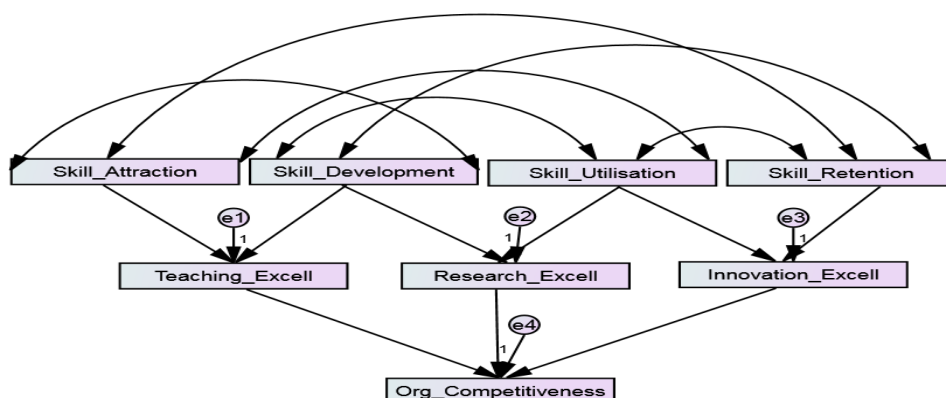


Figure 1: Proposed Study Model

Source: researchers (2015)

The model is made up of endogenous variables which include teaching excellence, research excellence and innovation; while the exogenous variables include skill attraction, skill development, skill utilisation and skill retention. The observed endogenous and exogenous variables are integrated in the model to establish whether specific paths are significant.

RESEARCH METHODS

The data for this study were collected from a survey of academics staff in selected private universities located in South-West Nigeria. However, the choice of the private universities in Southwest Nigeria was because about 46% of them are situated in South-West, Nigeria. Meanwhile, the private universities chosen for this study were the first four established private universities in South-West, Nigeria. The Universities are Babcock University (1999), Bowen University (2001), Covenant University (2002) and Pan-African University (2002). Both senior and junior academics staff ranging from assistant lecturers to full professorial cadre completed the questionnaire administered to them. Meanwhile, four hundred (400) questionnaire was administered but only two hundred and seventy four (274) copies were retrieved representing 69% response rate. Skill management was measured using 24-item instrument which was divided into sections A and B. Section A comprised of 4 items which was used to gather respondents demographic information such as gender, age, marital status and ranks. Section B contained 20 items regarding the constructs of the subject matter. Five-point Likert scale (5-Strongly Agreed, 4- Agree, 3-Undecided, 2-Strongly Disagree, 1-Disagree) that best describes the extent to which the respondents agree with each item in the questionnaire. A descriptive research method (Structural Equation Model (AMOS 22) was used to analyse the degree of relationship between observed variables and also regression between the dependent and independent constructs of the study.

RESULT AND DISCUSSION

Further to table 1 presented below, the level of correlations that exists between observed variables can be categorized as strong or low. The null hypothesis is the hypothesized model in which the parameters were set up to indicate whether a path should exist between variables or not. It is important to note that, where p-value (0.001) is less than the significance level (0.05), the null-hypothesis should be rejected. The relationship between skill attraction and teaching excellence is positive and estimated to be $r=.176$ ($p<0.05$). Meanwhile, the relationship between skill utilisation and research excellence and innovation excellence are positive and estimated to be $r=.201$ ($p<0.001$) and $r=.137$ ($p<0.05$) respectively. Besides, the relationship between skill retention and innovation excellence is also positive at ($r=.275$, $p<0.05$). Similarly, there was a positive relationship between employee skill development, teaching and research excellence estimated at ($r=.011$, $p<0.05$) and ($r=.069$, $p<0.05$) in that order. Also, the relationships between organisational competitiveness and teaching, research

and innovation excellence are positive and estimated to be at ($r = .241, p < 0.05$); ($r = .197, p < 0.05$) and ($r = .0831, p < 0.05$) in that order.

Table 1: Parameter Estimation (Regression Weight)

			Estimate	S.E.	C.R.	P	Label
Teaching_Excell	<---	Skill_Attraction	.176	.088	2.873	.004	par_6
Research_Excell	<---	Skill_Utilisation	.201	.061	3.351	***	par_7
Innovation_Excell	<---	Skill_Utilisation	.137	.060	2.270	.023	par_8
Innovation_Excell	<---	Skill_Retention	.275	.060	4.556	***	par_9
Teaching_Excell	<---	Skill_Development	.011	.089	.187	.852	par_10
Research_Excell	<---	Skill_Development	.069	.072	1.143	.253	par_11
Org_Competitiveness	<---	Teaching_Excell	.241	.052	4.044	***	par_12
Org_Competitiveness	<---	Research_Excell	.197	.063	3.316	***	par_13
Org_Competitiveness	<---	Innovation_Excell	.083	.064	1.418	.156	par_14

Note: C.R. = Critical Ratio; S.E. = Standard Error; * significant at 0.05

MODEL TESTING

Researchers used Structural Equation Modelling AMOS (Analysis of Moment Structure) path analysis version 22.0. The modelling was adopted to determine the level of fitness between independent and dependent variables. Model fit indices such as Comparative Fit Index (CFI); Normed Fit Index (NFI); Relative Fix Index (RFI); Incremental Fix Index (IFI); Root Mean Square Error of Approximation (RMSEA); and CMIN were adopted for the survey which indicate that the model could be adjusted fit. This is in line with Awang, (2012); Tabachinck and Fidell, (2007); Hu and Bentlar, (1999) that the minimum benchmark for fitness index must be above 0.9. However, the result obtained shows that all the fit indices are above the minimum value (NFI = .960; RFI = .904; IFI = .968; RMSEA = .803; AGFI = .902). All the fits indices are above the minimum acceptable value indicating a good fit. The result of structural equation model is depicted in figure II below:

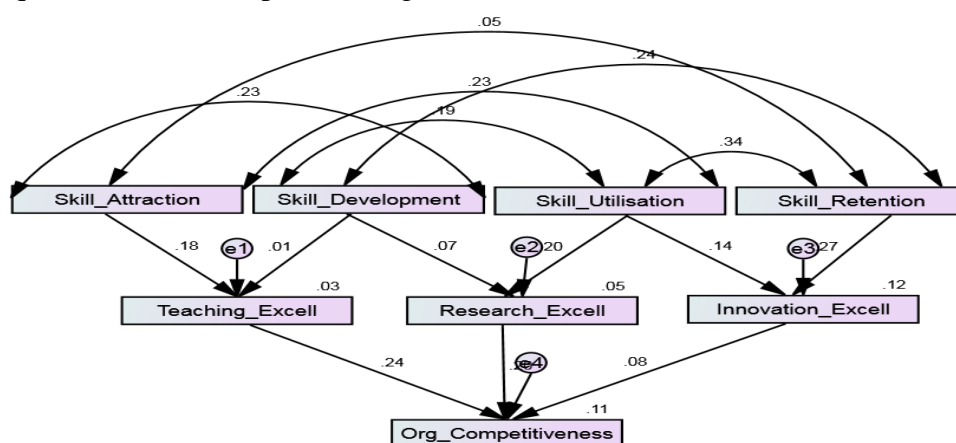


Figure II: Results of the Structural Model of the Data Collected

Source: Field Survey, 2015

Further to the result of the structural model shown in figure 2, the model results indicates the regression between skill attraction; skill development; skill utilisation; and skill retention on universities' competitiveness. Besides, all the variables tested under independent construct have positive path coefficients as factors that tend to enhance universities' competitiveness. However, the path coefficient scores (regression weights) of the observed constructs explain the regression between the studied variables. The regression weight between skill attraction and teaching excellence is .176 ($p < 0.001$) which indicate that when **skill attraction** goes up by 1 standard deviation, **teaching excellence** goes up by 0.176 standard deviations.

Meanwhile, the regression weight for skill attraction in the prediction of teaching excellence is significantly different from zero at the 0.05 level. The implication is that the ability of the universities to attract highly skilled faculty will improve teaching excellence. In a related development, the effects of skill utilisation and research and innovation excellence shows the path coefficient of .201($p < 0.001$) and $r = .137$ ($p < 0.05$) respectively. Therefore, when **skill utilisation** goes up by 1 standard deviation, **research excellence** goes up by 0.201 standard deviations while innovation excellence goes up by 0.137 standard deviations in that order.

The effect of skill development on teaching and research excellence is positive with the regression weight of .011, ($p < 0.05$) and .069, ($p < 0.05$), therefore, when skill development goes up by 1 standard deviation, teaching and research excellence goes up by 0.011 and .069, standard deviations respectively. The regression weight for skill development in the prediction of teaching and research excellence is significantly different from zero at the 0.05 level. Furthermore, it is important to state that skill retention has a strong relationship with innovation excellence with positive coefficient value of .275 ($p < 0.05$). Evidently, when skill retention goes up by 1, innovation excellence goes up by 0.275.

MANAGERIAL IMPLICATIONS

The study provided insight into the significance of skill management as a panacea to universities' competitiveness. The study will assist the management and other stakeholders in the university system to understand the significant relationship that exists between skill attraction, skill development, skill utilisation and skill retention on one hand teaching, research and innovation excellence on the other hand that will enhance the universities competitiveness. It is also imperative to state that the study served as an eye opener to the management of institutions of higher learning to ensure that competent staff are attracted, developed, utilised and retained to drive universities' quest for competitiveness. This is in line with the submission of Njoku (2008) and Salmi (2009) who posited that skill management system is a major factor that determines the organisational competitiveness.

CONCLUSION

The study assert that skill attraction, skill development, skill optimal utilisation and skill retention have positive effects on teaching, research and innovation which invariably enhances universities competitiveness. Evidently, the concluding remark of this study is in line with the submission of Tetey (2009); Pienaar and Bester (2008); Armstrong (2010) and Silzer and Church (2010) who stressed that skill management strategy is fundamental to an organisation's ability to attract, develop, reward, deploy and retain highly skilled employees for optimal job performance. Universities are therefore advised to promote disciplined atmosphere for learning with good teaching and research facilities, exhaustive review of curricula to redefine the research focus for the universities, encouragement of quality research publications and establishment of collaborations and linkages via research grants, awards, endowments for research clusters for interdisciplinary/multidisciplinary researches and as well improving on teaching facilities and staff reinvigoration development programme and ultramodern teaching aid.

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INFLUENCE OF FINANCIAL MANAGEMENT PRACTICES ON MANDATORY IFRS ADOPTION: EVIDENCE FROM NIGERIA

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ABSTRACT

This study seeks to investigate the effect of selected financial management practices: Equity finance, foreign debt capital and taxation on the drive towards mandatory IFRS adoption in Nigeria. The research design used is the survey approach where questionnaire was administered on management staff of some multinational companies in the Lagos metropolis while the regression model was employed to analyse the results. According to the findings from the study, although the drive for greater equity and foreign debt capital, as sources of funding, constitute positive signals for accelerated IFRS implementation, the second fiddle being played by taxation as a source of government revenue, on account of the pre-eminence of crude oil, also constitutes additional impetus for IFRS adoption in Nigeria. IFRS implementation should be vigorously pursued as all the three indices are currently in favour of corporate organizations, before the government suddenly wakes up to the realization that corporate taxation is actually very important. It is not to the knowledge of this author that the impact of these three variables on IFRS adoption has been studied before.

Keywords: Equity finance, foreign debt capital, IFRS, questionnaire, regression model, taxation.

1. INTRODUCTION

IFRSs are a set of accounting principles that is rapidly gaining acceptance on a worldwide basis. They are published by the London-based International Accounting Standards Board (IASB) and has adopted by many developed and developing countries as their basis for financial reporting. IFRS is more focused on objectives and it is principle-based; they purport to be a set of rules that ideally would apply equally to financial reporting by public companies worldwide. The adoption of IFRS as issued by the International Accounting Standards Board (IASB) is expected to result in the application of a common set of financial reporting standards within and between countries in Europe and many other countries that require or permit application of IFRS. Presently, over 120 countries are reported to have adopted or converged with IFRS.

The European Union (EU) took the lead when she mandated all listed companies in the European Union to start the adoption and implementation of the IFRS in their financial reporting since 2005. In fact the year 2005 to 2009 was regarded by the IASB to have provided a stable platform for EU companies that started implementation in 2005. However, comparability is unlikely to arise from IFRS adoption (Ball, Robin & Wu, 2000, Christensen Lee & Walker 2008, Sunders, 2010). Specifically, Ball (1995, p.29) concludes that “internationalization will reduce some or much of the diversity in accounting rules and practices across nations, it will not eliminate it. Nor should it”. Ball (2006) expresses concerns that the application of IFRS will not be uniform and that this will affect the reporting and perception of IFRS quality by users. According to Shima and Yang (2012), there are compelling reasons why countries may not adopt internationally based standards. Accounting systems develop organically within countries in response to unique

environmental conditions. As a result, standardization may not produce financial reports that are relevant for all nations because it may obscure those underlying differences in the environment (e.g., Choi and Levich, 1991; Alford et al., 1993; Nobes and Parker, 1995).

In July, 2010 Nigeria set in motion the process targeted at adopting IFRS between 2012 and 2014. In fact, all publicly listed entities in Nigeria were made to mandatorily adopt IFRS on 1st January, 2012. How far have we gone and what are the obstacles or challenges to full implementation? The objective of this paper, therefore, is to investigate the influence of selected financial management practices on the mandatory adoption of IFRS with special reference to the Nigerian environment. The three variables isolated for this purpose are: Equity, Foreign Debt finance and Taxation. This study is relevant at this time to enable stakeholders have a better understanding of the forces at play, especially as the effect of these specific variables have not been tested to date.

The rest of the paper is organized into four sections: Literature review, research methods; results, analysis and discussion; and conclusion.

2. LITERATURE REVIEW

Historical Development of IFRS

According to Odia and Ogiedo (2013), the process that led to the movement for accounting standards convergence was the proposal to create the Accountants International Study Group (AISG) by the professional accountancy bodies in Canada, the United Kingdom and the United States in 1966. This was formed in order to develop comparative studies of accounting and auditing practices in the three nations. The AISG which was eventually created in 1967, published 20 studies before it was disbanded in 1977. However, Sir Henry Benson put forward the proposal for the setting up of the International Accounting Standard Committee (IASC) at the 40th World Congress of Accountants in Sydney in 1972. After discussions and approval by the three AISG countries and representatives of the professional accountancy bodies in Australia, France, Germany, Japan, Mexico and the Netherlands, the IASC was finally established in 1973. Henry Benson was the first elected Chairman of IASC while Paul Rosenfield was the first secretary. By the beginning of the 21st century, only one of the nine original IASC countries (Germany) was able to get a relatively small number of listed companies to use IASs to report to domestic investors.

The primary goal of IASC formation was to develop a single set of high quality International Accounting Standards (IASs) to replace national standards. Meanwhile, during the period between 1973 and 2001, the IASC issued 41 international standards before it was replaced by the International Accounting Standards Board (IASB). All listed companies in France, Germany, the Netherlands and the UK and other 21 countries were then mandated by the European commission to adopt IASs or the International Financial Reporting Standards (IFRS) from 2005. While the Australian government and standard setter had put up an adoption policy of IAS by 2000, the US roadmap for adoption is 2014-2016; Canada and Japan are also considering convergence with IFRS. A Memorandum of Understanding (MOU) was agreed between the United States Financial Accounting Standard Board (FASB) and the International Accounting Standard Board (IASB), towards the convergence of US GAAP and the IFRS in 2002. In the Norwalk Agreement, both the FASB and IASB pledged their joint commitment towards the development of high quality, compatible accounting standards for both domestic and cross border financial reporting.

Conceptual Analysis of Issues Affecting IFRS Adoption

Basically, a country's accounting and disclosure system is anchored on its financial management practices and more generally its institutional infrastructure. Hence, every effort is geared towards the informational and contracting needs of the key parties in the economy and its role in corporate governance and the capital market. Since the accounting system is complementary to other elements in the institutional framework, a fit between them is likely to result in different accounting systems and infrastructural regimes across countries (Obazee, 2007). The financial management framework, therefore, impacts on the form and content of financial reporting (Zeff, 1972) and the use of international standard (Nobes & Parker, 1998, Zarzeski, 1996). Stock exchange requirements also constitute part of the institutional framework which, in turn, impacts on the use of international standards; others are company's choice of foreign exchange and level of disclosure. Cross-border listing makes reporting with IFRS very necessary for companies listed in stock exchanges under IFRS jurisdictions.

It is necessary to distinguish between the terms: Convergence, Adoption and Harmonization, as it relates to IFRS

IFRS Convergence

Apart from recognizing the growing need for international accounting standards, the need for global convergence of accounting standard or for an international standard setter is also to ensure that no individual standard setter has a monopoly on the best solutions to accounting problems.. It should also be noted that there are many areas of financial reporting in which a national standards setter finds it difficult to act alone. Convergence is, therefore, the process by which standard setters across the globe discuss accounting issues, drawing on their combined experiences in order to arrive at a generally accepted solution. According to Obazee (2007), convergence could be either by adoption (a complete replacement of national accounting standards with IASB's standards) or by adaptation (modification of IASB's standards to suit peculiarities of local market and economy without compromising the accounting standards and disclosure requirements of the IASB's standards and basis of conclusions). The ultimate objective of convergence is to achieve a single set of internally consistent, high quality global accounting standards, issued by the IASB and adopted by all the national standard setters (IASB, 2003).

IFRS Adoption

According to SEC (2010), there are two approaches to IFRS adoption around the world: Convergence and endorsement approaches. SEC (2010) classifies jurisdictions which do not adopt IFRS as issued by the IASB as following the convergence approach. They keep their local standards but make effort to converge with IFRS over time e.g. China. Endorsement approach is where jurisdictions incorporate individual IFRSs into their local standards e.g. countries in the EU. Adoption of IFRS means full scale implementation or usage of IFRS without any variation. Convergence may facilitate adoption over a transition period but it is not substitute for adoption. Therefore countries must resist the temptation of converging and go for full IFRS adoption. IFRS adoption is believed to have the most significant impact on accounting and financial reporting functions and enhance greater transparency and disclosures in financial statements etc (Ball, 1995, 2006; Epstein, 2009, Adam, 2009). However, clear empirical evidences of the economic consequences from mandatory adoption of IFRS have been limited (Daske et al, 2008).

Harmonization of Standards

Harmonization means "the reconciliation of different accounting and financial reporting systems by fitting them into common broad classifications, so that form becomes standard

while content retains significant differences” (Mathews & Perera, 1996, p. 322). On the other hand, convergence refers to the process of converging or bringing together international standards issued by the IASB and existing standards issued by national standard setters in various jurisdictions, with the aim of eliminating alternatives or discretions in accounting for economic transactions and events.

HYPOTHESIS DEVELOPMENT

This study will develop a prediction model for adoption of IFRS which is derived from Choi and Meek’s (2008, CM) environmental factors influencing accounting system development. The eight factors are equity finance, foreign debt finance, taxation, trade alliances, colonialism, legal systems, education and culture. For the purpose of this paper, however, only the three financial management-related variables which are equity finance, foreign debt finance and taxation are being studied. However, apart from the Nigerian environment which is different, this particular study will employ a different methodology from that used by CM to test whether a different result will be achieved.

1. Equity Finance

Equity financing is an important element in the financial management framework. Strong equity systems are normally dominated by outsiders who do not have a privileged relationship with the company (Nobes, 1998). Agency theory (Jensen and Meckling, 1976) suggests that as the relationship between businesses and providers of capital becomes more distant, information asymmetries between contracting parties increase, which stimulates the demand for more financial disclosures. In countries where equity financing is dominant, accounting takes on a more capital market orientation and higher levels of disclosure patterns are observed (e.g. Salter and Niswander, 1995; Salter, 1998). Moreover, Adhikari and Tondkar’s (1992) study of international stock exchanges found capital market size to be singularly significant in explaining the extensiveness of disclosure requirements.

Shima and Yang (2012) strongly contend that countries with well-developed stock markets, such as the United States, generally have accounting standards considered to be more advanced and may be reluctant to adopt alternative ones if the proposed standards are not considered as rigorous as their own (Ramanna et al., 2009). Countries with less advanced capital markets may be more inclined to adopt internationally recognized standards in an effort to signal their intentions to attract foreign capital. An early study of developing countries found that both capital market development and economic growth were negatively related to IAS adoption (Larson and Kenny, 1995), and similarly in the Asian Pacific region (Guan and Lau, 2004). However, as they advance, there is a higher voluntary use of international standards, i.e. IAS or US GAAP, in exchange listed firms (e.g., El-Gazzar et al., 1999; Tarca, 2004), and in those with better access to capital markets (Hope et al., 2006). In other words, we expect a positive relationship between greater equity financing and IFRS adoption as stated in the following hypothesis (we only state and test the null hypothesis):

H₀₁: More reliance on equity capital by Nigerian companies has no positive impact on the progress towards IFRS adoption.

2. Foreign Debt Capital

Adoption of IFRS has been linked with equity market benefits, i.e. lower cost of capital and increased liquidity (e.g., Leuz and Verrecchia, 2000; Sengupta, 1998), and may be beneficial for foreign debt financing as well. Accounting practice where bank financing is dominant is more focused on creditor protection (Doupnik and Salter, 1995). Information is communicated more efficiently through private channels, reducing the need for public

disclosures. However, private information gathering may be more difficult across national boundaries and foreign debt financing may benefit from greater financial disclosure through the use of IFRS.

H₀₂: Greater reliance on foreign debt capital by Nigerian companies will not impact positively on IFRS adoption.

3. Taxation

Taxation as a source of finance has been asserted to influence accounting system development. Governments that have greater control over managing the resources of a country, i.e., macro- economies, tend to become major players in shaping reporting standards (Alnajjar, 1986; Doupnik and Salter, 1993; Xiao et al., 2004). Greater government oversight of a nation's resources and economic goals is linked with financial accounting rules whose primary purpose is oriented toward satisfying regulatory needs, such as taxation and compliance issues, rather than information needs of investors. Financial and tax reporting conformity has been associated with a decrease in value relevance of accounting earnings (Ali and Hwang, 2000), and a decrease in capital mobility (Young and Guenther, 2003). It is predicted that as the importance of corporate taxation increases, the likelihood that countries will adopt IFRS will decrease and vice-versa.

H₀₃: The diminished prominence given to corporate taxation, on account of oil revenue, as a source of government funding in Nigeria, affects the drive towards IFRS adoption.

3. RESEARCH METHODS

The research design adopted is the questionnaire, through which the impact of the various variables on the mandatory IFRS adoption was assessed. The questionnaire containing nine questions were presented to a sample of forty executives in five multinational companies operating within the Lagos metropolis as at June 30, 2015 out of which thirty one responded. The responses were obtained through a five-point Likert scale which was subsequently converted into quantitative data and used to run the regression.

Functional and Model Specification

The basic functional relationship between the variables in this study is:

$$IFRSA = f(\text{EQUITY}, \text{FDEBT}, \text{TAX})$$

Where:

IFRS= International Financial Reporting Standard Adoption which is the *dependent* variable. It is driven by the following three *independent variables*:

EQUITY= Equity Capital

FDEBT= Foreign Debt Finance

TAX = Taxation as a source of Fund for Government

The model is the Linear Regression Model with Ordinary Least Squares (OLS):

$$IFRSA = \alpha_0 + \alpha_1 \text{EQUITY} + \alpha_2 \text{FDEBT} + \alpha_3 \text{TAX} + \mu \text{-----Model 1}$$

Where:

α_0 = Intercept (Constant) while α_i ($i = 1, 2, 3$) are the model parameters.

μ is a random disturbance or variable which connotes the unpredictable influence of other factors that are not included in the model.

3. RESULTS, ANALYSIS AND DISCUSSION

The result of the regression analysis is presented as Table 4.1 below. This will form the basis for subsequent analysis and discussion.

Dependent variable: IFRSA

Observations : 31

Method : Least Squares

Table 4.1

Variable	Constant	Std. Error	t-Statistic	Probability
C	4.42244	0.44425	-9.99946	0.0000
EQUITY	0.75666	0.06577	9.86645	0.0000
FDEBT	0.85556	0.05644	5.88896	0.0026
TAX	-0.43228	0.07777	6.77745	0.0019

 $R^2 = 0.777354$;

F-Statistic = 356.3456

Adjusted $R^2 = 0.7884564$

Prob. (F-Statistic) = 00000

*Source: EViews7 Regression Output***INTERPRETATION OF REGRESSION MODEL RESULTS**

From the above results, the regression equation in Model1 will now be as follows:

$$\text{IFRSA} = 4.42244 + 0.75666 \text{ EQUITY} + 0.85556 \text{ FDEBT} - 0.43228 \text{ TAX} \text{-----} 2$$

A close observation of the model parameters above show that a unit increase in the drive for equity (EQUITY) capital will generate an increase of 0.75666 in the potentials for IFRS adoption. In the same manner, a unit increase in the acquisition of foreign debt capital (FDEBT) will also increase the likelihood of IFRS adoption by 0.85556. In the case of taxation, however, a unit increase in the importance attached to corporate taxation as a source of funding by the government (i.e. TAX) will bring about a reduction in the chances of IFRS adoption by 0.43228. On the whole, according to the results, it can be observed that the drive for equity capital and foreign debt are positively correlated with the movement towards a mandatory IFRS adoption while a stronger drive for corporate taxation by the central government has the potential of a negative effect on IFRS adoption.

HYPOTHESIS TESTING AND EXPLANATORY POWER

To enable us test the statistical significance of each of the variables, we need to compare the chosen level of significance (in this case 0.05 or 5%) with the calculated value of each of the parameters. It can be observed from Table 4.1 above, that the calculated probabilities in each case (i.e. 0.0000, 0.0000, 0.0026 and 0.0019) is more than the level of significance of 0.05. Hence, we conclude that each of the variables (EQUITY, FDEBT and TAX) exerts a statistically significant positive effect on IFRS adoption. We, therefore, REJECT the null hypothesis (H_0) in each case and ACCEPT the alternate (H_1) in all the three instances.

For the combined effect of all the variables, we look at the associated probability of the F-Statistic and compare it with the chosen level of significance (in this case $0.0000 \leq 0.005$). The total effect of the variables is, therefore, significant. The explanatory power of the variables is measured with the coefficient of determination which ranges between 1 and 0. In

this case, the figure ($R^2 = 0.777354$) shows that the factors considered in this study (equity, foreign debt capital and taxation) are very relevant in determining the dynamism of mandatory IFRS adoption.

DISCUSSION OF FINDINGS

This study seeks to investigate the effect of equity capital, foreign debt capital and taxation on the mandatory adoption of IFRS in Nigeria. With respect to equity, the findings confirm the a priori expectation that greater reliance on equity does not generate a negative effect on IFRS adoption. This position is strengthened by the Agency Theory (Jensen and Meckling, 1976) which states that as providers of capital become more distant from the organisation, the need for more disclosure becomes important. In the case of foreign debt capital, although accounting for bank financing is often focused on creditor protection through private channels as argued by Douppnik and Salter (1995), this could be difficult across international boundaries. Hence, IFRS adoption will also benefit suppliers of foreign debt as information need to be readily available for them. Concerning taxation as a source of revenue, we have also seen that in our own jurisdiction where revenue from crude oil commands greater prominence than corporate taxation, companies will continue to comply with international standards which government does not interfere with. This is in line with the assertion that governments that have greater control over managing the resources of a country, i.e., macro-economies, tend to become major players in shaping reporting standards (Alnajjar, 1986; Douppnik and Salter, 1993; Xiao et al., 2004).

5. CONCLUSION

There are several accounting-related factors that exercise one form of influence or another in the drive towards the mandatory adoption of IFRS in national jurisdictions. This study set out to investigate the effect of three of such factors: Equity, Foreign Debt Capital and Taxation in the dynamics of IFRS implementation in Nigeria. According to the findings of this study, we conclude that additional impetus towards equity finance, including stock market sources, will assist the efforts in the direction of implementation because of the need for disclosure and good corporate governance. The same applies to foreign debt capital as a source of funding where the suppliers of credit at the international level obviously will appreciate international best practices in reporting and disclosure. However, in the case of taxation, the continued dependence on crude oil as the major source of central revenue at the expense of corporate taxation, has not adversely affected IFRS adoption in Nigeria.

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AN ASSESSMENT OF CHEMISTRY STUDENTS' KNOWLEDGE/AWARENESS OF GLOBAL WARMING AND CLIMATE CHANGE IN LAGOS, NIGERIA

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ABSTRACT

The study was carried out to assess the knowledge/awareness level of Chemistry students on the issue of global warming and climate change in Lagos, Nigeria. Descriptive research survey design was utilized for the study. The sample consisted of 299 students chosen by random sampling. Students' awareness level about global warming and climate change questionnaire (SAGCQ) with a reliability coefficient of 0.75 was used to collect data. Three research questions and corresponding hypotheses were tested at 0.05 level of significance. Chi-square statistics was employed for data analysis. Results obtained showed that the female and male students did not differ in their level of awareness on the issue of global warming. There was no significant difference in the action taken by male and female students to mitigate climate change/global warming. School type did influence students' level of awareness. It was recommended that curriculum planners should make climate change/global warming a major topic instead of a sub-topic in the Chemistry curriculum for better awareness. Creation of awareness should start from the primary school and students should be made to carry out projects to mitigate this global menace.

Keywords: Global warming, Climate change, Knowledge/awareness, Chemistry, Lagos.

INTRODUCTION

Global warming and climate change are international issues that are of concern to every inhabitant of planet earth. Global warming is an increase in the temperature of the earth. It is an overall gradual increase in world temperature over a period of time (Bauer, 2013). World temperature is measured by taking the mean of the temperature of the earth and the ocean. This according to scientists has shown a steady upward trend over the decades. Ademiju 2013, opined that the terms 'climate change and global warming' are used synonymously. Global warming refers to confirmed increase in the earth's mean surface temperature over the last 200 years. Climate change is a long term shift in climate due to human activities and natural variability. According to Agbo (2011), Climate is the result of complex sets of interaction within the atmosphere as well as between atmospheres and oceans; land surfaces and their vegetation, snow and ice cover. It is the expectation of the weather between 30-35 years and beyond. The main elements of weather are temperature, rain, dew, humidity, wind, sunshine, mist, haze and cloud. The collective pattern of expressions of these elements over time becomes the climate of a place (Agbo, 2011). Human civilization and industrialisation lead to global warming. Greenhouse gases contribute a lot to global warming. Carbon (II) oxide (CO) is generated by incomplete combustion of automobile fossil fuels. Carbon (II) oxide combines with haemoglobin of the blood to form carboxy-haemoglobin which prevents the circulation of oxygen; hence causing headache, vomiting and death. Carbon (IV) oxide (CO₂) retains a particular amount of infra-red heat ray radiated by the earth. A greater amount of atmospheric carbon dioxide will result in greater retention of infra-red heat ray, giving rise to greenhouse effect; that is a gradual warming of the earth (Odesina, 2008).

Aside CO_2 , other gases like sulphur (IV) oxide (SO_2) and nitrogen (IV) Oxide (NO_2) are acidic, corrosive and poisonous. SO_2 is produced during the combustion of sulphur containing coal or petroleum. Oxides of nitrogen are produced by vehicles and power generating plants. SO_2 and NO_2 combine with rain water, when it rains, to form acid rain which is harmful to plants, animals, buildings and metallic structures. When inhaled as air, they cause irritation of throat, nose and the respiratory tissues. NO_2 and SO_2 are also generated during the manufacture of fertilizers in industries. Chlorofluorocarbons (cfc) are made by man and used as propellant in spray cans, coolants in refrigerator and in air conditioners and in the manufacture of plastic foams. The ultraviolet (UV) light in the upper atmosphere breaks off the free chlorine atom from a chlorofluorocarbon molecule. The free chlorine molecule attracts a molecule of oxygen to form an oxide of chlorine, ClO . The oxide now attaches itself to another oxygen atom to form oxygen molecule. Hence, the chlorine is further released to continue attacking the ozone layer. This process is repeated severally, and the ozone layer is depleted. Ozone layer is useful because it shields the earth from the ultra-violet radiation of the sun. So when the ozone layer is depleted, the UV-rays hit people on earth directly. Excess UV rays cause sunburn, cataract and skin cancer (Odesina, 2008).

Climate change is closely associated with global warming (Bauer, 2013). Climate can be defined as the average weather or the regular variation in weather in a region over a period of years (Ebuehi & Olusanya, 2013). Climate change also includes global cooling, which is as a result of human activities and greenhouse gases. This change in world climate could change the earth beyond recognition as unusual weather patterns lead to natural disasters (Bauer, 2013).

Nigeria contributes to CO_2 emission through gas flaring and deforestation even though the country is not heavily industrialized (Della, 2007). This increases the amount of greenhouse gases released to the atmosphere causing global warming. Rising sea level is a common problem faced by Nigerian coastal cities. Rising sea level is an important consequence of rising temperatures. Low-lying settlements on Nigeria's Atlantic coastline ranging from Lagos to the Niger delta are gradually been submerged. Possible changes that Nigeria will or is facing are: change in rainfall pattern, sea-level rise and salt water intrusion, loss of biodiversity, drought, habitat loss, fresh water depletion and pollution. Gas flaring in the Niger delta releases a lot of CO_2 into the atmosphere and worsens the climate conditions. In the southern tropical areas, variations in temperatures and rainfall are prevalent. There is increased rainfall and evapo-transpiration, leading to droughts in certain parts (Della, 2007). According to Della (2007), Nigeria's environmental problems are worsened by excessive soil cultivation leading to soil infertility and deforestation. Burning of toxic wastes at dump sites and oil spills are other environmental problems. In the 1990s, Nigeria was listed among 50 countries that had the highest emission of CO_2 and SO_2 with a total of 96.5 million metric tons. Della, 2007 asserted that by 2002, gas flaring would have contributed more greenhouse gases to the atmosphere than from other sources in sub-Saharan Africa put together. These activities increase the spread of diseases and the proneness to extremes of weather conditions. Knowledge and awareness are synonyms that possess similar meanings. They both mean to have clear or explicit information about a situation or circumstance. Knowledge could also mean familiarity or understanding gained through experience or study. Ibhaifidon, Ewuzie and Onuzulike (2013) opined that knowledge is enhanced by educational attainment and experience. During a study, they discovered that educational level determined the adults' awareness level of health implications of climate change on children. The study of Chemistry should afford science students some understanding of climate change and its implications. But in the opinion of the researcher, very little emphasis is placed on this issue

as it is taught as a small sub-heading of the topic: "Pollution" in Secondary School Chemistry. Nigerian students may not perceive climate change as a threat to mankind because it is taught with little or no emphasis. It is possible that primary school pupils may not be aware of this menace. This therefore, necessitates the investigation into assessment of Chemistry students' awareness level about climate change and global warming.

Global warming and resultant climate change are also felt in other parts of the world. In Europe, freezing temperatures have resulted in the loss of lives. Transport and navigation services were badly affected and thousands of people were cut off. The Danuba River which runs through about six countries was covered by ice and ships were confined to the ports for a long time. This river which flows from Austria to its mouth on the Black Sea was partially blocked by ice hindering transportation, fishing, irrigation and power generation activities (Information Nigeria, 2012). Britain too has been experiencing heavy snowfall and freezing temperatures which led to certain deaths. Italy braced up for another wave of freezing weather as soldiers worked hard to free villagers trapped in three metre of snow (Information Nigeria, 2012).

A student initiative called Plant-for-the-Planet Foundation, launched in 2007, in trying to help curb climate crises asserted that a tree helps take 10Kg of CO₂ out of the air each year. During a person's lifetime, a total of 3 tonnes of CO₂ could be removed from the environment. The Foundation went on to say that people living in countries endangered by global warming are also the ones least responsible for causing it. For instance, one United States citizen emits an average of 20 tonnes of CO₂ into the atmosphere in a year. A European produces 10 tonnes, a Chinese emits 4 tonnes while an African produces 0.5 tonne. The children who constitute the members of this foundation, proposed certain solutions to global warming problems. They recommended that all technology for a CO₂-free-lifestyle should be used. That is, people should use electric powered cars, electric bikes, and pool cars to minimize carbon dioxide emission. Billions of trees should be planted to help remove CO₂.

If children of the above named Foundation are aggressively involved in saving the world and saving their future by planting trees to reduce global warming; one then wonders what level of awareness of the Nigerian secondary school students have and what they could do or have done to save the earth. Secondary school Chemistry is expected to equip the Nigerian student with basic knowledge, skills, attitudes and competencies that will enable them to contribute to economic and technological growth of the nation. Nigerian students are supposed to adopt life-styles that do not promote environmental pollution and global warming. As global warming leads to climate change, the urban population that live in coastal cities are likely to be displaced by floods. Food security of the Nigerian citizens will be affected since economic activities like fish catches along the coast may drop.

There are many secondary schools in Lagos State; both private and public. The private schools are the non-State providers of education; run by individuals, faith-based groups, charity organizations and communities. Public schools are the government schools which are owned, funded and run by the Lagos State government. Previous study (by Alade and Ogbo, 2014) revealed that private schools (12 098) outnumber the public schools (639). Alade and Ogbo (2014) also stated that during a Monitoring Learning Achievement exercise conducted by Education Sector Support Programme in Nigeria in which public and private school students partook; it was discovered that private school students performed better. At this juncture one then wonders which school type is more knowledgeable about the issue of global warming and climate change in Lagos state.

This paper is hereby saddled with the duty of ascertaining how much knowledge Chemistry students possess on this crucial global issue; as this can be a determinant of what needs to be done to ensure that they too are at alert and well informed to combat the menace of global warming.

STATEMENT OF THE PROBLEM

Global change in climatic conditions is a problem of great concern to everybody on earth. In Nigeria, this manifests in the form of rise in sea levels, rise in temperature, desertification, floods, erosion and other environmental problems. Lagos state which is a coastal city, in recent years had torrential downpours that rendered many inhabitants homeless and some people dead. Extremes of temperatures, severe droughts and floods are experienced in Kaduna State and other parts of Northern Nigeria.

Information Nigeria, 2012, asserted that Nigeria's climatic regime will surely be severely disrupted such that forest and water resources will be at risk. Already, fuel wood (firewood) shortage is being experienced. Hydro-electric power generation and food production are adversely affected because farmlands are being washed away by flood water. Some State governments have started implementing measures to counter the effects of global warming in Nigeria. For instance, the Lagos State government had to order companies and families residing near the Bar beach, Ajegunle and Banana Island to relocate to safer locations.

A lot of work still needs to be done as regards sensitizing the public on the impact of global warming and climate change so that people will see the need to find solutions and adopt a more environmentally friendly life-style. Secondary school Chemistry curriculum should equip the Nigerian students with attitudes, skills and competencies that they can apply to meeting human needs and solving environmental problems associated with climate change and global warming.

Unfortunately, the Chemistry curriculum at the secondary school level places very little or no emphasis on the teaching of climate change/global warming which appears as "a minute" sub-heading under the topic: Pollution. Often times, this topic is skipped by the Chemistry teachers in a bid to cover other topics which they consider more important. The knowledge of climate change and global warming is of great importance to all and to the Chemistry student in particular. This is because it is an issue that threatens mankind and the Chemistry student by virtue of their chemical knowledge should act as ambassadors of change in their immediate societies; since it is only when a person is aware of imminent disaster that the person could prevent or tackle it.

We live in a world where little children from other parts of the world like Korea, Berlin, Germany, United Kingdom and America are already involved in aggressive world-wide campaigns of planting a million trees in each country of the world (Plant-for-the-Planet Foundation, 2007). The aim of these children is to save their future and jointly help arrest the effects of global warming. One then wonders the level of awareness of Nigerian students on this crucial issue that threatens human existence. This study therefore sets out to ascertain the level of awareness of Nigerian chemistry students and what they have done to help fight the menace called global warming.

PURPOSE OF THE STUDY

The purpose of this study is to ascertain the level of awareness of Chemistry students (in public and private schools) and find out what they could do to mitigate the effects of global warming and climate change in their environment.

RESEARCH QUESTIONS

The following research questions will guide the study:

1. What is the extent of Chemistry students' knowledge of global warming/climate change and its adverse effects?
2. What action(s) have chemistry students taken to mitigate the effects of global warming and climate change?
3. To what extent will the Chemistry students' knowledge about global warming and climate change differ between the public and private schools?

Research Hypotheses

The following null hypotheses will guide the study:

1. There will be no significant difference between the level of knowledge of male and female chemistry students on the issue of global warming and climate change.
2. There will be no significant gender difference in the action taken by chemistry students to mitigate the effects of global warming and climate change.
3. Chemistry students' knowledge about global warming and climate change will not significantly differ between the public and private schools.

Research Design: The Descriptive Survey research design will be employed for this study.

Population: The population for the study will be the Chemistry students in Senior Secondary Schools (SSS) in Lagos State, Nigeria.

SAMPLE AND SAMPLING PROCEDURE

There are 20 local government areas in Lagos State. Ikeja Local government was selected through hat and draw sampling technique. The sample for this study was drawn from schools in Ikeja Local Government area of Lagos State. The initial sample for the study consisted of about 299 participants. Simple random sampling was used to select five co-educational schools from the above local government area – three (3) private and two (2) public schools. This was based on the fact that there are more private schools than public schools in Ikeja Local Government Area of Lagos State. In each selected school, simple random sampling was used to select one stream of SS 2 students. All the students in the selected classes participated in the study.

INSTRUMENTATION

A researcher designed questionnaire titled Students' Awareness level about Global warming/Climate Change Questionnaire (SAGCQ) was used to elicit necessary information from the students. It is a 20-item instrument. There are two sections in the research instrument. The section A was used to obtain respondents' bio-data information which includes age, sex; class of study and name of school. Section B consists of two subheadings namely: "Awareness Level about Global Warming and Action Taken against Global warming". The questionnaire was subjected to scrutiny by lecturers in Educational Measurement at the University of Lagos. The test- retest reliability coefficient of the instrument was 0.75.

RESULT OF DATA ANALYSIS

Chi square statistics was employed to analyse the data obtained. This method of analysis was considered suitable because the data was expressed in frequencies, dichotomous and in categories.

Table 1: Students' Awareness Level of Global Warming and Climate Change

	AWARE	UNAWARE
TOTAL	209	90

MEAN	32.2	13.73
PERCENTAGE	70%	30%

Table 1, above shows a distribution of students' awareness level of climate change and global warming. Out of a total of 299 respondents, 209 representing 70% of the students were aware of global warming as against 30 % who were not aware of the issue of global warming.

Table 2: Gender versus Students' Awareness Level of Global Warming and Climate Change

GENDER	AWARE	UNAWARE	TOTAL
MALE	91(65.7%)	48(34.3%)	139(100%)
FEMALE	118(73.9%)	42(26.1%)	160(100%)
TOTAL	209	90	299

Table 2, above summarizes the frequencies of students' awareness level against their gender. The table showed that female students were more aware of global warming and climate change than the boys. 91 male students out of 139 were aware of the issue of global warming and climate change; while for the female, 118 out of 160 were aware while 42 were not.

Table 3: Chi Square Analysis of Gender and Level of Awareness of Global Warming and Climate Change

Fo	Fe	Fo-Fe	(Fo-Fe) ²	(Fo-Fe) ² / Fe
91	97.16	-6.16	37.95	0.391
48	41.84	6.16	37.95	0.907
118	111.84	6.16	37.95	0.339
42	48.16	-6.16	37.95	0.788
				2.425

Cal. $X^2 = 2.425$; Table value = 3.84; df = 1; $p < 0.05$

Table 3, above shows the chi square analysis of gender versus level of awareness of Chemistry students on the issue of global warming and climate change. The null hypothesis is hereby retained because the critical value (3.84) is greater than the calculated value (2.425).

Table 4: Gender and Students' Action against Global Warming and Climate change.

GENDER	AGREED	DISAGREED	TOTAL
MALE	82	42	124
FEMALE	120	55	175
TOTAL	202	97	299

Table 4 above showed that the female students appeared to have taken a little more action against this global menace than their male counterparts. This could be attributed to the fact that girls carry out more domestic chores than the boys in the society even though the difference is insignificant. In most families, it is the girls that run domestic errands like shopping and cleaning the environment. Girls tend to re-use and recycle materials like plastic bottles and bags thereby minimizing pollution of the environment.

Table 5: Chi Square Analysis of Gender and Students' Action against Global Warming/Climate Change.

Fo	Fe	Fo-Fe	(Fo-Fe) ²	(Fo-Fe) ² / Fe
82	83.77	-1.77	3.13	0.37
120	118.23	1.77	3.13	0.026
42	40.23	1.77	3.13	0.78
55	56.77	-1.77	3.13	0.055
				0.196

Cal. $X^2 = 0.196$; Table value = 3.84; df= 1; $p < 0.05$

Table 5, above shows the chi square analysis of Gender versus students' action against global warming. The research hypothesis is retained because the critical value (3.84) is greater than the calculated value of 0.196.

Table 6: School Type versus Students' Awareness Level of Global Warming/Climate Change

SCHOOL TYPE	AWARE	UNAWARE	TOTAL
PRIVATE	190 (188.03)*	19(20.97)	209
PUBLIC	79(80.97)	11(9.03)	90
TOTAL	269	30	299

Table 6, above shows the distribution of school type versus students' awareness level of global warming and climate change. *Figures in bracket represent the expected frequencies.

Table 7: Chi Square Analysis of School Type versus Students' Awareness Level

Fo	Fe	Fo-Fe	(Fo-Fe) ²	(Fo-Fe) ² / Fe
190	188.03	1.97	3.88	0.02
19	20.97	-1.97	3.88	0.19
79	80.97	-1.97	3.88	0.05
11	9.03	1.97	3.88	0.35
				0.61

Calc. $X^2 = 0.61$; Table (critical) value = 3.84; df=1: $p < 0.05$

Table 7 shows the Chi Square analysis of school type versus students' awareness level of global warming and climate change in selected Lagos State schools. The null hypothesis is accepted since the critical value (3.84) is greater than the calculated chi square value (0.61).

DISCUSSION OF RESULTS

Hypothesis 1

This states that there will be no significant difference between the level of knowledge of male and female chemistry students on the issue of global warming and climate change. Table 3 above shows the chi-square analysis of gender and level of awareness of students on the issue of global warming. The statistical analysis shows a calculated X^2 value of 2.425 which is less than the critical (table) value of 3.84 given 1 degree of freedom at 0.05 level of significance. Hence, the null hypothesis is hereby retained. This implies that there is no significant difference in the level of awareness between male and female students on the issue of global warming and climate change – meaning that both genders have almost equal knowledge. However, the results of the study carried out by Ebuehi and Olusanya, 2013; titled: "Climate change: Knowledge, Attitude and Practice among residents of Ifo L.G.A, Ogun State" showed that 57.6% of respondents had poor knowledge of climate change.

Hypothesis 2

There will be no significant gender difference in the action taken by chemistry students to mitigate the effects of global warming and climate change. Table 5 shows the Chi square analysis of gender and students' action against global warming and climate change. The calculated value of 0.196 is less than the critical value of 3.84 given 1 degree of freedom at 0.05 level of significance. The null hypothesis is hereby accepted. This means that there is no significant difference in the action taken by male and female students on the issue of global warming. The findings of this research is in conformity with the those of Ibafidon, Ewuzie and Onuzulike (2013) which showed that gender has no influence in determining the awareness of health implications of climate change on children among adults in Owerri, Nigeria. Also, the results of a study by Ebuehi and Oluasnya 2013 revealed that 69.8% of the residents of Ifo L.G.A in Ogun State, Nigeria had poor practices and knowledge concerning the mitigation of climate change.

Hypothesis 3

This hypothesis states that Chemistry students' knowledge about global warming and climate change will not significantly differ between the public and private schools. Table 7 shows the Chi square analysis of school type against students' awareness level on the issue of global warming and climate change. The calculated value of 0.61 is less than the critical value of 3.84 given 1 degree of freedom at 0.05 level of significance. The null hypothesis is hereby retained. This means that there is no significant difference in the level of awareness between the private and public school students on the issue of global warming. Even though table 6 shows that a greater percentage of private school students were more knowledgeable than the public school students on this issue. It is however not in consonance with a Monitoring Learning Achievement exercise conducted by the Education Sector Support Programme in Nigeria during which students of both public and private schools partook (Alade & Ogbo, 2014). The private school students performed better. This is probably due to the fact that students in public and private schools are both taught from the same Chemistry curriculum which lays no emphasis on the issue of global warming and climate change.

CONCLUSION

This study was carried out to assess the Chemistry students' knowledge/Awareness level on the issue of global warming and climate change in Lagos, Nigeria. The following conclusions can be drawn based on the results of the study:

1. The female students appeared to possess almost the same level of knowledge on the issue of global warming/climate change as their male counterparts.
2. There was no significant difference in the actions taken by male and female students to mitigate the effects of global warming/climate change in their locality.
3. Private and public school Chemistry students did not significantly differ on their level of awareness about the issue of climate change and global warming.

If global warming is a problem that affects everybody on planet earth, then everyone must play a part in curbing this global problem. The following suggestions could help in tackling global warming. People should avoid the use of plastic bags by taking a re-usable cloth bag for carrying their groceries when shopping. Doing this reduces the need to throw away non-biodegradable plastic bags into the environment and contributing to global warming. Replacing high energy consuming bulbs with power saving electric bulbs will prevent damaging effects of global warming and reduce electricity bill money. Also, farming your own food or buying food grown in your own area will help to cut down on greenhouse gases emitted by farm tractors that run on fossil fuel. This reduces petrol needed to ship food and

gases emitted into the atmosphere. Buy and use recycled products because it reduces the need to cut down more trees in the environment and reduce the amount of waste in the landfills. Global warming can be prevented by not driving one's vehicle always, taking public transportation or better still using battery powered cars. Riding a bicycle or walking to places one wants to go to is not only good for the environment, but for our health.

RECOMMENDATIONS

The following recommendations were made based on the findings of the study:

1. Educational Curriculum planners should make the issue of climate change and global warming a full topic with greater emphasis instead of a sub-topic in the Chemistry curriculum. This will help both male and female students to have greater awareness of the implications of this global menace.
2. Non-governmental and government agencies should help to sponsor Climate Change Clubs in all primary, secondary and tertiary schools where information on zero tolerance to unsustainable ways of living will be disseminated.
3. Every student, aside Chemistry students should be made to carry out compulsory tangible projects on ways of curbing or tackling the harmful effects of climate change and global warming before graduation.

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TRANSFORMING FOOD PRODUCTION THROUGH HYGIENIC MEAT PROCESSING IN ABATTOIRS IN NIGERIA

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ABSTRACT

*Prevalence of food contamination and poisoning from unhygienic practices in food industry demands urgent attention to improve food security especially with need for essential protein, reduce morbidity and mortality among meat consumers in conformity with Millennium/Sustainable Development Goals (M/SDGs). However, the need to examine slaughterhouses and meat outlets for unhealthy practices is the purpose of this study. Descriptive survey research method was adopted while validated Modified Health Impact Questionnaire (MHeiQ) Cronbach's alpha $\alpha=0.78$ (heiQ, Osborne, Elsworth &Whitfield, 2013) utilised various techniques including: Positive and active engagement; health directed behaviour; skill acquisition; constructive attitudes; self monitoring; social integration and emotional well- being to elicit information on current status of hygiene, waste disposal, meat handling, sanitation, transportation, availability and utilisation of safety gadgets in abattoirs. Population comprised staff of three (3) abattoirs namely: Harmony and Kaara abattoirs and Ilaje slaughter slab in Lagos. Three hundred participants were selected through purposive sampling technique. Data analysis employed descriptive statistics of frequency counts and percentages while multiple regression statistics determined relationships between variables and contributions to safe meat production. Hypotheses were tested at 0.05 alpha level. **Result:** Detrimental health practices were observed. **Conclusion:** There is need to initiate Behaviour Change for Positive health practices to transform meat production. **Recommendation:** Regular training for Butchers, enforcement of safety standard and health policies with monitoring by Public health officers. **Implication to Health Education:** Training on Self-Management Health Interventions using the Trans-theoretical Health Model (Prochaska & Velicer,1997) was initiated to encourage gradual transformation of abattoir staff.*

Keyword: Transforming, food, hygienic processing, abattoir.

INTRODUCTION

The need to provide the human body with essential food nutrients derived from meat /animal protein has been associated with some health problems arising from procedures and activities in the meat processing plants referred to as abattoirs located in all states of Nigeria. However, meat production has great challenges which include: maintenance of food safety standard, reduction of client exposure to transferable animal related diseases (zoo noses), production of high quality meat at the right price and effective operations with healthy workforce. Nwanta, Onunkwo, Ezenduka, Phil-Eze, & Egege (2008) observed that the nation's desire to achieve high level of food safety and quality of life may be a mirage considering the poor state of meat processing plants and current challenges militating against the establishment. In view of these observations the scholars recommended that Local governments and private entrepreneurs should be encouraged to establish and manage abattoirs, slaughter houses and slabs more effectively. The World Health Organisation (WHO,1946) defined environmental sanitation as "the control of all those factors in man's physical environment, which exercise or may exercise a deleterious effect on his physical development, health and survival." In

general, sanitation covers arrangements for drainage of rain water and effluents, collection and disposal of garbage, and removal of human excreta.

Proper sanitation is a necessary pre-requisite for improvement in general health standards, productivity of labour force and good quality of life. Adeoti (2001) reported that ‘the stimulus-response notion of environmental policy as a main driver of firm’s technology investment in pollution abatement is doubtful in developing countries where environmental policy is considered to be relatively weak. The scholar provided evidence from Nigeria with interesting findings that factors relating to firm-level technological capabilities, firm-characteristics and environmental policy implementation strategy have profound implication for firm’s technology responses aimed at controlling industrial pollution. Egan, Raats, Grubb Eves, Lumbers, Dean,& Adams (2007) associated hygiene with training need in abattoir workers.

LITERATURE

Alonge, (2005) described an abattoir as a special facility designed and licensed for receiving, holding, slaughtering and inspecting animals and meat products before release to the public. While Alemayehe & Mezgebu,(2003) observed that a slaughterhouse or abattoir is a general term applied to an establishment engaged in killing livestock, or one or more species, for human consumption. It varies in size from the back yard of a local butcher to the great meat processing plants. In most countries slaughterhouses are either privately owned, depending on the local need, or are large premises capable of providing slaughtering accumulation for an entire city and are administered by the Local Government Authorities(LGAs). Studies from Nigeria and Ghana showed that many abattoir managers either deposit waste materials in the immediate environment or dispose of them directly into water bodies, some of which serve as sources of drinking water for people including the abattoir staff (Osibanjo& Adie, 2007).

Theoretical Frame work: The study was underpinned by the Trans theoretical Model of Change and Interactive Health Literacy Framework.

Trans-theoretical Model of Change

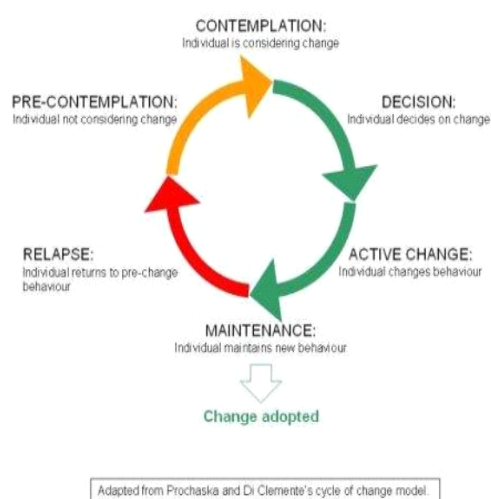


Fig.1
Source: Prochaska J.O. & Velicer W.F(1997)

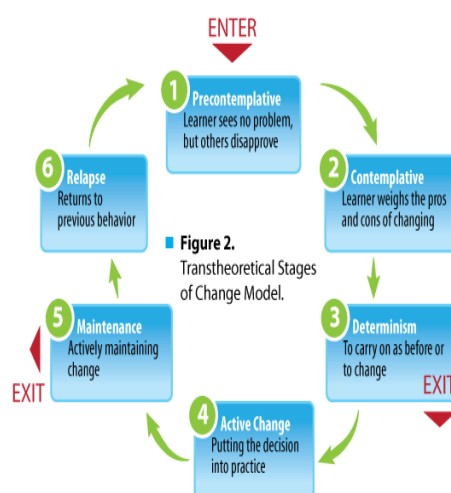


Fig 2.Interactive health literacy
Source: Parker R.(2009) Training Model.

Meat processing involves choice of animal, slaughtering, handling and transporting carcasses to the various outlets, sales and management of slaughter slabs and the Butcher’s table are seen to be carried out in unhygienic manner capable of contaminating the meet thereby

constituting heavy source of infection by meat related micro-organisms. Despite the effort of the Lagos state government to provide Meat Vans Butchers are seen to transport meat in unhygienic vehicles, motorcycles and commercial taxis. The market places have become impossible and some Butchers are seen chewing raw meat regarded as very unhealthy. It is feared that if nothing is done slaughter houses and abattoirs could become sources of exposures to deadly diseases instead of nutrient suppliers. The researcher therefore examined the meat production process if they conform with the Eight General hygiene Principles (GHP) through food Chain that include: (1) Primary production (2) Design of establishment (3) Control operation (4) Maintenance & sanitation (5) Personnel hygiene (6) Transportation (7) Product information& consumer awareness(8)Training practices in three meat plants identified in this study.

RESEARCH HYPOTHESES

The following hypotheses guided the study and they include:

1. The extent of personal hygiene practice in abattoirs will not significantly influence meat production.
- 2 Knowledge of Communicable animal related diseases will not influence waste disposal practices in abattoirs.
- 3 There will be no relationship between abattoir practices and the quality of meat produced

MATERIALS AND METHODS

The descriptive survey research method was adopted and a researcher structured and validated Modified Health Impact Questionnaire (MHieQ) $r=0.78$ was used to elicit information on the current status of personal hygiene, waste disposal, meat handling meat transportation, availability and utilisation of safety gadgets and sanitation practices within the abattoir. Study population comprised staff at three (3) abattoir facilities namely: Harmony, Kaara and Ilaje slaughter slab all in Lagos State. Three hundred (300) participants were selected through purposive sampling technique as study sample. Data collected was subjected to descriptive statistics of frequency counts and percentages while the multiple regression statistics were used to determine the relationships between variables studied and their contributions to the hygienic practices for safe meat production. Three hypotheses were tested at 0.05 level of significance.

The consent of the Abattoir authorities and employees was obtained using a letter of introduction from the department of Human Kinetics & Health Education, Faculty of Education, University of Lagos and surveillance of the respective abattoir/ slaughter slab was conducted to observe the various activities within the meat industry and to familiarize researcher with the Butchers and support staff. The data collection process involved the administration of 300 copies of the Modified Health Impact Questionnaire (MHieQ) at various locations namely: Harmony and Kaara abattoirs and Ilaje slaughter slab all in Lagos State within six (6) weeks.

RESULTS: Demographic Data of participants

Tabl e 1: Frequency data Abattoirs & Locations

Abattoir					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ileye	100	33.3	33.3	33.3
	Kaara	100	33.3	33.3	66.7
	Harmony	100	33.3	33.3	100.0
	Total	300	100.0	100.0	

Employees of three abattoirs namely: Ileye, Kaara and Harmony abattoirs participated in the study with 100 participants selected from each facility.

Table 3: Frequency data on Work Experience of Employees.

Experience		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 Years	17	5.7	5.7	5.7
	6-12 Years	72	24.0	24.0	29.7
	13-25 Years	130	43.3	43.3	73.0
	26 Years and Above	81	27.0	27.0	100.0
	Total	300	100.0	100.0	

The data collected revealed that the years of work experience is between 1 year to 26 years.

Table 5: ONE Way Analysis of Variance(ANOVA) of data on Variables studied {Personal Hygiene; Waste Disposal, Meat Handling, Meat Transportation, Sanitation Practice, Safety Gadgets at Abattoirs).

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Personal Hygiene	Between Groups	.333	2	.166	2.358	.096
	Within Groups	20.960	297	.071		
	Total	21.293	299			
Waste Disposal	Between Groups	1.620	2	.810	16.313	.000
	Within Groups	14.749	297	.050		
	Total	16.369	299			
Meat Handling	Between Groups	2.280	2	1.140	11.599	.000
	Within Groups	29.197	297	.098		
	Total	31.477	299			
Meat Transportation	Between Groups	1.341	2	.670	13.835	.000
	Within Groups	14.389	297	.048		
	Total	15.729	299			
Sanitation Practice	Between Groups	3.237	2	1.619	6.795	.001
	Within Groups	70.739	297	.238		
	Total	73.976	299			
Safety Gadgets	Between Groups	.985	2	.492	1.584	.207
	Within Groups	92.334	297	.311		
	Total	93.319	299			

Table 5: F- ratio values for the variables studied revealed: Hygiene= 2.358; Waste disposal= 16.313; Meat handling= 11.599; Meat Transportation=13.835; Sanitation=6.795 and Safety Gadgets=1.584; $P < 0.05$ indicating significant contributions to safe meat production. In addition these F-ratio values provided answers for the three hypotheses raised in this study.

Discussion of findings

The extent of personal hygiene practices in abattoirs revealed Hygiene F-ratio = 2.358 indicating the need to promote personal hygiene in abattoirs for safe meat processing. This was corroborated by Bello, Lawal, Dzikwi, Maikai, Imam, Sanusi, (2008) that observed deplorable condition of the abattoirs in Northern Nigeria and unhygienic conditions under

which animals were slaughtered and processed. Okoli, Aladi, Etuk, Opara, Anyanwu, & Okeudo, (2005) confirmed deplorable, unhygienic conditions at Bodija Municipal abattoir (South-Western Nigeria) and Owerri (South-Eastern Nigeria) respectively and concluded that, there was a public health danger associated with such unhygienic conditions. Dwivedi & Sharma, (2007) noted that practices with regard to body cleanliness vary according to seasons and reported that India is still lags behind many countries in the field of environmental sanitation.

To ascertain the knowledge of Communicable animal related diseases by abattoir workers various practices were considered which include: waste management, meat handling, sanitation and utilisation of preventive gadgets which yielded respective F- ratio values with significant contributions and awareness by workers. Lucas & Gilles, (1973) and Nwanta, Onunkwo, Ezenduka, Phil-Eze & Egege, (2012) asserted that the upsurge of prevalence of communicable diseases such as Tuberculosis, Cysticercosis, Trichinosis are additional pointers to abattoirs and slaughter houses as sources of diseases. Surveillance reports indicated that they pose serious environmental health risks because they are transferable by hosts. Li, (2009) opined that deterioration of the cleaning standard may occur if microorganisms are transmitted to well-cleaned surfaces from unwashed hands before processing starts.

Waste disposal contribution value of F-ratio = 16.313 emphasises waste disposal for safe meat production. Adelegan, (2002) & Olanike, (2002) reported high pollution load generated from abattoir wastewater in South-Western Nigeria. While Lawan, Bello, Kwaga, & Raji (2013) confirmed a clear evidence that the meat industry has the potential for generating large quantities of solid wastes and wastewater with a high biochemical and chemical oxygen demand. The scholar also reported that in Nigeria, many slaughterhouses dispose of their waste directly into streams or rivers and use water from the same source to wash slaughtered meat. Similar situation were observed in most private and government abattoirs and noted the need for review of the situation on food safety in Nigeria.

Bello & Oyedemi (2009) and WHO (2000) asserted that the production, handling, sales and consumption of poor quality animal food products are serious public health problems in the country. The F- ratio value for Meat handling= 11.599. Dwivedi & Sharma, (2007) confirmed that most of the problems in the country are due to defective environment, which in turn rob people of their health, destroy their livelihoods, and undermine their overall development potentials. Cadmus, Olugasa, & Ogundipe, (1999) observed the need for clean environment and water in hygiene practices.

To ascertain if any relationship exist between variables of abattoir practices of hygiene, meat handling, sanitation, waste disposal, utilisation of safety gadgets, meat handling and transportation and the quality of meat produced showed F- ratio values indicating significant contributions from each variable: Hygiene= 2.358; Waste disposal= 16.313; Meat handling= 11.599; Meat Transportation=13.835; Sanitation=6.795 and Safety Gadgets=1.584, The Red Meat Abattoir Association, (2010) declared that Abattoir operations are meant to recover the edible portions of slaughtered animals for human consumption. Steffen & Kirsten (1989) observed that the solid waste consists mainly of bones, undigested ingest and occasionally aborted foetuses while the liquid waste comprise blood, urine, water, dissolved solids and gut contents. Adelegan, (2002) argued that the practice is mainly due to lack of or inadequate waste recovery and treatment facilities and ensure that the workers remain free from diseases, there is need to utilise preventive services. The F -ratio for application of protective Safety Gadgets=1.584. Macan, Kanceljak & Macan (1995) observed that adequate

skin protection with over run gowns and the use of hand gloves will reduce skin contact with chemicals, extreme temperatures of hot and cold as exist in work environment and the high incidence of skin diseases among industrial workers. Emejor, (2013) also confirmed poor abattoir culture in Nigeria.

IMPLICATIONS ON HEALTH EDUCATION- INTERVENTION PROGRAMME

Based on the findings and the discussions generated the researchers observed the need to bridge the Health education gap provided by insufficient knowledge. Inadequate or problematic health literacy is a key determinant of health, possible high-prevalence of animal related diseases and obstacle to development in the Meat industry. An Health Intervention programme was designed, proposed for the Abattoir Staff through the application of the Trans- theoretical Model of Change inculcating health literacy. (Prochaska. & Velicer 1997): Fig 1 proposed the stages of (1)Pre-Contemplation(not considering change); (2) Contemplation (considering change);(3) Decision (individual decides to change); (4)Active Change(individual changes behaviour) and (5) Relapse(Individual returns to pre- change behaviour).

CONCLUSION

The study revealed that there is a reasonable gap on meat safety knowledge by abattoir and butcher shop workers. Due attention should be given by the government to improve the meat safety knowledge and the quality standard of meat processed. This study clearly defined the level of meat processed in abattoir in Lagos, Nigeria. The attainment of good hygiene and cleaning standard depends on the knowledge of hygiene in meat processing.

RECOMMENDATION

The study recommended that the authorities of the abattoirs should consider the following:

- 1 Provide supervisor from the Ministry of Health that whose interest is not commercialised.
- 2 Employee should be permanent staff to retain trained staff.
- 3 Meat Hygiene skills and sanitation programmes should have schedules for capacity building of workers.
- 4 Disease prevention and Health Education instructions should be displayed as Information, Communication, Education(IEC) materials such as: posters, hand bills translated to the three Nigerian Languages.
- 5 Local Government presence should be felt in Abattoirs to avoid sharp practices and wrong Health behaviours.
- 6 Health Officers should monitor abattoirs especially Sanitary Inspector to make unscheduled visits and defaulters punished with sanctions.

Table 6: SCHEDULE OF TRAINING/ HEALTH EDUCATION INTERVENTION

Session	Duration	Content	Training Objective	Activity
<i>session 1</i>	<i>30 minutes</i>	<i>Personal cleanliness</i>	After the completed module, the participants should be able to recognize the risk involved in working in a filthy environment. Be able to understand the appropriate standard of personal cleanliness.	Describe the standard of personal cleanliness. Show the participants items that can be used to encourage personal

				cleanliness
<i>Session 2</i>	<i>30 minutes</i>	<i>Meat Hygiene</i>	It is expected that after completion of this module, participants will see the need to attitude during meat slaughtering and understand their role to be hygiene conscious during and after slaughter. It will also discuss equipment cleanliness	Explains the step by step procedure in meat processing hygiene according to Food Agriculture Organization
<i>Session 3</i>	<i>30 minutes</i>	<i>Diseases associated with meat</i>	At the end of this module, the diseases associated with meat and the risk involved if a butcher is infected. The need to do a health check up at intervals will also be discussed	Describes the symptoms of diseases associated with meat handling, preparing and packaging.
<i>Session 4</i>	<i>30 minutes</i>	<i>Participation in sanitation</i>	After this module, the participants will become familiar with safer ways to sanitize their work environment and keep it free it from rodents, wild carnivores and their role in joint the effort.	Demonstrate ways to sanitize the work environment and the intervals at which it should be sanitized
<i>Session 5</i>	<i>30 minutes</i>	<i>Personal Protective Equipment(PPE)</i>	This module will enable participants to identify the different types of PPE needed in the work environment and how it is used	Demonstrate the utilization of the PPE and benefit of each.

ACKNOWLEDGEMENTS

This study was permitted by the Ministry of Agriculture and Department of Human Kinetics and Health Education. The Director of Veterinary Harmony Abattoir and Chairmen of Various groups. The authors will like to thank Dr. Idris, Mr Moses and Alhaji Tanko for their support during this study.

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CRASH HELMET USE AND LEGISLATION AMONGST COMMERCIAL MOTORCYCLIST IN LAGOS METROPOLIS

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ABSTRACT

There are many Government policies that has been formulated to curb the prevalence of motorcycle crashes in Lagos state, ranging from compulsory use of crash helmets and ban from plighting some routes within the state, despite the effort of the Government, it has been observed that the motorcycle riders do not adhere to the rules. This paper explores the use of crash helmets amongst commercial motorcyclist. The sample size for this study was three hundred and nineteen (n=319) Commercial motorcyclists. The simple random sampling method was utilized to select study locations. The research instrument was a researcher developed questionnaire. The items included in the questionnaire were formulated based on the variables tested. Four point Likert scale was adopted. The socio economic data was subjected to descriptive statistics while hypotheses was tested with inferential statistics of Chi-square at 0.05 level of significance. Findings of the study showed that a larger percentage precisely 61% of the respondent has SSCE and 27% of the commercial motorcyclist has School Leaving Certificate, most of which are not health and safety literates. Due to this fact, they do not perceive helmet as a significant protective device. Government should ensure stricter legislative laws for offenders who do not comply with usage of the crash helmet. The paper advocates for policies to control, enforce and regulate the activities of commercial motorcyclists by relevant government security agencies such as the Federal Roads Safety Corps

Key words: *crash helmet, perception, commercial motorcyclist, legislation*

INTRODUCTION

The motorcycle has become a major means of transport in Nigeria, and it is very likely that it will gain more acceptance among the population in the near future (Popoola, 2003). This is due to the fact that other means of transport such as taxis and buses are relatively scarce compared to the number of the population, and on the other hand the quality of the road network often does not allow other vehicles than the motorcycle. Finally, it is much cheaper than a car and offers to a lot of unemployed men an opportunity to open a kind of “transport business”. Motorcyclists are more prone to crash injuries than car occupants because motorcycles are unenclosed, leaving riders vulnerable to contact with hard road surfaces. This is why wearing a helmet, as well as other protective clothing, is so important. Helmets are the principal countermeasure for reducing crash-related head injuries, the leading cause of death among unhelmeted riders (National Highway Traffic Safety Administration, 2007).

Wearing a helmet has been shown to decrease the risk and severity of injuries among motorcyclists by about 70%, the likelihood of death by almost 40%, and to substantially reduce the costs of health care associated with such crashes (WHO, 2014). Helmet use consistently has been shown to reduce motorcycle crash-related injuries and deaths, and the most effective strategy to increase helmet use is enactment of universal helmet laws (National Highway Traffic Safety Administration, 2011).

In January 2009, the helmet use law was enacted which brought about different reactions from the motorcyclist (Lagos State Government 2009). According to an interview by This

Day Newspaper 2009, some of the motorcyclist has mixed reactions from fear of infection to cost of procurement of two helmets which is suppose to serve the rider and his passengers. The law was enacted, however the implementation as some had feared was not well enforced by the appropriate authorities. Some riders were often found without the crash helmet while some wore helmet without the inclusion of the passenger. In 2012, Lagos State Government published guidelines for route exemption for motorcycles operation within the state. Section 2 (2.7) states that everyone on motorcycle either as a rider or passenger, must wear protective helmet. It is the responsibility of the owner or rider to provide the passenger with the protective helmet (Lagos State Government 2012). Motorcycle helmet use has been suggested to be an effective way to reduce death and disability after traffic collisions, and enactment of universal helmet laws has been suggested as a means to enforce helmet use (Byrnes &Gerberich, 2012) .

Motorcycle helmet laws effectively promote helmet use compliance, reduce morbidity and mortality in motorcycle crashes, and lower the health care costs and associated societal burdens of these crash victims (Derrick & Faucher ,2009). Despite the effort of the Lagos State law, it has been observed that the law enforcement agents are often lenient with enforcing the helmet use law especially during campaign for a new administrations. Will the inconsistency in enforcement of the law by enforcement agencies be at detriment to the regular use?

LITERATURE

The Helmet

A motorcycle helmet is a type of protective headgear used by motorcycle riders. The primary goal of a motorcycle helmet is motorcycle safety - to protect the rider's head during impact, thus preventing or reducing head injury or saving the rider's life. Some helmets provide additional conveniences, such as ventilation, face shields, ear protection and intercom (Wikipedia, 2006). Wearing a helmet is the single most effective way of reducing head injuries and fatalities resulting from motorcycle crashes. Wearing a helmet has been shown to decrease the risk and severity of injuries among motorcyclists by about 70%, the likelihood of death by almost 40%, and to substantially reduce the costs of health care associated with such crashes (World Health Organization 2006)

Diagram of a standard crash helmet



(o'connor, 2005)

How the helmet works

A crash helmet aims to reduce the risk of serious head and brain injuries by reducing the impact of a force or collision to the head. A crash helmet works in three ways:

It reduces the deceleration of the skull, and hence the brain movement, by managing the impact. The soft material incorporated in the helmet absorbs some of the impact and therefore the head comes to a halt more slowly. This means that the brain does not hit the skull with such great force.

It spreads the forces of the impact over a greater surface area so that they are not concentrated on particular areas of the skull.

It prevents direct contact between the skull and the impacting object by acting as a mechanical barrier between the head and the object (World Health Organization, 2006).

RESEARCH QUESTIONS

1. Will commercial motorcyclist in Lagos metropolis consider helmet as a significant protective device?
2. Will inability of law enforcement agencies to implement safety laws be a factor in the use of helmet by commercial motorcyclist in Lagos metropolis?

RESEARCH HYPOTHESES

1. Commercial motorcyclist in Lagos metropolis will not consider helmet as a significant protective device
2. Inability of law enforcement agencies to implement traffic rules will not be a significant factor in the use of helmet by commercial motorcyclist in Lagos metropolis.

MATERIALS AND METHODS

The population of the study comprised motorcyclist in Lagos State. The study location were selected using simple random sampling method. The location includes Fadeyi, Berger, Ojodu, Agege, Ishaga, Ajuwon, Ogba, and Ikeja. The sample was purposively selected taking into consideration the following factors: a spread of motorcyclist in the different study location; the nature of their work requires them to move around. A total of three hundred and nineteen (n=319) were selected for the study.

A self-developed and validated questionnaire “Crash helmet use amongst motorcyclist” (CHUAM) was the only instrument used for data collection. The questionnaire had two parts: Sections A and B. Section A solicited demographic information on the respondents. The section also asked questions on availability of helmet for rider and passengers, the standard of the helmet purchased, and on comfortability of passengers when asked to use the crash helmet. In Section B of the questionnaire, questions regarding the perception of crash helmet as significant and effort of the law enforcement agencies were raised. The modified Likert scale format was used in this section. The face and content validity was used to determine the validity of the instrument while the Test Re-test method of reliability was used to measure the reliability of the instrument with an r value of 0.87

PROCEDURE FOR DATA COLLECTION

Four research assistants was recruited from the Department of Human Kinetics and Health Education, University of Lagos was trained on the use of the questionnaire. The research assistants and the researcher administered the questionnaire on the respondents. Due to the nature of the respondents work, questionnaire was administered and collected on the spot.

DATA ANALYSIS

The descriptive statistics of simple percentage and frequency count was used to present data while the inferential statistics of Chi-square was used to test the hypotheses at 0.05 alpha level.

RESULTS

Table 1: Socio demographic characteristics of respondents

Characteristics	Responses	freq(%)
Age	18-25 yrs	45(14.1)
	26-32yrs	127(37.9)
	33-39yrs	82(25.7)
	40-46yrs	38(11.9)
	47 yrs and above	27(8.5)
Educational status	School Leaving Certificate	88(27.6)
	SSCE	197(61.8)
	B.sc/HND	27(8.5)
Study Location	Berger	34(10.7)
	Fadeyi	26(8.2)
	Ojodu	46(14.2)
	Ajuwon	24(7.5)
	Ishaga	25(7.8)
	Akute	28(8.8)
	Ogba	61(19.1)
	Ikeja	75(23.5)

Table 1 presents information on socio demographic characteristics of the respondents which clearly depicts that the motorcyclist has an average of 26-32yrs which was 37.9% of the sample while 33-39yrs constituted 25.7 %. The educational status of the motorcyclist shows that the respondents were mostly people who concluded senior secondary school (61.8%) while school leaving certificate holders was 27.6% and B.Sc./HND degree holder constitute 8.5%. In conclusion, the respondents depended on the accessibility of the motorcyclists. Majority of the respondents were selected from Ikeja with 23.5% followed by Ogba with 61% and Ojodu with 14.2%.

Table 2: Responses on Helmet Utility by Motorcyclist

S/N	Variable	Freq (%)
1	Do you have helmets	
	Yes	194(60.8)
	No	120(37.6)
2	Do you have a standard helmet	
	Yes	274(85.9)
	No	43(13.5)
3	Do your passengers use helmets	
	Sometimes	103(32.3)
	Not often	119(37.3)
	Always	94(29.5)
4	Are your passengers comfortable with helmet use	
	Not comfortable	155(48.6)

	To some great extent	105(32.9)
	To a great extent	55(17.2)
5	Helmet causes heat	
	Yes	158(49.5)
	No	156(48.6)

Table 3: Research Question 1

S/N	Helmet as a Significant Protective Device?	SD (%)	D (%)	A (%)	SA (%)
1	<i>Helmet cannot protect, only God protects</i>	27(8.5)	49(15.4)	86(27.0)	151(47.3)
2	<i>Helmet can save life in case of accident</i>	43(13.5)	116(36.4)	91(28.5)	62(19.4)
3	<i>Diseases can be contracted by sharing helmet</i>	43(13.5)	89(27.9)	109(34.2)	72(22.6)
4	<i>I use helmet only for fear of being arrested</i>	72(22.6)	69(21.6)	92(28.8)	77(24.1)

Table 3 shows that majority disagreed that helmet use can save life in case of occurrence and the respondent agreed that sharing of helmet can cause contraction of diseases while most of the motorcyclist interviewed for the study agreed that they only utilize the helmet because of fear of getting arrested by the police.

Table 4: Research Question 2

S/N	Efforts of Law Enforcement Agencies	SD (%)	D (%)	A (%)	SA (%)
1	<i>Law enforcement agents do not use crash helmet</i>	22(6.9)	63(19.7)	101(31.7)	126(39.5)
2	<i>Traffic warden are not bothered if helmet is worn</i>	47(14.7)	114(35.7)	100(31.3)	52(16.3)
3	<i>Enforcement agents are inconsistent with enforcing use</i>	71(22.3)	82(25.7)	108(33.9)	52(16.3)
4	<i>Police have taken money from me</i>	50(15.7)	76(23.8)	88(27.6)	97(30.4)

Table 4 shows that police often take money from the motorcyclist as majority of the agreed 27.6% and 30.4% strongly agreed while 15.7% strongly disagreed and 23.8% disagreed. Question 1 shows that majority of the law enforcement do not use helmet when they ride on a motorcycle as 71.2 % agreed while 26.6% disagreed.

Table 5 Summary of Chi-square Analysis of hypotheses 1&2 at 0.05

s/n	variable	df	P value	X ² cal Value
1	Helmet as a significant protective device	3	0.000	25.923
2	Efforts of Law Enforcement Agencies	6	0.059	12.117

DISCUSSION OF FINDINGS

Hypothesis 1 states that commercial motorcyclist in Lagos metropolis will not consider helmet as a significant protective device. The result of the study shows that commercial motorcyclist will consider helmet as a significant protective device. Servadei, (2003), found out that the main risk factor for motorized two-wheeler users is the non-use of crash helmets. Use of helmets has been shown to reduce fatal and serious head injuries by between 20% and 45% and to be the most successful approach for preventing injury among motorized two-wheeler riders. According to World Health Organization, (2006) a helmet aims to reduce the risk of serious head and brain injuries by reducing the impact of a force or collision to the head however the attitude of the riders is an important factor to whether it will be used or not.

Hypothesis 2 states that the inability of law enforcement agencies to implement traffic rules will not be a significant factor in the use of helmet by commercial motorcyclist in Lagos metropolis. The study reveals that the Law enforcement agents ability to ensure compliance will be a great effort to ensure use by riders without asking for money. Gilchrist, Schieber, Leadbetter and Davidson (2000) postulated that without enforcement, the state and local laws did not prompt helmet use in the community, yet active police enforcement, coupled with helmet giveaways and education, was effective and lasting.

CONCLUSION AND RECOMMENDATIONS

Motorcycle is a trending mode of public transportation in Nigeria with preponderances on Lagos State (Olagunju, 2010). With the alarming rate of accident, the Lagos State Government has looked into several strategies of curbing this public means of transportation from being a nuisance to the society.

Government should make stricter legislative laws that suggest that when a motorcycle is purchased, the acquisition of an approved helmet should be mandated, or at least encouraged. Monitoring and enforcing the law rigorously is the key to success of each piece of legislation. Unfortunately legislations in Nigeria are often carried out with weak enforcement programs. The cause of weaknesses could be several issues. The most important one is empowerment of the law enforcement agents. The Government should stick to legislations that will preserve the life of its citizens and not shift grounds for sentiments, political gains or ulterior motives. As individuals in the community, people should be enlightened on how to behave responsibly by adhering to road safety use and gadgets that will reduce causality and mortality rates like wearing a crash helmet when riding on a motorcycle. The Federal Road Safety need to carry out repeated educative programs to enlighten the commercial motorcycle riders and the general public on this very important simple safety precaution- the need to always use crash helmet either as rider or as a passenger. Achieving a better has safer environment is not solely the responsibility of the Government. The community members have a part to play.

ACKNOWLEDGMENTS

A special thanks to Dr E.A Haastrup, Department of Human Kinetics and Health Education University of Lagos for support, guidance in supervision of the study. Mrs Omolade Aladesokun for the assistance rendered during the data collection.

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INFLUENCE OF WASTE MANAGEMENT ON ENVIRONMENTAL INSUCURITY AMONG RESIDENTS IN LAGOS

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ABSTRACT

Disposing of wastes in urban cities has been a major health threat in the society, particularly in Ejigbo area of Lagos State.

Main objective

This study therefore examine the influence of waste management on environmental insecurity among sub-urban residents in Ejigbo community, Lagos State.

Methods

Descriptive survey research design was used for the study. Convenience sampling technique was used to sample 500 respondents. The research instrument was revalidated using crombach method of reliability for internal consistency and the result yielded 0.71 alpha. Research hypotheses were tested using t-test statistical tool and the result held at 0.05 alpha level.

Results

The findings showed significant influence on insufficient funding by government at all levels. This would automatically reduce any inherent health threats arising from the waste disposal in the community ($t= 3.939, p< 0.05$), effective monitoring and control by the agencies involved ($t= 3.351, p< 0.05$) and the level of awareness campaign should be intensified to completely eradicate insecurity of the environment among sub-urban residents in Lagos State, particularly people living in Ejigbo community of Lagos State, Nigeria ($t= 3.092, p< 0.05$).

The study concludes and recommends among others; that government should intensify their efforts in the area of awareness campaign; effective monitoring and earmark good budgetary allocation to enhance positive attitude among Lagos residents towards good waste disposal and thereby reducing environmental insecurity in Lagos.

Keywords: Waste disposal, Environmental insecurity, Health threat and Residents

INTRODUCTION

The enjoyment of the highest standard of health is one of the fundamental rights of every individual regardless of age, education qualification, socio-economic status, religious affiliation, gender differences, race or tribe and the likes. Security of the environment becomes the responsibility of the government at all levels, as well as the individual residents, if we must attain the highest possible state of wellness. World Health Organization (2009) affirmed that, the foundation of health is the belief that all human beings deserve to be healthy without restriction. Security of life and property has been recognized as the basic for progress and development of any society.

In the opinion of Tannerfeldt & Perljung (2006) who said that, even though urbanization serves as a driving force for economic growth and development, the resulting effect on human health, livelihood and the environment has become a major concern. Part of the reason being the challenges of waste disposal that the cities generate, staggering challenges of slum development, environmental degradation, as well as compromised health standard resulting from exposure to solid wastes dumped very close to human residents.

The end of the 1980s saw a radical reappraisal of our concerns over resource availability and use, the environmental consequences of resource exploitation and the relationship between the environment, poverty and economic change. This re-appraisal has given rise to a new approach to environmental issues which seeks to reconcile human needs and the capacity of the environment to cope with the consequences of economic system. This approach is however, called sustainable development. Agunwanba (2008) said that, sustainable development without jeopardizing future development, means that our efforts to explore and exploit the natural resources is an obvious paradox evident in the need to ensure economic development, while protecting the environment. It is important to note that there must be a balance between levels of development and the stock of natural resources, which means development must be at a level that can be sustained without prejudice to the natural environment or future generations.

Adara (2007) affirmed that if there is to be sustainable development in waste management in Nigeria, the availability of land (for landfill), human resources, plant and equipment and other tools including capital must be readily available. He continued that we need to protect future for the next generation by cleaning up our environment of all types of waste, taking into consideration both physical and population development of the state. As such waste management must mean the collection, keeping, treatment and disposal of wastes in a way as to render it harmless to human and animal life, the ecology and the environment generally. Akinloye, Awoyinfa & Adewunmi (2013) quoting Gilberton (2005) that today, the environment is being polluted as never before by the accumulation of solid waste, a staggering burden born of influence, nurtured by rising population, foster by technology. They lamented further that waste management is becoming an alarming problem in many towns of the country.

Waste as the term implies, is any solid, liquid or gaseous substance or material which being a scrap or super flow, refuse or reject, is disposed off or required to be disposed as unwanted. The generation and disposal of waste is an intrinsic part of any developing or industrial society. Waste, both from domestic and commercial sources has grown significantly in Nigeria over the past decade. Every time a householder opens shops, it contributes to the mountain of waste. It is possible to quote figures which show that the production of waste amounts to millions of tons. According to Jimoh (2005) who observed that, the percent of Nigeria's population living in cities and urban areas has more than doubled in the last 15 years. The cities and urban areas experience continuous growth which contributes to enormous in the generation of solid and liquid wastes.

The management of waste is a matter of national and international concern. The volume of waste does not actually constitute the problem but the inability of governments, individuals and waste disposal firms to keep up with the task of managing waste and the environment. Mowoe (2000) affirmatively said that a dirty environment affects the standard of living, aesthetic sensibilities, health of the people and thus the quality of their lives. Uncontrolled and poorly managed solid wastes diminish the quality of life in Lagos metropolis. It must be acknowledged that although wastes from homes, factories and institutions make up a small part of the total load of solid wastes generated by Lagos state, they are certainly the most offensive and most dangerous to health when they accumulate near residential points. Several waste management agencies have set up programmes and strategies aimed at creating a positive attitude towards indiscriminate disposal of refuse. Some of these efforts are geared towards effective monitoring and control, awareness campaign, insufficient funding and inadequate facilities and equipment. It was on this premise, that this study, sought to investigate solid wastes as determinants of environmental insecurities among sub-urban residents in Ejigbo Area in Lagos State, Nigeria.

CONCEPT OF A HEALTHY ENVIRONMENT

Environment is the source of reservoir for the agents of disease. This helps in the transmission of agents to the host. Laoye (2006) submitted that the environment may be living or non living and the former may be biological and social. He further stressed that, the environment is divided into physical, biological and social. A healthy environment is a prerequisite for healthy human and economic development.

The possible ways in which environment can condition health of human beings are limitless, food, climate, shelter, clothing, availability of medical care, superstition, religious belief, occupational hazards, accident (Smith, 2006). According to Brooks, (2001) who said that, the provision of healthy environment is a major phase in any community and it is an evidence of the degree of civilization attained by the country. This could be achieved through the combined efforts of the individual residents and government at all levels.

ENVIRONMENT AND SECURITY

Security of the environment has been broadly recognized and appreciated by scholars and citizens as the primary condition for the progress and development of any society. Any local district, state or nation that does not give top priority for the protection of that community would soon sink. Hobbes (2000) posited that, the relationship between environment and security has been under consideration since the 1980s mainly by two groups, that the environmental policy addressing the security implications of environmental change and security, and the security community, looking at new definitions of national security, particularly in the post Cold War era.

The World Commission on Environment and Development clearly linked security with environment in 1987 Brundtland Report. In recent years, environmental security has been understood extensively which includes human, physical, social and economic well being, giving the scope for interpretation. Environmental security is to protect the residents from the short and long terms ravages of nature, man-made threats and deterioration of the natural environment. Amowitz, Reis, Lyons, Vann, Mansaray & Akinsulure, (2007) categorically said, in developing countries, lack of access of to clean water resources is one of the greatest environmental threats. Environmental security examines the threat posed by environmental events and trends to individuals, communities or nations. Coupland (2006) confirmed that the Millennium Project did a global assessment of the definitions of environmental security and created a synthesis. Environmental security can however, be viewed as the viability for life support with the intent of preventing damages to life and properties, responding to environmentally caused conflicts and act as analytical tool (Health Impact Assessment, HIA) for the promotion of peace between the residents and governments.

FACTORS ASSOCIATED WITH INSECURITY IN A COMMUNITY

There are many factors that could be responsible for environmental insecurity, resulting from peoples' cantankerous attitude or their negative health behavior. These factors are largely to cause damages and even death to the publicans. That is; pollution (Air, Water, Noise,), inadequate facilities and equipment, poverty, conflicts evocation, political unrest, cyber fraud, illiteracy among others. Adeleye (2001) identified air pollution which includes odour, smoke, noise, dust as one of the major factors responsible for insecurity in a community. Awofala (2002) said that, waste pollution from disposal site via flooding because of blocked drains and land degradation can carry germs and infect people, thereby causing environmental disaster.

WASTE AND WASTE MANAGEMENT IN LAGOS METROPOLIS

Ejigbo is one of the urban communities in Lagos State. Lagos State is arguably the most economically important state of the country, which contains the nation's largest urban area with 1,292 square miles (3,345 square km) and probably the most populous city in Nigeria. It is the second fastest growing city in Africa and the seventh fastest growing city in the world. The National Population Commission 2006 census affirmed that the official figure for Lagos State is 9,013,534. However, Lagos State has since 2006 experienced population explosion, untamed economic growth, and unmitigated rural migration. Subsequent to the re-modernization project achieved by the current administration of Governor Raji Babatunde Fashola, it's gradually becoming a major tourist destination, and being one of the largest cities in Africa and even in the world. Lagos is currently taking steps to become a global city. Lagos is Nigeria's economic focal point, generating a significant portion of the country's GDP. Most commercial and financial business is carried out in the central business district situated on the island. This is also where most of the country's commercial banks and financial institutions, as well as major corporations are headquartered. Lagos has one of the highest standards of living as compared to other cities in Nigeria as well as in Africa.

This seeming envious position has serious implications for the provision of urban services like portable clean water, sanitation, good roads, sufficient shelter, creation of jobs and waste disposal strategies. The inability of government to address the multiplicity of the recurrent decimal usually accompanies the largest unmet demands, thereby giving hope to environmental insecurity among residents.



figure 1

METHODS AND MATERIALS

Research Design

The study adopted a descriptive survey research method. The study was conducted in Isolo Local Government area of Lagos State, Nigeria using purposive sampling technique for study location and convenience sampling technique to select five hundred participants in Ejigbo community.

Procedures

The instrument used for data collection data was a validated questionnaire by experts which yielded 0.71 as reliability co-efficient. Data were analyzed using descriptive statistics of frequency counts and percentages for demographic profiling of the participants while inferential statistics of t-test was used to test the hypotheses at 0.05 alpha level.

Result

Participants' Demographic variables

The result are shown through providing demographic variables of the participants, Age, Sex, Marital Status, Educational Qualification and Ethnicity of the participants.

Variables	Frequency	Percentage %
Age		
21-35years		
41-50years	265	53
51years and Above		
Total	185	37
Sex		
Male	50	10
Female		
Total	500	100.0
Marital Status		
Single	180	36.0
Married	320	64.0
Other	500	100.0
Total		
Educational Qualification		
Ph.D holders		25
Master's holders	125	74.5
First degree holders		1.0
OND/HND	370	100.0
SSCE	5	
No Formal Education	500	
Total		
Ethnicity		75
Hausa		7
Ibo	45	31
Yoruba	35	12
Others	155	40
Total	60	1.0
	200	100.0
	5	
	500	14
		39
	70	34
	195	13
	170	100.0
	65	
	500	

On the age characteristics of the participants, showed that 265 (53%) of the total participants were between 21-35years, 185 (37%) were 41-50years, while 50 (10%) were 51years and above. This could be deduced that more young adults are residents in the community which should have been an impetus to be mindful and jealous of their total wellbeing. In terms of

sex, the table further showed that 180 (36.%) of the total participants are male while 320 (64%) were female respectively. About the marital status, the table showed that 125 (25%) of the total participants are single, 370 (74.%) are married, while 5 (1%) were others respectively. The table further showed that 45 (9%) of the participants were Ph.D holders, 35 (7%) with Master degrees, 155 (31%) with first degrees, 60 (12%) with OND/HND, 200 (40%) have secondary school education, while 5 (1%) had no formal education. In terms of ethnicity, the table also revealed that 70 (14%) of the total participants are Hausas, 195 (39%) are Ibos, 170 (34%) are Yorubas while 65 (13%) formed other residents respectively.

Hypotheses 1

Sex	N	Mean	Std. Deviation	T	Critical t	Sig p	Remark
Male	180	1.50	.501	3.939	3.868	.000	Significant
Female	310	1.32	.468				

The t value of 3.939 is significant at 5% ($P < 0.05$). Therefore, the hypothesis which stated that insufficient funding would have no significant difference between waste management and environmental insecurity among residents in Ejigbo area in Lagos State is hereby jettisoned.

Hypothesis 2

Sex	N	Mean	Std. Deviation	T	Critical t	Sig p	Remarks
Male	180	1.44	.498	3.351	3.272	.001	Significant
Female	320	1.30	.458				

The t value of 3.351 is significant at 5% ($P < 0.05$). The hypothesis which stated that effective monitoring and control would have no significant difference between waste management and environmental insecurity among residents is hereby jettisoned.

Hypothesis 3

Sex	N	Mean	Std. Deviation	T	Critical t	Sig p	Remarks
Male	180	1.28	.449	1.813	1.763	.071	Not significant
Female	315	1.21	.405				

The t value of 1.813 is not significant at 5% ($P > 0.05$). Therefore, the hypothesis which stated that inadequate modern facilities and equipment in implementing efficient waste management methods would have no significant difference between waste management and environmental insecurity among the residents is hereby retained.

Hypothesis 4

Sex	N	Mean	Std. Deviation	T	Critical t	Sig p	Remarks
Male	180	1.50	.501	3.092	3.055	.002	Significant
Female	320	1.36	.481				

The t value of 3.092 is significant at 5% ($P < 0.05$). The hypothesis which stated that awareness campaign would have no significant difference between waste management and environmental insecurity among the residents is hereby jettisoned.

DISCUSSION OF FINDINGS

This findings showed that domestic waste management has significant influence on environmental insecurity among the residents. Aminu-Kano & Lawal (2001) reiterated that, waste management was an appendage under the government setting and that government used to manage waste, but now there is a gradual shift from government funding with management being transferred into private hands. They stressed further that, waste management on its own is both capital and economic intensive, which means huge capital outlay is required. This, however means that, wherever there was availability of funds, the issue of waste management had to be given priority. The effective monitoring and control has significant difference on environmental insecurity among the resident. Oshinowo (2010) supported the finding that, Lagos state government recognizes the importance of legislation as a tool for ensuring environmental behaviour modification among human beings. He further stressed that ever before now, series of laws have been promulgated to influence her citizens' compliance with the ethics of qualitative environment. For example, Environmental Sanitation Edict No. 12. 1985 which provides for environmental sanitation within the state and the repeal of the environment Sanitation Edict No. 7 of 1983.

The inadequate modern facilities and equipment in implementing efficient waste management has significant influence on environmental insecurity among the residents. Onibokun (2009) observed that the modern materials designed to reduce waste and promote the re-use should be adopted in implementing efficient waste and management strategies. The awareness campaign has significant difference on environmental insecurity among the residents. Bassey, Benta-Coker & Aluyi, (2006) submitted that the government should regularly engage stakeholders in various environmental enlightenment activities. For instance, there have been series of radio and television jingles and drama sketches which the relevant government agencies have developed. Such campaign materials are now being aired on both the state television and radio in English, Pidgin English and other indigenous languages that are peculiar to the state.

CONCLUSION AND RECOMMENDATIONS

In view of this, it is therefore conclude that, both the residents and governments should develop proactive concerted efforts in ensuring that, the communities in which people live are guided and guarded jealously. The following recommendations were made that; provide enough fund for the running of waste collection and management within the states, provision of qualified health personnel to monitor the activities, create a comprehensive waste action plan, divert organic waste from landfill by creating composting opportunities, educate the public on recyclable material processing and eco-conscious purchasing practices, discourage single use bags within the city, provide accessible recycle bins in public places and partner with local districts to create waste reduction and recycling programmes.

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SOCIO-ECONOMIC BARRIERS AND ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS IN NIGERIA

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Abstract

Much has been talked about; many steps have been taken through different plans for the disadvantaged children. Still inequality exists in the classroom performance due to socio-economic factors. Some students come out with excellent results, others with good results while there is also a class of low achievers. This study therefore was geared towards assessing socio-economic barriers and academic achievement of secondary school students in Nigeria. Two research questions and two null hypotheses were formulated to guide the study. The target population for this study was 2,231 respondents comprising 2,021 secondary school teachers and 210 principals. A total of 221 teachers and 21 principals were selected using simple random sampling technique. Socio-Economic Barriers and Academic Achievement Questionnaire (SEBAAQ) was structured instruments used to elicit the needed information from the respondents. The data collected were analyzed using mean and standard deviation statistics to answer the research questions and independent t-test statistical tool to test the null hypotheses at 0.05 level of significance and 240 degree of freedom. From the analyses, an aggregate mean of 3.41 and 3.33 for the two research questions with the SD range of 0.46–0.70 were obtained indicating less variability in the opinions of the respondents. Implying that secondary school students are poorly fed, have no electronic gadgets, school fees are not paid regularly, have no learning materials, assist parents in farming, and hawk on the street after school. Based on the findings; parents economic empowerment, free and compulsory secondary education, and free learning materials were recommended to overcoming the socio-economic barriers affecting the academic achievements of secondary school students in Nigeria.

Keywords: Socio-Economic Barriers, students Academic Achievement, Secondary School education, Goal achievement

INTRODUCTION

Academic achievement of students especially at the secondary school level is not only a pointer to the effectiveness or otherwise of schools but a major determinant of the future of youths in particular and the nation in general. According to Ajila and Olutola (2000), the medium through which the attainment of individuals and the nation's educational goals can be achieved is learning. Aremu and Sokan (2002) opined that learning outcomes have become a phenomenon of interest to all and this account for the reason why scholars have been working hard to unravel factors that militate against good academic performance. This phenomenon, in their words, has been variedly referred to in literature as academic achievement, or scholastic functioning. Academic achievement of learners has attracted attention of scholars, researchers, parents, policy -makers and planners. Adeyemo (2001) maintained that the major goal of the school is to work towards attainment of academic excellence by students. According to him, the school may have other peripheral objectives; but the emphasis is always placed on the achievement of sound scholarship. Similarly, Osiki (2001) said virtually everybody concerned with education places premium on academic achievement and excellent academic achievement of children is often the expectation of parents.

However, students differ in learning as a function of their prior experiences, personal qualities and social supports. The latter includes the extent that parents and teachers encourage them to learn, facilitate their access to resources necessary for learning, and teach them strategies that enhance skill acquisition and refinement. Bandura, Barbaranelli, Caprara, and Pastorelli (2001) submitted that parent's academic aspirations for their children influence their children's academic achievements both directly and indirectly.

Ewumi (n.d.) noted that the influence of socioeconomic status on students' academic achievement at the individual level is still prevalent, but less strong in much of the literature. Although in her study of mother-only, mother-extended family, and two-parent families with children in first through third grades, concluded that two measures of parent expectations had a somewhat stronger influence than did the economic variables. In a study of data obtained from the Longitudinal Study of American Youth by Brookhart (1997), the effects of prior achievement were stronger than poverty on junior high and high school students. From the findings, cultural effects of a race and gender interaction for African American males among elementary school-aged children were stronger than socioeconomic status in predicting reading achievement.

In Nigeria, socio-economic barriers became stronger for individuals at the secondary level when poverty level in the country grow or became frustrating to the extent that more families have no resources to attain this level of education. Trusty (2000) asserted that there is an awareness of the importance of the home environment or family structure on student's academic achievement, which to him, is a function of socio-economic status. There is greater correlation between education and socio-economic developments because education remain an incontestable index of overall national development. The Education For All (EFA) Global Monitoring Report (2002) documented that, education improves productivity, health and reduces negative socio-economic consequences of life such as child labour as well as bringing about empowerment.

Alika and Egbochukwu (2009) stated that students are generally confronted with lots of socio-economic barriers ranging from poverty, school drop-out, child labour, lack of academic orientation and low drive for academic fulfillment. Unequal schooling has also limited the educational opportunities of secondary school students in Nigeria. In addition, those who are most times opportuned to be in school are confronted with enormous problems outside the school, which interfere with their learning (Dave, Anand, and Wolf, 1988). The effects of these socio-economic challenges on students may include drug abuse, delinquent gang membership, dysfunctional families, and family violence.

Socio-economic factors have effect on the academic achievement of secondary school students. According to Obadiya (2011), secondary school children contend with challenges like forced under-age marriages, girl-child labour and trafficking, displacements from armed conflicts as well as unhealthy practices. In the same vein, children will not go to school because of cost of schooling, opportunity cost, illness and hunger, limited economic costs of education and low quality of schooling (Action Aid International, Nigeria-AAIN, 2003).

Despite international and national efforts to ensure a successful migration of developing countries like Nigeria from effects of socio-economic variables on secondary school students, huge success has not been recorded. Evidence form Mohammed (2004) has shown that in Nigeria, governmental, non-governmental, private initiatives within and outside the frontiers of the nation for the northern states to embrace education has proved abortive. The number of

children attending schools in some northern states (Kebbi, Sokoto and Zamfara) of Nigeria is still abysmally low due to socioeconomic and cultural reasons and strictly discouraged from obtaining the basic western education.

Research conducted by Obasuyi and Igbudu (2012) showed that secondary educational achievement can be hindered by socioeconomic factors and the opinions of his respondents with respect to socioeconomic attributes were not significantly different ($t\text{-cal} = 0.38$). The finding supported a number of studies which have indicated that educational achievement can be limited by socioeconomic variables (Randell & Gergel, 2009; Alika & Egbochukwu, 2009). The major socioeconomic factor that constitutes barrier to effective and functional secondary education includes poverty. It determines a student's parental socioeconomic status which borders on whether or not they can eat adequately; acquire school materials; pay for tuition and opportunity costs in terms of time spent in school (students assisting in farm work or street hawking). The assertion is concomitant with Herz and Sperling (2004); Alika and Egbochukwu (2009) and Sutherland-Addy (2005).

Direct and indirect costs of education are deterrents to sending children to schools (Herz and Sperling). Direct and indirect costs impinging on secondary educational achievement include school fees, uniforms, textbooks, transport, and the likes. As a result, poor parents find it difficult to make provision for their children's education and hence cannot benefit from secondary schooling. Alika and Egbochukwu stated that for socioeconomic reasons, a secondary student's family background may have a direct and important effect on educational attainment.

Overcoming the socio-economic barriers to academic achievement of secondary school students in Nigeria is another challenging issue of this study. Obasuyi and Igbudu recommended in their research study that parents have to be economically empowered so that they can meet the economic needs of their children/wards, academically. They added that school fees should be free to all levels of secondary education; free learning materials given to students will help to reduce the direct and indirect costs of secondary education. Acharya, (2009) asserted a number of innovative strategies for overcoming socioeconomic barriers to academic achievement. According to him, these are: enriched curriculum, engaging students in authentic work, creating networks of support, co-curricular and extra-curricular activities, recognizing the value of student contributions, changing role of teachers and effective teachings, involving parents, creating partnerships with families, assess parents' needs and interests, encourage family learning, create a mechanism for personalized communication, give parents a voice in school decisions. Upon this background, the researcher is propelled to find out socio-economic barriers and academic achievement of secondary school students in Nigeria.

PURPOSE OF THE STUDY

The main purpose of this study was to investigate socio-economic barriers and academic achievement of secondary school students in Nigeria. Specifically, the study sought:

1. To determine the effects of socio-economic barriers on the academic achievement of secondary school students in Nigeria.
2. To ascertain strategies for overcoming socio-economic barriers to academic achievement of secondary school students in Nigeria.

Research Questions

The following questions were posed to guide the study:

1. What are the effects of socio-economic barriers on the academic achievement of secondary school students in Nigeria?

2. What strategies if adopted could overcome socio-economic barriers to academic achievement of secondary school students in Nigeria?

Research Hypotheses

The following hypotheses were formulated to direct the study:

HO₁. There is no significant difference in the mean ratings of respondents on the effects of socio-economic barriers on the academic achievement of secondary school students in Nigeria.

HO₂. There is no significant difference in the mean ratings of respondents on the strategies for overcoming socio-economic barriers to academic achievement of secondary school students in Nigeria.

METHODOLOGY

The study employed a survey research design. The design was appropriate for the study since data were obtained through the views of teachers and principals vis-a-vis the use of structured questionnaire on socio-economic barriers and academic achievement of secondary school students in Nigeria. The study was carried out in Nigeria. Three States were involved in the study; Lagos State, in South-western educational zone of Nigeria; Cross River State, the South-southern educational zone of Nigeria; and Enugu State, the South-eastern educational zone of Nigeria.

The target population for this study was 2,231 respondents. These comprised 2,021 secondary school teachers and 210 principals from five secondary schools randomly selected from these areas. These were Pillars College, Lagos; Marry Selessor Academy, Calabar; Ejiflox College, Lagos; University of Nigeria Secondary School, Enugu; and African Maritime Academy, Lagos. A total of 221 teachers and 21 principals were randomly selected from these schools. This gave a total sample size of 242 respondents.

Socio-Economic Barriers and Academic Achievement Questionnaire (SEBAAQ) was the structured instrument used to elicit the needed information from the respondents. The instrument was divided into two parts: Part I and II. Part I solicited information on personal data of the respondents while Part II was structured into two sections; A and B. Section A was structured to elicit responses on effects of socio-economic barriers on the academic achievement of secondary school students while items in Section B focused on the strategies for overcoming socio-economic barriers to academic achievement of secondary school students in Nigeria. The questionnaire items were drawn and coded on a 4-point scale as follows:

Strongly Agree	(SA)	4 points
Agree	(A)	3 points
Disagree	(D)	2 points
Strongly Disagree	(SD)	1 point

These responses were based on positively worded items while the reverse was for the negatively worded items. The average score from the coded data ($4+3+2+1=10/4$) was 2.50. This was taken as cut-off point for answering the research questions.

Three experts from the Department of Educational Research and Statistics were selected from the University of Calabar, University of Uyo and University of Nigeria, Nsukka to validate the research instrument. The validators re-structured and organized the instrument to meet the objectives and content of the study. Their comments were used to draft the final copy of the questionnaire. For the purpose of determining the reliability of the instrument, copies of the

questionnaire were administered to thirty (30) secondary school teachers and ten (10) School Principals in Abuja, North-Central Nigeria. The researcher administered copies of the instrument by herself to the respondents used for the reliability test. The data obtained from the administration of the instruments were analyzed using Pearson's Product Moment Correlation Coefficient (r) and a coefficient of 0.79 was obtained. This indicated that the instrument was reliable and capable of yielding the desired result for this study.

The researcher went to each of the selected schools involved in the study to administer the questionnaire to the respondents with the help of research assistants. The questionnaires were administered on face-to-face basis and were collected back with a 100% collection rate. The data collected for the study were analyzed using mean and standard deviation to answer the research questions. Independent t-test statistical tool was used to analyse the data aimed at testing the null hypothesis at 0.05 level of significance and 240 degree of freedom. For the research questions, an item with mean rating of 2.50 and above was regarded as agreed while mean response of less than 2.50 was regarded as disagreed. With respect to research hypotheses, a null hypothesis was upheld when the calculated t-value was less than the critical t-value of 1.960 and was rejected when the calculated t-value was greater than the t-tab value of 1.960.

RESULTS

Research Question 1

What are the effects of socio-economic barriers on the academic achievement of secondary school students in Nigeria?

To answer this research question, Section A of the instrument was presented to respondents to indicate their opinion on the effects of socio-economic barriers on the academic achievement of secondary school students. The result is presented in Table 1.

Table 1: Mean ratings of respondents on the effects of socio-economic barriers on the academic achievement of secondary school students.

S/N	Item statement	\bar{X}	SD	DEC
1	Frequency of eating affects the academic achievement of secondary school students	3.50	0.53	Agree
2	Possession of electronic gadgets by students has effect on their academic achievements	3.46	0.52	Agree
3	Regular payment of school fees by parents has effect on the academic achievement of secondary school students	3.28	0.46	Agree
4	Possession of learning materials by secondary school students affects their academic achievement in school	3.43	0.59	Agree
5	Students' assistance of parents on the farm has effect on their academic achievement in school	3.43	0.59	Agree
6	Students hawking after school affects their academic achievement in school	3.47	0.61	Agree
7	Drop-out of school by students due to income status of parents is an effect of socioeconomic barrier on their academic achievement	3.37	0.56	Agree
8	Parents coercing students into early marriage to obtain income affects students academic achievement	3.36	0.61	Agree
9	Sending students into prostitution to obtain	3.43	0.58	Agree

proceeds for sponsorship affect academic achievement of secondary school students

Aggregate mean

3.41

Note: \bar{X} = Mean score of respondents; SD = Standard Deviation score of respondents; DEC = Decision

Results in Table 1 show the responses on the effects of socio-economic barriers on the academic achievement of secondary school students. All the 9 items recorded mean scores ranging from 3.28 - 3.50 with an aggregate mean of 3.41. These values were above the cut-off point of 2.50 on the four-point scale, implying that both respondents agreed that all the items are potential effect of socio-economic barriers on the academic achievement of secondary school students in Nigeria. The result also revealed that all the 20 items had SD values ranging from 0.46 - 0.61 indicating that there was less variability in the opinions of the respondents.

Research Question 2

What strategies if adopted could overcome socio-economic barriers to academic achievement of secondary school students in Nigeria?

To answer this research question, Section B of the instrument was presented to respondents to indicate their opinion on strategies for overcoming socio-economic barriers to academic achievement of secondary school students. The result is presented in Table 2.

Table 2: Mean ratings of respondents on strategies for overcoming socio-economic barriers to academic achievement of secondary school students

S/N	Item statement	\bar{X}	SD	DEC.
1	Economic empowerment of parents has the potential to overcome socio-economic barriers to academic achievement of secondary school students	3.35	0.70	Agree
2	Free education at all levels of secondary schools overcomes socio-economic barriers to academic achievement of secondary school students	3.39	0.59	Agree
3	Making secondary education compulsory has the potential to overcome socio-economic barriers to academic achievement of secondary school students	3.27	0.64	Agree
4	Distribution of free learning materials to students overcomes socio-economic barriers to academic achievement of secondary school students	3.30	0.60	Agree
5	Enrichment of curriculum to develop students' vocational skills overcome socio-economic barriers to academic achievement of secondary school students	3.36	0.56	Agree
6	Engaging students in authentic class work overcomes socio-economic barriers to academic achievement of secondary school students	3.42	0.62	Agree
7	Creation of new networks for support overcomes socio-economic barriers to academic achievement	3.33	0.69	Agree

	of secondary school students			
8	Changing role of teachers and effective teaching overcomes socio-economic barriers to academic achievement of secondary school students	3.28	0.68	Agree
9	Giving parents a voice in school decision helps to overcome socio-economic barriers to academic achievement of secondary school students	3.30	0.67	Agree
10	Creating mechanisms for personalized communication help overcome socio-economic barriers to academic achievement of secondary school students	3.26	0.66	Agree
Aggregate mean		3.33		

Table 2 shows the opinion of respondents on strategies for overcoming socio-economic barriers to academic achievement of secondary school students in Nigeria. Results indicated that 10 items recorded mean scores ranging from 3.26 - 3.42. These values were above the cut-off point of 2.50 on the four-point scale. This implied that respondents maintained that all the strategies have potentials to overcome socio-economic barriers to academic achievement of secondary school students in the study area. The standard deviation values obtained revealed that all the 10 items recorded values ranging from 0.56 - 0.70; indicating that there was less variability in the opinions of the respondents.

TESTING OF HYPOTHESES

Research Hypothesis 1

There is no significant difference in the mean ratings of respondents on the effects of socio-economic barriers on the academic achievement of secondary school students in Nigeria.

Table 3: t-test analysis of respondents' opinions on the effects of socio-economic barriers on the academic achievement of secondary school students

S/N	Item statement	\bar{X}_1	SD ₁	\bar{X}_2	SD ₂	t-cal	RMK
1	Frequency of eating affects the academic achievement of secondary school students	3.49	0.52	3.67	0.50	-1.14	NS
2	Possession of electronic gadgets by students has effect on their academic achievements	3.47	0.53	3.38	0.49	0.79	NS
3	Regular payment of school fees by parents has effect on the academic achievement of secondary school students	3.39	0.62	3.04	0.58	2.1.9	NS
4	Possession of learning materials by secondary school students affects their academic achievement in school	3.37	0.57	3.23	0.53	1.16	NS
5	Students' assistance of parents on the farm has effect on their academic achievement in school	3.45	0.59	3.28	0.71	1.13	NS
6	Students hawking after school affects their academic achievement in school	2.38	0.61	3.38	0.49	0.00	NS
7	Drop-out of school by students due to income status of parents is an effect of socioeconomic barrier on their academic achievement	3.38	0.55	3.19	0.74	1.18	NS
8	Parents coercing students into early	3.38	0.58	3.42	0.58	-	NS

	marriage to obtain income affects students academic achievement						0.30
9	Sending students into prostitution to obtain proceeds for sponsorship affect academic achievement of secondary school students	3.31	0.50	3.14	0.35	2.04	S

Note: \bar{X}_1 = Mean opinion score of secondary school teachers; SD_1 = Standard deviation value of secondary school teachers respondents; $N_1 = 221$, \bar{X}_2 = Mean opinion score of school Principals respondents; SD_2 = Standard deviation value of school Principals respondents; $N_2 = 21$; NS = Not Significant; S = Significant; $df=240$, t_{-tab} = table value of t (1.960); t_{-cal} = calculated t -value

Table 3 presents data on the opinions of secondary school teachers and their Principals on the effects of socio-economic barriers on the academic achievement of secondary school students in Nigeria. Data show that 8 items, items 1-8 recorded calculated t -values range of -1.14 - 1.18. These values were less than critical t -value of 1.960 at 0.05 level of significance and 240 degree of freedom. The null hypothesis was upheld for these 8 items. The implication was that there was no significant difference in the opinions of respondents on the effects of socio-economic barriers on the academic achievement of secondary school students with respect to the following: frequency of eating, possession with electronic gadgets by students, regular payment of school fees by parents, possession of learning materials, students' assistance of parents on the farm, students hawking after school, drop-out of school by students, parents coercing students into early marriage, among others.

Item 9 recorded calculated t -value of 2.04. This was greater than t -table value of 1.960. The hypothesis was rejected for the item, implying that, respondents differed in their opinions on sending students into prostitution to obtain proceeds for sponsorship in the study area.

Hypothesis 2

There is no significant difference in the mean ratings of respondents on the strategies for overcoming socio-economic barriers to academic achievement of secondary school students in Nigeria.

Table 4: t-test analysis of respondents' opinions on strategies for overcoming socio-economic barriers to academic achievement of secondary school students

S/N	Item statement	\bar{X}_1	SD_1	\bar{X}_2	SD_2	t_{-cal}	Rmk
1	Economic empowerment of parents has the potential to overcome socio-economic barriers to academic achievement of secondary school students	3.38	0.60	3.14	0.65	1.71	NS
2	Free education at all levels of secondary school overcomes socio-economic barriers to academic achievement of secondary school students	3.41	0.59	3.23	0.53	1.80	NS
3	Making secondary education compulsory has the potential to overcome socio-economic barriers to academic achievement of secondary school students	3.27	0.66	3.23	0.43	0.44	NS

4	Distribution of free learning materials to students overcomes socio-economic barriers to academic achievement of secondary school students	3.2 2	0.5 9	3.0 9	0.65	1.76	NS
5	Enrichment of curriculum to develop students' vocational skills overcomes socio-economic barriers to academic achievement of secondary school students	3.3 9	0.5 7	3.3 3	0.65	0.42	NS
6	Engaging students in authentic class work overcomes socio-economic barriers to academic achievement of secondary school students	3.58	0.89	3.77	0.79	2.90	S
7	Creation of new networks for support overcomes socio-economic barriers to academic achievement of secondary school students	3.2 7	0.6 6	3.2 3	0.43	0.44	NS
8	Changing role of teachers and effective teaching overcomes socio-economic barriers to academic achievement of secondary school students	3.47	0.53	3.38	0.49	0.79	NS
9	Giving parents a voice in school decision helps to overcome socio-economic barriers to academic achievement of secondary school students	3.3 8	0.6 2	3.4 2	0.5 0	-0.40	NS
10	Creating mechanisms for personalized communication helps to overcome socio-economic barriers to academic achievement of secondary school students	3.38	0.60	3.14	0.65	1.71	NS

Table 4 presents results on the strategies for overcoming socio-economic barriers to academic achievement of secondary school students in Nigeria. The result revealed that items 1-5 and items 7-10 recorded calculated t-values, which were less than the critical t-value of 1.960 at 0.05 level of significance and 240 degree of freedom. The null hypothesis was accepted in respect of these items. Respondents do not differ in their opinions on the strategies for overcoming socio-economic barriers to academic achievement of secondary school students in respect of the following: economic empowerment of parents, free education at all levels of secondary schools, making secondary education compulsory, distribution of free learning materials to students, enrichment of curriculum to develop students' vocational skills, creation of new networks for support, changing role of teachers and effective teaching, giving parents a voice in school decision, creating mechanisms for personalized communication.

However, item 6 recorded calculated t-values of 2.90, which was above the table value of 1.960. Thus, the null hypothesis was upheld for this item, implying that respondents differ significantly in their opinions on strategies for overcoming socio-economic barriers to academic achievement of secondary school students in respect of this item.

DISCUSSION OF FINDINGS

Based, on the research questions and hypotheses tested, the findings of this study are discussed under the following sub-headings:

Effects of Socio-Economic Barriers on the Academic Achievement of Secondary School Students

The opinion of respondents on this aspect of the study revealed that the effects of socio-economic barriers on the academic achievement of secondary school students border around inadequate feeding by students, lack of electronic gadgets by students, irregular payment of school fees, poor learning materials, students assisting parents on the farm, students hawking after school, drop-out of school by students, parents coercing students into early marriage, among others. A total of 100 SS2 students from Low Socio-Economic Background (LSEB) and 100 SS2 students from High Socio-Economic Background (HSEB) were randomly picked from the five schools involved in the study. A study of their academic achievements in school was reviewed using their 2013/2014 promotion examination into their present class (SS2). It was discovered that 84% of the students from LSEB scored between 10—50% (below average) in Mathematics, English Language, Biology and Economics (which are core subjects) while 22% of the students from HSEB scored below average in the same core subjects. The poor academic achievement of LSEB students and high academic achievement of HSEB students was linked to the differences in their socio-economic background. Findings of this study agree with the research conducted by Obasuyi and Igbudu (2012) who found out that secondary educational achievement can be hindered by socioeconomic factors and the opinions of their respondents with respect to socioeconomic attributes were not significantly different ($t\text{-cal} = 0.38$). Similar findings that supported mine were those conducted by Randell and Gergel (2009) and Alika and Egbochukwu (2009), which have indicated that educational achievement can be limited by socioeconomic variables; the major socioeconomic factor according to their findings, that constitutes barrier to effective and functional secondary education includes poverty. Poverty determines a student's parental socioeconomic status which borders on whether or not they can eat adequately; acquire school materials; pay for tuition and opportunity costs in terms of time spent in school (students assisting in farm work or street hawking). The assertion is concomitant with Herz and Sperling (2004); Alika and Egbochukwu and Sutherland-Addy (2005). Direct and indirect costs of education are deterrents to sending children to schools (Herz and Sperling, 2004). Direct and indirect costs impinging on secondary educational achievement include school fees, uniforms, textbooks, transport, and the likes.

Strategies for Overcoming Socio-Economic Barriers to Academic Achievement of Secondary School Students

The findings in this aspect of the study indicated that overcoming socio-economic barriers to academic achievement of secondary school students requires the adoption of certain strategies such as economic empowerment of parents, free education at all levels of secondary schools, making secondary education compulsory, distribution of free learning materials to students, enrichment of curriculum to develop students' vocational skills, creation of new networks for support, changing role of teachers and effective teaching, giving parents a voice in school decision, and creating mechanisms for personalized communication. Findings of this study are in association with inferences drawn from the research study of Obasuyi and Igbudu (2012) which recommended that parents have to be economically empowered so that they can meet the economic needs of their children/wards, academically. They added that school fees should be free to all levels of secondary education; free learning materials given to students will help to reduce the direct and indirect costs of secondary education. Correspondingly, Acharya, (2009) asserted a number of innovative strategies for overcoming socioeconomic barriers to academic achievement. According to him, they

include among others, enriched curriculum, engaging students in authentic work, creating networks of support, co-curricular and extra-curricular activities, recognizing the value of student contributions, changing role of teachers and effective teaching, involving parents, creating partnerships with families, assess parents' needs and interests, encourage family learning, create a mechanism for personalized communication, and give parents a voice in school decisions.

IMPLICATION

Realization of National Educational Goals as contained in the National Policy on Education; and reduced gains from global programmes such as Education For All (EFA) and Millennium Development Goals.

CONCLUSION

Based on the findings, it was concluded that secondary school children contend with challenges like forced under-age marriages, girl-child labour and trafficking, displacements from armed conflicts as well as unhealthy practices. These are the consequences of socio-economic barriers on academic achievement of secondary school students in Nigeria. Secondary school students are poorly fed, have no electronic gadgets to ease their learning process, school fees are not paid regularly by parents, students have no learning materials, assist parents in farming, and hawk on the street after school. To overcome socio-economic barriers to academic achievement of secondary school students, the adoption of certain strategies such as economic empowerment of parents, free education at all levels of secondary schools, making secondary education compulsory, distribution of free learning materials to students, enrichment of curriculum to develop students' vocational skills, creation of new networks for support, changing role of teachers and effective teaching, giving parents a voice in school decision, and creating mechanisms for personalized communication; must be prioritized.

RECOMMENDATIONS

Based on the findings and conclusion of the study, it was recommended that:

1. Parents should be economically empowered so that they can meet the economic needs of their children/ward academically
2. Government of Nigeria should make school fees for all levels of secondary education free. This will cushion the concomitant effects of low socio-economic status on parents.
3. Free learning materials should be given to all secondary school students to help reduce the direct and indirect costs of secondary education for parents, thus overcoming the socio-economic barriers affecting the academic achievements of secondary school students in Nigeria.
4. Poverty alleviation programmes of the Nigeria government should be sincerely pursued and objectively executed.
5. Improving the settings in which many low-income school children grow up—that is, supporting their families, strengthening their neighborhoods, improving their schools, and making quality health care and other services more accessible to them—should be a policy priority for government at all levels and a research priority for social scientists from all disciplines.

FURTHER RESEARCH

The extent to which parents' empowerment will bring about such anticipated improvement in the academic achievement of secondary school students in Nigeria; will further illumine the study area.

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EFFECTS OF REFUSE EXPOSURE ON SELECTED PHYSIOLOGICAL PARAMETERS OF DUMPSITE WORKERS IN LAGOS STATE

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ABSTRACT

The study determined the effect of refuse exposure on selected physiological parameters of dumpsite workers in Lagos state. The selected physiological parameters studied were, physical characteristics, heart rate, systolic and diastolic blood pressure of dumpsite workers. The experimental research design was adopted for this study. The purposive random sampling technique was used to select the participants. The participants were forty (40) workers. Descriptive statistics of simple percentage mean and standard deviation were used in presenting the data collected. Inferential statistics of t-test was used in testing two stated hypotheses at 0.05 level of significance. There was significant difference in the physical characteristics and heart rate of dumpsite workers as a result of exposure to refuse dumps. It was recommended that dumpsite workers should be involved in regular exercise that will help develop their cardiorespiratory fitness.

Keywords: Body composition, Refuse handlers, physiological parameters, Refuse management

INTRODUCTION

Globally there is no throwing away in solid waste management but when disposing waste, system complexities and integrated nature of materials and pollution are quickly apparent. Waste incineration is expensive and poses challenges of air pollution and ash disposal. Incineration requires waste placed outside for collection to containerize, to stay dry and much of the waste stream is not combustible. Therefore landfills are better options for solid waste disposal. Landfills require land availability as practiced in many communities in Nigeria, and siting is often opposed by potential neighboring residents because of its health hazards. Waste collection vehicles are large sources of emissions and both incineration and landfilling contribute to these emission. Uncollected waste can provide breeding areas and food to potential disease carrying vectors, such as insects and rodents with their associated health and nuisance issues. Waste generated sources are residential, industrial, commercial, institutional, construction and demolition, municipal services, medical and agricultural wastes.

As the world moves towards its urban future, the amount of municipal solid waste (MSW), one of the most important byproducts of the urban lifestyle is growing even faster than the rate of urbanization. Miller (2005) revealed that groups at risks from the unscientific waste disposal include population in areas where there is no proper waste treatment method, children, waste workers, population living close to waste dump sites and animals. The impact on human health include chemical poisoning through chemical inhalation, low birth rate, cancer, congenital malformation, neurological diseases, nausea, vomiting and increase of hospitalization of diabetic residents living near hazard waste sites.

As at 2006, the population of Lagos State was 17.5million, based on parallel count conducted by the state during NationalCensus with a growth rate of 3.2%. The State today has a population of over 21 million. (Association of Lagos state origin, 2015). The United Nations estimates that at its present growth rate, Lagos State will be the third largest megacity

in the world by 2015 after Tokyo in Japan and Bombay in India. (Campbell, 2012; This Day Live, 2010). Assuming the megacity status of Lagos is saddled with the responsibility of managing the enormous waste being generated by the highly densely populated city. These waste generated over the years were disposed freely at designated points all over the city and thereby defacing the beauty of the city. The Lagos Waste Management Authority (LAWMA) was instituted to ensure that refuse generated are disposed and managed effectively with less hazardous impact on residents.

This organization deployed strategies of ensuring private participation in the refuse collection and disposal at designated dump sites situated in Olusosun, Igando, Ikorodu and other dump sites within the Lagos environs. The private/public participation in refuse management in Lagos State seems to expose refuse handlers to certain hazards which may subsequently pose danger to their health status. Most refuse handlers are not aware of the danger involved in their job performance as they are exposed to a lot of health hazards. At the dumpsite are also refuse scavengers who are also involved in ravaging and selection of valuable items from refuse. The group at risk from the unscientific disposal of waste and those whose water supply has become contaminated, either due to waste dumping or leakage from landfill sites are being exposed to series of infection and diseases. (Elliot et al, 2011). Uncollected solid waste also increases risk of injury and infection. It is also found that with increase in global population and the rising demand for food and other essentials, there has been a rise in the amount of waste being generated daily by each household. Waste that is not properly managed especially excreta and other liquid and solid waste from households and the community, constitute a serious health hazard and lead to the spread of infectious diseases. (Davidson, 2011).

The refuse disposal workers on daily basis are in contact with wastes of various kind and they are unaware of the danger these gas emission from the waste pose to their physiological parameters which uphold their health related components. There is an observed death of workers in the waste management industry which most individual think is far degrading to do in this part of the world and the health consequences attached to the hazardous nature of the job becomes more threatening to the upkeep of a healthy environment. Since cardiovascular disease is on the increase in Nigeria most especially among workers in health risk prone worksites, physiological parameters of individual dumpsite workers are unattended to which in turn becomes life threatening if it continues unchecked. It is therefore imperative to assess the effect of refuse exposure on the physiological parameters of handlers at dumpsites in Lagos State.

RESEARCH HYPOTHESES

The following hypotheses were tested :

1. There will be no significant difference on physical characteristics on dumpsite workers in Lagos State?
2. Refuse exposure will not significantly affect resting heart rate, systolic and diastolic blood pressure of dumpsite workers in Lagos State?

METHODOLOGY

Research Design

The Post-test Only Experimental Design was adopted in this study because it is used to study the effects of hazardous situations and effects of environment on people. This design involves

assessing and measuring anthropometric, heart rate systolic and diastolic blood pressure and cardio-respiratory features of dumpsite workers in an attempt to determine the effect on physiological parameters. A lot of valuable information was derived from this design.

Population of the Study

The target population for this study was made up of public and private workers of LAWMA charged with the responsibility of managing waste in Lagos State. A total of forty participants were selected from two land filling dump sites of Olusosun and Igando in Lagos State. The dumpsite workers were selected based on their consistency on the job.

Sample and Sampling Technique

The purposive sampling technique was adopted for the selection of participants.

Test Instrument

Three physiological parameters were tested in this study. The cardio respiratory status which involve the physical characteristics, resting heart rate, systolic and diastolic blood pressure a. **Materials used for testing includes**, weighing scale, tape measure, stadiometers and height rods, sphygmomanometer, stethoscope and treadmill.

Validity and Reliability of Test Instrument

Standardized test instrument with high reliability and content validity are used in this study. The validity of these instruments are universally accepted because they have been tried, tested and proven by experts in the field of exercise physiology.

DATA COLLECTION

The participants were made to pass through the cardio-respiratory status test in Event Gallery Gymn, Kilometre 5 LASU Isheri-Oba Road — Iba Ojo; Lagos State where their cardio respiratory fitness was determined. The participants walked up a 5 percent grade at a selected brisk walking pace, which later moves into a comfortable jogging pace for 3 minutes this is considered as a warm up for the test, while the treadmill grade was increased, keeping the speed constant until the participants were unable to continue. Distance covered is noted and interpreted. Measurements and testing were done according to American College of Sports and Medicine (ACSM, 2000) recommendation and specifications. Test materials include :Weighing Scale, Tape Measure, Stadiometers and height rods Sphygmomanometer Stethoscope and Treadmill.

PROCEDURE FOR DATA ANALYSIS

The data collected were collated and analysed using the descriptive statistics of frequency counts and percentages for demographic information of participants and the inferential statistics of test analysis to test all the hypotheses at 0.05 level of significance

Demographic Data Presentation

Table 1: Distribution of Participants by Age

Age	Number Participants	of Percentage
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18—22years	13	32.5
23—27years	7	17.5
28—32years	9	22.5
33—37years	2	5
38—42years	3	7.5
43 years and above	6	15
Total	40	100

Table 1, it shows that (13) 32.5percent of the total participants were within ages 18 -22 years, (7) 17.5 percent were 23-27 years, (9) 22.5 percent were 28-32 years, (2) 5 percent were from 33-37 years, (3) 7.5 percent were 38-42 years, while 43 years and above were (6) 15 percent respectively.

Table 2: Distribution of Participants by Gender

Gender	Number of Participants	Percentage
Male	30	75
Female	10	25
Total	40	100

From Table 2, it showed that out of all the participants used for the study (30) 75 percent were male gender while (10) 25 percent were females.

Table 3: Distribution of Participants by Weight, Height, Resting Heart Rate, Systolic and Diastolic Blood Pressure.

Variables weight	Number of Participants	Percentage
40 -50kg	1	2.5
51 – 60kg	13	32.5
61kg and above	26	65
Height		
1.50 – 1.55m	15	37.5
1.56 – 1.80m	25	62.5
Resting Heart Rate		
55 – 74	17	42.5
75 – 94	19	47.5
95 – 114	04	10
Systolic Blood Pressure		
100 – 115mmHg	10	25
116 - 130mmHg	22	55
131 – 145mmHg	08	20
Diastolic Blood Pressure		
65 – 84mmHg	38	95
85 – 94mmHg	1	2.5
95 – 103mmHg	1	2.5

The participants weight in Table 3 above showed that (1) 2.5percent weighed 40-50kg, (13) 32.5 percent weighed 51-60 kg, while 61kg and above were (26) 65 percent respectively. The participants of 1.50 – 1.55metres height were (15) 37.5 percent while (25) 62.5 percent were 1.56 -1.80 meters in height. (17) 42.5 percent of the total participants had their heart rate within the range of 55 –75 beats per minute, (19) 47.5 percent were within the range of 75—94 beats per minute while (4) 10 percent of the total participants were within the range of 95 – 114 beats per minute. The systolic blood pressure measurement for participants showed that (10) 25 percent were within 100 – 115mmHg, (22) which is 55 percent were within 116 – 130 mmHg while (8) which represent 20 percent of the total participants were

within the range of 131 — 145 mmHg. The Diastolic blood pressure measurement for participants showed that (38) 95 percent were within 65 — 84mmHg, (1) which is 2.5 percent were within 85 — 94 mmHg while (1) which represent 2.5 percent of the total participants were within the range of 95 — 103 mmHg.

Table 4: Mean of Physical Characteristics of Dumpsite Workers.

Variables	N	B	S.D
Physical Characteristics			
Weight	40	61.575kg	5.023
Height		1.636m	0.083

In view of the above result as presented in Table 4, it is evident that the calculated mean weight for the participants is 61.575kg with standard deviation of 5.023 while the calculated mean for height of dumpsite workers used for the study is 1.636m with standard deviation of 0.083 respectively.

Table 5: t-test analysis of refuse exposure on heart rate, systolic and diastolic blood pressure of dumpsite workers

Variables	B	S.D	N	df	L.S	t-calc	t-critical
Refuse exposure effect on heart rate of dumpsite workers	73.25	12.96	40	39	0.05	34.92	1.68
Refuse exposure on systolic blood pressure	123.3	12.31	40	39	0.05	62.48	1.68
Refuse exposure on diastolic blood pressure	77.5	7.96	40	39	0.05	60.23	1.68

Key *Significant

In view of the above result as presented in table 5, it is evident that the calculated t-value of 34.92 is greater than the t-critical value of 1.68, which indicates that refuse exposure have effect on heart rate of dumpsite workers and there exist differences in their heart rate.

Refuse exposure on systolic blood pressure on dumpsite workers revealed that calculated t-value of 62.48 is greater than the t-critical value of 1.68 which revealed that significant effect and difference exist on exposure to refuse by dumpsite workers. The exposure of refuse on diastolic blood pressure of dumpsite workers showed that the calculated t-value of 60.23 was greater than t-critical value of 1.68 with a degree of freedom 39, and all cases established at 0.05 respectively. This revealed that exposure of dumpsite workers to constant refuse affect the diastolic blood pressure and differences were noticed in the diastolic pressure.

DISCUSSION

Physiological assessment of dumpsite workers with the calculated t-value of 17.17 is greater than the t-critical value of 1.68 (t-calc. 17.17 > t-crit. 1.68) with degrees of freedom 39 established at 0.05 level of significance revealed that that exposure to refuse was statistically significant in effect and difference in physical characteristics of dumpsite workers.

The findings is consistent with Elliot (2001) and McNamee (2001) which states that workers in refuse dumpsites are always in contact with poisonous gas emission which have adverse effect on the physical characteristics of the dumpsite workers and scavengers. Supporting the above position Herbert (2011) submitted that dumpsite workers are human which are exposed to hazardous threat due to the nature of the environment where they operate. Thus, their weight, body composition are affected based on the influence of the environment. The study revealed basic physical qualities in terms of response ability, mental power, and water

shortage in the body and hypoxia which shows the oxygen content of the body cell. This in turn constitute the basic physical qualities of each participant. Also results obtained indicated that the calculated t-value of 34.92 is greater than the t-critical value of 1.68, which indicates that refuse exposure have effect on heart rate of dumpsite workers and there exist differences in their resting heart rate. The refuse exposure on systolic blood pressure on dumpsite workers revealed that calculated t-value of 62.48 is greater than the t-critical value of 1.68 which revealed that significant effect and difference exist on exposure to refuse by dumpsite workers. The exposure of refuse on diastolic blood pressure of dumpsite workers showed that the calculated t-value of 60.23 was greater than t-critical value of 1.68 with a degree of freedom 39, and all cases established at 0.05 respectively. This 'revealed that exposure of dumpsite workers to constant refuse affect the diastolic blood pressure and differences were noticed in the diastolic pressure. The natures of the job in dumpsites in developing countries pose a threat to the cardiovascular efficiency of people that work at dumpsites. According to Lewis (2007) waste management requires strength, vigour, untiring efforts in order to succeed as a worker. All these affect the vascular system which in turn affect the resting heart rate and the blood pressure generally.

CONCLUSION AND RECOMMENDATION

CONCLUSION

Based on the findings obtained above, the following conclusions are hereby reached that exposure of dumpsite workers to constant refuse collection, disposal and management affect the following physiological parameters. The physical characteristics, resting heart rate, systolic blood pressure, diastolic blood pressure, are affected by the exposure of dumpsite workers to refuse.

The finding obtained are as follows;

1. Exposure to refuse was statistically significant in effect and difference in physical characteristics of dumpsite workers in Lagos State.
2. Refuse exposure have significant effect on heart rate of dumpsite workers and there exist differences in their heart rate
3. Refuse exposure of dumpsite workers have significant effect and differences on their systolic blood pressure.
4. Exposure of dumpsite workers to constant refuse affects the diastolic blood pressure and differences were noticed in the diastolic pressure
5. Refuse exposure significantly affects the cardio-respiratory status and showed differences in the cardio-respiratory status of dumpsite workers

RECOMMENDATIONS

In view of the, findings obtained and the conclusions reached above, the following recommendations are hereby made.

1. Dumpsite workers should be involved in regular exercises that will help develop their cardio.-respiratory status.
2. Dumpsite workers should ensure they undertake health screening test on physiological parameters to determine their health status on quarterly basis.
3. The land filled gas extraction trench be adopted in reducing gas emission in dumpsites.
4. Dumpsite workers must be conscious of their eating habit on the dumpsite for fear of contamination.
5. Lagos Waste Management Authority must provide refuse collection trucks that will aid collection and disposal of refuse with less exposure to hazards.
6. Dumpsite workers should follow hygienic rules within the dumpsite with the usage of personal protective safety devices.

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AN APPRAISAL OF THE IMPACTS OF NIGERIAN EDUCATION ON PROFESSIONALISM

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ABSTRACT

That the youths of today become the leaders of tomorrow is inevitable, and whether we are prepared or not, the natural law of succession is looming. In this jet age of awareness and globalisation, it is imperative that the Nigerian education system takes proactive steps by carefully developing the youths through a functional education system with a rich content scope that takes into consideration, the dynamics and yearnings of the labour market. This study therefore appraised the impacts of the Nigerian education on professionalism. Using a purposive sampling method, data were obtained through the interview of seven (7) interviewees, including graduates and postgraduate from Accounting, Architecture, Computer Science, Education, Engineering, Mass Communication and Medicine. The data were analyzed descriptively. The results show that (i) 85.7% of the respondents agreed that there is a gap between the school curriculum and what operates within the profession, (ii) 85.7% of the interviewees also opined that the school curriculum aids the acquisition of professional and problem solving skills and that (iii) it takes an average of 6 years to become a professional under the Nigerian education system. It was however concluded that all stakeholders, viz-a-viz the government, professionals, all agencies of education and government and non-government organisations must work hand in hand so that the national objectives could be attained through education. The study therefore recommended that greater attention needed to be given to the offer of equal education opportunity to all citizens irrespective of sex, religion, ethnicity and age, among others.

Keywords: Education, Professionalism, Skills, Problems and Prospect.

INTRODUCTION

The general objectives or aims of education according to Jekayinfa (n.d.) can be summarized as the all-round development of human nature so that people are able to use their talents to the optimum capacity of their inborn potentialities. In so doing, the individuals become useful to his country, to his society, his family and to himself. Olawepo (1997) opined that education is meant to coordinate the three aspects of human nature. He argued that one of the three aspects is the cognitive domain that is the mental part which includes perception, sensation, imagination, memory and thinking. This aspect should be coordinated by education in such a way as to make a balanced individual who can think right with adequate foresight and sensitivity to human feelings. Another aspect of human nature is the affective domain, that is, the social and emotional nature of human beings. This will enable one to become well behaved citizen, respected and respectable everywhere. A third aspect of human nature is the psychomotor nature, that is, the physical aspect such as hands, legs and healthy body and mind.

On this note, this study appraised the impact of the Nigerian education on professionalism, vis-à-vis the course content, delivery method, impact on students' professional skills, among others.

PHILOSOPHY OF NIGERIAN EDUCATION

For the Nigerian education philosophy to be in harmony with Nigeria's national objective, it has to be geared towards the values, aims and objectives stated at the National curriculum conference of 1969 and specifically stated in the National Policy on Education as the General Objectives of Education in Nigeria which are as follows:

- (a) The inculcation of the right type of values and attitudes for the survival of the individual and of society. This is an objective which can concern mainly the affective domain;
- (b) The inculcation of national consciousness and national unity. This is also an objective mainly in the affective domain;
- (c) The training of the mind in the understanding of the world around. This is aimed at developing the intellectual aspect of human beings;
- (d) The acquisition of appropriate skills, abilities and competencies both mental and physical as equipment for the individual to live and contribute to the development of his society. This objective is aimed at developing the intellectual, affective and psychomotor domains of human nature simultaneously. This is why education should be seen as aiming to develop all aspects of human persons simultaneously.

The section 8(58) of FRN (2004) however posits that tertiary education is the education given after secondary education either in universities, colleges of education, polytechnics, monotechnics including those institutions offering correspondence courses. One of the goals of such education is to “acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society”. Article 64(c) of the same section indicates that Universities education shall contribute to: making all students, as part of a general program of all-round improvement in University education, to offer general study courses such as history of ideas, philosophy of knowledge and nationalism. This provision demands the strengthening of entrepreneurship education curriculum in the tertiary institutions. Our world is fast changing, interdependent and certainly amongst the most interesting in human history (Enu, 2010). It is indeed an era of greater challenges. These challenges bring possibilities for those responsible for educating subsequent generations. On the strength of this, Greig, Pike and Selby (1991 in Enu, 2012) asked the following questions: How should schools go about in the task of preparing young people for more informed and effective participation in world society? How can teachers best help develop global understanding in the face of this exciting yet daunting prospect of adult life in the 21st century? What kind of skills, capacities and insights students need to make sense of, cope with and handle an accelerating rate of change in this growing world? A synthesis of the above questions constitutes a functional education system with a rich content scope, which also takes into cognizance the dynamics of the labour market, equips its graduates with occupational skills and competencies to enhance their self-reliance.

THE CONCEPT OF PROFESSIONALISM

The concept of a profession has been defined by so many authors in different ways. Amaele and Amaele (2003) defined a profession as a service occupation, which applies a systematic body of knowledge to problems that are of great relevance to the needs and yearnings of the society. Yahiya (2004) described a profession as an occupation which has its basis on specialized and organized skills, knowledge and intellectual competence. He further stated that profession derives its raw materials from the society and utilizes the raw materials to achieve set and desired objectives. Thus professionals usually have clients who seek their services and terminate such relationship at will.

Oyekan (2004) said viable professions are so much appreciated for their crucial and distinct rides from their repertoire of cherished knowledge, practical skills and intellectual competence. Among them are teaching, journalism, engineering, medicine law, accountancy etc. These occupations render professional activities for certain fees by their clients. A

profession is therefore an occupation which renders services useful for the survival of individuals and the society, these valuable services are vital to survival and it is knowledge based, problem-solving, rare, managerial and full of expertise.

QUALITIES OF PROFESSIONALS

According to Stoner and Wankel (1988), professionals must be governed by a strict code of ethics to protect the clients because of the professional's expert knowledge in a specific area, which makes the clients to be dependent on the professional, as a result of which the client is in a vulnerable position. Qualities of a professional are:

- a) Possession of a specific knowledge and skills
- b) A strict code of ethics
- c) Personal dedication and commitment
- d) Achievement of professional status through performance and not through favoritism or other factors irrelevant to the work at hand.
- e) Informed judgment and decision based on general professional principles.

From the above, it is apparent that the Nigerian education system through the higher institutions of learning has failed to produce graduates who are professionals in their various disciplines. Despite that the Nigeria policy on education made it clear on the need for functional, to be relevant, practical and acquisition of appropriate skills and development of competencies as equipment for the individuals to live in and contribute to the development of his/her society (Aladekomo, 2004).

METHODOLOGY

The research design adopted in this study is basically descriptive in approach as it seeks to establish relationship between two and more variables. The design is partially exploratory as it attempts to uncover the various hindrances bringing about discrepancies between education and professionalism in the country.

Using a purposive sampling method, data were obtained through the interview of seven (7) interviewees, who were either first degree holder or postgraduate student. So, they are to a large extent acquainted with the both the educational system and professional terrain of their fields. The selection also cut across six different professions or disciplines. The purposive sampling technique was adopted as it allows the researcher to select particular elements from the population that will be representative and informative about the topic. Based on the researcher's knowledge of the population, a judgment is made about which case should be selected to provide the best information to address the purpose of the research (James 1996).

RESULTS

57.1% of the interviewees agreed with the fact that for Nigerian graduates to be relevant in their fields, they must obtain a professional certificate. While the remaining 42.9% said it has been integrated as part of their school programme.

85.7% of the respondents agreed that there is a gap between the school curriculum and what operates within the profession. This to a large extent is a reason for employers preference of a professional to just a graduate.

85.7% of the interviewees also opined that the school curriculum aids the acquisition of professional and problem solving skills.

PROBLEMS OF THE NIGERIAN EDUCATION AND PROFESSIONALISM

In addition to the above results, some of the problems identified by this study are:

1. Unavailability of seasoned lecturers, who are full-time professional in their various fields.

2. Most of the higher institution lecturers are deficient in the knowledge of industrial practices.
3. Lack of linkage between theories (from the institutions) and practices (in the industries), thereby hindering the development of creative and innovative ideals in both the institutional and industrial personnel. This at the long run mars technological development and/or advancement in the country.
4. The lack of sound and creative application of knowledge on the part of the students also renders our university graduates irrelevant on the field, and as well makes the industries to just focus on routine activities and ways of doing things, which adversely affect their growth and that of the nation at large.
5. The gap between the Nigerian education system and professionalism makes it nearly impossible or very tedious for Higher National Diploma (HND) holders to become professionals in some disciplines, e.g. Architecture.
6. Incapability of some of the lecturers to transfer knowledge to the students adequately. This is as a result of politicising lecturing appointment.
7. New or emerging professional principles and standards are not promptly adopted in higher institutions.
8. Inapplicability of classroom or theoretical ideas in real-life situation on the field. This is at times because the knowledge is obsolete or lack of the required facilities on the field. For instance in the medicine, a form of surgical procedure for gastric/colon cancer described in the textbook/classroom is different from what is actually done on patients in practice.

PROSPECTS OF NIGERIAN EDUCATION AND PROFESSIONALISM

Sequel to the afore-identified problems, the following recommendations are expected to bring about synergy between the educational system and professionalism in Nigeria. Hence, enhancing the relevance of the Nigerian graduates in their various fields, taking the country's education system to a greater level, reducing the rate of unemployment in the country and above all promoting technological development and advancement. Ultimately, this will bring about economic growth and national development.

1. The course content should be decentralised in such a way that each student would learn how he/she can be innovative and creative with respect to his/her field of study.
2. Professional exams and certifications should be integrated into the school programme, as it is practiced in the medical schools, such that at the end of the programmes the students will not only obtain both academic and professional certificates but will also so be academically and professionally grounded.
3. Professionals in various disciplines should be integrated into the education system as seasoned lecturers.
4. Tutelage and mentorship programmes should also be integrated into the school system for maximum result.
5. All these however will be likened to a day dream, if the government fail to allocate at least the minimum allocation (26% of the total budget) recommended by UNESCO to the education sector.

DISCUSSION

Education is a viable means through which any nation can experience growth and development. This study posits that professionalism should be integrated into the school curriculum in the higher institutions, so as to solve the challenges faced by the Nigerian graduates as regards this. This is in agreement with the view of Brideges, Juceviciene, Jucevicius, McLaughlin & Stamkeviciute (2007) in their book entitled Higher Education and National Development... strongly stated that universities and societies across the world are

consulted in the expansion of their central aims and purposes to be able to accept the challenge of development in the society in which it's located. This change of direction has much implication for the curricula, instructional procedures and on the students as a whole. The authors advanced further that universities are increasingly expected not mostly to respond to these changes but to drive economic and social development in the new environment, contributing to business competitiveness and innovation through "knowledge transfer" "research-based business start-ups" "demand-led education and training", the development of "the learning society" and the contribution of higher level skills to knowledge economy". At the same time, the university struggles to meet up with its traditional roles in the formation of an intellectual leadership, the education of a democratic citizenry or the cultivation of a wise and highly skilled community.

It was also found that for the country to experience technological advancement and economic development, then the gap between our higher institutions and the industries must be bridged. This is in consonant with the claim of Bloom, Canning & Chan (2005) that, in establishing the conceptual link between higher education, and economic growth in Africa, tertiary education can help economies keep up or catch up with more technologically advanced societies. Higher education graduates are likely to be more aware of and better able to use new technologies. They are also more likely to develop new tools and skills themselves. Therefore their knowledge can also improve the skills and understanding of non-graduate coworkers... Equally, DEBloom & Rosovsky (2004) advanced that higher education is a determinant of income and can produce public and private benefits. It can create greater tax revenue, increase savings and investment and lead to a more entrepreneurial and civic society. It can as well improve a nation's health, contribute to; reduced population growth, improved technology, and strengthened governance.

CONCLUSION AND RECOMMENDATIONS

Conclusively, considering the fact that part of the national objectives can be achieved using education as a tool, it follows then that the government, professionals, all agencies of education and government and non-government organisations must work hand in hand so that the national objectives could be attained through education.

Some of the issues to be addressed by the nation so that its educational objectives could be fully realized are the removal of the imbalance in intra-state and inter-state education. The need to give greater attention to the education of girls and women, the offer of equal education opportunity to all citizens irrespective of sex, religion, ethnicity and age. The objectives of education in Nigeria should be grounded in the country's ideology or philosophy of life. As Adetoro (1966) puts it, if we are a truly democratic society, our philosophy of education must reflect a democratic philosophy of life, with all the freedoms guaranteed by our constitution.

ACKNOWLEDGEMENTS

Our profound gratitude goes to almighty Allah, for the gift of Life, health, freedom and faith. We equally appreciate our parents; Mr. & Mrs. Adefowaju, and Mr. & Mrs. Iyanda for their unflinching efforts towards discharging their parental responsibilities towards us.

We also appreciate our teachers and mentors, as well as the council of higher institution (COHI) of the MSSN Lagos State Area Unit for their supports and courage.

Finally, we would also love to show my profound gratitude to the Chairman Organising Committee of the 10th UNILAG Annual Research Conference and Fair, for this golden opportunity.

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WOMEN HOME-ROLES AND NON-HOME ROLES CONFLICT ON FAMILY STABILITY AND SUSTAINABILITY

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ABSTRACT

This research study was carried out to investigate women's work-role conflict and the interaction with family welfare and family stability. Descriptive survey research technique was adopted for the study. The instrument (WRHRS) for collection of data was a structured questionnaire designed for this purpose. A total of Two hundred 200 participants were randomly selected as study sample from five different banks as purposive sample. The questionnaire made use of the four-point Likert scale of strongly agree, agree, disagree and strongly disagree. Reliability of the instrument was ensured through a Cronbach-Alpha method in which a reliability quotient of 0.81 was obtained. In analyzing the data, descriptive statistics of frequency counts, percentages and Product Pearson moment Correlation were employed at 0.01 level of significance. The results of the study revealed that, there was a significant relationship of job strain encountered by married women and their interaction with family members and secondly, there was a significant relationship between the behaviour of married working women and their home stability. as a result, the two hypotheses were rejected with corresponding correlation coefficients of r_{cal} (2.34) and r_{cal} (2.70) respectively.

Keywords: Non-Home roles, Home-roles, Working Women, Role conflict, Home stability.

INTRODUCTION

Woman's economic capabilities, and in particular their ability to manage family welfare, are being threatened, because modernization has shifted the balance of advantage against them. It would be fair then, to say that women's workload has increased with the changing economic and social situation. The mutual interference of the home and the work domain has been identified as one of the major stressors in the workplace. As a result, employees especially the females find themselves struggling to juggle the competing demands of work and family (Rothman 2009; Olukoya, 2006; Byron, 2005). Flexible employment, working time and the reconciliation of work and family life are central issues in current policy and academic debates. Considering policy concerns, the European Union, for example, has been a leading promoter of directives on working time, parental leave and part-time workers' right. It has also incorporated the promotion of flexible employment and the reconciliation of work and family life into the European employment strategy (MacInnes, 2006; Cousins and Tang, 2004).

Women are disadvantaged in the workplace by time poverty (juggling the needs of home and work), intermittency (taking time off to take care of children or elderly parents), and lack of mobility (needing a job close to home and family). The question of how to strike a balance between work and home is attracting increasing attention at both the national and international level (Greenhaus and Beutell and Wittig-Berman, 2008; Crompton and Lyonette, 2006). Work-life conflict is a form of inter-role conflict whereby the fulfillment of role demands emanating from one domain (i.e. non home -role which is work) interferes

with fulfilling role demands in another domain (i.e. home or leisure activities) (Kinman and Jones, 2008).

The major problem a woman faces is the conflict arising from multiple roles. According to Katz and Khan 2008, there are three sources of work-family conflict, namely, time conflict, strain conflict, and behaviour conflict, that is any role characteristic that affects a person's time involvement, bring strain, or influence behaviour within a role can produce conflict with another role. Time-based conflict includes concepts such as excessive work, work overload, schedule conflict, inflexibility of schedule, marital status, presence of children, and family size. On the other hand, strain conflict arises when perceptions of insufficient energy to successfully perform both work and family roles materializes, leading to job and family dissatisfaction, work and family tension, depression, and life stress. While, behavior conflict, arises when the working woman uses her home as an outlet to vent her work-life grievances and dissatisfactions; a concept known as "displacement" in psychology.

Coping roles behaviours are measures a woman takes to balance home and non – home roles to avoid conflict. These include Structural roles (which involves an attempt to deal directly with role senders and lessen the conflict by mutual agreement on a new set of expectations); Personal roles (which involves changing one's personal concept of role demands received from others) and Reactive role (which entails attempting to improve the quality of role performance with no attempt to change the structural or personal definition of one's roles, (Fakim, 2012; Folkman, 2004)

STATEMENT OF THE PROBLEM

Married working women are faced with problems in performing different roles or multiple roles, such as the wife, mother, homemaker, employee, student and volunteer. While women have taken on more masculine work roles, they continue to bear much of the responsibilities in their homes. Many studies have found that long working hours contribute to conflict between work and non-work roles. There is an interrelationship between family and work, there are also conflicts and competing demands, many of which fall on women who bear the brunt of the different demands and needs of the workplace and the home. These needs demonstrate the importance attributed to this issue by policy makers while academic debate, too, has focused on the need to reconcile work and family life. As women have increasingly entered the labour market and increased their aspirations for educational attainments, careers, and financial independence, the question of how to reconcile non – home roles and family responsibilities has become far more pressing (Cousins and Tang, 2004). Women who are managing careers, homes, children, and husband may find the expenditure of time and effort to be overwhelming. Thus, if women are to reach their potential in the managerial setting, they must recognize that home and career conflicts exist and as such develop strategies for coping with them.

HYPOTHESES

1. There will be no significant relationship between job strain encountered by married women and their interaction with family members.
2. There will be no significant relationship between the behaviour of married working women and their home stability and sustainability.

METHODOLOGY

This study was carried out through survey research. It involves the generation of information and collection of data from respondents through the use of questionnaire.

Sample and Sampling Technique

The sample for this study comprises a total of Two hundred married women employees derived from five banks. The purposive sampling technique was used to select the respondents for the research. The purposive sampling technique, according to Patton (2002) entails searching for those members of the research population with the certain qualities that the researcher is looking for. In this case, the researcher sought for married women working in banking industry.

Research Instrument

The research instrument used for data collection is a self - structured questionnaire made up of 10 items using the 4-point Likert-scale of strongly agree (SA), Agree(A), Disagree (D) and Strongly Disagree(SD).

Validity and Reliability of Research Instrument

Face and content validity was assured and Cronbach Alpha reliability co efficient of 0.81 was achieved to establish the suitability and consistency.

DATA ANALYSIS AND RESULTS

Research Question 1

Will the strain encountered by married women in their careers have a negative influence on their relationship with their family members?

Table 1: Job Strain and Interaction with Family Members

S/ N	QUESTIONNAIRE STATEMENTS	S A	%	A	%	D	%	S D	%
1.	My job takes its toll on me physically and mentally	75	7.6%	19	1.6%	72	7.2%	36	3.6%
2.	My work schedule often conflicts with my family life.	41	4.0%	57	6%	30	3.0%	70	7.0%
3.	After work, I come home too tired to do some of the things I would like to do.	47	4.6%	54	5.4%	51	5.2%	48	4.8%
4.	My family dislikes how often I am preoccupied with my work.	45	4.8%	49	5.0%	22	4.2%	61	6.0%
5.	My job makes it difficult to be the kind of spouse or parent I would like to be.	46	4.4%	59	6.0%	21	4.2%	53	5.4%
	Total	254	25.4%	240	24%	238	23.8%	268	26.8%

Table 1 shows that (25.4%) of the participants strongly agreed with items 1 - 5. (24%) agreed, (23.8%) disagreed while (26.8%) strongly disagreed. The data reveals that about 50% of the participants believed that there is negative impact of job strain encountered by women on their relationship with family members.

Research Question 2

Will the behaviour demonstrated by married working women cast a negative influence on their home roles?

Table 2: Behaviour of Married working women and their home stability

S/ N	QUESTIONNAIRE STATEMENTS	S A	%	A	%	D	%	S D	%
6.	I try to dispel any grievances with my family members on a regular basis.	42	4.2%	58	5.8%	42	4.2%	46	4.6%
7.	I devote full attention to each role (home role and non-home role) when I am in it.	53	5.4%	41	4.0%	42	4.2%	65	6.4%
8.	I plan, schedule and organize carefully.	43	4.2%	51	5.2%	55	5.4%	51	5.2%
9.	I try to train my kids to care for themselves so that they cope well in my absence.	47	4.6%	59	5.8%	45	4.6%	51	5.0%
10.	I use modern gadgets to reduce the strain of my absences (e.g. freezer to prolong food life, washing machine to wash more clothes etc.)	57	5.8%	49	5.0%	66	6.6%	36	3.8%
	Total	242	24.2%	258	25.8%	250	25%	250	25%

Table 2 reveals that (24.2%) of

the participants strongly agreed with items 6 – 10 (25.8%) agreed, (25%) disagreed, while (25%) strongly disagreed. The data shows that 50% of the participants believed that there is a problem in maintaining stability in homes by married working women.

Hypothesis one

There will be no significant relationship between job strain encountered by married women and their interaction with family members.

Table 3: Correlation Analysis of Relationship between Job Strain and family Interaction

Variables	N	\bar{X}	SD	DF	r-cal	r-crit	Remark
Strain	200	58.4	4.9	198	2.34	1.92	Rejected
Family interaction	200	51.3	4.6				

(r.cal = 2.34 < r.crit = 1.92, df = 198, P > 0.01) ** Correlation is significant at the 0.01 level (2-tailed)

The result above reveals that there is a high and significant correlation between the strain encountered by married women and their interaction with family members. This is shown by r.cal of 2.34 being greater than r- crit of 1.95 tested at 0.01 level of significance. It can be stated that there is a significant relationship between the strain encountered by married women and their interaction with family members thus, the null hypothesis is rejected.

Hypothesis Two

There will be no significant relationship between the behaviour of married working women and their home stability.

Table 4: Correlation Analysis of relationship between career women behaviour and home stability

Variables	N	\bar{X}	SD	DF	r-cal	r-crit	Remark
Behaviour	200	38.6	11.4	198	2.7	1.95	Rejected
Home stability	200	39.7	9.8				

($r_{cal} = 2.7 < r_{crit} = 1.95$, $df = 198$, $P > 0.01$)**Correlation is significant at the 0.01 level (2-tailed)

The result above shows that the correlation between the behaviour of married women and their home stability is significant and also high. This is shown with r_{cal} of 2.70 at 0.01 level of significance. It implies that the null hypothesis two is rejected, and means that there is a significant relationship between the behaviour of married women and their home stability.

DISCUSSION OF RESULTS

The result for hypothesis one on relationship between job strain encountered by married women and their interaction with family members based on role stress theory depicts the assumption that individuals have a finite amount of physiological and psychological resources to expend on multiple role obligations. Consequently, involvement in work and family roles depletes these resources and inevitably results in role conflict (Renne, 2003; Okonufua, 2002; Kahn et al, 1964). Based on the foregoing, it can be inferred that the psychological resources possessed by married working women are not abundant enough to spread through their workplace and their homes, this results in strain, and consequently, conflict. The inability to cope with the challenges brings about negative behaviour such as shouting at the spouse, not relating well with the children, emotional pain etc. which is a serious problem bringing about conflict and psychosocial problems to married women. The stress that results from these new realities affects families at all income levels and at all life stages. The most obvious implication for workers and families is the increasing time squeeze, which means that many working female adults, mothers, and married women who possibly may also be students at the same time have difficulty providing the “assumed” normal daily attention needed for the well-being of family members, including themselves.

The result for significant relationship between the behaviour of married working women and their home stability corroborates the findings of Lu, (2007) on the impact of work-family conflict on working women in Taiwan, using 441 women (aged between 15 and 64 years) in paid employment and working in three public universities in northern Taiwan. Her findings showed that work-family conflict was strongly linked with lower job and family satisfaction, greater stress and more severe physical ailments. Lu, (2007) suggested that, implementing family-friendly policies and creating a supportive work environment can help working women to manage their work-family conflict and improve their behavioural outcomes.

From a statistical point of view, the United Nations in 2012 gave an insight into the women’s changing roles. From the perspective of education and income, the UN gave the percentage of women in college to have grown steadily from 42% in 1970 to 56% in 2011. For the first time ever, women received more PhDs than men in 2008-2009 (United Nations, 2012). The percentage of women in the workforce almost doubled in the second half of last century, from 32% to 62 % (United Nations, 2012). Furthermore, women's median income has increased over 60% over the past 30 years, while men's median income has hardly increased at all and wives whose earnings were greater than their husbands’ increased 18 percentage points, from 4 to 22 percent, from 1970 to 2007 (United Nations, 2012).

There should be an increase attention on gender and development issues thereby making female work constraint an important issue. Pearce (2007) believes that this is a necessary response to the global realization of imbalance attention to the differentiated positions of women and men in the society in terms of resource allocation, rights and opportunities. Above all, consideration should be given to productive activities, formulating policies and designing projects, which can however, have adverse or positive impact on economic outcomes. As the case may be it is imperative therefore that women have a role to play in economic advancement of a nation and the level to which this can be attained is a function of how effective are the influencing factors in every economy.

CONCLUSION AND RECOMMENDATIONS

Women opportunities to contribute to the development of societies need should be improved otherwise economic growth especially in developing countries will be constrained and the ability to care for the environment in these countries reduced.

When more women work, economic grow. An increase in female labour force participation, or a reduction in the gap between women's and men's labour force participation, results in faster economic growth.

Linking gender equality, home stability and sustainable development is important for several reasons. It is a moral and ethical imperative. Efforts to achieve a just and sustainable future cannot ignore the rights, dignity and capabilities of half the world's population. To be effective, policy actions for sustainability must redress the disproportionate impact on women of economic, social and environmental shocks and stresses. The policy actors could be the government, civil society, international agencies, or the private sectors. Women should not be viewed as victims, but as central actors in moving towards sustainability.

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ASSESSMENT OF SECONDARY SCHOOL STUDENTS' KNOWLEDGE OF THE CONCEPT OF CLIMATE CHANGE: IMPLICATIONS FOR TEACHER EDUCATION

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ABSTRACT

The purpose of this study was to investigate students' knowledge on the concept of climate change and its implication for teacher education. This study was a descriptive survey. The population of the study comprised all secondary school students in Lagos State. Two hundred and ninety-four (294) Senior Secondary School Students from six (6) Secondary Schools in Lagos State, Nigeria were selected for the study through multi-stage random sampling. A test-item named Students' Knowledge of Climate Change (SKCC) was used to collect data from the respondents. Item analysis was carried out to find the reliability of the SKCC. One research question and one research hypothesis was raised to guide the study. The data gathered were analyzed using simple percentages, descriptive statistics and Analysis of Variance (ANOVA) at 0.05 level of significance. The findings showed no significant difference in the knowledge of climate change among the selected senior secondary schools. The implications of this finding were discussed and it was suggested that climate change units be included in the curriculum of teachers' education. In addition, secondary school curriculum should be revised such that the students will be kept abreast with the challenges and mitigation strategies of climate change, among others.

Keywords: Climate Change, Global Warming, Education

INTRODUCTION

The general prevailing weather conditions of a region – such as temperature, air pressure, humidity, precipitation, sunshine, winds, cloudiness – could be seen as a pointer to the well-being of the people. Climate change has been observed to be a complex problem that cuts across different dimensions such as social, environmental, cultural, ecological, ethical, economic and political issues. As an ecological being, man needs conducive environment for effective and fruitful living (Owolabi, Gyimah & Amponsah, 2012). Ikehi, Ifeanyieze and Ugwuoke (2014) perceives climate change as the variation of the average weather attributed directly or indirectly to human activities in addition to natural events that alter the composition of the atmosphere. In addition, when viewed from the context of environmental policy, climate change refers to only the changes in modern climate, including the rise and in average surface temperature known as global warming (United Nations Framework Convention on Climate Change, 2004).

Alan (2013) reported that significant climatic changes in the world were already evident from the observations of, for instance, rising global average temperature, surging average sea level, widespread melting of ice and snow cover, the changes of frequency or intensity of extreme weather events (i.e., tropical cyclones, heat waves, heavy precipitation, cold/hot days), and etc. In addition, most of the observed increase in global average temperature since the mid-20th century was 'very likely' due to the escalation of greenhouse gas (GHG) concentrations

through anthropogenic activities such as burning fossil fuels (Intergovernmental Panel on Climate Change [IPCC], 2007).

Changing climate has been observed by scientists to have significant impact on our planet. United Nations Children's Fund (2011) reported that in 2007, the Intergovernmental Panel on Climate Change (IPCC) issued its Fourth Assessment Report, so far the most convincing assessment on the science and implications of climate change. This report concluded that only immediate and sustained action will stop climate change from causing irreversible and potentially catastrophic damage to our environment. The IPCC noted that climate change will manifest itself in various ways, including: Rising temperatures, droughts and desertification; Heavy precipitation, flooding and rising sea levels; Extreme weather events such as cyclones, floods and droughts. Such conditions can impact diminishing water resources, causing increased malnutrition, waterborne diseases such as diarrhoea, and vector-borne diseases such as malaria.

Nigeria as a whole is not shielded from this threat, being the populous and populated black nation in the world. It is of utmost importance that Nigeria's educational institution not only provides the facilities to promote behavioural change among their students but all commit themselves to reducing the impacts on the environment, in particular their contribution to climate change through environment friendly practices such as reduction of carbon emission to the atmosphere.

Furthermore, our educational institutions are straight forwardly challenged to increase their responsibility in developing an environmentally literate citizen. In particular schools need to play a prominent role in preparing citizens to analyze and resolve environmental issues. Schools are obliged to help students to be a part of society. While they also assume to be leaders in creating a culture of environmental stewardship in our society. Halder, Havu-Nuutinen, Pietarinen, Zyadin and Pelkonen (2014) noted that school students are the future citizens of a country, and unless they are aware of the pressing environmental and energy related challenges and their relationship with sustainable development, such problems cannot be solved effectively.

Climate change awareness involves creating knowledge, understanding and values, attitude, skills and abilities among individuals and social groups towards the issues of climate change for attaining a better quality environment. Climate change specialists have repeatedly pointed out that a solution to climate change problem will require climate change awareness and its proper understanding. The role of teachers will go a long way in achieving this purpose (Ekpoh & Ekpoh, 2011).

In the light of this, it is pertinent to assess the knowledge, concepts and practices of secondary school students towards global climate change. This is an important task because secondary school students have a significant impact on the environment. This includes their high output levels of waste and greenhouse gases. Ultimately, their actions play a role in contributing to climate change. Therefore, it becomes prudent to understand what levels of knowledge and what types of attitudes and practices students ascribe to, in order to know their impact on global climate change.

STATEMENT OF PROBLEM

Climate change threatens the broader sustainable development agenda to reduce poverty and child mortality, ensure universal primary education for all children and enhance gender

equality. It jeopardizes efforts to meet the Millennium Development Goals (MDGs), especially those related to child welfare (UNICEF, 2011).

The study has been motivated as a result of the low level of awareness of the problem among secondary school students and the public in general. In light of the negative effect which climate change cause to both lives and property the information about students understanding about the concept of climate change will go a long way in helping to develop a curriculum that will enhance students' knowledge and understanding about climate change, thereby the threat to lives can be controlled. The need for such information therefore constitutes a problem of interest to this research work. Thus, this study is meant to assess secondary school students' factual knowledge of the concept of climate change and its implication for teacher education.

PURPOSE OF STUDY

The purpose of this study is to investigate students' knowledge on the concept of climate change and provide guidance to curricular development in order to enhance science teaching and learning experiences through the development of innovative, instructional programs and activities based on students' ideas and understanding.

Research Question

This study provided answer to the following question

1. What is the level of knowledge of secondary school students in Lagos metropolis on climate change?

Research Hypothesis

1. There is no significant difference in the knowledge of climate change among the selected secondary school students.

METHODOLOGY

In carrying out this research work, a descriptive survey research design was used to assess the level of knowledge of secondary school students' concept of climate change: implication for teacher education. The population comprised all secondary school students in Lagos State. The target population involve Senior Secondary II (SS II) Students in Lagos State.

In order to give every school equal opportunity of being selected, the study adopted a Multistage Radom Sampling. The first step involve using simple random sampling technique, hat and draw method to select six (6) Local Government Areas out of the twenty (20) Local Government Areas in Lagos State. The second step involved selecting one Senior Secondary School in each of the selected six Local Government Areas in the stage. Thereafter, forty-two students, containing male and female students were randomly selected from each of the six secondary schools. Thus, the sample size consisted of two hundred and ninety-four (294) respondents from six (6) senior secondary schools in Lagos State. Table 1 shows the distribution of the Local Government Areas, Senior Secondary Schools and Senior Secondary II Students selected for the final study.

Table 1: Distribution of Male and Female Students in the six selected Senior Secondary Schools/Local Government Areas (LGA) of Lagos State

<i>LOCAL GOVT. AREA</i>	<i>SCHOOLS</i>	<i>MALE</i>	<i>FEMALE</i>	<i>TOTAL</i>
LGA A	School A	22	20	42
LGA B	School B	21	21	42
LGA C	School C	19	23	42

LGC D	School D	22	20	42
LGA E	School E	21	21	42
LGC F	School F	20	22	42
LGA G	School G	22	20	42
TOTAL		147	147	294

INSTRUMENT

A test item called Students' Knowledge of Climate Change (SKCC) was used to collect data from the respondents. The SKCC was adopted to gather information on the students' knowledge of climate change. The SKCC has two sections, i.e. Section A and Section B. Section A of the questionnaire covered items on personal information of the respondents and Section B had 20-item multiple choice questions raised on Students Knowledge on Climate Change. The item was validated using experts in Science Education and Measurement & Evaluation. The item analysis was carried out before the main study. The index of difficulty ranging from 0.2 to 0.8 and a positive index of discrimination (Obe, 1980; Okoli, 2005, Ilogu, 2008).

ADMINISTRATION

Copies of SKCC were personally administered to the selected six senior secondary school II students in the six randomly selected Local Government Areas of Lagos State. The researcher collected the completed responses to the test items immediately so that analysis could be done.

DATA ANALYSIS

Data collected were analysed using simple percentage, mean, standard deviation and Analysis of Variance (ANOVA). The hypothesis was tested at 0.05 level of significance.

RESULT

Research Question 1: What is the level of knowledge of secondary school students in Lagos metropolis on climate change? To answer this research question, responses of the students who responded to the test items were summarized and presented in Table 2.

Table 2: Summary of Students' Responses to the Multiple Choice Questions

SN	Items	Right Option	Wrong Option	Total
1	The hot weather experienced today is caused by	70% (176)	30% (76)	100% (252)
2	Greenhouse gases are carbon dioxide trapped in the	70% (176)	30% (76)	100% (252)
3	The resultant effect of greenhouse gases trapped in the atmosphere is called	46% (116)	54% (136)	100% (252)
4	Which of the following is a global phenomenon?	54% (136)	46% (116)	100% (252)
5	Global warming is caused primarily by carbon dioxide from	32% (81)	68% (171)	100% (252)
6	What is weather?	55% (139)	45% (113)	100% (252)
7	Which of these can change from hour to hour, day to day and	70% (176)	30% (76)	100% (252)

	season to season?			
8	What is climate?	21% (53)	79% (199))	100% (252)
9	Which of following activities are responsible for change in climate	27% (68)	73% (184)	100% (252)
10	Preserving existing forests and planting new trees will help to reduce effect of	49 (123)	51 (129)	100% (252)
11	What is climate change?	45% (113)	55% (139)	100% (252)
12	Acid rain is one of the impact of	47% (118)	53% (134)	100% (252)
13	Air pollution causes	26% (66)	74% (186)	100% (252)
14	Global warming will have significant impacts on	46% (116)	54% (136)	100% (252)
15	Which of the following are effects of global warming?	39% (98)	61% (154)	100% (252)
16	Students can help to save our earth through the following except	27% (68)	73% (184)	100% (252)
17	What kind of weather does global warming cause?	32% (81)	68% (171)	100% (252)
18	What is ozone layer?	35% (88)	65% (164)	100% (252)
19	What is greenhouse effect?	32% (81)	68% (171)	100% (252)
20	Carbon dioxide from burning coal, oil and gas in power plants, cars and factories causes	28% (71)	72% (181)	100% (252)
Average		43% (108)	57% (144)	

Evidence from Table 2 showed that 70% (176) responses to item 1, were right while 30% (76) were wrong. A total of 70% (176) responses to item 2 were right while 30% (76) were wrong. A total of 46% (116) responses to item 3 were right while 54% (136) responses were wrong. A total of 54% (136) responses to item 4 were right while 46% (116) responses were wrong. A total of 32% (81) responses to item 5 were right while 68% (171) were wrong. A total of 55% (139) responses to item 6 were right while 45% (113) responses were wrong. A total of 70% (176) responses to item 7 were right while 30% (76) were wrong. A total 21% (78) response to item 8 was right while 79% (174) were wrong. A total of 27% (68) responses to item 9 were right while 73% (184) were wrong. A total of 49% (123) responses to item 10 were right while 51% (129) were wrong.

A total of 45% (113) responses to item 11 were right while 55% (139) were wrong. A total of 47% (118) responses to item 12 were right while 53% (134) responses were wrong. A total of 26% (66) responses to item 13 were right while 74% (186) were wrong. A total of 46% (116) responses to item 14 were right while 54% (136) were wrong. A total of 39% (98) responses to item 15 were right while 61% (154) were wrong. A total of 27% (68) responses to item 16 were right while 73% (184) were wrong. A total of 32% (81) responses to item 17 were right

while 68% (171) were wrong. A total of 35% (88) responses to item 18 were right while 65% (164) were right. A total 32% (81) response to item 19 was right while 68% (171) were wrong. A total of 28% (71) responses to item 20 were right while 72% (181) were wrong.

The overall average performance of students from Table 2 shows that 43 percent of the respondents were right. However, 57 percent of the respondents were wrong while attempting the 20-item multiple choice questions.

Hypothesis 1: There is no significant difference among the selected secondary schools in their concepts of climate change. The result of analysis in respect of this hypothesis was presented in Table 3.

Table 3: Analysis of Variance (ANOVA) showing difference among selected secondary schools in their concepts of climate change

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	710.36	4	177.59	2.192591	Not Sig.
Within Groups	20005.89	247	80.99550607		
Total	20716.25	251			

Not Significant at 0.05; $df = (4, 247)$; $F_{critical} \text{ at } 0.05 (4, 152) = 2.43$

The result in Table 3 reveals that a calculated F-value of 2.19 resulted as the difference among selected secondary schools in their knowledge of the concept of climate change. Thus, the calculated F-value of 2.19 is statistically insignificant since it is lesser than the critical F-value of 2.43, given 4 and 152 degrees of freedom at 0.05 level of significance. Thus, the null hypothesis was accepted. This implies that there exists no significant difference among selected secondary schools in their knowledge of the concept of climate change.

Hypothesis 2: There is no significant difference in the knowledge of climate change among the selected secondary school students due to gender. The result of analysis in respect of this hypothesis was presented in Table 4.

DISCUSSION

The study revealed that 43 percent of the respondents got the questions right, while 57 percent of the respondents were wrong while attempting the 20-item multiple choice questions. Thus, the performance of students can be perceived as below average. The findings align with Alan (2013) who observed that students possessed a fairly low level of climate change knowledge with different misconceptions. Shepardson, Roychoudhury, Hirsch and Niyogi (year) noted that students has poor knowledge of climate change because they cannot monitor climate change due to time and scale issues. In addition, Nwankwo and Unachukwu (2012), in their study noted that majority of the teachers are not aware of the causes and effects of climate change.

The analysis of hypothesis one shows that the knowledge of secondary students across the selected secondary schools is not significantly different with regards to the knowledge of climate change. By implication, it means that secondary school students exhibited low knowledge of climate change across schools in Lagos State. The findings is line with Owolabi, Gyimah and Amponsah (2012) who observed low level of knowledge in Junior Secondary Students knowledge of climate change. Similarly, Ekpoh and Ekpoh (2011), and Pradhan (2002) who in their separate studies noted teachers working in secondary school had low awareness about environmental problems.

CONCLUSION

In conclusion, the study revealed that students in Lagos State possessed below average knowledge of climate change. Also, the students' knowledge of climate change across Lagos State Senior Secondary Schools is below average.

RECOMMENDATIONS

Based on the findings of the study, it was recommended that:

- 1) climate change education in the curricula of teachers education with the aim of breeding competent and well qualified cadre of teachers, who will in turn help to produce citizens who are critical thinker, able to manage uncertainties and change, and how to be adaptable, to achieve this it is crucial to review the whole education system.
- 2) advisory and monitory groups should be set up by the federal and state government ministries of education to monitor the progress made as well as areas improvement needs and provision of quality assurance on climate change education materials and practices in schools.
- 3) Secondary school curriculum should be revised such that the students will be kept abreast with the challenges and mitigation strategies of climate change.

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INFLUENCE OF GENDER STEREOTYPES ON SPORTS INVOLVEMENT AMONG INSTITUTIONAL ATHLETES

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ABSTRACT

The study investigated the influence of gender stereotypes on sports involvement among institutional athletes. The sample used for the study was one hundred and two (102) students-athletes selected from University of Lagos. The descriptive survey method was used and the respondents were selected through simple random sampling. A self-structured questionnaire was used to collect data for this study. The test-retest reliability value obtained for the instrument using Pearson Product Moment Correlation Co-efficient was 0.81. Data from the study was analysed with the use of frequency counts and percentages for demographic data and Chi-square for the variables of the study. Findings of the study revealed that there was significant gender differentiation in sports involvement among institutional athletes. Also, Parental approval will have no influence on sport involvement among institutional athletes. Media was confirmed to also influence sport involvement among institutional athletes. Based on the findings, it is recommended that the innate sport ability of a girl child should be jointly nurture by all and derogatory comment should be effectively nip in the bud. There should also be encouragement of mutual respect, cooperation and support between male and female Participants in sport

INTRODUCTION

Sport with all obvious traits is having a profoundly positive impact on the world. It can extracts youthful communities from poverty and inject flaking nations with relentless spirit. Sport transcends barriers and mends people with tumultuous personal histories. Effectively operating beyond the limitations of a classroom, sport can teach essential life lessons. Involvement in sport is the act of sharing in the competitive activities of a group. Sport and the values associated with it have traditionally been those relevant to both sexes.

The lofty values of sport have most often been mar by gender imbalance in sport. Wilde (2009) posits that one specific area in which traditional gender stereotypes have been evaluated and analyzed is sport and physical activities. Comparing traditional female gender stereotypes with those of the 21st century women in sport, it is clear that female athletes are beginning to establish themselves in the sport world. Their ability to challenge sexist barriers and restrictive notions about women's physical appearance, athletic ability, and participation in sports, is evident through their increased involvement in sports. However, it is also true that traditional female stereotypes continue to prevail.

A study by Hardin and Greer (2009) found that participants rated sports, such as basketball and soccer as more masculine even though both genders play these sports at the collegiate and professional levels. In addition, McCabe (2007) noted that women who played basketball tended to believe that their abilities were inferior to those of men. Historically, sports have served as an arena for men. Competition served as a means of displaying power and dominance. Since men predominantly held positions of power and dominance in the home, politics, and business, women's main role was to stay at home, support her husband, and focus on raising the family.

Sohi and Ikhioya (1990) quoted in Ikhioya (1999) reported that women in Nigerian universities were not active sport participants. According to them, these women did not regard sport as conducive to their physical wellbeing. Oworu (2003) postulated that the notion that women have been conditioned to be what they are is deeply rooted in the prejudicial social patterns of different cultures. Ikhioya (1999) citing Ikhioya (1986) and Amuchie (1978) further showed that in most communities in Nigeria, especially rural ones, cultural beliefs and attitudes had strong influences on low participation of women in sports. Besides, organizations of sporting activities in most communities are usually focused on combative sports, such as boxing, wrestling, archery and shooting. These sports are mainly participated in by men and tend to discriminate against women.

Karuru (2006) pointed that globally, evidence of gender inequity includes the widespread preference of sons over daughters, limited education and work opportunities for girls and women, and high levels of physical and sexual violence against girls and women. More subtle forms of discrimination are arguably equally problematic and include gender stereotyping and institutional discrimination. Some cultural traditions that favour men over women, and the subsequent cultural practices that perpetuate that discrimination, lead to social exclusion. Chalabaev et al (2003) submitted that although natural physical differences do exist between women and men, they are not sufficient to explain the sex differences observed in sport performance and participation, and psychosocial determinants should also be considered.

According to Huggins and Randell (2007) in both subtle and explicit ways, women face many barriers to participating in sports, which prevent women and girls from reaping the many benefits that can be gained from playing sports and engaging in physical activity. Around the world, women encounter discrimination and stereotyping. Women athletes receive lower levels of media coverage, and are subjected to sexist and derogatory language in the media and from people in their communities. The sporting world epitomizes many of the gender stereotypes which persist around the world today, and has proved to be highly resistant to meaningful gender reform. By creating opportunities for women and girls to engage in sport, communities and societies empower women and girls on an individual level, by promoting self-confidence, leadership, teamwork skills and a sense of achievement.

RESEARCH HYPOTHESES

The following research hypotheses constituted the basic assumptions for this study:

1. There will be no significant gender differentiation on sports involvement among institutional athletes.
2. Parental approval will have no significant influence on sport involvement among institutional athletes.
3. Media will have no significant influence on sport involvement among institutional athletes.

METHODOLOGY

The sample size involved one hundred and two (N=102) students-athletes selected from University of Lagos. Simple random sampling with replacement was used to select the participants for the study. A self-structured questionnaire consisting of three variables to which the participants were asked to tick the options of their choice in four-point Likert rating scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD). The validity of the instrument was ascertained through some experts from the cognate unit of this study who assisted in content and construct validity.

Test-retest method was used for reliability of the instrument, a correlation co-efficient value of 0.81 was obtained. Out of the 110 copies of questionnaire administered, 102 were correctly

filled, returned and coded for analysis. Descriptive statistics of frequency counts and percentages was used to analyze the demographic data, while inferential statistics of Chi-square (χ^2) was used to test the hypotheses at 0.05 alpha level.

RESULT

The demographic data revealed that by gender, 73 (71.5%) of the total respondents were males while 29 (28.4%) were females. Based on age, 42 (41.2 %) of the respondents fell within age range of 16-20 years, 47 (46.1) were within 21-25 years, 11 (13.8%) were within 26-30 years while age 31 & above constituted 2(1.9%) of the respondents. In Sport specialisation, 37 (36.3%) of the respondents specialised in Football, 24 (23.5%) played Basketball, 19 (18.6%) engaged in Volleyball, 16 (15.7%) participated in Athletics while 6 (5.9%) of the respondents specialised in Racket sport.

The data analyses of the responses of the participants are shown in the tables below.

Table 1: Chi-square Result of gender differentiation on sports involvement

Variable	N	Df	Calculated χ^2	Critical χ^2	Remark
Gender differentiation	102	3	59.8	16.9	*S* Significant

$$\chi^2 \text{ Cal. Value} = 59.8 > \text{Crit. } \chi^2 \text{ value} = 16.9, \text{ df } 3 \text{ p} < 0.05$$

Table 1 above showed that calculated chi-square value of 59.8 was greater than the critical value of 16.9 at 0.05 alpha level. This implies that there is significant gender differentiation in sports involvement among institutional athletes.

Table 2: Chi-square Result of Parental approval on sports involvement

Variable	N	Df	Calculated χ^2	Critical χ^2	Remark
Parental approval	102	3	16.8	16.9	*I* Insignificant

$$\chi^2 \text{ Cal. Value} = 16.8 < \text{Crit. } \chi^2 \text{ value} = 16.9, \text{ df } 3 \text{ p} < 0.05$$

As showed in table 2 above the calculated chi-square value of 16.8 was less than the critical value of 16.9 at 0.05 alpha level. This connotes that parental approval will have no significant influence on sport involvement among institutional athletes.

Table 3: Chi-square Result of media on sports involvement

Variable	N	Df	Calculated χ^2	Critical χ^2	Remark
Media	102	3	31.7	16.9	*S* Significant

$$\chi^2 \text{ Cal. Value} = 31.7 > \text{Crit. } \chi^2 \text{ value} = 16.9, \text{ df } 3 \text{ p} < 0.05$$

Table 3 above indicated that calculated chi-square value of 31.7 was greater than the critical value of 16.9 at 0.05 alpha level. This connotes that media will have significant influence on sport involvement among institutional athletes.

DISCUSSION OF FINDINGS

The finding of this study that there is significant gender differentiation in sports involvement among institutional athletes agrees with Tanner (2011) who opines that female athletes still battle stereotypes associated with them. Participation in certain sports by women is still not deemed acceptable by all. Specifically, participation in team sports and physical sports is not always approved of. Language used by commentators reinforces these ideas. So little attention is given to women's sports as it is that what coverage they do receive stands out, but not for the right reasons. This coverage entails using language that lessens the importance of female athletes. Similarly, because female athletes often sweat, play aggressively, wear athletic wardrobes, develop muscles, and have masculine builds, they do not fit the expectations of society. Instead, society stereotypes these "masculine" female athletes - those with muscles and masculine builds - and those who play masculine sports as mannish lesbians (Jones & Greer, 2007).

The finding that parental approval will have no significant influence on sport involvement among institutional athletes contradicts Malszecki and Cavar (2005) who connote that people are bombarded with gender stereotypes from birth until death. Once a new baby's sex is revealed, they are dressed in either blue or pink, given gifts of trucks and soldiers or dolls and animals, and referred to as strong and alert or soft and delicate. Actions and ideas such as these are only the first of many gender stereotypes that a new child will encounter throughout their lifetime. The outcome of the study is however supported by Chalabaev et al (2003) who sees stereotype as trait of self-concept other than prevailing circumstances.

The finding that media will have significant influence on sport involvement among institutional athletes agrees with Tanner (2011) who reported that women in general are often sexualized and objectified and female athletes are no exception. Instead of focusing on their abilities and triumphs, commentators devote time to talking about their appearance. Soccer player Brandi Chastain's removal of her jersey after winning the World Cup was a huge media sensation. Her team's victory did not garner the majority of the media's attention. Instead, the removal of her shirt gained the most coverage. Male commentators constantly made sexual references to a shirtless Chastain. The clip of her in her sports bra was plastered everywhere. Tennis star Anna Kournikova was sexualized and objectified for her physical appearance as well. Broadcasters often commented on her attractive body and long blonde hair and made references to how lucky her boyfriend was to be dating such an attractive woman.

Media representations in line with gender schémas reinforce gender stereotypes. Media represent the societal gender schémas by underrepresentation of female athletes. Furthermore, when female athletes do receive media attention, their femininity receives more attention than their athletic ability (Fink & Kensicki, 2002).

CONCLUSION

In line with the findings of this study, the following conclusions were drawn that there is gender differentiation in sports involvement among institutional athletes. Media also have significant influence on sport involvement among institutional athletes. Parental approval was however confirmed not to have influence on sport involvement among institutional athletes.

RECOMMENDATION

Based on the findings of this study, the following recommendations were made:

1. The innate sport ability of a girl child should be jointly nurtured by all and derogatory comment should be effectively nipped in the bud.

2. There should be encouragement of mutual respect, cooperation and support between male and female Participants in sport
3. Media practitioners should be censored on unguided statement that fuel stereotype in sport.
4. Constant enlightenment should be offer to parent to desist from stereotyping duties for their wards

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AN INVESTIGATION INTO THE EFFECTIVENESS OF INSECTICIDE –TREATED NETS INITIATIVE AMONG PREGNANT WOMEN IN KOSOFE LOCAL GOVERNMENT AREA OF LAGOS STATE

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ABSTRACT

The purpose of this study was to investigate the effectiveness of insecticide treated nets (ITN) initiative for pregnant women at Kosofe Local Government Area of Lagos State. The sample used for this study was two hundred and ten (n-210) pregnant women registered in various health centers and hospitals in the Local Government. The descriptive survey design was used and the respondents were selected using purposive sampling technique. Insecticide Treated Nets Assessment Questionnaires (ITNAQ) was used to elicit opinion from respondents. The test retest reliability value obtained for the instrument using Pearson Product Moment Correlation Co-efficient was 0.86. Data was analysed using frequency counts and percentage for demographic data while Chi-square was employed in determining the level of significance between the hypothesized and observed values at 0.05 alpha level. The result of the findings revealed that insecticide treated nets initiative have significant influence on health status, health awareness and also reduce maternal mortality among pregnant women. The study recommended that government and stakeholders in health promotion should provide insecticide treated nets to people and also create awareness on the importance of it to the general populace which will thereby reduce the scourge of malaria.

Keywords: *Investigation, Effectiveness, Insecticide-treated Nets, Pregnant Women, Malaria.*

INTRODUCTION

Nigeria as a nation is blessed with both human and natural resources yet women die everyday from the scourge of maternal mortality. Nigeria has the second highest rate of maternal death in the world one in every eight women die while giving birth. Most of these deaths are avoidable as compared to the United States of America where only one in 4,800 obtains (Daily Independence, 2012).

Roll back' Malaria initiative is the initiative put in place for the mosquito control, through the use of Insecticide-Treated Nets (ITN) and Indoor residual Spraying (IRS). Malaria Threaten, the lives of 3.2billion people globally and exacts a great toll on vulnerable pregnant women and children, killing an estimated 1 to 2 million yearly and causing illness in about 300 to 500 million among these two groups due to their high vulnerability Africa is a malaria-endemic region where approximately 25million women become pregnant annually. This factors contributes to the maternal and neonatal morbidity/mortality in Africa region. One of the major public health challenges in Nigeria is the very high prevalence of malaria. Malaria accounts for about 110 million clinical cases annually in the country. As reported by the most recent estimates, nearly half the Nigerian population annually experience one episode of malaria and the majority of outpatients visits made to the government health facilities can be attributed to malaria (FMOH, 2011). The most vulnerable groups, as have been observed, as

children age below 5 years and the pregnant women. The severity of malaria is worsened by pregnancy as a result of distinct malaria parasites that binds the placenta (Tako, Zhou, Lohove, Leke, Taylor & Leke, 2004). Malaria can result to pregnancy loss, still birth, low birth weight and neonatal mortality if not properly taken care of at the early stage (Jamison, 1993). Hence, its enormous physical, emotional, social and economic impacts on the clients, families and the nation at large cannot be quantified. One established means of preventing the adverse consequences of malaria during pregnancy is sleeping under an insecticide treated net (ITN) throughout pregnancy. Despite increased access to this intervention over time, consistent ITN use during pregnancy remains relatively uncommon in sub-Saharan Africa. ITNs are distributed free of charge to various household in Lagos and it is also provide within the states at a subsidized price. While mass, free ITN distribution campaigns and subsidized voucher programs for ITNs targeting pregnant women and children under 5 years of age have been successful at increasing the proportion of households that own and use an ITN.

Several global and regional attempts have been made at controlling malaria thereby reducing maternal mortality in the past with little success as a result of ineffective strategies used and insufficient resources. However, the most recent launching of the roll back malaria initiative has generated a lot of resources for the control of the diseases with simple and cost-effective interventions, with a specific focus on the most at risk. At the historic malaria summit hosted by Nigeria in 2000, Africa Heads of states made a declaration to halve the burden of malaria by year 2010, one of the targets set for first five years was to ensure that the vulnerable groups, children under five years of age and pregnant women, have access and sleep under ITNs. The four key intervention strategies of Roll back malaria, which is recommended by WHO are: case management of malaria in pregnancy, using sulfadoxine + pyrimethamine (sp) as a drug of choice for intermittent preventive treatment (IPT), widespread use of insecticide treated nets (ITNs), antennal care and vaccines.

Therefore, the purpose of this study was to examine and investigate the effectiveness of insecticide – treated nets among pregnant women.

SIGNIFICANT OF THE STUDY

This study may be significant on the following ways

- i. The study will facilitate the effective use of Insecticide Treated Nets among pregnant women, thereby reducing the scourge of malaria and its impact on maternal health.
- ii. It will also help various health organization to implement and create awareness on the effective use ITNs among pregnant women most especially at the grass root level.

METHODOLOGY

This study investigated the effectiveness of insecticide-treated nets initiative among pregnant women in Kosofe local government area of Lagos Stat. The sample size involve two hundred and ten pregnant women who were purposively selected form the total population of pregnant women across various ante-natal centers in Kosofe Local Government.

Insecticide – Treated Nets Assessment Questionnaire (ITNAQ) was used to elicit opinion from the respondents. ITNAQ consisted of four variables to which the participants were asked to tick the option of their choices in four point likert rating scale of Strongly Agree, Agree, Disagree and Strongly Disagree respectively.

The information elicited includes participants' socio demographic variable, utilization pattern of ITNs, awareness and use of ITNs in reducing maternal mortality among pregnant women. The face and content validity of the instrument were ensured by comparing its items with previous studies and by matching them with the stated objectives and formulated research

hypotheses. In addition, copies of the research proposal and the instrument went through series of expert review in the Department of Human Kinetics and Health Education, University of Lagos. Permission to conduct the study was obtained and informed consent was verbally obtained from the respondents before the copies of the questionnaire were administered.

Test-retest method was used for reliability of the instrument; a correlation co-efficient value of 0.86 was obtained 210 copies of the questionnaire were administered by the researcher with the help of two trained research assistant.

Completed copies of the questionnaire was collated and subsequently analysed. Descriptive statistics of percentages and frequency counts was used to analyse the socio-demographic variable while inferential statistics of chi-square was used to test all the stated hypotheses at 0.05 alpha level.

Table 1: Participants' socio-demographic characteristic

A. Age group (years)	Frequency	Percentages
Less than 20years	14	6.67%
20 – 29	138	65.71%
30 – 39	36	17.14
40 – 49	22	10.48
Total	210	100
B. Levels of Education	N	Percentages
No formal Education	24	11.43
Primary School Education	46	21.90
Secondary School Education	128	60.95
Tertiary Education	12	5.71
Total	210	100
C. Employment Status	N	Percentages
Students	30	14.29
Housewives	38	18.10
Self employed	82	39.04
Civil servants	36	17.14
Private workers	24	11.43
Total	210	100
D. Marital Status	N	Percentages
Single (unmarried)	12	5.71
Married (living separately)	42	20.00
Married (living together)	156	74.29
Total	210	100

From table 1 above, the data revealed that by age group, 14(6.67%) were less than 20years of age, 138 (65.71%) were between 20 – 29 years, 36 (17.14%) 30-39 years and 22(10.48%) fell within 40-49years of age; based on level of education, it was shown that 24(11.43%) had no formal education, 46(21.90%) had primary education, 128 (60.95%) had primary education, 128 (60.95%) had secondary education while 12(5.71%) had tertiary education.

In employment status, 30 (14.29%) were students, 38 (18.10%) were house wives, 82(39.04%) were self employed, 36(17.14%) were civil servants while 24 (11.45%) were private workers. Based on marital status 12(5.71%) were single (unmarried) married (living separately were 42(20.00%) while 156 (74.29%) were married living together.

Table 2: Chi-square result of insecticide treated nets' influence on the health status of the pregnant women

Variables	N	Df	L.S	Calc X^2	Crit. X^2	Remark
Health status of pregnant women	210	9	0.05	113.51	18.92	*S*

X^2 cal value = 113.51 > crit. X^2 = 18.92, df = 9, $P > 0.05$.

Table 2 above showed that calculated value of 113.51 is greater than critical value of 18.92, with degree of freedom 9 at 0.05 level of significance. This implies that insecticide treated nets would have significant influence on the health status of the pregnant women.

Table 3: Chi-square Analysis on ITNs and its significant Influence on health awareness among pregnant women

Variables	N	df	L.S	Calc X^2	Crit. X^2	Remark
Health status of pregnant women	210	9	0.05	40.86	18.92	*S*

X^2 cal value = 40.86 > crit. X^2 = 18.92, df = 9, $P > 0.05$.

Table 3 revealed that calculated value of 40.86 is greater than critical value of 18.92, with degree of freedom 9 at 0.05 level of significance. This connotes that ITN, initiatives will have significant influence on the health awareness among the pregnant women.

Table 4: Chi-square Analysis on ITN influence in reducing maternal mortality among pregnant women

Variables	N	df	L.S	Calc X^2	Crit. X^2	Remark
Health status of pregnant women	210	9	0.05	122.71	18.92	*S*

X^2 cal value = 122.71 > crit. X^2 = 18.92, df = 9, $P > 0.05$.

Table 4 showed that calculated value of 122.71 was greater than critical value of 18.92, with degree of freedom 9 at 0.05 level of significance. This implies that ITN will have significant influence in reducing maternal mortality among pregnant women.

DISCUSSION OF FINDINGS

The first finding which implies that insecticide treated nets will have significant influence on the health status of pregnant women also agree with Steketee, Nahlen, praise and Menendez (2001) which stated that insecticide treated, will help to prevent malaria infection among pregnant women which will thus enhance the health status of the pregnant women.

The second finding that insecticide treated nets will have significant influence on the health awareness of the pregnant women agrees with Robson (2010) that acquisition of health awareness. The practice of disseminating health information is the norm in all formal health facilities.

The third finding which connotes that insecticide treated nets will have significant influence in reducing maternal mortality rate among pregnant women agrees with Hansen, (2002) which stated that malaria is one of the leading cause of maternal mortality in sub-Saharan African and this scourge can only be prevented through roll back malaria initiative of which insecticide treated nets initiative is inclusive. Insecticide treated nets helps to prevent malaria which can lead to death among the pregnant women.

CONCLUSION

It was observed that insecticide treated nets initiative increase level of health literacy. The initiatives programme describe malaria as a preventable and treatable diseases transmitted by mosquitoes that kills more than one million people annually, most of the in Sub-Sahara Africa. Therefore, insecticides treated nets initiative is effective and helps to promote and sustain the life of pregnant women.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

- Health education and promotion programs emphasizing on prevention of malaria should be carried out.
- Free ITNs distribution programme of the federal government of Nigeria should be examined and reviewed for effectiveness.
- Health awareness on the usage of ITNs should be encouraged.

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DEMOGRAPHIC VARIABLES AS DETERMINANT OF STUDENTS' CHOICE OF SPORTS ACTIVITIES IN LAGOS STATE

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ABSTRACT

This study was conducted to investigate demographic variables as determinant of students' of Lagos state in choice of sports activities. The variables studied were age, gender and religion & cultural belief. The sample for the study was two hundred and fifty (250) staff and members of selected recreational centres in Lagos State. Data were collected from the subjects with a self-structured validated questionnaire. Results were obtained through descriptive statistics of simple percentage and chi-square analysis used to test the stated hypotheses at a 0.05 level of significance. The findings revealed were age, gender and religion & cultural belief would all significantly influence students' choice of sports activities in Lagos state. Based on these findings it was recommended that Demographic variables (age, gender, religion and cultural belief) influence choice of sports activities in Lagos state, therefore, advantage should be taken of this finding to increase the level of sports activities among secondary school students in Lagos state.

Keywords: Demographic Variable, Sports, Age, Religion, Health

INTRODUCTION

According to Fasan (2004), one of the most important phenomena which cut across all human endeavours is sport and that the knowledge of sports has contributed immensely to the art and science of discoveries. Students like to engage in the same sports as their age grades, they feel secure, relaxed and well understood in the midst of their peers and they also overcome challenges together. Age affects participation in sports and the interest of individuals is normally aroused by the presence and success of their friends in a particular sport (Hamafyelto and Badejo, 2002), for instance, Mikel Obi, Taye Taiwo, Dele Adeleye, Chindeu Ogbuke Obasi, were members of the Nigerian Under-20 silver medal winning team at the 2005 Holland Junior World Cup and the National Under-23 Dream Team that won Silver medal at the Beijing Olympic games in 2008, this players have moved together through the age grade competitions and are now playing at the top level for the senior national team, the Super Eagles. These are motivating factors for young men to take part in sporting activities.

Worldwide, girls are less frequently seen engaging in sports activities than boys, some sports are still considered male sports and so it sometimes harder for female to get involved in these sports (e.g. rugby, football, wrestling and boxing) (Wikipedia, 2010). Boys and Girls tend to engage in different types of physical activities and their attitude towards sports may different. The competitive dimension of many sports may for some be at the heart of the game, while for others sports may simple be an opportunity to get together. In addition to a general lack of safe and appropriate sports facilities, lack of skills, resources, and technical support, girls may face additional physical constraints, including lack of equipment and facilities. Girls may be particularly exposed to physical and or verbal or sexual harassment as well as other dangers related to choice of sports programmes, for instance there is lack of female role models, including female Physical Education teachers (Wilson, 2009).

Contrary to commonplace assumption regarding ‘determinants’ of sports participation, Birchwood et al (2008) found strong evidence that family culture were the chief factor underpinning individuals’ propensities to play sport. These cultures are perhaps best described as ‘habit uses’ – belief and behavior in relation to sports with historical and social dimensions. It is clear that parents’ holds specific goals in relation to their children sports participation, and may employ a set of strategies and practices in order to achieve such goals. Today, sports are truly global with well co-coordinated programmes. It has moved from the cradle of enjoyment, recreation and entertainment to an instrument of international politics, and nationalism. In support of the above, Awosika (1992) highlighted that sports has become a unifying factor in the country and it has become an essential ingredient toward nation building. He went further to say that, sports cut across all barriers, ethnic, religious or racial and has served as a dialogue in developing youth. If you enjoy sports at school you are more likely to play sport when you leave school and outside of school hours (Wikipedia, 2010). Sporting activities has economical benefit to the athletes, officials, organizations and the government of a nation. In event of any completion, this usually attracts spectators who pay gate fees, which enhance the economic and financial status of the nation or particular sports organization that stages the competitions. (Ikulayo 2007).

Awoyinfa (2005), opined that when sports came into existence some thousand years ago, little did the world realized that it will soon develop to become a socio-economic, political, cultural and religious weapon through which many nations around the globe would seek to rule the world, during competitions. Filley (2005), asserts that sports just as we approach the next millennium has so much developed that it has established itself as a factor to reckon with in international affairs right from the primary school to tertiary institution and of course at local, states, national and international levels.

The following research questions were raised and answered in the study:

- i. Will age influence students choice of sports activities in Lagos State?
- ii. Will gender influence students’ choice of sports activities in sports in Lagos State?
- iii. Will religion and cultural belief influence students’ choice of sports activities in Lagos State?

HYPOTHESES

The following hypotheses were tested in this study

- i. Age will not significantly influence students’ choice of sports activities in Lagos State.
- ii. Gender will not significantly influence students’ choice of sports activities in Lagos state.
- iii. Religion and cultural belief will not significantly influence students’ choice of sports activities in Lagos State.

METHODOLOGY

The research method that was adopted for this study is the descriptive survey research design. This descriptive survey research design was appropriate since it determines the influence between the variables in the study. The simple random sampling technique was adopted for this study. The sample used for the study consisted of 400 students made up of 50 students from 8 selected Local Government Areas which include Ikeja, Oshodi/Isolo, Alimosho, Surulere, Mainland, Lagos Island, Shomolu and Kosofe and the sample involved students between ages 12 and 18 in JSS I to SSS 3. The research instrument employed was a self-structured and validated questionnaire of Four-Point Likert Attitudinal Scale. The instrument was validated by three (3) experts in the field of Human Kinetics and Health Education after which the instruments were administered. Reliability of the instrument was established

through a test-retest two weeks intervals with using Pearson Product Moment Correlation Coefficient (PPMCC) which recorded reliability index of 0.83. This was regarded as high reliability.

A total of 400 copies of the validated questionnaire were administered with the help of two research assistants who helped in the distribution and collection of the questionnaire forms from respondents. The questionnaires were collected on the spot. The data analysis reflected according to the hypotheses raised for the study using descriptive statistics of percentages and inferential statistics of chi-square to test significance at a 0.05 level of significance

RESULTS

The analyses of the responses of the subjects are shown in Table 1 below, chi-square (χ^2) analysis on the demographic variables as determinant of students' in Lagos state choice of sports activities.

Table 1 – Chi-square Analysis on the demographic variables as determinant of students' in Lagos state choice of sports activities

Variables	N	Calculated chi-square value (χ^2 calc-value)	Critical chi-square value (χ^2 crit. value)	Degree of Freedom (df)	L.S	Remarks
Ho ₁ : Age will not significantly influence students' choice of sports activities in Lagos State.	400	87.85	21.03	12	0.05	"S" Significant
Ho ₂ : Gender will not significantly influence students' choice of sports activities in Lagos state.		179.5	21.03	12	0.05	"S" Significant
Ho ₃ : Religion and cultural belief will not significantly influence students' choice of sports activities in Lagos State.		168.94	21.03	12	0.05	"S" Significant

Hypothesis one states that age will not significantly influence students' choice of sports activities in Lagos State. The findings of this study revealed that hypothesis one chi-square value of 87.85 is greater than the critical chi-square value of 21.03 established at a 0.05 level of significance. The result shows that the stated null hypothesis one was significant. This implies that age will significantly influence students' choice of sports activities in Lagos State.

Hypothesis two states gender will not significantly influence students' choice of sports activities in Lagos state. Calculated chi-square value exceeded the critical chi-square value, calculated χ^2 value = 179.5 > critical χ^2 value = 21.03, at $p > 0.05$. Hypothesis three was significant. This implies that gender will not significantly influence students' choice of sports activities in Lagos state.

Hypothesis three states that religion and cultural belief will not significantly influence students' choice of sports activities in Lagos State. The result revealed that the calculated chi-square value of 168.94 was greater than the critical chi-square value of 21.03 established at 0.05 alpha level. Thus null hypothesis two was significant. This implies therefore that religion and cultural belief will not significantly influence students' choice of sports activities in Lagos State.

DISCUSSIONS OF FINDINGS

Critically looking at the results obtained on each items on the variables, it is evident that age of students will significantly influence choice of sports activities in Lagos state. Kilpatrick (2005) stated that youth, especially girls always feel comfortable in the midst of their mates in their sporting activities. In support of this finding by Kilpatrick was Carlos (2000) who stated that youth are always with their colleagues during leisure time. Kelinske (2001) in his study on youth and sports reported that youth of the same age bracket play together especially among girls. Steven (2004) carried out a study among adolescent (individuals between 12-18 years old), on the factors responsible for behaviours at this stage of life. His study revealed that individuals at this age bracket behave similarly because of the development that take place in their bodies and that at their age, they consider themselves as adults and independent of decision taking.

It is evident that gender of students will significantly influence choice of sports activities in Lagos state. In a study carried out by Odedeji (1993) on influence of gender on the choice of recreational activities among individuals between 20 and 35 years, it was reported that 97% of the female were attracted to the same activity which are less rigorous in nature while 99% of the male were found in rigorous activities, it was concluded that gender influences the choice of recreational activity. In a similar study, Odogwu (1998) found out that gender influence the choice of sports among students in boarding school with the girls participating in the same sport likewise the boys.

Religion and cultural belief of students will significantly influence choice of sports activities in Lagos state. Ogunsanya (2000) quoting Dada (1990) registered that Quranic injunction in Islam as a religion discourages women's participation in sports. He asserts that the faithful of his religion often refer to the Quran, chapter four (4), verse Ten to thirty-one (10-31) which states that Women should not engage in sports that will expose them. According to Oyewunmi (2009) religion of parents will significantly affect the students' attitudes towards their choice of sporting activities. His study found that 58% of Christian, 30% Muslims and 11.6% traditional worshippers among parents had favourable attitude towards students' choice of sports activities. Adedeji (1992), opined that women are gentle, shy, fragile conventional and subordinate to the male sex. Traditionally, women have always been regarded as the weaker sex, whose natural charm, beauty and femininity may be destroyed by rigorous physical activities.

CONCLUSION

From the result of the study, the following conclusions were drawn:

- i. Age has a significant influence on choice of sports activities in Lagos state.
- ii. Gender of students has a significant influence on choice of sports activities in Lagos state.
- iii. Religion and cultural belief of students has a significant influence on their choice of sports activities in Lagos state.

RECOMMENDATIONS

In view of the findings obtained and the conclusion reached above the following recommendations were hereby made.

1. Demographic variables (age, gender, religion and cultural belief, socio-economic status) influence choice of sports activities in Lagos state, therefore, advantage should be taken of this finding to increase the level of sports activities among secondary school students in Lagos state.

2. Enlightening campaign should be carried out in all Lagos state secondary schools by both the government and private bodies on the benefits of sports activities.
3. Religious groups should be encouraged to participate more in sports programme.
4. The government should create more recreational centres with token fees being collected while the private recreational clubs should be made to reduce their huge membership fees and annual dues so that it can be affordable to the masses.

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CONSTRUCTING NATIONAL TRANSFORMATION THROUGH PRE-SERVICE CHEMISTRY TEACHERS' AWARENESS OF ENTREPRENEURSHIP OPPORTUNITIES EMBEDDED IN SCHOOL CURRICULUM

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ABSTRACT

Transformation Agenda is based on a set of priority policies and programs which when fully implemented is expected to transform the Nigerian economy to meet the future needs of the people. Transformation Agenda can be well driven through entrepreneurship. Entrepreneurship helps in employment generation and wealth generation which can generate a lot of income through wages or salaries and taxes which can transform Nigeria into a global player. Entrepreneurship opportunities abound in the secondary school chemistry curriculum but the extent to which pre-service chemistry teachers in the university are aware based on their personal characteristics need to be examined. Four hypotheses were generated and tested. The design employed for the study was ex-post facto. The sampling techniques combined purposive and simple random technique to select a sample of 132 pre-service chemistry teachers. Entrepreneurship Opportunities in Chemistry Curriculum Questionnaire (EOiCCQ) was the instrument developed to collect data. Data was analysed using descriptive statistics, Multivariate Analysis of Variance, and Analysis of Variance. Significant differences were found to exist along the lines of course level, mode of entry and years of part-time working experience on their awareness of entrepreneurship opportunities. The study has implication for teaching and learning as well as admission policies.

Keywords: Entrepreneurship Opportunities, Pre-service, Chemistry Teachers, curriculum, Personal Characteristics

INTRODUCTION

National Transformation Agenda in Nigeria was envisioned in a bid for the country to be ranked among the first 20 developed economies in the world. Agenda that forms the key objectives of the vision 2020 are to:

- Stimulate Nigeria's economic growth and launch the country onto a path of sustained and rapid socio-economic development
- Place Nigeria in the bracket of top 20 largest economies of the world by the year 2020, able to achieve a GDP of not less than \$900 billion and a per capita income of not less than \$4000/annum by the year 2020.

Functional education provides a means by which Vision 2020 can be actualized. A functional education is that type of education that equips the individual with the required knowledge and understanding that can be transformed into worthwhile application capable of adding quality to the life of the individual and by extension the society. Functional education instills creativity and innovation which provides room for in-built entrepreneurship opportunities that is capable of creating employment and generating wealth in the long run.

Financial Standard (2009) observes that close to 60% of Nigerians of working age are not employed and it is near impossible for the government to provide jobs for all her teeming population. The Human Development Ranking Index in the last six years has put Nigeria in a position of 158 to 153 with no significant improvement (UNDP, 2009, UNDP, 2012). Thus,

there is a need to be pro-active with regard to what our university graduates can do based on what they have been taught and this coincides with two of the propositions of Boulton cited in Bamiro (2015) in that: the university's concern is useful knowledge, but not merely with the immediately applicability-a university is a resource for an unknown future. Another one is that the central role of university is education with the authors of this work laying emphasis on functional education.

CONCEPT OF ENTREPRENEURSHIP AND SECONDARY SCHOOL CHEMISTRY CURRICULUM

Entrepreneurship entails being enterprising, innovative, creative, filling a need in the society and this tends to improve the living conditions of the people involved and this also impacts on the society at large. Akpomi (2009) view Entrepreneurship as a response to the diverse opportunities and potentials that exist within an individual and his/her environment. Entrepreneurship is a nexus of knowledge, skills and attitude. This literally means that an entrepreneur must acquire the required knowledge, Thomas (2013) notes that Entrepreneurship is one of the most important drivers of job creation and economic growth which is crucial for the development of a vibrant, small and medium-sized business sector.

Entrepreneurship education provides means by which concepts, principles, ideas, theories can be translated into products and services based on the societal needs. Arogundade (2011) define entrepreneurship education as the willingness and ability of a person to acquire educational skills, to explore and exploit investment opportunities, establish and manage a successful business enterprise. Entrepreneurship education for pre-service chemistry teachers can come from two broad perspectives and these are; the knowledge of concepts, theories, laws, propositions, ideas and principles that are chemistry based in their science education courses in the university. Another broad perspective is the knowledge acquired from their courses in the chemistry specific courses at the undergraduate level. Though, this particular study approximates the first perspective.

The new secondary school chemistry curriculum imbibed Nigeria's endorsement of international protocols for Education for All (EFA), The Millennium Development Goals (MDGs) and subsequent adoption of a National Economic Empowerment and Development Strategies (NEEDS). It therefore became imperative to update existing chemistry curriculum to cater for contemporary needs of the nation as a country aspiring to be among the first 20 economies in the world by 2020 (Nigerian Educational Research and Development Council, 2008). Two of the objectives at the secondary school chemistry curriculum are linked to entrepreneurship. The objectives are stated below:

- (i) To develop reasonable level of competence in ICT applications that will engender entrepreneurial activities;
- (ii) To apply skills to meet societal needs of creating employment and wealth;

Beautiful and lofty as these objectives related to entrepreneurship are, there is a proviso to it and this is that the effective implementation of this new curriculum will rely heavily on the availability of teachers who are well grounded in the subject matter of chemistry as well as the philosophy and purpose of the curriculum (NERDC, 2008). This new curriculum is weaved around four thematic areas and these are: the chemical world, chemistry and environment, chemistry and industry as well as chemistry and life.

Pre-service chemistry teachers are expected to be aware of these objectives in order to be able to offer functional chemistry education to the students and by extension conscious of the entrepreneurship prospects embedded in the chemistry curriculum which can make them to

earn a living on their own, more so, Odogwu, Yewande and Fakorede (2013) in a study on the pre-service STM teachers found out that they would prefer to function more as an entrepreneur rather than an intrapreneur. Sound entrepreneurship foundations would provide a viable and solid basis for national transformation. This is because it would impact positively on the economy, social lives, enhance community development as well as generally improve the standard of living of people and make our country a better place to live in with the prospect of ensuring sustainable development.

Entrepreneurship abilities within a school setting or targeted at future teachers in school is gradually receiving attention. Hamzah, Yusuf and Abdullah (2009) in a study on Headmaster and Entrepreneurship criteria investigated the competency analysis of self-entrepreneurship of 106 headmasters who has participated or are still participating in the Teachers' Post-Graduating Special Program. In this study, the headmasters (the respondents were given questionnaires to evaluate their self-entrepreneurship competency by themselves. 13 characteristics of entrepreneurship which consists of 70 questions were given to the headmasters. The study showed that the entrepreneurship characteristics within the headmasters are average and poor in "initiative" and "information retrieval.

Also, in the Nigerian setting, Odogwu, Yewande and Fakorede (2013) in a study predicting whether University of Lagos pre-service STM teachers would function more as an entrepreneur or an intrapreneur found out that personal characteristics were effective in predicting influence of student and school characteristics of pre-service STM teachers' entrepreneurship abilities. Some studies documenting some entrepreneurship outcomes with regard to personal characteristics are fairly well documented in literature (Lumpkin, 2007; Olakitan, 2011; Parker & Collins, 2010; Yewande & Esiobu, 2013). Yewande and Esiobu (2013) notes that the Department of Science and Technology Education in University of Lagos have courses which ordinarily should equip their students for teaching in secondary schools as well as prepare them for the world of work as an intrapreneur or as an entrepreneur in areas that approximates their discipline. In that study Yewande and Esiobu (2013) observed that entrepreneurship abilities of pre-service Science, Technology and Mathematics (STM) differ by school and student characteristics such as: age, geo-political zone of birth as well as the university type of pre-service STM teachers.

Simpeh (2011) in a non-empirical study using summary review of literature on Entrepreneurship theories and empirical research classified Entrepreneurship theories into six and these are: economic entrepreneurship theories, psychological entrepreneurship theories, sociological entrepreneurship theories, anthropological entrepreneurship theories, opportunity based entrepreneurship as well as resource based entrepreneurship theories. Economic entrepreneurship theories include: classical, neo-classical and Austrian Market Process (AMP) developed by Schumpeter cited in Simpeh (2011). All these theories provide information and understanding of entrepreneurship from the view point of economic factors. Entrepreneurship theories from the psychological domain are documented in literature and they include: personality trait, locus of control and need for achievement theory (Coon, 2004; Mohar, Singh & Kishore, 2007). In sociological entrepreneurship theories, the level of analysis is the society. Anthropological theories explain the origin, development, customs, and beliefs of a community. In other words, the culture of the people in the community. The anthropological theory says that for someone to successfully initiate a venture the social and cultural contexts should be examined or considered. A very popular theory here is the cultural entrepreneurship model well explained in literature (Baskerville, 2003; Mitchell et al., 2002a). The opportunity based theory provides a wide-ranging conceptual framework for entrepreneurship research (Fiet, 2002; Shane, 2000). The Resource-based theory of

entrepreneurship argues that access to resources by founders is an important predictor of opportunity based entrepreneurship and new venture growth (Alvarez & Busenitz, 2001; Davidson & Honing, 2003). National Transformation Agenda in Nigeria is inextricably linked with MDGs which dovetails into Sustainable Development.

PURPOSE OF THE STUDY

The purpose of the study was to examine the pre-service chemistry teachers' awareness of entrepreneurship opportunities that abound in the secondary school chemistry curriculum. The specific objectives of the study are:

- (1) To ascertain whether course level could influence pre-service chemistry teachers' awareness of entrepreneurship opportunities
- (2) To determine whether mode of entry (UTME and Direct) could influence pre-service chemistry teachers' awareness of entrepreneurship opportunities
- (3) To ascertain the influence of years of part-time working experience on pre-service chemistry teachers' awareness of entrepreneurship opportunities.

Hypothesis

1. There will be no significant mean difference in pre-service chemistry teachers' awareness of entrepreneurship opportunities in the thematic areas of; chemistry and industry, the chemical world, chemistry and environment and the chemistry of life with regard to their course level.
2. There will be no significant mean difference in pre-service chemistry teachers' awareness of entrepreneurship opportunities with regard to their mode of entry.
3. There will be no significant mean difference in pre-service chemistry teachers' awareness of entrepreneurship opportunities with regard to their years of part-time working experience.

METHOD

The design employed for the study was a non-experimental type that was ex-post facto. This design was considered ideal when it is not possible to manipulate the characteristics of human subjects. The population for the study comprises 188 pre-service chemistry teachers in the department of Science and Technology Education, University of Lagos.

The study combined purposive and simple random sampling techniques. Purposive and simple random techniques were considered in order to exclude 100 level students as they are deemed not to have taken courses in the department with regard to methodology. With that, they were excluded and eighty percent of the remaining population was considered as the sample using simple random sampling technique which gave 132.

The instrument designed was: Entrepreneurship Opportunities in Chemistry Curriculum Questionnaire (EOiCCQ). It consists of two sections with the first being the bio-data section. The bio-data consists of items such as: course level, mode of entry and years of part-time working experience. Section B consists of four sections of the chemistry curriculum in which the pre-service chemistry teachers rated themselves on an 8-point rating scale ranging from almost nonexistent to an excellent extent. The first part under section B comprises seven items which is chemistry and industry. The second part in the section consists of ten items which represent the chemical world. The third part in the section consists of 10 items under chemistry and environment while the last part in the section consists of six items under the chemistry of life. Face and content validity were ascertained by the second author of this work. Reliability was ascertained using Cronbach alpha which gave a value of 0.802

Data was analysed using descriptive statistics of mean and standard deviation. Inferential statistics of One-way Multivariate analysis of variance (MANOVA) and One-way Analysis of Variance (ANOVA).

RESULTS

Results were presented along the lines of stated hypotheses.

Hypothesis 1

There will be no significant mean difference in pre-service chemistry teachers' awareness of entrepreneurship opportunities in the thematic areas of; chemistry and industry, the chemical world, chemistry and environment and the chemistry of life with regard to their course level.

Table 1: Descriptive Statistics, MANOVA and ANOVA Values of Course Levels on Entrepreneurship Opportunities of Pre-service Chemistry Education Students

Dependent Variable	Independent Variable	N	Mean	SD	Multivariate Values		Univariate Values		Scheffe Post-hoc
Chemistry and Industry Score	Course Levels				F	Sig.	F	Sig.	
	200 Level (1)	40	4.18	1.22	9.46	0.00	14.25	0.00	1*2
	300 Level (2)	36	5.65	0.98					1*3
	400 Level (3)	56	4.84	1.32					2*3
	Total	132	4.86	1.32					
The Chemical World Score	200 Level (1)	40	5.25	1.05			0.64	0.53	
	300 Level (2)	36	5.39	1.14					
	400 Level (3)	56	5.08	1.53					
	Total	132	5.21	1.29					
Chemistry and Environment Score	200 Level (1)	40	4.78	1.37			3.27	0.04	1*2
	300 Level (2)	36	5.63	1.07					
	400 Level (3)	56	5.15	1.70					
	Total	132	5.17	1.48					
Chemistry of Life Score	200 Level (1)	40	4.98	1.07			16.74	0.00	1*2
	300 Level (2)	36	6.33	0.84					2*3
	400 Level (3)	56	4.90	1.52					
	Total	132	5.31	1.38					

***This implies significant difference between levels of the factors. Significant at $p < .05$**

Table 1 provides a summary of the descriptive statistics of mean and standard deviation using an eight-point scale with chemistry of life having the highest mean score ($\bar{x}=5.31$; $SD=1.38$) with Chemistry and Industry component having the least mean score ($\bar{x}=4.86$; $SD=1.32$). It can be implied that pre-service chemistry teachers were most aware of entrepreneurship opportunities with regard to chemistry of life while least aware of entrepreneurship opportunities in chemistry and industry. 300 level students were most aware of the entrepreneurship opportunities in all the four dependent variables making up pre-service chemistry teachers' entrepreneurship opportunities.

Overall multivariate test was significant using Pillai's Trace ($F=9.44$, $p < .05$). This implies that the hypothesis stated was rejected and it is concluded that course level had a significant effect on the awareness of entrepreneurship opportunities. Further analysis shows that the differences exist on three dependent variables namely: chemistry and industry, chemistry and environment and chemistry of life. Scheffe post-hoc revealed that for chemistry and industry, significant difference existed between pre-service chemistry students at 300 level when compared to 200 and 400 levels with 300 level students having the most superior score in chemistry and industry. Similarly, 400 level pre-service chemistry students demonstrated a significantly higher score when compared to 200 level students.

Hypothesis 2

There will be no significant mean difference in pre-service chemistry teachers' awareness of entrepreneurship with regard to their mode of entry.

Table 2: Descriptive Statistics, MANOVA and ANOVA Values of Mode of Entry on Entrepreneurship Opportunities of Pre-service Chemistry Education Students

Dependent Variable	Independent Variable	N	Mean	SD	Multivariate Values		Univariate Values		Pair-Wise
Chemistry and Industry Score	Mode of Entry				F	Sig.	F	Sig.	
	UTME(1)	97	4.92	1.34	3.24	0.047	0.780	0.380	
	Direct Entry (2)	35	4.69	0.27					
	Total	132	4.86	1.32					
The Chemistry World Score	UTME(1)	97	5.35	1.25			4.420	0.037	
	Direct Entry (2)	35	4.83	1.33					1*2
	Total	132	5.21	1.29					
Chemistry and Environment Score	UTME(1)	97	5.29	1.57			2.725	0.101	
	Direct Entry (2)	35	4.81	1.13					
	Total	132	5.17	1.48					
Chemistry of Life Score	UTME(1)	97	5.31	1.41			.002	0.963	
	Direct Entry (2)	35	5.32	1.29					
	Total	132	5.31	1.38					

***This implies significant difference between levels of the factors. Significant at $p < .05$**

Table 2 indicate that UTME pre-service chemistry teachers had a higher mean scores when compared to Direct Entry students for chemistry and industry, the chemical world as well as chemistry and environment respectively ($\bar{x}=4.92$, $SD=1.34$; $\bar{x}=5.35$; $SD=1.25$; $\bar{x}=5.29$, $SD=1.57$). On the other hand, UTME pre-service chemistry teachers had a higher mean score than UTME students in chemistry of life ($\bar{x}=5.31$; $SD=1.38$)

Multivariate test was significant using Pillai's trace ($F=3.24$, $p < .05$). This means that the null hypothesis stated was rejected and it can be inferred that mode of entry had a significant effect on combined measures of awareness of entrepreneurship opportunities of pre-service chemistry teacher with regard to secondary school curriculum. As a result of the significance, a one-way analysis of variance was conducted and it was observed that differences exist only on one dependent variable of the chemical world.

Hypothesis 3

There will be no significant mean difference in pre-service chemistry teachers' awareness of entrepreneurship opportunities with regard to their years of part-time working experience.

Table 3: Descriptive Statistics, MANOVA and ANOVA Values of Course Levels on Entrepreneurship Opportunities of Pre-service Chemistry Education Students

Dependent Variable	Independent Variable	N	Mean	SD	Multivariate Values		Univariate Values		Scheffe Post-hoc
Chemistry and Industry Score	Experience				F	Sig.	F	Sig.	
	None (1)	72	4.54	1.40			3.707	0.006	1*2
	A Year less (2)	21	5.54	1.07					
	1-2yrs (3)	20	4.83	1.08					
	3-4yrs (4)	14	5.20	1.21					
	Above 4 years	5	5.89	0.63					
	Total	132	4.86	1.32					
The Chemical World Score	None (1)	72	5.31	1.30			1.707	0.152	
	A Year less (2)	21	4.70	0.90					
	1-2yrs (3)	20	5.33	1.34					
	3-4yrs (4)	14	5.01	1.65					
	Above 4 years	5	6.12	0.45					

	Total	132	5.21	1.29	2.76	0.00			
Chemistry and Environment Score	None (1)	72	4.96	1.70			2.085	0.087	
	A Year less (2)	21	5.40	0.59					
	1-2yrs (3)	20	5.25	1.19					
	3-4yrs (4)	14	5.20	1.39					
	Above 4 years	5	6.80	1.00					
	Total	132	5.17	1.48					
Chemistry of Life Score	None (1)	72	5.06	1.45			2.316	0.061	
	A Year less (2)	21	5.63	1.03					
	1-2yrs (3)	20	5.41	0.66					
	3-4yrs (4)	14	5.49	1.97					
	Above 4 years	5	6.70	0.79					
	Total	132	5.31	1.38					

***This implies significant difference between levels of the factors. Significant at $p < .05$**

Table 3 indicate that pre-service chemistry teachers had the highest mean score in chemistry and industry ($\bar{x}=5.89$; $SD=0.63$), the chemical world ($\bar{x}=6.12$; $SD=0.45$), chemistry and environmental score ($\bar{x}=6.80$; $SD=1.00$) and chemistry of life score ($\bar{x}=6.70$; $SD=0.79$). On the other hand, pre-service chemistry teachers with no years of part-time working experience had the least scores in chemistry and industry ($\bar{x}=4.54$; $SD=1.40$), chemistry and the environment ($\bar{x}=4.96$; $SD=1.70$) and chemistry of life ($\bar{x}=5.06$; $SD=1.45$). Overall multivariate statistic was significant as measured by Pillai's Trace ($F=2.76$, $p<.05$). This implies that the null hypothesis stated was rejected and it is concluded that years of part-time working experience had an influence on pre-service chemistry teachers' entrepreneurship opportunities. Further analysis using one-way analysis of variance indicated that the significance was mainly due to the dependent variable of chemistry and industry ($F_{(4,127)}=3.707$, $p,.05$) being the only dependent variable that was significant. Scheffe post-hoc analysis shows that the significance was mainly due to the differences between pre-service chemistry teachers with a year less when compared to those without years of part-time working experience.

DISCUSSION

Chemistry of life had the highest mean score with regard to pre-service chemistry teachers' awareness of entrepreneurship opportunities for sustainable development. Chemistry of life contains concepts such as: carbon and its compounds, hydrocarbons, alkanols, alkanolic acids, aldehydes, ketones, fats and oils as well as soaps and detergents and giant molecules such as : sugars, starch and proteins. The practical application of these concepts in areas such as soaps, detergents, varnishes, lacquers, perfumes, vims, polish seems to be fairly well known to the pre-service teachers, thus, it was very easy for them to rate it as the most. Hypothesis one was significant with regard to course level being responsible for the differences in the combined measures of entrepreneurship opportunities. 300 Level pre-service teachers had the highest mean score in the four areas with 200 level having the least score. In their own case, it might be attributable to the fact that they have not received adequate courses in methodology in education as well as courses in chemistry science. However, the major finding of this study is the fact that 300 Level pre-service teachers claimed to be aware of entrepreneurship opportunities more than their 400 Level counterparts. Since entrepreneurship is a composite function of knowledge, skills and attitudes, it may be inferred that pre-service chemistry teachers may be more skilled and possess more positive attitude when compared to the 400 level pre-service chemistry teachers. This finding is supported by studies that confirmed that personal characteristics are predictors of entrepreneurship outcomes (Lumpkin, 2007, Olakitan, 2011, Parker et al, 2010)

The second hypothesis was rejected. Pre-service teachers with UTME as mode of entry significantly had a higher entrepreneurship awareness scores than the pre-service teachers with Direct Entry as mode of entry. This also implies that other factors such as positive attitude, skills and exposure to experiences that could make them to be more aware of entrepreneurship opportunities could have been the driving force for the significantly higher score for UTME mode of entry of pre-service chemistry teachers and skills when compared to direct entry. Hypothesis three was rejected. There was a significant mean difference in the levels of years of part-time working experience on the awareness of entrepreneurship opportunities of pre-service chemistry teachers. This is in line with an earlier finding on entrepreneurship abilities of pre-service STM teachers in which Yewande and Esiobu (2013) found significant difference with regard to their entrepreneurship abilities with pre-service STM teachers having higher number of years of working experience having the highest entrepreneurship abilities score.

CONCLUSION

Pre-service chemistry teachers had the highest score on the awareness of entrepreneurship opportunities in chemistry of life and the least being chemical and industry. Course level, mode of entry as well as years of part-time working experience were significant factors affecting pre-service chemistry teacher's awareness of entrepreneurship opportunities in secondary school chemistry curriculum.

RECOMMENDATIONS

- Seminars and workshops should be organized for pre-service teachers students on entrepreneurship skills, knowledge and attitudes based on concepts in chemistry. This may be carried out using resource persons in the world of work as well as students who graduated from the same department from which the students can learn.
- There might be a need to increase the number of years spent in acquiring a degree in science education to accommodate a semester each for further teaching practice as well as world of work apart from teaching in schools where entrepreneurship skills, knowledge and attitudes in the chemical world can be learnt.
- There is a need to conduct a study with larger sample size to determine the extent of interactions of some of these personal characteristics on pre-service chemistry teachers' entrepreneurship opportunities.

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STRATEGIES FOR ENHANCING QUALITY ASSURANCE AND STANDARDS IN TECHNOLOGY EDUCATION PROGRAMME FOR NATIONAL TRANSFORMATION

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Abstract

The study examined strategies for enhancing quality assurance and standards in technology education programme for national transformation. Survey research design was used for the study. The population for the study comprised of 75 respondents, made up of six technology education lecturers, one workshop technologist and 68 undergraduate technology education students of the Department of Science and Technology Education, University of Lagos, Akoka, Nigeria. Three research questions guided the study. Structured questionnaire was used for data collection. Data collected were analyzed using Mean and Standard Deviation. The findings of the study revealed adequate provision of infrastructural facilities and frequent accreditation exercise will enhance quality assurance and standards in technology education programme. Based on the findings of the study, it was recommended that the University of Lagos, Nigeria management should source funding and assistance through appropriate educational agencies such as TETFund; ETF, PTEF, NGOs; among others to enable them provide the needed infrastructural facilities to enhance quality assurance and standards in technology education programme in the University of Lagos, Akoka, Nigeria for national transformation.

Keywords: strategies, quality assurance, standard, technology education, national transformation

INTRODUCTION

Technological knowledge, skills and attitude are the engines of economic growth and social development of any nation (Goel, 2010). The process of giving or receiving systematic instruction for acquisition of industrial technical knowledge and vocational skills demands a pragmatic approach to education. Education in Nigeria according to the Federal Government of Nigeria (FGN, 2004) is an instrument per excellence for effecting national development. It is the process of giving or receiving systematic instruction, especially for acquisition of knowledge, skills, aptitude, attitude, and competencies to live in and contribute to the development of the society. However, systematic instruction for acquisition the knowledge and skills for developing goods and services to meet the needs of economic growth and social development of any nation can be acquired through appropriate technology.

Technology is a creative and purposeful activity aimed at meeting needs, wants and opportunities through products and offering services. It is a systematic use of all technical knowledge, method and operations in the control of nature (Shobowale, 2006). The author posited that to very high extent technology determines the level of wealth and the quality of the standard of living in a nation. In other words, to provide trained manpower in technological knowledge and vocational skills that determines the level of wealth and the quality of the standard of living in a nation, it require organized and qualitative technology education programmes.

In the opinion of Miller (2005), technology education is a systematic way of exposing individuals to the practical task for developing and producing goods and services to meet the needs and wants of man. The goals of technology education in the report of FGN include to: provide trained manpower in the applied science, technology and business, particularly at crafts, advance crafts and technical levels; provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development; and give training and impact the necessary skills to individuals who shall be self-reliance economically.

The programmes in technology education are an organized and designed process meant to equip individual with work and life knowledge, skills and attitudes. According to

Adebayo (2005), these include: vocational education such as: agricultural education; fine and applied arts; home economics; and industrial technical education such as: Auto-mechanical/metal-work technology; electrical/electronic technology and building construction/woodwork technology. Technology education programme therefore, is organized and designed to provide trained manpower in technological knowledge, vocational skills and business attitude necessary for entrepreneurship and economic development to students who shall be self-reliant economically, wealth creators and lead to reduction to unemployment in a society.

In corollary, technology education programme is offered in the department of science and technology education, faculty of education, University of Lagos. In view of this study, these include: include: Auto-mechanical/metal-work technology education, electrical/electronic technology education and building construction/woodwork technology education. Interestingly, in teaching and learning of technology education programme, it is the duty of the technology education lecturers and educational institution authorities to ensure that there is qualitative teaching and learning so that the students will acquire the required knowledge, skills, attitude, and abilities needed in technology productions and services. This explains that technology education programme helps the University of Lagos students to be self-employed and be able to employ others for economic growth and social development of the nation. However, graduates of technology education programme are expected to give out to the society the quality of education acquired.

Quality is that distinguishing parameter or characteristic that brings out or express the worth or goodness associated with a thing (Ndem and Egbe, 2012). Quality in education relates more to the extent to which the educational system assists the individuals and the society to realise its social and developmental objectives (Igborgbor, 2012). The two aspects of quality in education according to Oderinde (2004) include: internal and external. The internal aspect is the implementations of the school objectives; while the external aspect deals with the implementation of national objectives, which are pre-requisites to the achievement of quality in any educational institution.

More so, for education to maintain its quality Ehidero (2004) reported that it must provide the graduates with the minimum skills and abilities. The author stated that to achieve the desired quality in any educational programme, the institution heads should ensure that the necessary infrastructures and instructional facilities needed in the teaching and learning are available and utilized in appropriate manners. This implies that technology education programme should be provided with the necessary infrastructures and instructional facilities needed in the teaching and learning in order to provide the graduates with the minimum skills and abilities that will enable them to be employable, self-employed, employ others and self-sufficient. Quality therefore, connotes measure of excellence, ideal and standards; it has to do with the level of competence or excellence in performance, which can be measured by establishing acceptable criteria and standards.

A standard in the opinion of the British Standards Institution (2015) is an agreed way of doing something. It could be about making a product, managing a process, delivering a service or supplying materials. The author observed further that standards can cover a huge range of activities undertaken by organizations and used by their customers. In this study, standard is the yardstick upon which technology education programme activities and tasks ensure quality attributes measurement and value attainment of infrastructures and instructional facilities for maintaining its intended purpose. The combination of these attributes and peculiar features therefore, makes provision for maintaining the technology education programme products quality assurance.

Quality assurance is the planned and systematic production processes that provide confidence in products sustainability for its intended purpose. It is all the actions taken to ascertain that the quality of education is maintained (Idialu, 2012). Quality assurance as

applied in education according to African Union (2007) refer to all forms of internal and external quality monitoring, evaluation or review or the systematic review of educational programmes to ensure that acceptable standards of education, scholarship and infrastructure are being maintained. The philosophical objectives of quality assurance in the study of Oyebade, Oladipo and Adetoro (2012) are the decision of educational programme to train individuals to achieve competence in a given area of industrial production functions. Ehidero reported that quality assurance is focused on the learners' entry behaviour and characteristics, teachers' qualifications, their pedagogical status, professional preparedness, philosophical beliefs, subject matter as well as orientations.

Factors affecting quality assurance in technology education programmes in Nigeria according to Idialu include: shortage of qualified personnel; inadequate facilities for teaching and learning; low level of funding; poor societal attitude; poor remuneration of teachers; poor supervision; and poor assessment methods. The need for quality assurance in Nigerian technology education for effective teaching and learning cannot be overemphasized. In the same vein, the major needs for quality assurance in Nigeria education system according to Adegbasan (2011) include ability to: serve as indispensable component of quality control strategy in education; ensure and maintain higher standard of education at all levels; assist in monitoring and supervision of education; determine the quality of the teachers' input; determine the number of classrooms needed based on the average class size to ensure quality control of education; determine the level of adequacy of the facilities available for quality control; and ensure how the financial resources available could be prudently and judiciously utilized.

For success in the achievement of technology education programme objectives, the issue of quality assurance must be accorded paramount consideration, especially in ensuring effective curriculum implementation with respect to the resource personnel, instructional facilities, technologist, content, and instructional methods. With reference to this study, quality assurance is the systematic management and assessment procedures adopted to monitor performance, ensure improvement and achievement of quality of students' outputs in technology education programme for entrepreneurship and economic development in Nigeria. This explains that, through technology education programme, the nation develops its human resources potentials, which is the key to progressive change in economic development. Joyce, Maryam and Zainab (2012) defined development as any progressive change in the economic, social-economic and education sphere. Development therefore, is a fundamental agent of change that gradually transforms technology education students to become refined, productive and self-reliance civilized in a nation. If the changes are quantitative and qualitative, hence, such changes would lead technology education programme to national transformation.

Transformation according to Nasiru (2011) is a complete change from one situation to another, a total departure from the old order to a new one, which does not come accidentally, but require deliberate effort. The author asserted that transformation call for practical action and go beyond mere expression or verbal pronouncement, but requires a number of tasks to be performed. Joyce, et al., defined transformation as a process of profound and radical changes that orients an organization in a new dimension and takes it to an entirely different level of effectiveness. The author observed further that national transformation agenda by former President Goodluck Jonathan, was to ensure quality assurance and standards of education in Nigeria.

National transformation according to Dakuku (2012) refers to the fundamental change in the building block of a nation, changes in the social, economic, infrastructural and political landscape of a nation. So it is logical to say that it takes a performer to be a transformer. With reference to this study, national transformation is the fundamental changes in technology education programme, changes in the social, economic, funding, and infrastructure facilities

provided with reference to this study, include: technology education programme workshops buildings; functional and innovative machines, equipment, tools; computer/graphic studio; well equipped offices for lecturers; among others, for teaching and learning activities. Igborgbor (2012) argued that lack of knowledge, skills, attitudes, and competencies among the new crops of graduates in the country could be attributed to insufficient infrastructure facilities, instructional materials, overcrowded lecture-rooms and shortage of offices for qualified lecturers. Hence, the fundamental changes in technology education programmes will help to provide the industrial technical knowledge and vocational skills, attitudes and competencies necessary for entrepreneurship and economic development to students who shall be self-reliant economically and reduce unemployment situation of the nation, but it appears that this is far fetch among the present university graduates in Nigeria, specifically, technology education students in the University of Lagos, Nigeria. However, to achieve the desired quality assurance and standards needed in technology education programme in order to fulfill stakeholder expectations for national transformation, it demands effective strategies to succeed.

Strategy in the view of Shobowale (2015) may be considered as a pattern in a stream of decisions that guides an organization's ongoing alignment with its environment and shapes internal policies and procedures. According to Riley (2012), strategy is the direction and scope of an organization over the long-term, which achieves advantage for the organization through its configuration of resources within a challenging environment, to meet the needs of markets and to fulfill stakeholder expectations. More so, strategies that are needed to enable educational resources record success in its quality assurance and standards efforts in the view of Farashuddin (2005) should be appropriately linked to the institution's mission, culture, strengths, and weaknesses, its opportunities, and threats. Strategies for establishing quality assurance and standards in education according to the author include: monitoring, supervising, inspecting, quality control, and evaluation.

However, strategies are the art and science of enhancing quality assurance and standards in technology education programme in a synchronized and integrated fashion within a challenging environment in order to meet the needs of markets and to fulfill stakeholder expectations for national transformation. Strategies therefore, needed to enhance quality assurance and standards desired in technology education programme in this study include: adequate provision of infrastructural facilities, consumable materials; accreditation exercise of technology education programme in the University of Lagos, Nigeria for national transformation. Indeed, the strategic rules of conduct in technology education programmes are based on the ideas of providing trained manpower in the applied science, technology and entrepreneurship competencies to students for developing and producing goods and services in order to reduce unemployment in a society.

Technology education programme has been acknowledged as an organized and designed to provide trained manpower in technical knowledge, vocational skills and business attitude necessary for entrepreneurship and economic development to students who shall be self-reliance economically, wealth creation and reduction to unemployment in a society. In order to accomplish these outcomes, quality must be the watchword. Quality assurance and standards are key components of successful internalization strategies for building institutional reputation in a competitive local and global arena for national transformation.

Over the year's Department of Science and Technology Education, University of Lagos, Akoka, Nigeria, which offers technology education programmes do not have required infrastructural facilities such as: functional technology education workshops; innovative machines, equipment, tools; computer/graphic studio; lecture-rooms; and consumable materials for teaching and learning activities, no befitting offices for lecturers; among others. The workshops provided in the department are ill-equipped with non-functional machines; offices provided for lecturers are not befitting; and so on. The above situations negate the

principles of quality assurance and standards in technology education programmes. If the situations are not checked, it will lead to the production of half-baked graduates who may not fit properly in the world of work, especially in technology education teaching subjects and related areas. A situation where indicators and indices of quality assurance and standards may pose as obstacles, need to be addressed. It is against this backdrop that this study examines the strategies for enhancing quality assurance and standards in technology education programme for national transformation.

Research Questions

The following research questions guided the study:

1. How would provision of infrastructural facilities and materials enhance quality assurance and standards in technology education programme?
2. How would frequent accreditation exercise enhance quality assurance and standards in technology education programme?

Methods

Survey research design was adopted for this study. Survey research design according to Nworgu (2006) is concerned with exploring people's opinions by the use of questionnaire. The design was considered adequate since the study obtained data from all the population for the study, which comprised of 75 respondents, made up of six technology education lecturers, one workshop technologist and 68 undergraduate technology education students of the Department of Science and Technology Education, University of Lagos, Akoka, Nigeria through the use of questionnaire. There was no sampling because the population is of manageable size. The instrument for data collection was a Strategy for Enhancing Quality Assurance and Standards Questionnaire (SEQASQ) that addressed the research questions with 5 point Likert-type scale response options of Strongly Agree (SA=5); Agree (A=4); Undecided (U=3); Disagree (D=2); and Strongly Disagree (SD=1) respectively. The questionnaire was validated by three experts. A reliability co-efficient of 0.82 was obtained using Cronbach Alpha analysis to determine the internal constituency of the questionnaire items. Seventy-nine copies of the 32-items SEQASQ were administered to the respondents in the Technology Education Unit of the Department of Science and Technology Education, University of Lagos, Akoka, Nigeria, by the researcher with the help of three research assistants. All the 79 copies of the 32-items SEQASQ administered were retrieved and analyzed using *Mean* and *Standard Deviation* for answering the research questions. An item with the *Mean* of 3.50 and above were regarded as Agree; while any one with *Mean* score below 3.50 was considered as Disagree by respondents to enhancing quality assurance and standards in technology education programme for national transformation.

Results

Research Questions 1

How would provision of infrastructure-facilities and consumable-materials enhance quality assurance and standards in technology education programme?

Relevant data are presented in Table 1.

Table 1

Respondents Views on how Provision of Infrastructure-facilities and Consumable-materials Enhancing Quality Assurance and Standards in Technology Education Programme N = 20

S/N	Provision of Infrastructural Facilities and Consumable-materials	\bar{X}	SD	Remarks
1.	Construction of innovative building structure/workshops	4.06	0.85	Agreed
2.	Building of well equipped lecture-rooms with internet connection.	4.04	0.983	Agreed
3.	Provision of functional machines, equipments and tools for students' practical work.	4.21	0.83	Agreed
4.	Provision of befitting lecturer offices to include air-conditions, land phone extension, computers, and printers.	3.76	0.75	Agreed
6.	Provision of qualified workshop technologists.	4.13	0.79	Agreed
7.	Provision of technology education computers/graphic studio.	4.10	0.88	Agreed
8.	Provision of technology education consumable-materials.	4.11	0.77	Agreed
9.	Provision of common-room for lecturers with internet connected.	4.14	0.84	Agreed

Table 1 showed that all the nine items on provision of infrastructural facilities and consumable- materials had their *Mean* value above 3.50 and were positive. This indicated that all the respondents agreed that provision of infrastructural facilities and consumable materials will enhance quality assurance and standards in technology education programme for national transformation.

Research Questions 2

How would frequent accreditation exercise enhance quality assurance and standards in technology education programme?

Relevant data are presented in Table 2.

Tables 2

Respondents Opinions on how Frequent Accreditation Exercise Enhance Quality Assurance and Standards in Technology Education Programme
N=20

S/N	Frequent Accreditation Exercise	\bar{X}	SD	Remarks
1.	The National University Commission (NUC) should visit technology education programme regularly to ensure that needed facilities are provided.	4.18	0.86	Agreed
2.	The NUC should always inspect facilities provided.	4.16	0.83	Agreed
3.	There should be regular internal inspection of infrastructural facilities by quality control committee in the University.	4.17	0.86	Agreed
4.	The head of department to ensure that each lecturer covers the course outline in each semester.	4.11	0.91	Agreed
5.	Students' workshop practical activities should be properly supervised.	4.22	0.92	Agreed
6.	Students should be properly supervised during their Field Trip and Industrial Work Experience (SIWES) exercises	4.15	0.81	Agreed
7.	Students should be given take home assignment, term papers and assessed properly by the lecturers.	4.11	0.89	Agreed
8.	Students' class-seminars should be coordinated and assessed properly by the lecturers.	4.12	0.86	Agreed
9.	Students' practical/written projects should be well supervised and evaluated by the lecturers.			Agreed
10.	Students should be inspected properly by the lecturers on workshops rules and regulations during practical activities.	4.10	0.92	Agreed
		4.17	0.81	Agreed
11.	Lecturers should be encouraged through promotions and related conferences/workshop/seminars without delay	4.14	0.87	Agreed

Table 2 revealed that all the 11 items on frequent accreditation exercise had their *Mean* value ranged from 4.10 to 4.18 and were positive; indicating the respondents agreed that frequent accreditation exercise will enhance quality assurance and standards in technology education programme for national transformation.

Discussion

The findings of this study revealed that nine adequate provisions of infrastructure, facilities and materials-items will enhance quality assurance and standards in technology education programme for national transformation. These include: Construction of innovative building structure/workshop; Building of well equipped lecture-rooms with internet connection; Provision of: functional machines, equipments and tools for students' practical work; technology education consumable-materials; befitting lecturer offices to include air-conditions, land phone extension, computers, and printers; qualified workshop technologists; technology education computers/graphic studio; and common-room for technology education lecturers with internet connected. The findings were in line with the opinion of Igborgbor (2012) who stated that lack of skills among the new crops of graduates in the country could be attributed to insufficient infrastructure facilities, instructional materials, overcrowded lecture-rooms and shortage of offices for qualified lecturers. The findings also agreed with the view of Idialu (2012) who opined that factors affecting quality assurance in technology education in Nigeria

include: shortage of qualified personnel; inadequate facilities for teaching and learning; low level of funding; poor societal attitude; poor remuneration of teachers; poor supervision; and poor assessment methods. The findings and the opinions of authors above helped to justify the findings of this study on provisions of infrastructure-facilities and consumable-materials items enhancing quality assurance and standards in technology education programme for national transformation.

The data presented in Table 2 disclosed that all the 11 items on frequent accreditation exercise will enhance quality assurance and standards in technology education programme for national transformation. These items include: The National University Commission (NUC) should visit technology education programme regularly to ensure that needed facilities are provided; the NUC should always inspect facilities provided; there should be regular internal inspection of infrastructural facilities by quality control committee in the University; the head of department to ensure that each lecturer covers the course outline in each semester; students' workshop practical activities should be properly supervised; students should be properly supervised during their field trips industrial work experience (SIWES) exercise; students should be given take home assignment, term papers and assessed properly by the lecturers; Students' class-seminars should be coordinated and assessed properly by the lecturers; students' practical/written projects should be well supervised and evaluated by the lecturers; Students should be inspected properly by the lecturers on workshops rules and regulations during practical activities; and lecturers should be encouraged through promotions and related conferences/workshop/seminars without delay were in agreement with the findings of Farashuddin (2005) who observed that strategies for establishing quality assurance and standards in education include: monitoring, supervising, inspecting, quality control, and evaluation. The result of the findings also in consonance with the work of Adegbasan (2011) who argued that the major needs for quality assurance in Nigeria education system include ability to: ensure and maintain higher standard of education at all levels; assist in monitoring and supervision of education; determine the quality of the teachers' input; determine the number of classrooms needed based on the average class size to ensure quality control of education; and ensure how the financial resources available could be prudently and judiciously utilized. The findings and work of authors above gave credence to the findings of this study on supervision, inspection and evaluation of infrastructure-facilities; lecturers and students enhancing quality assurance and standards in technology education programme for national transformation.

Conclusion

Based on the findings of this study, strategies like provision of infrastructural facilities and consumable-materials as well as were agreed by the respondents that provisions of infrastructure-facilities and consumable-materials will enhance quality assurance and standards in technology education programme for national transformation. However, if the situations are appropriately checked and managed accordingly, it will lead to the production of qualified and knowledgeable technical and vocational skilled graduates who shall be self-reliant and fit properly in the world of work, especially in technology education teaching subjects and related areas. Consequently, the problems of unemployment and poverty among technology education graduates will be reduced in Lagos State, Nigeria.

Recommendation

Based on the findings of the study, the following recommendations were made:

1. The University of Lagos, Nigeria management in addition with the government budgetary allocation should source fund and assistance through TETFund; Public/Private Sector Partnership; NGOs; among others to enable them appropriately provide the needed infrastructural facilities and consumable-materials to enhance quality assurance and standards in technology education programme for national transformation.

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PERCEIVED KNOWLEDGE OF THE SPREAD, CONTROL AND PREVENTION OF EBOLA VIRAL DISEASE ON HEALTH BEHAVIOUR OF SECONDARY SCHOOL STUDENTS IN LAGOS STATE

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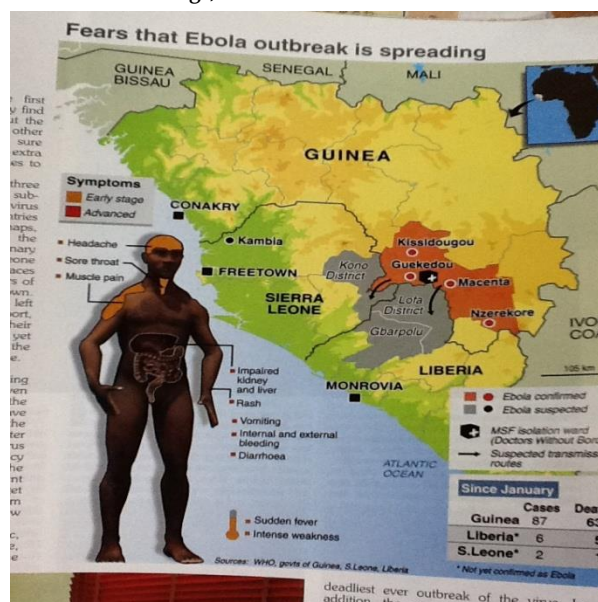
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ABSTRACT

The study investigated the perceived knowledge of the spread, control and prevention of Ebola viral disease on health behaviour of secondary school students in Lagos State. The sample used for the study was six hundred (600) secondary school students from Lagos State. The descriptive survey method was used and the respondents were selected through simple random sampling. A self-structured questionnaire was used to collect data for this study. The test-retest reliability value obtained for the instrument using Pearson Product Moment Correlation Co-efficient was 0.84. Data from the study was analysed with the use of frequency counts, percentages, bar chart and pie chart for demographic data and T-test for the variables of the study. Findings of the study revealed that there was significant difference in students' knowledge on the meaning of Ebola Virus Disease among secondary schools in Lagos state. Also, there is no significant difference in students' perception on the causes of Ebola Virus Disease among secondary schools in Lagos state. Based on the findings, it is recommended that School authorities, including the school teachers should never relent in stressing the practice and importance of taking those health preventive measures that the students have been acquitted with. Parents should also emphasize the practice of these health preventive measures on their children, besides; they also should be exemplary in such practice.

INTRODUCTION

Ebola is a virus that is highly contagious and infectious occurring in Africa, similar to but with a much higher mortality rate than green monkey disease. According to King and Curita (2004) Ebola virus is one of at least 30 known viruses capable of causing viral hemorrhagic fever syndrome. The disease first appeared in two simultaneous outbreaks, one in Nzara, Sudan and the other in Yambuku, Democratic Republic of Congo. The virus belongs to the family of Filoviridae, genus of Ebolavirus and contains a non-segmented, single strand of RNA genome of negative polarity. Five species of EVD have been identified which include: Zaire, Bundibugyo, Sudan, Reston and Taï Forest. Bundibugyo, Zaire and Sudan Ebola viruses have been associated with large outbreaks in Africa (Sola, 2014).



Outbreaks of Ebola hemorrhagic fever have received much attention in the popular press, which has mainly focused on the gory aspects of its clinical manifestations, high mortality rates, and fears of airborne transmission today, more people are aware of the deadly Ebola Virus because of the internet and various forms of social media. The virus didn't just appear, though and has been thriving on our planet earth since ages. It reportedly killed one fourth of the world's gorilla population before it actually infected humans, particularly those living near tropical rainforests. The horrifying disease emerged in the year 1976 in Yambuku, Democratic republic of Congo (formerly Zaire) and got its name from this same spot (Brown, 2014).

The disease has been spreading among wild non-human primate, apparently as a result of their contact with the unidentified reservoir host (Leroy, 2004). This has contributed to a marked reduction in chimpanzee and gorilla populations and has also triggered human epidemics, presumably due to consumption of sick or dead animals as a source of food (Pourrut, 2005). Ebola Virus Disease is important to public health because the case fatality rate can be very high (25-90%) and it may constitute an event of public health emergency of international concern (Landoud, 1999).

The highly contagious disease has become a contemporary infection lately. The outbreak of the disease in West Africa countries is the Zaire species of the virus. It is reported to have begun in guinea in December 2013, where a two year old child and his family members acquired the infection (Grady & Sheri, 2014). The outbreak subsequently spread to Liberia, Sierra Leone, Nigeria and Senegal (World Health Organisation, 2014). The WHO declared it as the most severe and deadliest outbreak till now. The disease was officially notified as public international health emergency in 2014. Since the current outbreak, effort has been made to develop vaccine to combat the epidemics. This has help to cure some victims and reduce the wide spread but the disease still pose danger as new cases are reported in hitherto mentioned country, specifically Liberia (Centers for Disease Control and Prevention, 2014)

STATEMENT OF THE PROBLEM

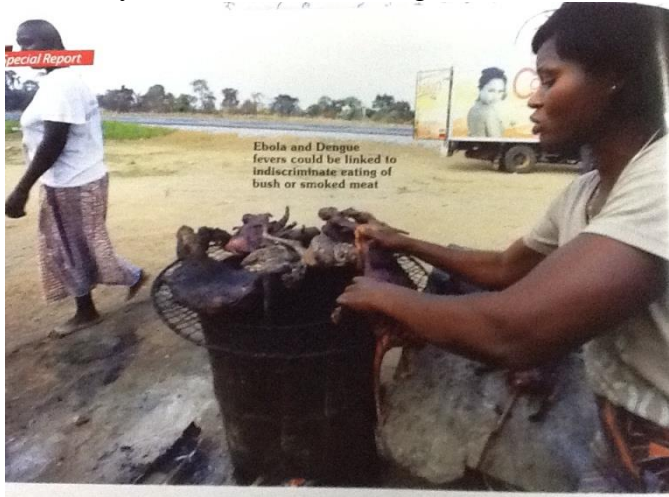
The researcher observed that the emergence of Ebola in Nigeria came when the primary and secondary school students in the country are on long vacation. This inturn helped in reducing the spread of the disease among this vulnerable group. The primary and post primary school students fall under the category of persons that are classified as high risk group when it

comes to food-borne illness and person to person communicable disease and could experience more severe consequence of their close interaction.



Patrick Sawyer and Wife

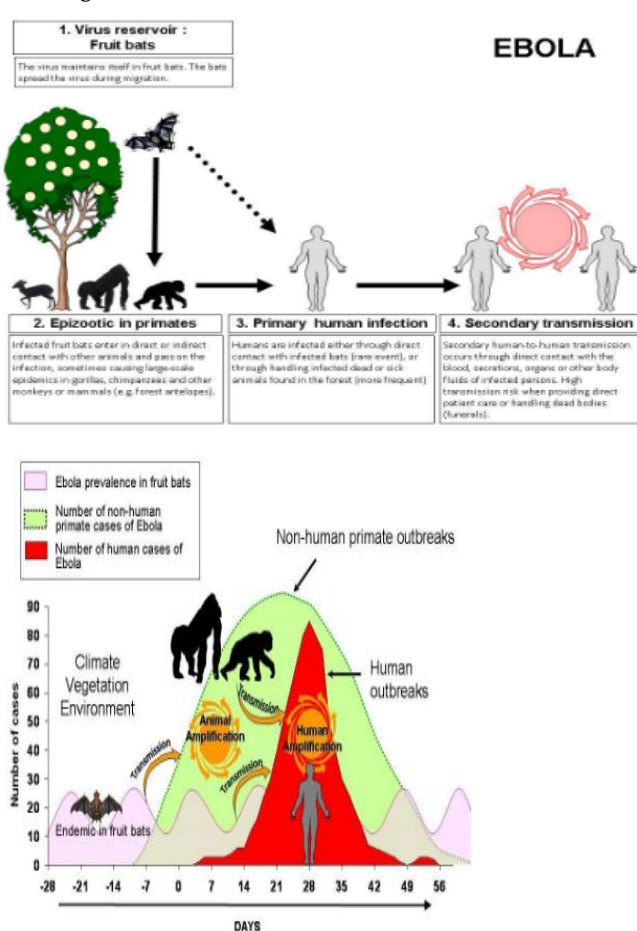
With the required sensitization about the dangers of Ebola outbreak in the country, it is very pertinent to guide secondary school students to make informed decisions on healthy practices as a way of life especially when they mingle alone with their peers and away from the watchful eyes of advanced adults. This study therefore, intends to examine the perceived knowledge of the spread, control and prevention of Ebola viral disease on health behaviour of secondary school students in Lagos State.



RESEARCH HYPOTHESES

The following research hypotheses constituted the basic assumptions for this study:

1. There is no significant difference in students' knowledge on the meaning of Ebola Virus Disease among secondary school in Lagos state.
2. There is no significant difference in students' perception on the causes of Ebola Virus Disease among secondary school in Lagos state.
3. There is no significant difference in students' level of awareness on the symptoms of Ebola Virus Disease among secondary school in Lagos state.
4. There is no significant difference in health practices and prevention of Ebola Virus Disease among secondary school in Lagos state.



METHODOLOGY

The sample size involved six hundred students (N=600) selected from Secondary Schools in Yaba Local Development Area of Lagos state. Simple random sampling without replacement was used to select the schools and participants for the study. A self-structured questionnaire consisting of four variables to which the participants were asked to tick the options of their choice in four-point Likert rating scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD). The validity of the instrument was ascertained through some experts from the cognate unit of this study who assisted in content and construct validity.

Test-retest method was used for reliability of the instrument, a correlation co-efficient value of 0.84 was obtained. Out of the 600 copies of questionnaire administered, 584 were correctly filled, returned and coded for analysis. Descriptive statistics of frequency counts, percentages, bar chart and pie chart were used to analyze the demographic data, while inferential statistics of T-test was used to test the hypotheses at 0.05 alpha level.

RESULT

The demographic data revealed that by gender, 259 (44.3%) of the total respondents were males while 325 (55.7%) were females. Based on age, 14 (2.4 %) of the respondents fell within age range of 8 and 11 years, 253 (43.3%) were within 12 and 14 years, 314 (53.8%) were within 15 and 17 years while age 18 and 20 constituted 3 (0.5%) of the respondents.

The data analyses of the responses of the participants are shown in the tables below.

Table 1: T-test Result of Students' knowledge on Ebola Virus Disease

Variable	N	Df	Calculated T-test	Critical T-test	Remark
Students' knowledge on EVD	584	18	5.45	1.73	*S* Significant

$$T_{\text{Cal. Value}} = 5.45 > T_{\text{Crit. value}} = 1.73, \text{ df } 18 \text{ p} < 0.05$$

Table 1 above showed that calculated t-value of 5.45 was greater than the critical t-value of 1.73 at 0.05 alpha level. Thus, the null hypothesis 1 stated is rejected. This implies that there is significant difference in students' knowledge on the meaning of Ebola Virus Disease among secondary schools in Lagos state.

Table 2: T-test Result of Students' Perception on Causes of Ebola Virus Disease

Variable	N	Df	Calculated T-test	Critical T-test	Remark
Students' perception on causes of EVD	584	18	0.17	1.73	*NS* Insignificant

$$T_{\text{Cal. Value}} = 0.17 < T_{\text{Crit. value}} = 1.73, \text{ df } 18 \text{ p} < 0.05$$

Table 2 above indicated that calculated t-value of 0.17 was less than the critical t-value of 1.73 at 0.05 alpha level. Thus, the null hypothesis 2 stated is accepted. This connotes that there is no significant difference in students' perception on the causes of Ebola Virus Disease among secondary schools in Lagos state.

Table 3: T-test Result of Students' Level of Awareness on Symptoms of Ebola Virus Disease

Variable	N	Df	Calculated T-test	Critical T-test	Remark
Students' level of awareness on symptoms of EVD	584	18	2.55	1.73	*S* Significant

$$T_{\text{Cal. Value}} = 2.55 > T_{\text{Crit. value}} = 1.73, \text{ df } 18 \text{ p} < 0.05$$

The table 3 above revealed that calculated t-value of 2.55 was greater than the critical t-value of 1.73 at 0.05 alpha level. Thus, the null hypothesis 3 stated is rejected. This implies that there is significant difference in students' level of awareness on the symptoms of Ebola Virus Disease among secondary schools in Lagos state.

Table 4: T-test Result on Health Practices and Prevention of Ebola Virus Disease

Variable	N	Df	Calculated T-test	Critical T-test	Remark
Health Practices and Prevention of EVD	584	18	1.27	1.73	*NS* Insignificant

$$T_{\text{Cal. Value}} = 1.27 < T_{\text{Crit. value}} = 1.73, \text{ df } 18 \text{ p} < 0.05$$

Table 4 above showed that calculated t-value of 1.27 was less than the critical t-value of 1.73 at 0.05 alpha level. Thus, the null hypothesis 4 stated is accepted. This implies that there is no significant difference in health practices and prevention of Ebola Virus Disease among secondary school in Lagos state.

DISCUSSION OF FINDINGS

The finding of this study that there is significant difference in students' knowledge on the meaning of Ebola Virus Disease among secondary schools in Lagos state revealed that many people have a relative idea on the epidemics. Different channels such as online media, conventional media, group meetings and gathering are used to convey message and development on the disease. Anderson (2008) opined that the World Health Organization (WHO) and the Council for Health Research for Development (COHRED) have established a global Internet platform which provides practical information and tools to assist countries and individuals in managing their national health research systems more effectively and strengthening the role and conduct of research authorities. Additional information may be found in each country on research governance and policies, national priorities, health research institutions and networks, national ethics committee focal points, and the review committees responsible for national health research.

The outcome of the study that there is no significant difference in students' perception on the causes of Ebola Virus Disease among secondary schools in Lagos state require urgent action by health management institution in the country. The information on the disease should be holistic; all pertinent issues that the public need to know should be effectively conveyed to them. Centers for Disease Control and Prevention (2014) stressed that there should be a strong link and mechanisms in place to exchange information rapidly between the media and communications subcommittee and the behavioural and social intervention subcommittee. This would allow for appropriate action and follow up on rumours and misinformation and communicating information and stories that explain and personalize outbreak control measures. A strong communications mechanism also helps demonstrate to the public that their local authorities are listening and responding to the concerns of local communities. This, in turn, supports transparency and trust.

The finding that there is significant difference in students' level of awareness on the symptoms of Ebola Virus Disease among secondary schools in Lagos state connote that the public can be quickly be alerted if suspected cases occur. This can however portend wrong perception as Ebola at the early stage share same symptoms with some communicable diseases. In corroboration with the finding, Global Virus Network (2014) asserts that when the surveillance system detects suspected human cases of viral haemorrhagic fever (VHF), a team should be sent to the site without delay to investigate, confirm, or discard the rumour and take initial control measures as required.

The outcome of the study that there is no significant difference in health practices and prevention of Ebola Virus Disease among secondary school in Lagos state confirm the notion that leap service is still being to prescribed measures and practices to prevent contact with the disease. Sola (2014) stated that fear has not made many to comply with health practices against Ebola; adoption of segregation and suspicious look are rather adopted. Sola further reported that people are already afraid that Ebola disease would not only cause ripples in families but also break into a chain reaction. As it affects people's perception of members of households, so also is the case of international relationships. This perception has affected migration statistics, economic and social relationships.



CONCLUSION

In line with the findings of this study, the following conclusions were drawn:

1. There is significant difference in students' knowledge on the meaning of Ebola Virus Disease among secondary schools in Lagos state.
2. There is no significant difference in students' perception on the causes of Ebola Virus Disease among secondary schools in Lagos state.
3. There is significant difference in students' level of awareness on the symptoms of Ebola Virus Disease among secondary schools in Lagos state.
4. There is no significant difference in health practices and prevention of Ebola Virus Disease among secondary school in Lagos state.

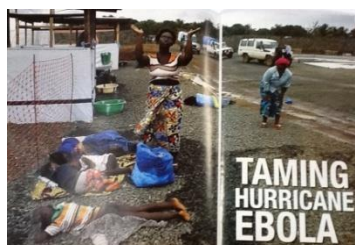


RECOMMENDATION

Based on the findings of this study, the following recommendations were made:

1. School authorities, including the school teachers should never relent in stressing the practice and importance of taking those health preventive measures that the students have been acquitted with.

2. Parents should emphasize the practice of these health preventive measures on their children, besides; they also should be exemplary in such practice.
3. The government of the nation (through the immigration officers) has duties to perform in ensuring proper inspection of those travellers coming in and out of the country. Government should not at any time relent on this.
4. Our hospitals and clinics at the state and federal levels should also be equipped with adequate, requisite and functioning equipment, in case of any health emergencies on this Ebola Virus Diseases.



Ebola Scare

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FIRST LANGUAGE ACQUISITION AND ITS INFLUENCE ON EARLY CHILDHOODS' LANGUAGE LITERACY

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ABSTRACT

First language (L1) is the language a person has learned from birth or within the critical period. The learner speaks it fluently and is often the basis for cultural identification. First language might not be the native language or mother tongue (MT) of that individual but it might be the language of the environment in which an individual grew up. This study set out to investigate the influence of L1 on the early childhood's language literacy and how it contributes to their early years' language proficiency. A four Likert scale questionnaire was used to elicit information from 50 primary school teachers in Yaba Local Government of Lagos State. Data collected were analyzed using simple percentages and frequency counts, while Chi square was used to test the hypothesis formulated. The study found out that first language has effect on early childhood's language literacy. Recruitment and preparation of teachers who are proficient in the L1 and also have the knowledge of practices to teach the content areas is very crucial. This would help to support the children learning the language. Parental support is also very essential to enhance the success of L1 acquisition, and so, they need to be informed about the benefits of L1 especially the MT acquisition because it should not hinder their children's opportunity to learn foreign or official language. Instructional materials for both teachers and students also need to be available in the language instruction.

Keywords: *First language, Mother tongue, preschools' language literacy, critical period*

INTRODUCTION AND BACKGROUND TO THE STUDY

Language is very crucial in humans, especially the first language or otherwise in some cases called mother tongue language depending on which one the child acquires first in life due to the interaction in the environment. According to Oxford Dictionary(2000), first language (especially the mother tongue) is the language a person has learned from birth or within the critical period, or the language a person speaks the best and so is often the basis for cultural identification. The first language might not be the native tongue or mother tongue language of that individual but it might be the language of the environment in which he grew up. In some countries, the term native language or mother tongue refer to the language of one's ethnic group rather than one's first language. Language is also an important way to make sense out of past experience, to learn from it, and to make it comprehensible. Again, critical period which implies those early years when humans are more efficient at language learning. In other words, it is that age of language acquisition which also acts as a predictor of ultimate language proficiency in humans (Newport, Bavelier & Neville 2001; Singleton & Lengyel 1995; Penfield & Roberts 1959).

Language is the way children are socialized by adults and the way children learn to guide their inner voice. The central role of language is the way humans communicate with other people and with themselves (Berk & Winsler, 1995; Tabors, 1997). This is very crucial because a properly educated person, no matter his field of learning must be able to communicate ideas, principles and information about himself and his environment to the

outside world using language. If he has properly grasped the language of instruction, there is no doubting the fact that he will appropriately apply the acquired knowledge as the need arises (Opara & Okudo, 2015). The chances of keeping children of early years in school, then, are significantly improved if they can understand and learn productively in the language of the classroom in addition with their already acquired L1 thereby improving language learning outcomes (Okudo and Omotuyole (2013). In the beginning, children's language growth comes from their direct experience. It is personal and related to the present. As their language understanding grows, children can relate to ever more expanding situations. Children use language metaphorically, providing evidence that for children's language it is creative as well as imitative. For children, language is a powerful tool for understanding the world around them. By questioning, children become active in their attempt to comprehend and learn (Au, Knightly, Jun & Oh 2002; Oh, Jun, Knightly & Au 2003). Language learning is not really something that the child does; it is something that happens to the child placed in an appropriate environment, much as the child's body grows and matures in a predetermined way when provided with appropriate nutrition and environmental stimulation. Mother tongue (MT) or native language is the language which the person acquires in early years and which normally becomes her natural instrument of thought and communication. The American Heritage Dictionary of the English Language (Suina, 2004) defines mother tongue as one's native language; the language learned by children and passed from one generation to the next; it is received by birth or from ancestors. The way children learn language follows a specific pattern and is inherently systemic in nature. It is clear that children must be exposed to language and are able to interact with others, but how that exposure and interaction occur is extremely variable. Even though young children are not formally taught first language, its acquisition is part of the overall development of children physically, socially, and cognitively. There is strong evidence that children may never acquire a language if they have not been exposed to a language before they reach the age of 6 or 7 (McLaughlin, 1984). Children between the ages of 2 and 6 acquire language so rapidly that by 6 they are competent language users. By the time children are of school-age, they have amazing language ability; it is a seemingly effortless acquisition (Newport, 1991). Okudo and Omotuyole (2013) added that the symbolic language which the children came to school with need to be concretized with the use of locally made instructional materials. This would make them to participate fully in early childhood language learning literacy and also to be able develop communicative competence that is clear, meaningful, culturally and linguistically appropriate.

Ball (2010) found out that becoming literate and fluent in one's first language is important for overall language and cognitive development, as well as for academic achievement. Chuo and Walter (2011) added that children who were taught in their mother tongue (Kom- language in Cameroun) performed significantly better than their peers who attended schools where English was the medium of instruction. Nicholas and Lightbown (2008) therefore suggested the use of games such as tongue twisters in MT to explore pronunciation, and poetry or song to rehearse grammatical information which would help to improve language literacy of in the early years.

STATEMENT OF PROBLEM

In the present day Nigeria, the average child does not speak more than one language (English) which is the language of instruction otherwise known as the official language of the nation. In few cases there is addition of Pidgin English, which is the language of communication in most urban areas. This scenario puts Nigeria at the verge of cultural identity loss and damage which is becoming a matter of national concern (Ohiri-Aniche, 2008; Njemanze, 2012). Most Nigerian parents do not encourage their children/wards to

speak their native tongue or mother language; these led to the problem of envisaging situation of loss of invaluable identity of the nation as a whole. This study therefore examined the influence of first language (mother tongue in most cases) acquisition on early children's language literacy.

PURPOSE

The purpose of this paper is to examine the importance of first language (especially MT) acquisition and its influence on early childhoods' language literacy. Specifically the study has the following objectives:

- 1 To examine the effects of first language acquisition on child's intellectual development.
- 2 To examine how the first language contributes to early childhood language learning education.
- 3 To find out whether parents influence the use of first language (especially MT) in the early childhood language literacy.
- 4 To find out the strategies that can be used to encourage first language (MT) in schools.

Research Questions

To achieve the objectives of this study, the following research questions were raised.

- 1 What are the effects of first language acquisition on child's intellectual development?
- 2 How does first language acquisition (especially the MT) contribute to the early childhood language learning literacy?
- 3 How do parents influence the use of first language acquisition (especially the MT) in the early childhood's language literacy?
- 4 What are the strategies that can be used to encourage first language (MT) in schools?

Research Hypotheses

- 1 H_0 : First language especially the mother tongue has no significant effect on early childhood's language literacy.

Significance of Study

This study would be of great benefit as it will provide necessary information on the concept of first language (native language or mother tongue), it will expose parents to the benefits of mother tongue acquisition on children's language learning, and it will also contribute to field of early childhood language literacy and proficiency the society.

METHODOLOGY

Research Design and Research Instrument

Descriptive survey research design was used for the study. Data were collected using questionnaire distributed to primary school teachers, on the influence of mother tongue acquisition on early childhood's language literacy in some selected primary schools in Yaba area of education district IV of Lagos State. The questionnaire was in a four Likert scale format.

The population of the study comprised all primary school teachers in Yaba local government area in education district IV of Lagos State.

Simple random sampling technique was used to select ten primary schools and their classroom teachers. This gave a total of fifty primary school teachers. The primary six classroom teachers were exempted because the school authority maintained that the pupils were being prepared for external examinations (Common Entrance).

DATA COLLECTION PROCEDURE AND ANALYSIS

A total of 50 questionnaires were distributed to the respondents in their various primary schools. The researchers collected the questionnaires the same day so as to achieve high percentage of returns. Data collected were analyzed using descriptive statistics of percentages and frequency counts.

Research Question One: What are the effects of first language acquisition on child's intellectual development?

Table 1: Descriptive statistics of the respondents' responses to research question one

S/N	Items	S.A	A	D	S.D	TOTAL
1	Children who master their first language perform better in schools.	14 28.00%	18 36.00%	17 34.00%	1 2.00%	50 100%
2	Language can help children understand the world at an early age.	16 32.00%	23 46.00%	11 22.00%	0	50 100%
3	Language can help children's intellectual development thereby increasing their speed of reasoning.	21 42.00%	14 28.00%	15 30.00%	0	50 100%
4	Language can contribute to children's intellectual development through social interaction with peers.	17 34.00%	26 52.00%	7 14.00%	0	50 100%

Table 1 portrays the distribution of respondents to the performance of children who master their first language in schools. The table shows that 14 (28%) of the respondents strongly agreed with the statement, 18 (36%) agreed while 17 (34%) of the respondents disagreed and 1 (2%) strongly disagreed with the statement. This shows that a high percentage of the respondents (64%) agreed with the statement. The table also shows that 16 (32%) of the respondents strongly agreed, 23 (46%) of the respondents agreed, 11 (22%) of the respondents disagreed with the statement. This shows that a high percentage of the respondents (78%) agreed with the statement that language can help children understand the world at an early age. The table shows that 21 (42%) of the respondents strongly agreed, 14 (28%) of the respondents agreed, 15 (30%) of the respondents disagreed with the statement. This shows that a high percentage of the respondents (70%) strongly agreed with the statement that first language acquisition can help children's intellectual development thereby increasing their speed of reasoning. The table also depicts that 17 (34%) of respondents strongly agreed, 26 (52%) of the respondents agreed, 7 (14%) of the respondents disagreed with the statement. This shows that a high percentage (66%) agreed with the statement that language contributes to children's intellectual development through social interaction with peers.

Research Question Two: How does first language (MT) contribute to the early childhood language literacy?

Table 2: Descriptive statistics of the respondents' responses to research question two.

S/N	Items	S.A	A	D	S.D	TOTAL
5	Language helps children understand diversity in the world.	18 36.00%	22 44.00%	10 20.00%	0	50 100%
6	Understanding of first language promotes intellectual development in other curriculum areas.	12 24.00%	25 50.00%	13 26.00%	0	50 100%
7	Language contributes to help children speak more than one language at an early age.	17 34.00%	18 36.00%	15 30.00%	0	50 100%

8	Language promotes pride in first language in children at an early age.	14 28.00%	21 42.00%	11 22.00%	4 8.00%	50 100%
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Table 2 shows the distribution of respondents to how language helps children understand diversity in the world. Table 2 depicts that 18 (36%) of the respondents strongly agreed, 22 (44%) of the respondents agreed, 10 (20%) of the respondents disagreed with the statement. This shows that a high percentage (80%) agreed with the statement that language helps children understand diversity in the world. The table also shows that 12 (24%) of the respondents strongly agreed, 25 (50%) of the respondents agreed, and 13 (26%) of the respondents disagreed with the statement. This shows that a high percentage (74%) of the respondents agreed with the statement that understanding of first language promotes intellectual development in other areas of study. Table 3 also shows that 17 (34%) of the respondents strongly agreed, 18 (36%) of the respondents agreed, 15 (30%) of the respondents disagreed with the statement. This shows that a high percentage (70%) agreed with the statement that first language contributes to helping children to speak more than one language at an early age. The table portrays that 14 (28%) of the respondents strongly agreed, 21 (42%) of the respondents agreed, 11 (22%) of the respondents disagreed, and 4 (8%) of the respondents strongly disagreed with the statement. This shows that a high percentage (70%) agreed with the statement that first language acquisition promotes pride in children's language literacy in early years.

Research Question Three: How do parents influence the use of first language (especially MT) in the early childhood's language literacy?

Table 3: Descriptive statistics of the respondents' responses to research question three.

S/N	Items	S.D	A	D	S.D	TOTAL
9	Language can be promoted through the use of greeting.	9 18.00%	38 76.00%	3 6.00%	0	50 100%
10	Language can be promoted through day-to-day verbal communication.	28 46.00%	20 40.00%	2 4.00%	0	50 100%
11	Language can be promoted as a subject matter in schools.	16 32.00%	30 60.00%	4 8.00%	0	50 100%
12	Language can be promoted by through storytelling and folktales in the first language especially MT.	20 40.00%	25 50.00%	5 10.00%	0	50 100%

Table 3 shows the distribution of respondents' responses to acquisition of language through greeting. The table shows that 9 (18%) strongly agreed with the statement, 38 (76%) agreed with the statement and 3 (6%) disagreed with the statement. This shows that a higher percentage of the respondents agreed (94%) with the statement that first language acquisition can be promoted through greeting. The table shows that 28 (56%) of the respondents strongly agreed with the statement, 20 (40%) of the respondents agreed with the statement, and 2 (4%) of the respondents disagreed with the statement. This shows that a high percentage (96%) strongly agreed with the statement that language can be promoted through day-to-day verbal communication. Table 3 shows that 16 (32%) strongly agreed with the statement, 30 (60%) of the respondents agreed, 4 (8%) disagreed with the statement. This shows that a high percentage of the respondents (92%) agreed with the statement that language can be promoted through learning it and using it as a subject matter. The table 3 also shows that 20 (40%) of the respondents strongly agreed with the statement, 25 (50%) of the respondents agreed with the statement, 5 (10%) of the respondents disagreed with the statement. This

shows that a high percentage of the respondents (90%) agreed with the statement that first language can be promoted through storytelling and folk tales in the first language especially the MT.

Research Question Four: What are the strategies that can be used to encourage first language (especially the MT) in schools?

Table 4: Descriptive statistics of the respondents' responses to research question four

S/N	Items	S.A	A	D	SD	TOTAL
13	Setting up of a language laboratory promotes the language.	12 24.00%	15 30.00%	18 36.00%	5 10.00%	50 100%
14	Availability of language textbooks promotes language in schools.	16 32.00%	13 26.00%	17 34.00%	4 8.00%	50 100%
15	Employing language teacher for each common language in the environment promotes it.	14 28.00%	31 62.00%	5 10.00%	0	50 100%
16	Encouraging speaking of languages in schools promote it.	19 38.00%	22 44.00%	9 18.00%	0	50 100%

Table 4 portrays the distribution of respondents' responses on how setting up of language laboratory could promote the early children's language literacy. The table shows that 12 (24%) of the respondents strongly agreed, 15 (30%) of the respondents agreed, 18 (36%) of the respondents disagreed, 5 (10%) of the respondents strongly disagreed with the statement. This shows that an average percentage (54%) agreed with the statement that setting up of a language laboratory could promote the language literacy in early childhood. The table also shows that 16 (32%) of the respondents strongly agreed, 13 (26%) of the respondents agreed, 17 (34%) of the respondents disagreed, 4 (8%) of the respondents strongly disagreed with the statement. This shows that an average percentage (58%) agreed with the statement that availability of textbooks on L1 promotes the language literacy of early childhood in schools. The table shows that 14 (28%) of the respondents strongly agreed, 31 (62%) of the respondents agreed, 5 (10%) of the respondents disagreed with the statement. This shows that a high percentage (90%) agreed with the statement that employing language teachers for each L1 especially local languages promotes language literacy in early childhood. The table shows that 19 (38%) of the respondents strongly agreed, 22 (44%) of the respondents agreed, 9 (18%) of the respondents disagreed with the statement. This shows that a high percentage (82%) agreed with the statement that encouraging speaking of first language especially the MT in schools promotes its acquisition in the early years of children.

TEST OF HYPOTHESIS

The hypothesis formulated in this study was also tested using Chi square (X^2) statistical method. The decision region was based on the rules that if the p value (i.e. asymptomatic value) is less than 0.05, then there is a significant relationship. But if the p value is higher than 0.05, then there is no significant relationship.

Table 5: Analysis of Hypothesis Testing

Language can be acquired through direct teaching	Language can help children understand the world at an early age			
	Strongly agreed	Agreed	Disagreed	Total
Strongly agreed	6.1 (20.00%)	8.7 (14.00%)	4.2 (4.00%)	19.0(38.00%)

Agreed	9.0 (12.00%)	12.9 (32.00%)	6.2 (12.00%)	28.0 (56.00%)
Disagreed	1.0 (.00%)	1.4 (00%)	7 (6.00%)	3.0 (6.00%)
Total	16.0 (32.00%)	23.0 (46.00%)	11.0 (22.00%)	50 (100.00%)
$X^2 = 16.385$, $df = 4$, $p\text{-value} = 0.003$				

SUMMARY OF FINDINGS

It should be deduced from table 5 that the calculated value (X^2) is 16.385 and the 'p' value is 0.003 which is less than the level of significance of 0.05. Hence, the Null hypothesis (H_0) was rejected therefore first language has effect on children's years of language learning and literacy. This agrees with Nadine (2003) who asserted that first language (especially the mother tongue) has effect on children's language literacy. Similar results were also achieved in a programme in the Philippines, where children learning in their first language (mother tongue) showed statistically significant improvements in all subjects compared to children who were learning only in Filipino (Walter and Dekker, 2011).

RECOMMENDATIONS

In line with the findings of this study, the following recommendations were made in order to improve first language acquisition especially the mother tongue education which would enhance the early year children's language literacy.

Teacher recruitment and preparation: Availability of teachers who are speakers of L1 (especially the mother tongue) fluently is a key consideration for early year children's successful language literacy. Teachers need to be proficient in the L1 especially in the mother tongue and have knowledge of practices to teach the content areas in the mother language and have knowledge of practices to teach and support children learning first, second or foreign language.

Parental support is very essential to the success of a first language especially the mother tongue acquisition. Therefore, parents need to be well informed about the benefits of MT and be reassured that L1 (especially mother tongue) acquisition would not hinder their children's opportunity to learn a foreign or national language which often remains a key goal for sending their children to school.

LIMITATIONS OF THE STUDY

This study was restricted to Yaba Local Government Area of Lagos State. There is need for more intensive research to be conducted in other areas of Lagos and among other communities to establish the influence of mother language on child's learning in the environment.

The study focused on the positive effects of first language on early childhood's language literacy so there is need for other researchers to make further study on its negative effects.

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EDUCATION AS KEY TO ACHIEVING VISION 20:2020

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ABSTRACT

This paper defines vision 20: 2020 as a local adaptation of the Millennium Development Goals (MDGs) which emerged from the UN 2000 summit as a strategic plan for global development. While the efficacy of education in realization of the vision is recognized worldwide, the paper takes a critical look at the factors that could strip (and indeed have been stripping) Education of its efficacy in Nigeria. Identified as hindrances in the wheel of education are proliferation of policies, course offerings for fancy and not for relevance, poor implementation of curriculum, indiscipline and lack of political will. The paper concludes that for education to play its traditional role of enhancing development as envisaged in vision 20:2020, the Nigerian Education System in theory and practice needs be reengineered and implemented with determination and sincerity. Sincerity comes to play when negative human interventions otherwise called inhibitive factors are eliminated. In the final analysis, the paper anchors the effectiveness of the new reengineered education system on injection of character training which is the missing link so far that can guarantee the educated Nigerian a sense of decency, decorum and do-it-right.

INTRODUCTION

It is axiomatic stating that education is the bedrock of any development or growth. Abraham Lincoln, the 16th American president, Abraham Lincoln once said “ I will study and get ready and the opportunity will come”. This is to allude to the fact that physical development, like the act of nation building which is envisaged in vision 20:2020, is predicated on human capita development. The prospective builders of the nation must be educated first and foremost. Even in the religious realm, when the white missionaries landed in Nigeria in the 19th century in pursuance of evangelical mission, they saw the need to first educate Nigerians in order to enable them to appreciate the Christian tenets. The white missionaries must have learnt the instrumentality of education as a strategy to achieve a goal from God who educated all prophets beginning from Adam across Abraham, Moses, Jesus to Muhammad at the beginning of their mission as messengers of God. All the revelations received by the prophets from God constituted their education. From whichever perspective one may look at development and growth, it is taken for granted that education is an indispensable prerequisite. It is against the backdrop of the forgoing that a poser emerges namely: what is the extent of researchability of the topic “education as key to achieving vision 20:2020? Given the axiomatic nature of the topic therefore, it could be observed that the topic is a mere stimulant to induce a research instinct into the factors that may enable or hinder education from performing its traditional roles as bedrock of development. To that extent, the emerging outlines are:

1. Education; meaning and purpose
2. Vision 20:2020; meaning and genesis
 - a. MGDs, EFA and the UN 2000 summit
 - b. Vision 20:2020 in retrospect
3. Enabling/Inhibitive Factors
 - a. Lack of political will
 - b. A disconnect between education and culture: the Chinese experience
 - c. Confusion in education

4. A way forward

Education: Meaning and Purpose

In simple terms, education takes place in every human social interaction as information is given and received. Technically, education is the knowledge processed and disseminated with a view to effecting a change in the recipient. The knitty gritty of curriculum development, curriculum implementation and curriculum evaluation is a matter of details. In terms of purpose, education aims at preparing learners for a task. The learner is expected to exhibit a behavioral pertan different from the pre-education condition. To the extent that education means preparing an individual for a task, through acquisition of skills and competencies, the purpose of education is to build the individual. The educated person at the end of the day should be able to use his/her head and hands. The highpoint of education is encompassed in what is termed capacity building and human capital development. Essentially, the educated person should be capable of changing his behaviour, outlook and indeed his environment for better. This brings us to the interconnectedness between education and nation building. National building is defined in the context of this paper as changing the environment, that is, the society or nation from state of backwardness to that of development. The intriguing question at this juncture is: what level of development has our education system yielded after decades of operation?

Vision 20: 2020 Meaning and Genesis

Vision 20:2020 is a dream about acquisition of a mansion where life can be rosy and pleasant. The vision is an expression of a desire to lift Nigeria from the committee of third world nations to the club of industrialized countries with all the indices of development such as availability of job opportunities, efficient health care delivery, food security, adequate housing, egalitarianism, efficient transportation system, regular water and power supplies, social security and discipline. The architects of the vision stated thus: this is a dream “to make Nigeria one of the biggest 20 world economies in the year 2020”.

The Genesis

It should be remarked quickly that making 2020 the target year in Nigeria is to shift the goal post from the original target of year 2015 set at the UN 2000 summit to translate the Millennium Development Goals (MDGs) into reality.

The Millenium Development Goals (MGDs) coupled with EFA is the resolution adopted at the UN 2000 summit when all the rich and poor countries of the world resolved to reduce the poverty level around the world by 2015. As the Nigerian political leadership was poised to put machinery in motion for the implementation of MGDs, it was found expedient to shift the goal post from 2015 to 2020. This is to say that vision 2020 is not completely a local developmental initiative. Rather, it is a local version of an international agenda for development.

Proliferation of Development Plans.

It is obvious, when viewed in practical terms that vision 20:2020 is another development plan in the series of such plans that have been declared over the years. For example, the nation has witnessed so far.

1. Ten year development plan (before the civil war)
2. Five year development plan (after the civil war)
3. Vision 2010 by General Sanni Abacha
4. Structural Adjustment Plan (SAP) by General Babangida
5. National Economic Empowerment Strategy (NEEDS) by Chief Olusegun Obasanjo

6. 7 point agenda by president Musa Yar'adua
7. Vision 20:2020
8. Transformation agenda by President Jonathan

The official slogan that usually accompanied the declaration of each of those plans is:

This administration is determined more than ever before to move Nigeria forward.

Incidentally, experience shows that at the end of the tenure of each administration, Nigeria has always become worse than the administration met it. It is important to ask: what is the fate of the vision 20:2020 / Transformation agenda? Would it suffer the usual fate of abysmal treatment? What is the role of education in this scenario?

Of course, it is assumed that education is the catalyst that can make vision 20: 2020/ transformation agenda real. But our optimism about the potency of education must not ignore some daunting inhibitive factors such as the following:

(a) Lack of political will

In Nigeria, the act of nation building begins and ends at the level of strategic plan which is usually neatly packaged by brilliant and sophisticated technocrats and launched in pomp and pageantry with promises of ‘ ‘ **this administration is determined more than ever before to do all within its power to move Nigeria forward**’ ’ Whereas the government is endowed with abundant human capital and funds for successful implementation of any development plan provided there is a political will. The indicators of lack of political will include, but not limited to, the following:

- i. Nigerians at home and in the diaspora with sterling skills and expertise are resources never tapped by the government.
- ii. In addition to the Federation Account from where the three tiers of government directly draw their monthly allocations, there are other auxiliary sources such as billions of dollars that accrue from the negotiated debt relief gains from Paris club of 2003. Evidently, the government does not have financial difficulties executing development projects.
- iii. The indifference of the government to the revelation made by the CBN governor Sanusi Lamido that the unproductive National Assembly consumes 25.41% of the nation's annual budget is an indicator of lack of political will to stop wastages which have been the greatest obstacle to development.
- iv. Reports of evaluation of government projects. These are usually a catalogue of failed projects that had gulped trillions of naira such as Nigeria's country report on Eight E – Ministerial review Meeting, Abuja 2010, Inception report on review and performance evaluation of MDGs conditional grant scheme in the 36 states and FCT, etc.

v.

(b) Disconnect between education and culture

While education is taken for granted as a catalyst for development, the education system in Nigeria is laden with various shades of confusion that has incapacitated and prevented it from playing its traditional role. For example, there is a disconnect between education and culture in Nigeria. As a matter of illustration, China's education is indigenous to the extent that it evolved from the Chinese culture. Both blend to produce sustainable development which is balanced and evenly distributed between the urban and rural parts of the country. Language factor is another remarkable aspect of Chinese education. The language spoken in the family is the language of instruction in the schools, the language of administration and the Press. The calligraphy to write the Chinese language and by extension to document the Chinese history was locally generated at the dawn of the Chinese existence.

In Nigeria, the reverse is the case; education did not evolve from the Nigerian culture(s). It is foreign. The language of administration, instruction and the Press is different from that of the home. The calligraphy used in writing both the foreign and indigenous languages is foreign. The result is that the educated Nigerian, according to Fafunwa (1967) is alien in his own country to the extent that he (the educated Nigerian) has to isolate himself to live in GRA, leaving the overwhelming majority of the citizenry to live in filthy areas.

(c) **Confusion in Education**

Confusion of different descriptions is a cancer warm incapacitating our education system thereby preventing it from playing the expected role of accelerating the project of nation building. Here, for example, is part of the recommendations of a Task team set up on education in 2011:

Upgrade all schools to become better able to deliver education..... We have the firm belief that this report would give a positive transformational action on education in the country.

The excerpt above is part of the recommendations in a report on education reform presented to President Jonathan in 2011. This being the report of the Task Team set up by the President early in the year to assess the suitability of our educational system to deliver the vision 20:2020/transformation agenda.

It is astonishing to note that the Task Team set in 2011 is a continuation of the education reform which started in 1969 with the National Curriculum Conference which was to break away from the colonial legacy and create an education system that could be Nigerian in design, implementation and result. But four decades later, the reform continues.

Emanating from the reform exercises are the following documents:

1. National policy on Education 1977
2. Revised edition 1981
3. Revised edition 1989
4. Revised edition 2004
5. Revised edition 2007
6. Revised edition 10 year education blue print 2007
7. Road map on education
8. Report of the presidential task team on education

The proliferation of policies implies the stakeholders' fancy for issuance of policies without regard for implementation. The immediate effect of the proliferation of policies is confusion. For example, students would like to know:

the difference between UPE and UBE;

the difference between 6-3-3-4 system and 9-3-4 system;

the rationale for the removal of HSC which used to serve as a preparatory stage for the prospective tertiary education aspirants;

the difference between Social Studies and Civics;

the reason why Civics was removed to create room for Social Studies; and

the rationale for resuscitation of Civics and the concurrent teaching of Civics and Social Studies;

Added to the foregoing, as a manifestation of confusion, is the introduction of subjects such as family planning, sexuality education and population education which a school of thought considers a mere fancy for foreign ideas rather than need.

Similarly, the phenomenal explosion in the population of admission seekers particularly at the tertiary education level, without a corresponding expansion in the carrying capacity of these institutions creates a great deal of confusion.

Confusion is the result of running secondary schools of different standards and orientations in the same system. For example, there are

1. Unity schools run by the federal government
2. Model Colleges run by the Lagos state government
3. General High School run by the Lagos state government and other state governments in the federation.

While admission to the unity schools and the Lagos state model colleges is by entrance examination, pupils are moved en-mass from primary schools to the general public high schools. Furthermore, the unity schools and model colleges have well trained teachers who are well motivated as against un-trained and ill-motivated teachers in the general public schools. Ironically, students from the secondary schools of varied standards will write the same WEAC and NECO examinations. Do we expect the same results?

The Philosophy of Education coupled with the exaggerated romance with materialism as contained in the National Policy on Education is an hallmark of confusion. In theory and practice, an exaggerated romance with materialism is promoted in our education system.

In theory, it is stated thus in the philosophy of education:

1. A free and democratic society;
2. A just and egalitarian society;
3. A united, strong and self reliant nation;
4. A great and dynamic economy;
5. A land full of bright and full opportunities for all citizens.

In practice, entrepreneurship is now a compulsory subject not only for undergraduates but also for the basic 9 pupils. The objective of this course offering is to promote a sense of wealth creation and poverty eradication/reduction in the learners. The end product of this orientation is an educated Nigerian who is too conscious of money making and too scared of poverty.

The learner is overwhelmed by the menace of poverty and the effort to fight it through job creation. This is emphasized at the expense of paying attention to real learning and mind cultivation which could automatically bring money.

The over glorification of job creation and poverty reduction in our education system is therefore counterproductive.

A MISSING LINK

The sense of doing it right (otherwise called discipline) is missing in our education system. If the youths are educated in Science and Technology without a deep orientation in character training, devils are being created as evident in the following vices:

- wicked politicians who recklessly loot the public treasury with impunity,
- judiciary that cannot promote and uphold justice. For example, the President of the Nigerian Bar Association, Mr. Joseph Daudu is quoted as saying that there is a growing perception, backed up by empirical evidence that justice is purchasable and it has been purchased on several occasions in Nigeria. (The Punch Oct 4, 2011, pg 18).
- lecturers who impose worthless materials on their students to make money,
- lecturers who feel disturbed when approached for guidance by students – the very essence of their employmen in the first instance,
- the contract awarding authorities who collude with contractors to do shoddy jobs or outright abandonment of the contract while the money is shared,

- examination leakages in which all stakeholders including government officials, students, parents, staff of the examining houses and teachers are culprits,
- the emergence of pressure groups under various guises such as MEND, Boko Haram, MOSOB (the list is inexhaustible), who operate with impunity, are examples of what education can do when it is devoid of a sense of doing it right.

RECOMMENDATIONS

There is a need to move away from culture of Task Force, Task Team, Declaration of Strategic Plans to a culture of concrete actions.

A sincere and conscious reduction of the running cost of government by shifting attention from over glorification of democracy to the real business of developing the nation should be made by those in authority.

Dishonest slogans and campaigns of Job creation, wealth creation, poverty alleviation, poverty reduction and poverty eradication should be discontinued.

All the indices of confusion in education system identified in this paper should be stopped.

The Philosophy of Education in Nigeria should be redesigned to include principles of character training and the do-it-right spirit.

Subject offerings by expunging subjects that are there only for fancy and not out of need should be streamlined.

The recommendations of the 1969 National Curriculum Conference should be revisited thereby making conscious efforts to indigenize the Nigerian education system.

CONCLUSIONS

Over the years, education has failed to produce development which to Nigerians is a serious problem. The thesis of this paper is that, vision 20: 2020 as a dream to enthrone an industrialized and egalitarian Nigeria may remain a paper work unless the factors that have eroded the capacity of education for development so far are identified. To a large extent, an attempt has been made in this paper to provide what could be termed a partial solution which is the unveiling of the factors that have so far eroded the capacity of education for development. The factors are lack of political will, proliferation of policies that are rarely implemented, flooding classrooms with course offerings that are embraced out of fancy and not need or relevance. The second part of the solution is to conduct a scientific study of the unveiled factors - in a supplementary form - with a view to rating the extent of damage inflicted by each of the factors on education and prescribe ways and means of eliminating them. Given the fact that all the factors that have negated the goals of education so far are moral issues, it is proposed in this paper that the spirit of do it right, that is character training should be injected in the Nigerian education system. The impunity by which many educated Nigerians indulge in anti social and anti progress practices is a function of education. It should be recognized therefore that it will be easier for a camel to pass through the eye of a needle than education to serve as an instrument of nation building without putting in place, first and foremost, human capital that is morally responsible and morally worthy. Of course, it is the same education that would be designed in a manner that equips the human capital with the right frame of mind needed to behave responsibly.

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**PROFESSIONAL COMMITMENT AMONG IN-SERVICE TEACHERS IN TEACHING AND LEARNING
IN SOME SELECTED SECONDARY SCHOOLS IN EDO STATE, NIGERIA.**

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ABSTRACT

This study investigated professional commitment among in-service teachers in teaching and learning of mathematics in the secondary schools in edo state. To carry out the study, two hypotheses were formulated. The sample of study comprised hundred (100) randomly selected teachers from four secondary schools in ovia south east local government area, edo state. Nigeria.

The instrument used for data collection was a self-developed questionnaire. The data collected were analysed and the formulated hypotheses were tested using independent t-test of and pearson product moment correlation statistical methods. All the hypotheses tested were at 0.05 level of significance. The results of the data analysis revealed that: teachers/students relationship predicts significantly professional commitment among in-service teachers in teaching and learning of mathematics; there is significant influence between teachers' attitude and professional commitment among in-service teachers in teaching and learning of mathematics.

Based on these findings, the following recommendations were made: -

Teachers should be committed to their work; training of teachers should be an annual event; there should be more programmes for professional improvement of the teachers and poor school facilities and poor rate of teachers teaching in the secondary schools in lagos state should be addressed.

Keywords: Professional Commitment, In-service Teachers, Teaching and Learning Mathematics.

INTRODUCTION

The keystone in the educational edifice is doubtless the teacher. On him depends much more than any other, the progress and prosperity of children. Nobody can effectively take his place or influence children in the manner and to the degree; it is possible, for him alone to do. It is strongly believed that to be a teacher is to be the member of a holy order.

The Secondary Education Commission (2003) defined that 'we are however, convinced that most important factor in the contemplated educational reconstruction is the teacher – his quality, his educational qualifications, his professional training and the place he occupies in the school as well as in the community. The reputation of a school and its influence on the life of the community invariably depend on the kind of teachers working in it.

Teachers play an important role in educating the future members of a society through their work in schools. Furthermore, teachers in secondary schools, institutions of higher education, in technical training colleges and in centres of lifelong learning play a critical part in advancing economic and technological development as well as sustaining the well-being of the societies they serve. Consequently, the factors influencing the levels of commitment of the teachers in schools and in the wider education systems must necessarily be the focus of an important field of research leading to the introduction of reform and change within classrooms and lecture theatres, schools, institutions and learning centres, and national systems of education.

Movement of trained teachers from teaching profession to other field of human endeavours at the various levels of the educational system has created a serious vacuum as they are marred by untrained teachers. On the basis of this assertion critics of teaching profession cling tenaciously to infiltration in untrained teachers into the teaching profession as a means to cast aspersions on teaching as a profession. Lassa (2001) asserted that the mass movement of professional teachers to their lucrative professions could be associated with the poor conditions of service of teachers and other related problems. Awokoya (1992) viewed on professionalization of teaching remarked that teaching profession is characterized with a lot of problems. Again Awotua (2001) reiterated that education is the gateway for any meaningful development and teacher holds the key to the door. He further explained that teaching profession should be given all the necessary attention, so that the desired objectives and the benefits of teacher commitment in to the profession can be realized in full. This

study investigates the professional commitment among in-service teachers in teaching and learning of mathematics in secondary schools.

Mathematics by its nature develops the human way of reasoning and it is primarily concerned with ideas, processes and reasoning. Tejumade (2003), reiterated that Mathematics' role in realizing the nation's scientific and technological aspiration is unquestionable. In the words of Ibodo (2001), the significance of Mathematics education in Nigeria's educational system and the nation's technological development has been recognized. This is why Mathematics is an important subject in Nigerian schools. It is made compulsory for all the students to offer at both the Junior and Senior Secondary school certificate examinations. Bacon (2005) asserted that Mathematics is the gate and the key of sciences, thus the neglect of Mathematics could be harmful to all knowledge. The reason is that he who is ignorant of it cannot be proficient in the other sciences. Also, because Nigeria depends on it as one of the subjects that could help the nation meet its objectives for science and technological advancement. Mathematics has become the celebrated key to knowledge; queen; servant and midwife of sciences (Khine, 2004). In spite of the importance of Mathematics to our national development, students in secondary schools continually record poor results at the Junior Secondary School Certificate Examination and other external examinations.

Commitment to teaching is used here as an indicator of a teacher's psychological attachment to the teaching profession. Defined in this manner, commitment to teaching tends to be examined in one of two ways (Coladarci, 2007). First, teacher attrition is studied. Recent figures, for example, suggest that roughly half of those who enter teaching leave within the first 5 years (Wise, Darling Hammond, & Berry, 1987). Moreover, a disproportionate number of leavers are from such undersupplied disciplines as mathematics and science (Darling Hammond, 1984). Although there has been some suggestions, based on National Teacher Examination (NTE) scores, those leavers are more likely to be among the academically achievers (Darling-Hammond, 2004), results of a national survey of former and current teachers indicate that the two groups are Comparable on several indicators of professional quality (Metropolitan Life, 2005). That is, in addition to having similar education, leavers are equally likely to have received an "award, citation, or special recognition" for their teaching and to have been asked to serve in a supervisory role over other teachers (Metropolitan Life, 1985). Not surprisingly, low salary is the most frequently reported reason for leaving teaching, cited by 60% of those who actually left the profession (Metropolitan Life, 2005). Over one third (36%) of leavers also cite working conditions as a factor in their decisions to leave.

A second way to study commitment to teaching is to ask teachers whether they would choose this profession if they had the decision to make over again. The National Education Association poses a similar question to a sample of teachers as part of its continuing poll. Although the proportion of teachers reporting they would not choose teaching rose from 10% to 36% between 1966 and 1981, this figure had dropped to roughly 30% by 1986 (Darling-Hammond, 1990).

Similar sources of disenchantment are provided by former teachers and those who, although remaining in the teaching profession, express reservations about their choice of profession (Metropolitan Life, 1985). Frequently cited by both groups are excessive nonteaching responsibilities, large classes, lack of job autonomy and discretion, sense of isolation from colleagues and supervisors, insufficient administrative support, and powerlessness regarding important decision making processes (e.g., Bird & Little, 1986; Chapman & Hutcheson, 1982; Darling-Hammond, 1984, 1990; McLaughlin, Pfeifer, Swanson-Owens, & Yee, 1986; Metropolitan Life, 1985; Rosenholtz, 1989; also see Lortie, 1975; and Sizer, 1985).

There is some evidence that teacher efficacy is related to academic achievement and teacher behaviour known to foster academic achievement (Ashton & Webb, 1986; Berman & McLaughlin, 1977; Gibson & Dembo, 1984; Greene, Anderson, & Loewen, 1988; Hoy & Woolfolk, 1990b; Soar & Soar, 1982; also see Ashton, 1984; and Dembo & Gibson, 1985) as well as with important student cognitions such as performance expectancies and appraisals (Midgley et al., 1988) and efficacy for achievement (Greene et al., 1988). More-efficacious teachers, relative to their less-efficacious peers, also are more likely to adopt change proposals associated with formal innovations and staff development programs (Berman & McLaughlin, 1977; Guskey, 1988; Poole, Okefor, & Sloan, 1989; Rose & Medway, 1981; Smylie, 1988). Teacher efficacy has been linked to parent involvement in school activities (Hoover-Dempsey, Bassler, & Brissie, 1987).

Okefor and Sloan (2004) asserted that following broad acceptance of multiple intelligences and the interest in brain-based learning, teachers still needed to understand how to shape lesson and unit plans to appeal to students of all talents and gifts. They sought to facilitate the learning of students of genders and all personalities, all cultural groups, all ages, and in all locations and types of schools. While doing this, however, educators still needed to convey the state-required content and show gains in test scores a daunting challenge, but one critically important to individual students, to parents, and to educators themselves.

Berman (2008) reiterated that classroom instruction, of course, is not the summed total of teaching and learning challenges. The curriculum represents the overall scope and sequence of content that teachers will present and students will learn; it is a grand plan to *direct* and *focus* classroom instruction. Instruction embraces five classroom elements that teachers can differentiate, or modify, to increase the likelihood that each student will learn as much as possible, as efficiently as possible.

In 1995, Association of Supervisory Curriculum Development (ASCD) published Carol Ann Tomlinson's *How to Differentiate Instruction in Mixed-Ability Classrooms*, a book that introduced "differentiated instruction" as an overall framework for adapting: content, process, products, affect, and the learning environment. In addition, differentiated instruction prompts teachers to adjust and adapt instructional planning to three student characteristics: readiness, interest, and learning profile. ASCD continues to provide educators employing differentiated instruction with extensive new resources, including workshops, video programs, publications, guidelines for school leaders, and models of lesson and unit plans.

In the same vein, the National Curriculum Framework (NCF, 2005) followed by the Right to Education (RTE, 2009) have created a new environment for school education. The vision of education is substantially different from the traditional one, entailing changes in curricular goals, pedagogy and assessment. These changes reflect a renewed commitment to universal education, to a democratic ethos and to a constructivist pedagogy based on a better understanding of how children learn. The teacher is the key agent in the transition to this vision of education. The National Knowledge Commission (NKC, 2007) has observed that the teacher is the single most important element of the school system and has stressed the need to substantially enhance teachers' professional capabilities, standing and commitment to education, hence the need to examine teachers' commitment among in-service teachers in teaching and learning in Mathematics.

Statement of the problem

The depth of Mathematical knowledge an individual has dictates the level of accuracy of his/her decision. This implies that before an individual can function well in the society he/she must possess or have relatively good education and be good in Mathematics especially in this technological age. Technological development is highly rooted in the study of Mathematics.

The results of the West African School Certificate from 2000-2012 portrayed poor performance in Mathematics. The modal scores for most centers within this period according to West African Examination Council (WAEC) lie between 30 to 35 marks. Given that a credit pass in Mathematics is a requirement for admission to universities for all courses, it is obvious that less than 35% of the candidates who completed secondary school from 2002-2012 would be eligible for admission to universities or other allied institutions.

Teaching and learning are affected by the nature of educational policy adopted by the ruling government. Unstable governments often affect learning adversely. Control of formal education by the conservative elements or an adult generation which received its education in the past, or untrained, inert and often cowardly educational leaders, has adverse effect on teaching and learning. In Nigeria, teachers and learners come to school from varying cultural and linguistic group. They, therefore, bring into the actual setting their different cultural trait and identification. They bring to school their peculiar attitudes towards members of other ethnic groups and this affects teaching and learning.

There could be some factors surrounding the students which may be affecting their academic performance in school. These may include teachers' commitment to duty as this would have spiral effects on students' academic performance.

Several studies have been conducted on teachers' variables like gender, qualification, achievement motivation, Study behaviour, attitude and methodology on academic performance. Various results

have been the outcome of these results. They seem not to bring teachers' commitment among the in-service teacher in teaching and learning. Some gaps still exist in this area.

In this study the researcher investigated teachers' commitment among in-service teachers in teaching and learning of mathematics, would proffer remedies' to questions like how teachers/ students will predict professional commitment among in-service teachers in the teaching of mathematics and if attitude and value of teachers influence professional commitment among in-service teachers in the teaching and learning of mathematics.

Purpose of the Study

This study was designed to investigate professional commitment among in-service teachers' in teaching and learning of mathematics in secondary schools in Edo State. Specifically the study was designed to :

1. Find out whether teacher/ student relationship predict professional commitment among in-service teachers in teaching and learning of mathematics.
2. Determine whether teachers' attitude influence professional commitment among in – service teachers in teaching and learning of mathematics.

Research Hypotheses

1. Teachers/ students relationship will not predict significantly professional commitment among in-service teachers in the teaching and learning of mathematics.
2. There is no influence of teachers' attitude on professional commitment among in-service teachers in teaching and learning of mathematics.

Significance of the Study:

The study is highly significant as many categories of people would benefit from it viz-a- viz students, teachers, parents and government.

The study would help the students develop positive attitude towards their studies and thereby seek voluntarily for total developmental and high performance in mathematics. The study would acquaint teachers to develop positive self-efficacy, right values in life to discharge their duties. They should see reasons why students are not performing well in mathematics and to offer remedial assistance for better performance.

The parents would also benefit from the study as they work hand in hand with the teachers to ensure good study habits for their wards and children to achieve maximally in mathematics. They would also want to see the need to purchase their books, payment of tuition fees and attendance of the school parents' teachers' association meetings ensuring high academic performance of their wards and children in school. The government too would enable teachers to perform creditably well in schools. The needs for teachers' motivational drive, adequate facilities in schools, materials require to affect teaching and learning.

Scope of the Study

It should be realized that many variables jointly contribute to professional commitment of teachers in secondary schools. This study would only investigate Professional Commitment among in-service teachers in the teaching and learning of mathematics in some selected secondary schools in Ovia Local Government Area of Edo State. Nigeria.

LITERATURE REVIEW

Commitment of Teachers to teaching and learning process: Commitment to teaching is used here as an indicator of a teacher's psychological attachment to the teaching profession. Defined in this manner, commitment to teaching tends to be examined in one of two ways (Coladarci, 2007). First, teacher attrition is studied. Recent figures, for example, suggest that roughly half of those who enter teaching leave within the first 5 years (Wise, Darling Hammond, & Berry, 1987). Moreover, a disproportionate number of leavers are from such undersupplied disciplines as mathematics and science (Darling Hammond, 1984). Although there has been some suggestions, based on National Teacher Examination (NTE) scores, those leavers are more likely to be among the academically achievers (Darling-Hammond, 2004), results of a national survey of former and current teachers indicate that the two groups are comparable on several indicators of professional quality (Metropolitan Life,2005). That is, in addition to having similar education, leavers are equally likely to have received an "award, citation, or special recognition" for their teaching and to have been asked to

serve in a supervisory role over other teachers (Metropolitan Life, 1985). Not surprisingly, low salary is the most frequently reported reason for leaving teaching, cited by 60% of those who actually left the profession (Metropolitan Life, 2005). Over one third (36%) of leavers also cite working conditions as a factor in their decisions to leave.

A second way to study commitment to teaching is to ask teachers whether they would choose this profession if they had the decision to make over again. The National Education Association poses a similar question to a sample of teachers as part of its continuing poll. Although the proportion of teachers reporting they would not choose teaching rose from 10% to 36% between 1966 and 1981, this figure had dropped to roughly 30% by 1986 (Darling-Hammond, 1990).

Professional Development

Willis (2002) recommends that professional development should be site-based, long-term, on-going, accessible, and inclusive, and therefore part of a teacher's everyday practice, rather than tacked on. In this way, more active learning opportunities can be offered to suit a teacher's individual needs and goals, and being long-term there is time for teachers to consider alternatives, while being encouraged and supported (Ball, 1996; Loucks-Horsley & Matsumoto, 1999; Zaslavsky & Leikin, 1999). Another important factor is for teachers to have ownership of their development making participation voluntary and expectations explicit at the outset, so they know what they are „buying“ into (Kedzior & Fifield, 2004; Lee, 2001).

Peer mentoring is an adaptation of traditional mentoring, and can be set up between teachers who work together in the same domain to provide the help, advice and encouragement needed when trying to implement different ways of teaching (Darwin & Palmer, 2009). With effective peer mentoring, as the relationship grows and collegiality develops, trust will build, and current ideas and beliefs can be challenged or validated in a safe environment (Robb, 2000). Teachers who meet together on a regular basis for group peer mentoring have the opportunity to share their experiences and support each other. From an extensive study of the literature by the Timperley, Wilson, Barrar, and Fung (2007), their recommendations support the participation of teachers in structured professional groups as interaction with colleagues create opportunities for new learning.

METHODOLOGY

Research Design:

The research design for this study is the descriptive survey. Descriptive survey according to Ilogu (2005) is used to collect data that will enable the researcher to describe systematically the characteristics features about the given population. The design is deemed to be appropriate because the questionnaire will be used to collect data from the sample with the view of generalizing on the entire population.

Population of the Study

The target population for this study consists of all secondary schools in Edo State. The accessible population consists of teachers in some selected schools in Ovia South East, Local Government Area in Edo State, Nigeria.

Sample and Sampling Technique

The sample comprised one hundred and twenty (100) teachers randomly selected from four of the secondary schools in Ovia S.E, L.G.A. in Edo State. Twenty- five teachers comprising thirteen (13) male and twelve (12) female mathematics teachers were selected from each of the four schools studied. Their age ranged between 20-60 years teachers.

Instrumentation

The major instrument used for data collection was a 20- item researcher's designed questionnaire tagged Professional Commitment among In-service Teachers in Teaching and Learning of Mathematics (PCAITTLM).

It was divided into two sections A and B. Section **A**, sought teachers biographical information such as name of the school, type of schools, subject taught, sex, age qualification and experience

Section **B**. is made up of twenty (20) items classified into four sub- headings.

Items 1-5 focused on teachers/ students relationship would predict professional commitment among in-service teachers in teaching and learning of mathematics, item 6-10 assess the influence of teachers attitude on professional commitment among in-service teachers, 11-15 items addressed variables bothering on teachers efficacy correlation with professional commitment among in-service teachers in teaching and learning of mathematics and items 16-20 focused on variables of teachers' motivation on job performance as correlates with professional commitment among in-service teachers in teaching and learning of mathematics. All items took the 4-point likert scale ranging from strongly agree to strongly disagree. (SA,A,D,SD).

Validity and Reliability of the Instrument

The instrument was subjected to proper scrutiny by three experts in instrument construction. One of which majored in Measurement and Evaluation, one in Guidance and Counseling and the third in Educational Psychology. They see to the instrument if all the variables were addressed and effect corrections where necessary.

Reliability of the Instrument: Test retest method was used with the application of Pearson Product Moment Correlation. A high coefficient of 0.75 was established. With this high coefficient it therefore means that the instrument is reliable.

Data Analysis

Pearson Product Moment Correlation statistical tool was used to analyse hypothesis 1 and Independent t- test for hypothesis 2. All formulated hypotheses were tested at 0.05 level of significance.

Hypothesis One:

Teachers/ Students relationship will not significantly predict professional commitment among in-service teachers in teaching and learning of mathematics.

Table1. Relationship between teachers/ students and professional commitment among in-service teachers.

Variable	N.	Mean	S.D	D.F	r _{cal}	r _{crit}	Remark
Teachers/studs relationship.	100	12.35	3.55	98	0.62	0.20	Significant
Profnal comm. of trs.	100	13.50	4.04				

Table 1 shows the relationship between teachers/ students and professional commitment among in-service teachers in teaching and learning of mathematics. The mean and standard deviation of teachers/students and professional commitment of teachers were (12.35, 3.55) and (13.50, 4.04) respectively. The r calculated value of 0.62 resulted from the relationship between teachers/ students and professional commitment among in-service teachers in teaching and learning of mathematics. This calculated value is significant as the value is greater than the critical value of 0.20 given 98 degree of freedom at 0.05 level of significance. It therefore means that teachers/ students relationship significantly predicts professional commitment among in-service teachers in teaching and learning of mathematics.

Hypothesis Two:

There is no significant influence between teachers' attitude and professional commitment among in-service teachers in teaching and learning of mathematics.

Table2: Significant Influence between teachers' attitude and professional commitment among in-service teachers in teaching and learning of mathematics.

	N.	Mean	S.D	D.F	T _{cal}	t _{critical}	Remark
Teachers' Attitude	100	11.49	3.45	198	5.25	1.96	Significant
Profnal comm. of trs.	100	12.5	3.05				

Table 2 revealed the significant influence between teachers' attitude and professional commitment among in-service teachers in teaching and learning of mathematics. The calculated table values of 5.25 resulted as difference between teachers' attitude and the professional commitment among in-service teachers in teaching and learning of mathematics. This calculated table value is significant as is greater than the critical value of 1.96 given as 198 degree of freedom at 0.05 level of significance. It implies that there is significant influence between teachers' attitude and professional commitment among teachers in teaching and learning of mathematics.

Discussion of Findings.

The findings in the study “ An Investigation of Professional Commitment among In-Service teachers in teaching and learning Mathematics have revealed that the four posited null hypotheses for the study were rejected while the alternative hypotheses were obtained.

Teachers/ students relationship will not predict significantly professional commitment among in-service teachers in teaching and learning of mathematics was rejected as the data results showed that teachers/ students relationship predicts significantly professional commitment among in-service teachers in teaching and learning of mathematics.

This statement was in line with the findings of Nwadingwe (2006) affirmed that Learning results from the interaction between the learner and the learning environment. At every point, the students look up to their teachers for leadership and advice. The students need to admire their teachers, trust them and be receptive of their views and leadership. Whenever, good relationship is allowed to thrive between teachers and students, students would tend to be interested in the subjects taught by the teachers. Poor relationship has diverse effect on the students' attitude in respect of events in the teaching- learning environment (Nwadinigwe, 2006).

There is significant influence between teachers' attitude and professional commitment among in-service teachers in teaching and learning of mathematics. This finding was supported by Ashiake (2010). Posited that Students and teachers though separate entities in themselves, form part to the personality of their school. They are part of the learning environment. They bring into the environment their personal characteristic like age, sex, principles or philosophies of life, home and social experiences, professional experiences and competencies (on the part of the teachers), levels of skill development, levels of intellectual maturity, interests, attitudes and values, styles of conceptualization, social outlook and orientation, emotional disposition, introversion and extroversion, self-concepts, etc. Whatever, they bring with them help to make up the tone of the environment. They bring to school their peculiar attitudes towards members of other ethnic groups. They also bring with them the language or dialect of their groups as well as their values as teachers or learners. They represent their homes and social groups. Whether they are rich or poor, dull or bright, with or without any aggressive behavior, introverted or extroverted, strong or weak, short or tall, male or female, young or old, their characteristics add up to the general climate of the learning environment and thus help in making a learner a success or failure.

Conclusion and Recommendations.

None of the null hypothesis formulated for this study was accepted for the study, all were rejected while the alternative hypotheses were upheld. This implies,

Teachers/students relationship predicts significantly professional commitment among in-service teachers in teaching and learning of mathematics and there is significant influence between teachers' attitude and professional commitment among in-service teachers in teaching and learning of mathematics and finally,

Based on the results of data analysis and the conclusion reached, the following are hereby recommended:

1. For teachers to be dutifully committed to their work effective motivation of teachers, teachers' salary and other remuneration should be paid adequately and promptly.
2. Training of teachers annually is important as this will further boost their performances on the job should be given an urgent attention.
3. Adequate training programmes for professional improvement and development of teachers in schools should be provided.
4. Eroding prestige of teachers and lack of motivation in teaching. This condition affects learning indirectly in various ways which needs to be addressed. And others.

Implications of the Study.

- (a) It was observed that teachers / students relationship is paramount for effective teaching and learning to be achieved. Students need to admire their teachers, trust and be receptive of their views and leadership. They do this if the teachers relate well to the learners.
- (b) Whether teachers/ students are rich or poor, dull or bright, with or without aggressive behaviour, introverted or extroverted, male or female, their traits or attributes add up to the general climate of the learning which are springboard to teaching and learning.
- (c) It is known fact that the proportion of low-achieving students in a teacher's classroom had a negative direct effect on personal efficacy. Students need to develop positive thinking about themselves and positive attitude to their studies.

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DEVELOPMENT AND VALIDATION OF INSTRUMENT: A PANACEA FOR TEACHERS EFFECTIVENESS

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ABSTRACT

This study examined the development and validation of instrument a panacea for teachers' effectiveness scale (TES). To carry out this study, four null hypotheses were posited to give direction. The sample of the study comprised of one hundred and sixty (160) randomly selected teachers from public Secondary Schools in Ikeja Local Government Area of Lagos State. The instrument used for data collection was a 30 item scale titled "Teacher efficacy scale (TES)" which was developed through the adoption of the items from the Megan Tschannen-Moran, College of William and Mary Anita Woolfolk Hoy, the Ohio State University Teacher self-efficacy scale (TSS) and additional items was generated by the researcher making the total items used as 41. The data collected were analyzed and the formulated hypotheses were tested using Croanch's Alpha, Descriptive Statistics and Pearson Product Moment Correlation statistical tools. All the hypotheses were tested at 0.05 level of significance. The results of the data analysis showed: The scores of the teachers' effectiveness scale validation instrument yield significant high coefficient of validity; the scores of the teachers' effectiveness scale validity instrument yield high coefficient internal consistency and reliability; the scores of teachers in the factor structure of TES are high and there is significant correlation among the sub-scales of TES.

Based on this result of the findings the following recommendations were made. They include: Content Validity Ratio (CVR) becomes inevitable to determine validity coefficient of instrument because this formula requires the number of panels that will rate the items good and the total number of panels. The summation of the scores of the items will give a true picture of the validity coefficient; Validation of instrument will yield good result if the psychometric properties of the instrument is held to a high esteem; Croanch's Alpha technique is required to refine and isolate the bad items from the good ones and also to ensure high validity and reliability coefficient of the questionnaire; Adequate knowledge of descriptive statistics is important to enable the developer to describe logically the minimum, maximum, mean and standard deviation in the table etc.

Keywords:- Teacher efficacy, Construct validity, factor analysis, Factorial validity.

INTRODUCTION

Background to the Study

The teacher efficacy has been a subject of broad research for approximately three decades (Paneque & Barbetta, 2004). Effectiveness generally refers to the extent to which somebody achieves his purpose. Relating this to the teacher therefore, it is about doing the right things in the teaching process so that at the end of teaching, the goals and objectives of the teachers can be achieved Research findings have demonstrated that effective teaching leads to good academic performance in courses. (Tschanne-Moran, Hoy & Hoy, 1998).

Teacher efficacy, by its general definitions, means the measure of teachers' own ability to organize and execute courses to complete specific teaching tasks and reach teaching goals (Tschanne-Moran, Hoy, & Hoy, 1998). In the same vein, it has also been defined as a judgment of teachers' capabilities to bring about desired outcomes of students' engagement and learning (Tschanne-Moran & Woolfolk-Hoy, 2001). In fact, the construct of teacher efficacy has obtained numerous attention both in its meaning and measure for over 25 years (Iebone, 2004). In recent years, a growing number of education research have identified teacher efficacy as a significant element underlying the effectiveness of teaching and learning (Ho & Hall, 2004).

This concept has been linked to a number of factors such as teacher's behaviour and attitude; teacher's organizational skills and enthusiasm for teaching, levels of planning and teacher's professional efficacy for teaching (Allinder, 1994; Hall, Burley, Villeme & Bruckheimer, 1992). Thus, the concept of TE has been found to be an important construct in education (Tschanne Moran and Woolfolk-Hoy, 2001). Parents, practitioners and policy makers agree that the key to improving public education and teaching effectiveness is by placing highly skilled and effective teachers in classrooms. This is because, teachers with a high sense of efficacy have a strong conviction that they can influence student learning, even the learning (Guskey & Passaro, 1994). Overall, efficacious teachers tend to engage in more productive quality teacher behaviours (Ashton & Webb, 1986), Gibson & Dembo, 1984). In contrast, teachers with low efficacy feel they only have minimal influence on student achievement. These teachers give up more easily when confronted with a difficult situation, are less resourceful, and oftentimes feel that students cannot learn because of the extenuating circumstances (Aston & Webb, 1986, Bandura, 1997). Due to selection of more effective and positive teaching behaviours, efficacious teachers tend to have high student achievement, whereas teachers with low efficacy tend to have low student achievement.

Scaling involves a high degree of operationalization, and allows researchers to measure complex issues (Sarantakos, 2003). Furthermore, it enables researchers to summate values of several variables into one score and this with a relatively high degree of reliability. In general, it offers respondents a choice of picking the answers out of given sets of alternatives, which as well shall see, are established in a very careful but also a cumbersome way.

The development of instrument such as teacher efficacy scale TES for the measurement of the construct has generated heated debate among researchers especially in the United States of America (USA). While some TE researches were based on the tradition of the social learning theory propounded by Rotter (1966), others were based on the conceptual stand of social cognitive theory postulated by Bandura (1986). The belief of the social learning theorists is that the control of reinforcement of teachers' actions lies either within them or in the environment. Those whose belief is that they can teach very difficult or unmotivated students have a belief that the ".....reinforcement of teaching activities lies within the teachers' control or is internal" (Tschanne-moran & Woolfolk -Hoy, 2001) on the other hand, those whose belief that the environment overwhelmingly influence the reinforcement of their teaching actions demonstrate a belief that reinforcement of their teaching is beyond their control i.e. external to them. Thus, diverse forms of TE scales based on different methodologies, samples and techniques have been developed based on the theories of Rotter (1966) and Bandura (1986).

From 1976, when researchers from Rand Corporation pioneered research activities on the development of instrument for the measurement of Teacher Efficacy (TE) to the most recent times, there have been series of reports of measurement defects by researchers across cultures and national boundaries (Brouwers, 2003; Campbell, 1996; Tschanne-Moran & Woolk-Hoy, 2001). For example, the outcomes of Factor Analysis (whether Confirmatory Factor Analysis (CFA) or Exploratory Factor Analysis (EFA) of TE scales have yielded different results even where similar instruments were used in data collection (Coladarci & Fink, 1995). It can be inferred from these differences in the results that TE may be context-specific as thought by Pajeres (1996). The context-specificity of TE is dependent to a large extent on the situation of the mind of the respondents (teachers) and the condition under which they work. This perhaps could be the reason why Bandura (1997) proposed that a TE belief arises from the three factors. Bandura referred to this interplay as environment, Behaviour, and Personal factors.

Evidence from literature revealed that the various versions of TE scales were developed mainly in the United States of America. In Nigeria, no serious attention has been given to the development of measuring instrument for capturing an elusive construct as TE (Tschanne-Moran & Woolfolk-Hoy, 2001). One thing to note is that the environment in America under which a typical American school teacher works is quite different from that in Nigeria. It is also a matter of common knowledge that the societal value and orientation in America are different from those in Nigeria. The process of teacher preparation in Nigeria is also different from that of the United States of America (Okebukola, 2002). What teachers in America will regard as serious constraints to achieving students' learning may not necessarily be seen as such by teachers in Nigeria. Therefore, there is the need to develop an instrument in to measure the construct validity of teacher effectiveness scale in the country.

Statement of the Problem

Teacher efficacy scales presently in use have been found to poorly predict teacher effectiveness. Index of teacher effectiveness has not received common acceptance among evaluators. More so, there have never been uniformity on the index of teacher efficacy scale among scholars, what seems a threat to another person may not be so to another. Therefore the corresponding index of teacher efficacy is not valid. Also, the outcomes of factor analysis (confirmatory Factor Analysis or Expository Factor Analysis) of TES have yielded different results even where similar instruments were used in data collection (Coladarci & Fink, 1995). Thus, there is need for cross-cultural validation of Teacher effectiveness scales, especially in Nigeria, where no serious attention has been given to the development of measuring instrument for capturing construct of teacher effectiveness scale (Tschanne-Moran and Woolfolk-Hoy, 2001).

Theoretical Framework

The study is hinged on social cognitive theory postulated by Albert Bandura and Julian Rotter's social learning theory on locus of control.

Bandura Social Cognitive Theory

The construct of teacher efficacy has evolved from Bandura's (1977, 1997) work in the general area of self-efficacy. The theory posits that the perceptions of one's ability affect one's thoughts, feelings, motivation, and actions. Bandura (1995) identified four primary sources of efficacy development: mastery experiences, vicarious experiences, physiological and emotional states, and social persuasion. Of these four sources of efficacy development, mastery experiences are the most influential (Bandura, 1997). Bandura (1997) suggested that once efficacy beliefs are formed, they are very difficult to change. Therefore, it is easier to affect change when teachers are in formative process in teacher preparation programs rather than when they are in the classroom. This is particularly important because of the implications for both professional teacher education programs and teacher development programs. Self-efficacy is a cognitive process that mediates and regulates behavior (Bandura, 1982). This can have a meaningful impact on teachers as the construct of self-efficacy has been defined, conceptualized and operationalized in public schools. Gibson and Dembo (1984) attempted to improve the validity and reliability of earlier work on teacher efficacy and expand Bandura's two-component cognitive learning theory model. They developed a 30-item scale that consisted of two factors – personal teaching efficacy and teaching efficacy. The first factor, personal teaching efficacy, equates to Bandura's efficacy expectation which represents a teacher's belief that he or she has the skills to bring about student learning. The second factor, teaching efficacy, matches Bandura's (1977) outcome expectancy factor which represents a teacher's belief that any teacher's ability to bring about change is limited by external factors such as family background or parental influence. Hoy and Spero (2005) argued against the direct connection between Gibson and Dembo's (1984) teaching efficacy and Bandura's outcome expectancy noting that the teaching efficacy factor "appears to reflect a general belief about the power of teaching to reach difficult children and may have more in common with teachers' conservative/liberal attitudes towards education" (p. 347, Hoy & Spero, 2005).

Teacher Self-Efficacy Research: There are many factors to consider when examining the academic environment in the public schools. Teacher efficacy is one of the key factors that consistently influences teaching and learning (Woolfolk & Hoy, 1990). Ashton and Webb (1986) were among the first to apply Bandura's social learning theory to the study of teacher efficacy. Their research stemmed from one of the original measures of teacher efficacy developed by the Rand Corporation (Berman & McLaughlin, 1977) to assess two dimensions of the construct. The first was labeled teacher efficacy, which they believed corresponded to Bandura's outcome expectations. The second was labeled personal efficacy, which they believed corresponded to Bandura's efficacy expectations. According to Ashton and Webb (1982) the two items they used to measure teacher efficacy supported the fact that there are at least two different dimensions of efficacy. Bandura's (1977) two dimensions were reconceptualized and consequently changing efficacy expectation to "personal teacher efficacy" and outcome expectation to "general teacher efficacy" (Hoy & Woolfolk, 1993). The research on personal teacher efficacy and its effect has been documented by a number of researchers. The Rand Corporation studies by Armor, et al. (1976) and Berman and McLaughlin (1977) were among the first to examine teacher efficacy as a predictor variable. Both of the studies were conceptually based on the work of Rotter (1966) and used a locus of control approach.

Rotter's Locus of Control Theory

Locus of control is the framework of Rotter's (1954) social-learning theory of personality. Rotter describes personality as a relatively stable set of potentials for responding to situations in a particular way. He referred locus of control as the extent to which individuals believe they can control events affecting them. A person's "locus" (Latin for "place" or "location") is conceptualized as either internal (the person's believes they can control their life) or external (meaning they believe their decisions and life are controlled by environmental factors which they cannot influence, or by chance or fate). Individuals with a strong internal locus of control believe events in their life derive primarily from their own actions: for example, when receiving test results, people with an internal locus of control tend to praise or blame themselves and their abilities. People with a weak external locus of control tend to praise or blame external factors such as the teacher or test. It one of the four dimensions of core self-evaluation –one's fundamental appraisal of oneself-along with neuroticism, self-efficacy, and self-esteem.

Internals were believed by Rotter (1966) to exhibit two essential characteristics: high achievement motivation and low outer-directedness. This was the basis of the locus-of-control scale proposed. Although it was based on Rotter's belief that locus of control is a single construct.

Rotter sees personality and behavior as always changeable. Change the way the person thinks, or changes the environment the person is responding to, and behavior will change. He does not believe there is a critical period after which personality sets. But, the more life experience one has building up certain sets of beliefs, the more effort and intervention required for change to occur. Rotter conceives of people in an optimistic way. He sees them as being drawn forward by their goals, seeking to maximize their reinforcement, rather than just avoiding punishment.

Rotter has four main components to his social learning theory model predicting behavior. These are behavior potential, expectancy, reinforcement value, and the psychological situation.

Purpose of the Study

The purpose of this study is to develop and validate an instrument known as “Teacher Effectiveness Scale.

Specifically, the study will have the following objectives:

1. To develop a Teacher Effectiveness Scale (TES) for Nigerian Secondary School Teachers.
2. To develop the internal consistency and validity of the TES?
3. To determine the factor structure of the instrument.
4. To provide easy accessibility of the scale to researchers.

Research Questions

The study sought to find answers to the following research questions:

1. To what extents will Teacher effectiveness scales have high construct validity?
2. What are the internal consistency and validity of the TES?
3. Will the teachers’ scores in the factor structure of the Teacher Effectiveness Scale (TES) be high?
4. Would there be significant correlation among the sub-scale of the TES?

Research Hypotheses

The following hypotheses will guide in the direction of the study:

1. The scores of the teacher effectiveness scale validation instrument (TES) will not yield significant high coefficient of validity.
2. The scores of the teacher effectiveness scale validation instrument (TES) will not yield high coefficient internal consistency and reliability
3. The scores of teachers in the factor structure of TES will not be high.
4. There will be no significant correlation among the sub-scales of the teacher effectiveness scale.

Scope of the Study

The study will cover all the Lagos state teachers from public schools in the selected Local Government Area of Lagos. Apart from the geographical scope, the study will be focusing on the development and validation of teacher effectiveness scale.

Significance of the Study

The study will be significant for the following reasons: It will help to generate more empirical data and information on the topical issues of TES. It will help teachers to learn and use new approaches and strategies for teaching. It will help teachers to know how to use management techniques that enhances students’ autonomy. It will provide special assistance to low achieving students. It will build students’ self-perceptions of their academic skills. It will help teachers to know how to set attainable goals. It will help teachers to persist when things do not go smoothly and are more resilient in the face of setbacks, thereby prevent students’ failure.

It will help our schools to be producing highly competitive students’ in the society who will be more useful. It will also help to stimulate further researches on this topic on account of the very sensitive issues it would have raised as well as suggestions I hope to make based on my findings.

LITERATURE REVIEW

Teacher Efficacy

Teacher efficacy, by its general definition, means the measure of teacher's own ability to organize and execute courses to complete specific teaching tasks and reach teaching goals (Tschannen-Moran, Hoy, & Hoy, 1998). In recent years, a growing number of educational research have identified teacher efficacy as a significant element underlying the effectiveness of teaching and learning (Ho & Hau, 2004). In fact, the construct of teacher efficacy has obtained a plenty of attention both in its meaning and measure for over 25 years (Labone, 2004). Basically, the three terms of teacher efficacy, teachers’ sense of efficacy, and teacher self-efficacy have the similar meaning; they have been defined as the beliefs that teachers are able to create positive effects on student performance (Ho & Hau, 2004), the beliefs that teachers can give rise to desirable learning outcomes by students (Soodak&Podell, 1996), and “a judgment of his or her capabilities to bring about desire outcomes of student engagement and learning, even among those students who may be difficult or unmotivated” (Tschannen-Moran & Hoy, 2001, p.783). Even though different researchers made a little bit different definition among these similar terms; power of teacher efficacy is well established, and the research interest of teacher efficacy from educational researchers will be never-ending.

Teacher self-efficacy was defined as the extent to which a teacher believes he or she has the capacity to affect students’ learning outcomes. Similarly, Ashton (1984) defined it as the degree to which teachers believe in their ability to affect student performance.

However, Guskey (1982) defined teacher efficacy as a teacher’s willingness to take responsibility for student successes and failures. In general, teacher self-efficacy is a teacher’s belief that he or she can influence how well students learn; even those students considered to be difficult or appear to lack motivation (Guskey&Passaro, 1994). Though there is some variation in the definitions of teacher self-efficacy, researchers have consistently found a relationship between teachers’ sense of efficacy and the behavior and learning of students (Henson, 2002).

Teacher efficacy refers to the “teachers’ perceptions that they have the skills and ability to help students learn, are competent in building effective programs for students, and can effect changes in student learning” (p. 490, Short, 1998). The belief of teachers that their efforts or capability affect outcomes is critical to teacher self-efficacy definitions. The teacher efficacy literature distinguishes between teacher’s individual (self) efficacy and teachers’ collective (general) efficacy. The following sections describe the early conceptual beginnings of self-efficacy and selected teacher self-efficacy research. Bandura (1977) conceptualized self-efficacy using social cognitive theory as the foundation. Bandura described self-efficacy as the belief in one’s capabilities to organize and set forth a course of action necessary to produce the given attainments. The two dimensions of Bandura’s (1977, 1986) notion of self-efficacy are outcome expectation and efficacy expectation. Outcome expectation refers to one’s estimation that a given behavior will lead to a specific outcome. Efficacy expectation refers to one’s belief of being capable of demonstrating the behaviors necessary to achieve the outcome. Bandura concluded that the two dimensions are different continuums that are interrelated, situational, and affect motivation and future learning. The two discrete expectations interact to determine the initiation and persistence of coping behaviors. Thus, one’s confidence that a certain behavior will lead to certain outcomes, together with the confidence one has the ability to perform the behavior, determines one’s action. Teacher efficacy is one of the key factors that consistently influences teaching and learning (Woolfolk & Hoy, 1990).

Ashton and Webb (1986) were among the first to apply Bandura’s social learning theory to the study of teacher efficacy. Their research stemmed from one of the original measures of teacher efficacy developed by the Rand Corporation (Berman & McLaughlin, 1977) to assess two dimensions of the construct. The first was labeled teacher efficacy, which they believed corresponded to Bandura’s outcome expectations. The second was labeled personal efficacy, which they believed corresponded to Bandura’s efficacy expectations. According to Ashton and Webb (1982) the two items they used to measure teacher efficacy supported the fact that there are at least two different dimensions of efficacy. Bandura’s (1977) two dimensions were conceptualized and consequently changing efficacy expectation to “personal teacher efficacy” and outcome expectation to “general teacher efficacy” (Hoy & Woolfolk, 1993). The research on personal teacher efficacy and its effect has been documented by a number of researchers. The Rand Corporation studies by Armor, et al. (1976) and Berman and McLaughlin (1977) were among the first to examine teacher efficacy as a predictor variable. Both of the studies were conceptually based on the work of Rotter (1966) and used a locus of control approach.

After interviews of sixth grade teachers and principals of 20 elementary schools in the Los Angeles Unified School District, Armor et al. (1976) concluded that teacher efficacy was strongly related to increases in reading. Rand conducted a study by Berman and McLaughlin (1977) also found teachers’ sense of efficacy to have a positive impact. Their study consisted of 18 school districts across the nation with interviews of 100 superintendents, 171 principals, and 1072 teachers and the findings showed that teachers’ sense of efficacy had major positive effects on the percentage of project goals achieved and improved student performance.

Since the early teacher efficacy studies, research findings have documented the effect of teacher efficacy on classroom management (Ashton & Webb, 1986; Gibson & Dembo, 1984; Woolfolk & Hoy, 1990), special education referrals (Meijer & Foster, 1988; Soodak & Podell, 1993), and family involvement in school (Garcia, 2004). For example, Soodak and Podell (1993) found that high efficacy teachers were more willing to take responsibility for students with special needs. These teachers were more likely to develop special programs for students with special needs, rather than refer them to special services. Soodak and Podell noted that the impact on regular class placement was mediated by the social class of the students. For low socioeconomic (SES) students, teachers with high personal efficacy were more likely to consider a regular classroom placement as being appropriate for special needs students. There was no relationship for high SES students.

The relationship between teacher efficacy and various aspects of teaching has also been studied. Teachers’ teaching efforts, level of aspiration, and goals all appear to be affected by their efficacy beliefs (Hoy & Spero, 2005). Teachers who have a strong sense of efficacy tend to employ greater levels of organization, planning, and enthusiasm (Allinder, 1994). There has been evidence that higher efficacious teachers spend more time teaching in subject areas where their sense of efficacy is higher (Riggs & Enochs, 1990); whereas, teachers with lower to avoid subjects (Riggs, 1995). Higher efficacious teachers tend to be more willing to try new ideas and methods to better meet students’ needs (Cousins & Walker, 2000; Guskey, 1988). Clearly, teacher efficacy can impact teaching and learning.

Dating back to the early Rand study (Armor et al., 1976), higher teacher efficacy was found to correlate with student reading achievement. Researchers analyzing the impact of teacher efficacy on student achievement found students with efficacious teachers generally outperformed those in classrooms with less efficacious teachers. Additional research supports findings from the Rand study that student achievement is higher when there is higher teacher self-efficacy (Ashton & Webb, 1986).

According to Ross’ (1994) review of the teacher efficacy literature, teacher efficacy may have an impact on student achievement in a number of ways. First, teachers with higher efficacy are more likely to learn about and implement new teaching methods, particularly the techniques that are especially demanding. Second, efficacious teachers use various classroom management approaches that stimulate student autonomy and reduce custodial control. Keeping these students on task as a result of effective management strategies may contribute to higher student achievement (Woolfolk, Rosoff, & Hoy, 1990). Third, efficacious teachers may be more successful

because they are more attentive to the needs of students with lower ability levels. According to Ashton, Webb, and Doda (1983) teachers with low efficacy beliefs were found to concentrate their efforts on the upper ability group, giving less attention to lower ability students who were viewed as potential sources of disruption. The fourth effect of teacher efficacy on student achievement is that it may lead to specific teacher behavioral changes which create changes in students' perceptions of their academic skills. Fifth, it may be possible that teacher efficacy influences student achievement through teacher goals of beginning and pre-service teachers (Brookhart&Loadman, 1993; Czerniak&Schriver-Waldon, 1991). Finally, efficacious teachers may influence student achievement through teacher persistence. Teachers with high perceived efficacy may view student failure as a challenge to intensify their teaching effort (Ross, 1994). Students of efficacious teachers have been found to generally outperform students in other classes (Henson, 2001). The effect teacher efficacy has on study achievement appears to be well documented.

Teacher efficacy was predictive on the Canadian Achievement Tests (Anderson, Greene, &Loewen, 1988) and the Ontario Assessment Instrument Pool (Ross, 1992). In rural, urban, majority Black, and majority White schools, student achievement was found to be greater for students of efficacious teachers (Watson, 1991). This should offer encouragement to principals who are seeking to improve their schools, especially since studies have shown that transformational leadership behaviors have a positive impact on teacher self-efficacy (Hipp, 1997; Leithwood, Jantzi, & Fernandez, 1993).

In the work of Onyeda& Patricia (2001); Teacher efficacy is the teacher's belief in his or her capability to organize and execute courses of action to successfully accomplish specific instructional tasks or, more simply, his or her capacity to affect student performance (Bandura, 1995). Teachers with a high sense of efficacy have a strong conviction that they can influence student learning, even the learning of those students who may be more challenging (Guskey&Passaro, 1994). These teachers are open to new ideas and are more willing to experiment with and try new teaching strategies to better meet their students' needs (Ghaith&Yaghi, 1997; Guskey, 1988). Overall, efficacious teachers tend to engage in more productive, quality teacher behaviors (Ashton & Webb, 1986; Gibson &Dembo, 1984). In contrast, teachers with low efficacy feel they only have minimal influence on student achievement. These teachers give up more easily when confronted with a difficult situation, are less resourceful, and oftentimes feel that students cannot learn because of the extenuating circumstances (Ashton & Webb, 1986; Bandura, 1997). Due to the selection of more effective and positive teaching behaviors, efficacious teachers tend to have high student achievement, whereas teachers with low efficacy tend to have low student achievement.

Indeed, Bobbett, Olivier, and Ellett (2008) recently showed that teachers' efficacy beliefs and teachers' self-efficacy beliefs are distinctly different constructs, although these concepts have long been used interchangeably. Specifically, teacher efficacy or teachers' sense of efficacy refers to "teachers' beliefs in their abilities to affect student performance" (Dellinger et al., 2008, p.753) whereas teachers' self-efficacy beliefs refer to "teachers' beliefs in their capabilities to perform specific teaching tasks at a specified level of quality in a specified situation" (Dellinger et al., 2008, p. 753; see also Guskey&Passaro, 1994; Denzine, Cooney, & McKenzie, 2005).

Concept of Self-Efficacy

The concept of self-efficacy was originally developed by Albert Bandura to constitute a part of his social-cognitive theory. Bandura defined self-efficacy as a belief in one's own ability to organize and perform a certain task (Bandura, 1997). As such, self-efficacy is a self-system that controls most personal activity, including appropriate use of professional knowledge and skills. Teacher self-efficacy is the belief that teachers have in their own abilities and skills as educators. Self-efficacy beliefs influence thought patterns and emotions, which, in turn, enable or inhibit actions. It is generally accepted that overt teacher behaviour in the classroom has an invisible complement— teacher beliefs. The latter constitute a very important determinant of the former, i.e., teachers' actions are influenced by their beliefs and assumptions about the school, teaching and pupils. A significant teacher characteristic within the area of beliefs and assumptions is self-efficacy. According to social-cognitive theory, teachers who do not expect to be successful with certain pupils are likely to put forth less effort in preparation and delivery of instruction, and to give up easily at the first sign of difficulty, even if they actually know of strategies that could assist these pupils if applied. Self-efficacy beliefs can therefore become self-fulfilling prophecies, validating beliefs either of capability or of incapacity. (Tschannen-Moran & Woolfolk Hoy, 2007). According to Bandura's theory, self-efficacy has two components: *efficacy expectation and outcome expectancy*. The former is the conviction that one has the ability, knowledge, and skills to perform successfully actions required to produce desired outcome(s). The latter represents a person's estimate of the likely consequences (impact) of performing a task at the self-expected level of performance. That is, outcome expectancy is the belief that a given behaviour or action will indeed lead to (an) expected outcome(s). To be successful, the teacher must have both high efficacy expectations and high outcome expectancy. If the teacher has the former but not the latter, it is unlikely that the teacher will be successful even if he/she is professionally well-qualified. It should be stressed that self-efficacy judgments are examples of belief in one's own capabilities; they are not necessarily accurate assessments of these capabilities on the part of the teacher. In theory, if a teacher has good self-efficacy this may or may not coincide with his/her real teaching capabilities, and, ultimately, with his/her actions in the classroom. The actual relationship depends on the person and educational situation.

According to the Social-cognitive theory of learning, a person's self-efficacy depends on behavioral, environmental and cognitive factors

(Bandura, 1986). Bandura and Wood (1989) supported the idea that a robust sense of personal efficacy to sustain the necessary attention on productivity and a constant effort to achieve goals is the key of success in many areas. Bandura (1986) was the first to define self-efficacy as a person's sense and confidence in his/her abilities to achieve his/her goals. More specifically, the term "self-efficacy" refers to a person's personal critique on his/her capabilities to organize and perform a specific behavior (Staple, Hulland & Higgins, 1999). The concept of self-efficacy does not indicate the actual skills that a person may have, but the degree of his/her faith in them. People with high self-efficacy consider a new situation as a challenge, do not give up their effort in case of failure, but very quickly regain what they have lost, while people with low self-efficacy have low aspirations and consider a new situation as a threat, trying to avoid it, reducing their effort or even abandoning every effort to achieve their goals (Bandura, 1994). According to self-efficacy theory, increasing manager's self-efficacy, organization performance could develop and improve (Staple, Hulland & Higgins, 1999). Self-efficacy has, among others, been investigated in the frame of contemporary occupational settings. As Golia, Belias, Tsioli and Koustelios (2013) mention, teachers' self-efficacy is strongly related with principals' leadership behavior, which provides motives, vision and opportunities for flexible and adaptive behavior in the classroom.

Teacher's self-efficacy

During the last decades, several studies have been focused on teachers' self-efficacy. According to Tschannen-Moran and Woolfolk-Hoy (2001), teacher's beliefs about the degree up to which they are able to influence students' involvement in the learning process has been characterized as a simple idea with significant implications. Tschannen-Moran and Woolfolk-Hoy defined teachers' self-efficacy as "the estimation of their abilities to bring desired results in potential involvement with their students, or results that are related to the students' learning, even with students which are difficult to motivate" (Henson, 2001). Additionally, talking about self-efficacy as the faith in ourselves, Tschannen-Moran argued that teachers' self-efficacy motivates school teachers to adhere to various setbacks that arise. Bandura stated that people with low self-efficacy are insufficient as teachers, even if they are aware of what they are supposed to do (Frank, 2009). Teachers' high self-efficacy is related with their high confidence in their ability to confront different new issues that arise, as well as their ability to deal with the consequences that may be created in the classroom (Staple, Hulland & Higgins, 1999). There are at least four types of teachers' self-efficacy, which play a key role in a teacher's way of teaching and his/her willingness to persist even when things in class are not so easy (Gibbs, 2003). The types of teachers' self-efficacy are the following: behavioral self-efficacy, cognitive self-efficacy, emotional self-efficacy and finally, the culture of his/her self-efficacy (Gibbs, 2003). *Behavioral self-efficacy* explains the degree of a teacher's belief in his/her efficacy to execute specific actions in order to handle specific teaching situations. *Cognitive self-efficacy* describes a teacher's personal estimation of his/her capability to regulate over his/her thinking during the teaching action. *Emotional self-efficacy* refers to a teachers' belief in his/her ability to manage their own emotions in a particular teaching context. Last, but not least, *Cultural self-efficacy* is about a teacher's personal expectations of being effective in specific situations in culturally appropriate teaching ways (Gibbs, 2003). behaves, thinks and becomes motivated to be involved in a particular task.

The construct of teacher efficacy

The construct of teacher efficacy has been a subject of broad research for approximately three decades. Ever since the theory of self-efficacy was first introduced, attempts have been made to identify its empirical value, i.e., to assess how it functions in the everyday practice of teachers and its impact on pupils' learning. A great many research projects have accumulated facts about the effects of teacher self-efficacy in various school situations and environments. It has been proved that teachers' belief in their own abilities positively affects the actions and efforts of teachers, as well as motivation, styles of teaching, classroom management, pupils' learning, and other teacher characteristics.

Research has shown that teacher efficacy has positive effects on:

- Teacher effort and persistence in the face of difficulties (Podell & Soodak, 1993; Gibson & Dembo, 1984);
- The implementing of new instructional practices (Evers, Brouwers, & Tomic, 2002);
- Pupils' academic achievement and success (Ross, 1992; Caprara et al., 2006).

Teachers with high levels of self-efficacy:

- Frequently experiment with new teaching methods;
- Have a tendency to be less critical of their students; are usually more supportive, both instructionally and emotionally;
- Typically work longer with problematic pupils;
- Are usually more enthusiastic;
- Usually are more committed to the profession than other teachers (Ashton & Webb, 1986; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998);
- Deal with the needs of low-ability students (Ross & Gray, 2006);
- Exhibit greater levels of planning (Allinder, 1994);
- Tend to be more open to new ideas (Cousins & Walker, 2000);

- Use less teacher-directed whole-class instruction (Ashton & Webb, 1986);
- Adopt a more humanistic approach to the classroom (Woolfolk, Rosoff, & Hoy, 1990).

Therefore, a strong sense of self-efficacy in a teacher is a crucial factor in instruction. A teacher's personal beliefs and attitude relate to teacher success and use of effective teaching strategies, and they affect pupil performance. Effective teachers display behaviours which are typical for quality instruction. A highly effective teacher does not only believe that he/she can influence actions but also actually demonstrates this belief through his/her behaviour. To put it in Bandura's diction, teacher belief mediates teacher action. In the broadest sense, "teacher efficacy," which is sometimes called "teaching efficacy", refers to teachers' beliefs about their ability to influence student outcomes. Influenced by locus of control theory (Rotter, 1966), teacher efficacy is sometimes divided into general teacher efficacy and personal teacher efficacy. General teacher efficacy means teachers' beliefs in the ability of teachers in general to influence student outcomes (teachers can make a difference); personal teacher efficacy means teachers' beliefs about their own ability to affect student outcomes. Cherniss (1993) has suggested that teacher efficacy should consist of three domains: Task (the level of the teacher's skill in teaching, disciplining and motivating students); Inter-personal (the teacher's ability to work harmoniously with others, particularly service recipients, colleagues and direct supervisors) and Organization (the teacher's ability to influence the social and political powers of the organization). Cherniss (1993) did not elaborate on his proposed conceptualization beyond its basic definition. In the context of the present study, we dealt with personal and general efficacy: (i) Personal teaching efficacy is the teachers' own expectations that they will be able to perform the actions that lead to students learning and ii). General teaching efficacy is the belief that the teacher population's ability to perform these actions is not limited by factors beyond school control. Teacher efficacy discussions usually center on two categories of teachers. That is, teachers with substantial confidence in their efficacy are described with terms such as confidence, a positive sense of teacher efficacy, or high teacher efficacy.

Teaching efficacy was later renamed *general teaching efficacy* (GTE) by Woolfolk and Hoy (1990) to be better distinguished from personal teaching efficacy (PTE). General teaching efficacy is different from personal teaching efficacy. While PTE focuses on teachers' beliefs that they can complete tasks to initiate learning, GTE is the belief that teaching itself can initiate learning. Gibson and Dembo (1984) describe this as "the belief that any teacher's ability to bring about change is limited by factors external to the teacher". The distinction between the two types of efficacy is important. While it is one thing to believe in one's ability to teach, it is another to believe in the power of teaching. A teacher can have high personal teaching efficacy and low general teaching efficacy, and vice versa. However, as Bandura (1997) points out, PTE is a better predictor of teacher actions than outcome expectancy because the outcomes that teachers anticipate depend largely on their judgment of how they will be able to perform in a given situation.

The first version of the TES had 53 items, after factor analysis was performed; the instrument was reduced to 30 items only. Later the authors developed a short form with only 16 items but better psychometric qualities. Still later, other researchers developed a 10-item version that was found to have psychometric qualities roughly equivalent to those of the 16-item version. In the study by Gibson and Dembo (1984) the factors PTE and GTE explained 28.8% of the total variance, which is less than expected in an ideal research instrument. Other research studies produced similar – i.e., rather low – total explained variance.

The TES has been used in various forms in diverse school environments and types of schools; it has been administered to in-service teachers of a variety of school subjects, and it has also been used with pre-service teachers. In principle, the research supports the construct validity of the TES, i.e., it proves the existence of two dimensions, PTE and GTE, and their relative independence as documented by low correlation between them (usually below 0.20). On the other hand, a couple of studies conducted in a variety of environments showed that some questionnaire items were not consistent with the original dimensions, or that the factor structure of the questionnaire was different from the original assumption. In some studies factor analysis produced one factor only (e. g., Deemer&Minke, 1999), or three factors (e. g., Denzine, Cooney, & McKenzie, 2005), or even four factors (e. g., Brouwers & Tomic, 2003). Some authors interpreted the factors of the results in a way different from Gibson and Dembo's (1984). This is true especially of GTE, which suffers from theoretical inconsistency, and in some situations yielded fluctuating data.

Several authors (Woolfolk& Hoy, 1990; Soodak & Podell, 1996) challenged the original conception of GTE, which Gibson and Dembo (1984) maintained was in agreement with Bandura's outcome expectancy. They found that GTE was different from Bandura's notion of outcome expectancy because it concerned teachers' belief that they could overcome external influences, and it did not concern the outcomes of their behaviours. Consequently, new models of self-efficacy were proposed. Soodak and Podell (1996) postulated a 3-factor model comprising (a) personal efficacy, (b) outcome efficacy, and (c) teacher efficacy. Personal efficacy pertains to a teacher's belief that he/she possesses teaching skills, while outcome efficacy refers to the belief that, when teachers implement these skills, they lead to desirable pupil outcomes. The third factor, teacher efficacy, is the belief that teaching can overcome the effects of outside influences. Some authors (Guskey&Passaro, 1994; Deemer&Minke, 1999; Brouwers &Tomic, 2003) point out that the problem with GTE rests in the wording of its items. They have found that the items in PTE are worded in the first person, (When a pupil gets better grades, it is usually because I have found better ways of pupil), while items in GTE refer to a third person – a teacher (A teacher is very limited in

what he/she can achieve because it is the home environment that shapes a pupil's motivation.). Furthermore they note that the majority of items in GTE are formulated in negative terms (The hours in my class have little influence on students compared to the influence of the home environment), while items in PTE are mostly worded in positive terms (When a pupil does better than usual, often it is because I exert a little extra effort). These are important objections to the conceptualization of the original TES. However, subsequent research has not proved that either "I" versus "teacher", or positive versus negative orientation items play a decisive role in factor analysis of TES data (Guskey&Passaro, 1994; Deemer &Minke, 1999).

To sum up the research situation, the TES is based on an excellent construct – self-efficacy – but the instrument by which it is measured shows some instability and sometimes produces inconsistent results. This situation issues a challenge to researchers to discuss these inconsistencies and, in turn, improve the psychometric quality of the TES. The research reported in this paper represents a contribution to these efforts.

Development of teacher efficacy instruments

From 1976, when researchers from Rand Corporation pioneered research activities on the development of instrument for the measurement of Teacher Efficacy (TE) to the most recent times, there have been series of reports of measurement defects by researchers across cultures and national boundaries (Brouwers, 2003; Campbell, 1996; Tschannen-Moran & Woolk-Hoy, 2001). For example, the outcomes of Factor Analysis (whether Confirmatory Factor Analysis(CFA) or Exploratory Factor Analysis (EFA) of TE scales have yielded different results even where similar instruments were used in data collection(Coladarsi& Fink, 1995). It can be inferred from these differences in the results that TE may be context-specific as thought by Pajeres (1996). The context-specificity of TE is dependent to a large extent on the situation of the mind of the respondents (teachers) and the condition under which they work. This perhaps could be the reason why Bandura (1997) proposed that a TE belief arises from the three factors. Bandura referred to this interplay are environment, Behaviour, and Personal factors.

Evidence from literature revealed that the various versions of TE scales were developed mainly in the United States of America. In Nigeria, no serious attention has been given to the development of measuring instrument for capturing an elusive construct as TE (Teschannen-Moran & Woolfolk-Hoy, 2001). One thing to note is that the environment in America under which a typical American school teacher works is quite different from that in Nigeria. It is also a matter of common knowledge that the societal value and orientation in America are different from those in Nigeria. The process of teacher preparation in Nigeria is also different from that of the United States of America (Okebukola, 2002). What teachers in America will regard as serious constraints to achieving students' learning may not necessarily be seen as such by teachers in Nigeria. Self-efficacy was researched in a variety of educational and cultural settings. For these reasons the authors developed specific instruments which were tailored for particular purposes.

Below is a list of some of the instruments.

1. Ohio State Teacher Efficacy Scale – OSTES, sometimes labeled TSES(Tschannen-Moran & Woolfolk Hoy, 2001) – concentrates on three kinds of efficacy: (a) for instructional strategies, (b) for classroom management, (c) for student engagement
2. Bandura Teacher Self-Efficacy Scale – a 28-item scale which has six subscales measuring instructional efficacy (Bandura, 2006)
3. Science Teaching Efficacy Belief Instrument – STEBI (Riggs & Enochs, 1990).
4. Mathematics Teaching Efficacy Belief Instrument – MTEBI (Enochs, Smith, & Huinker, 2000).
5. Teacher Self-efficacy in Behaviour Management and Discipline Scale – SEBM (Emmer & Hickman, 1991).
6. Teachers' Efficacy Beliefs System-Self – TEBS-Self (Dellinger et al., 2008) – intended to distinguish between efficacy and self-efficacy in the classroom context.
7. Culturally Responsive Teaching Self-Efficacy Scale – CRTSE (Siwatu, 2007) – intended to reflect cultural aspects of instruction.
8. Teacher Interpersonal Self-Efficacy Scale (Brouwers&Tomic) – consists of three subscales: (a) teacher-perceived self-efficacy in managing student behaviour in the classroom, (b) teacher-perceived self-efficacy in eliciting support from colleagues, (c) teacher-perceived self-efficacy in eliciting support from school principals.
9. Norwegian Teacher Self-Efficacy Scale – NTSES (Skaalvik & Skaalvik, 2010) – has 24 items in 6 dimensions
10. Generalized Self-Efficacy Scale (Schwarzer& Schmitz, 2004) – a ten-item scale of German origin comprising four areas: (a) job accomplishment, (b) skill development on the job, (c) social interaction with pupils, parents and colleagues, (d) coping with job stress
11. Collective Efficacy Scale (Goddard, 2002) – designed to measure the perceived collective efficacy of teachers.
12. Teacher Efficacy for Moral Education – TEME (Narvaez et al., 2008)
13. Character Efficacy Belief Instrument – CEEBI (Milson, 2003)

This review shows that individual authors expanded the original concept of

Teacher self-efficacy, adopted it to specific conditions and environments, and added new dimensions to catch broader teacher roles and positions. Moreover, many of the instruments were used in studies conducted not only in the country of their origin but also in other nations of Europe and Asia. This practice produced important data for cross-country comparisons of the functioning of teacher self-efficacy, of both in-service and pre-service teachers.

Measurement of self-efficacy

Many researchers have attempted to define self-efficacy as a dependent variable, affected by different factors. In one of his surveys, Bandura (1977) supported that different factors are likely to affect people's perception of self-efficacy. He defined two dimensions of self-efficacy: the effects of expectations and the efficacy of expectations. During the last decade of Bandura's research (1997), the perception that the concept of self-efficacy can be measured by a significant number of sources, like *mastery experiences*, *vicarious experiences*, *social persuasion* and *physiological and emotional states*, has become prominent. Specifically, the term *mastery Experiences* refer to the most powerful source of self-efficacy. It is based on direct and personal experiences, and it is connected with how much skill and effort put forth and how persistent teachers are in facing failure. Next, *vicarious experiences* are based on the observation of the experiences of others. Teachers approach situations imitating skills and coping strategies that they see others like themselves doing successfully. *Verbal persuasion* as a resource of self-efficacy stems from what others say to us. Teachers are led to believe they can accomplish a task or behavior when they achieve realistic encouragement or discouragement and become more likely to exert greater effort to become successful. The teacher's acceptance of colleagues and principals is a very important issue that has been found to increase teachers' self-efficacy. Finally, *physiological and emotional states* exists when teachers personal efficacy is influenced by their physical and emotional arousal and allows people to practice dealing with stress, relaxation techniques, and symbolic desensitization (Bandura, 1977a; Bandura, 1977; Muretta, 2004)

In the last decades, many questionnaires have been developed for the measurement of self-efficacy; based on Bandura's definition of self-efficacy. Some of them are the following: Teachers Locus of Control (Rose & Medway, 1981), Bandura's Teacher Self-Efficacy Scale (Bandura, 1997), Ashton Vignettes (Ashton, Buhr & Crocker, 1984), Webb efficacy scale (Ashton, Olejnik, Crocker & McAuliffe, 1982), Teacher efficacy scale (Gibson, & Dembo, 1984). In addition, Dimmock and Hattie (1996) have developed some tools-questionnaires in order to measure self-efficacy among principals of primary and secondary education. However, several studies that followed revealed the low validity and reliability of those tools. Many of them either do not actually measure self-efficacy as a multidimensional model or do not measure what exactly is a teacher's self-efficacy or, finally, do not follow Bandura's recommendations (Skaalvik & Skaalvik, 2007). Therefore, the development of Teachers' Sense of Efficacy Scale and Principal Sense of Efficacy Scale (PSES) (Tschannen-Moran & Woolfolk Hoy, 2001; Tschannen-Moran & Gareis, 2004, respectively) intended to cover the various shortcomings of the above questionnaires and measure the levels of self-efficacy among teachers and principals of primary and secondary education effectively. TSES includes two versions: Long version with 24 items and three dimensions, each dimension having eight items, and Short version with 12 items and three subdomains, each subdomain having four items. Three subdomains are Efficacy in Student Engagement, Efficacy in Instructional Strategies and Efficacy in Classroom Management. The response format for the TSES is a 5-point Likert-type scale with the following (1) = Nothing, (2) = Very little, (3) = Some influence, (4) = Quite a bit and (5) = A great deal (Tschannen-Moran & Woolfolk Hoy, 2001).

Psychometric properties of the assessment instruments

This is concerned with the evaluation of behaviour of an individual in order to assist in making judgments, predictions and decisions about people. The tools or instruments used in validation are known as psychological instruments.

Validity:

This refers to the degree to which a test or any other measuring instruments is truly measuring what it is intended to measure (Nzewi, 2010). There are various ways of assessing of test validity.

- I. **Assessing content validity:** content validity is concerned with the test's ability to include or represent all of the content of a particular construct. There is no easy way to measure content validity, but through the use of subject matter experts. These experts will carry out "a systematic examination" for the test content to determine whether it covers a representative sample of the behavior domain to be measured. These experts usually draw up a test specification by a thorough examination of the subject domain upon which the selection of test items is based.
- II. **Assessing criterion related validity:** This involves the correlation between the test and a criterion variable or variables accepted as representation of the construct in question like entry qualification.
- III. **Predictive validity:** This refers to the degree to which the given test can predict or correlate with other measures of the same construct measures in the future.
- IV. **Construct validity:** This is the type of validity that measures the extent to which any research instrument (questionnaire, interviews, tests) actually measures the construct of psychological interest

e.g., attitude, intelligent, anxiety among others (Nzewi, 2010). According to Nworgu 2006), construct validity is concerned with the purity with which any research instrument measures any construct it is designed to measure.

Specifically, construct validity seeks to establish whether:

- i. There is any relationship between the researcher's operationalized concepts and the actual causal relationship being studied.
- ii. It involves the empirical and theoretical support for the interpretation of the construct of interest.
- iii. It is an attempt to generalize the researcher's conceptualized treatment and outcomes to broader constructs of the same concepts.

Assessing construct validity:

- i. These include statistical analysis of the internal analysis structure of the instrument.
- ii. It also involves analyzing the relationships between responses to different test items.
- iii. They also involve the relationships between the test and measures of other constructs.
- iv. The actual statistical analyses for measuring construct validity of research instrument which is known as FACTOR ANALYSIS.

Reliability: This is the consistency of measurement of a research instrument. It is the degree to which such an instrument measures the same way each time it is used under the same condition with the same subjects. Reliability is usually expressed by an index known as the coefficient of reliability, which is a correlation coefficient.

Assessing reliability of a research instrument

- i. **Internal consistency:** This refers to the degree of consistency with which the item in the instrument measures a given trait. **Approaches for estimating internal consistency are:**
The Cronbach's alpha technique: This method uses a single administration of the test instrument to collect scores.
 - a. It splits all the questions in the test instrument every possible way and computes correlation values for them all.
 - b. Computer software is used for the computation.
 - c. The output from the computer is one number called Cronbach's Alpha.

The split-half method:

In this approach, the entire test scores are Splits into two halves which are treated as alternate forms. The half reliability estimate is then stepped up to the full test length .Using the Spearman-Brown prediction formula. It also uses a single administration of test instrument to generate test scores. Others are

Kuder-Richardson 20 reliability.

- ii. **Test-Retest Method:** In this method, the same instrument is administered to the same group of people on two different occasions separated by sometime interval. The resulting test scores are correlated and this correlation coefficient provides a measure of stability. This indicates how stable the test results are over the given period of time. The time interval should neither too short nor too long. Let say, the space of two weeks.
- iii. **Equivalent form Reliability:** This is used to establish the equivalence of two test forms, that is, the extent two sets of test are identical. Here, two equivalents or parallel form of a test are administered to one group of students with no significant time delay. Thereafter, the scores in the two sets are correlated.

Efficacy studies with findings that efficacy has a positive impact on student achievement and program implementation. Throughout the years, others have made a connection between efficacious teachers and (a) classroom management, (b) special education referrals, (c) teaching strategies, and (d) students' perceptions of their own academic skills.

Although teacher efficacy has been found to have an overall positive impact on students, it continues to be a construct worthy of further exploration. According to Henson (2001), "the advancement of teacher efficacy into the next stage of its developmental life would be fostered by empirical evaluation of sources of efficacy building information, collective teacher efficacy, and methods for impacting efficacy change in teachers"

• **Empirical framework**

Bamidele (2008), carried-out a research on Reliability and Factor Analyses of a Teacher Efficiency Scale for Nigerian Secondary Teachers in Ile-Ife. His sample comprised 2400 in-service secondary school teachers in Nigeria using multi-stage sampling technique from the six geo-political zones in Nigeria as the first stratum and one state was selected using simple random techniques. The instrument he used for his study was 52- item scale called Teacher-Efficacy Scale (TES) through the adaptation of the items on the Bandura's (1990) Teacher self-efficacy scale (TSS). The data was analyzed using Exploratory Factor Analysis (EFA) and reliability analyses techniques to identify the factors on which the items on the scale loaded. Cronbach's Coefficient Alpha was employed for taking decisions on item retention; Spearman Brown's and Guttman's Split- half coefficients were used to determine the results of the scale. The result shows that twenty-eight (28) items were dropped, resulting in the final version of 24 items on the final version which had a cronbach's Alpha and Split-half reliability

coefficients of 0.88 and 0.90 respectively. This shows they are effective to influence students' learning and parental support in students' learning.

In the work of Peter (2011), on measuring the self-efficacy on in-service teachers in Slovakia Bratislava. His sample comprised 217 teachers in 5 regions of Slovakia to determine the average level; general teaching scores of in-service teachers and to find out if in-service teachers are superior to the pre-service teachers in the previous studies on personal teaching efficacy. For the instrument he adapted the version of Gibson's and Demo's Teacher Efficacy Scale (TES). The new version of the TES was factor-analyzed to assess its construct validity, and reliability coefficients. The findings shows that an average level of perceived self-efficacy of teachers is a characteristics of the majority of in-service teachers; general teaching efficacy scores are lower than those of personal teaching efficacy; in-service teachers are superior to the pre-service teachers in the previous sample (Gavora, 2009; 2010) in terms of personal teaching efficacy but not in general teaching efficacy, female teachers are superior to male teachers in personal teaching efficacy while no statistical difference was detected in general teaching efficacy.

Dr. Jean Ling Lee (2012) studied Teacher Efficacy in Collaborating Teaching of Casino Gaming Class in NIT college of Taiwan; this is because, the Taiwanese government had financially support collaborative teaching programs which consists of a professor and a field specialist from specific industry to aid the students to learn not only the theories from the textbooks but also on-hand and on-the-job knowledge of the industry. As a result, the study was designed to investigate the influence that collaborating teaching had on participating educators' teacher efficacy through the examination of the development and change of the participating educators' sense of efficacy and the reflection of efficacy beliefs in their classroom practices after collaborating teaching. He sampled 8000 students from 400 faculty members. A college professor and a field specialist participated in the research. It is to investigate the development of efficacy beliefs in casino gaming class during the 8-week out of 18-week of a semester long collaborating teaching. The instrument for the data collection was mainly questionnaire survey, interviews, and field notes from classroom observations. To illuminate more comprehensively the process involved in the formation of teacher efficacy, the research methodologies adopted have moved from quantitative to qualitative. Hence, the study reports on data obtained from classroom observations, the sources of questionnaire survey, and interviews with the two educators. The findings suggest that for collaborating teaching to be beneficial to the teachers' sense of efficacy, both educators should seize the co-working opportunities by making good use of their individual knowledge and learn from each other. It also suggests that the college professor can recommend the acquainted field specialist to join the project when teaching heavy pragmatic class and things will be going easier and smoother.

Methodology

Introduction

This chapter discussed the following sub-topics: research design, population, sample and sampling technique, instrumentation, scoring of the Instrument, procedure for data collection and proposed method of data analysis.

Research Design

The study is an instrumentation research design that dealt with the development and validation of a Teacher Effectiveness Scale. This study is subsumed in descriptive survey design. According to International Centre for Educational Evaluation (1982), a study is instrumentation when it is aimed at developing new or modifying content, procedures, technology or instruments of educational practice. Descriptive survey according to Ilogu (2006) is used to collect data that would enable the researcher to describe systematically the characteristics features of the given population. This design is suitable for this research in the sense that the study tried to identify the factor structure and psychometric properties of Teacher Effectiveness Scale.

Population of the Study

The target population consists of all the teachers in Lagos State Public secondary schools of Education District IV.

Sample and Sampling Technique

The sample for the study consisted of 160 teachers from four (4) schools in public schools in Ikeja L.G.A. of Lagos State (Education District (iv)). The participants also comprised male and female.

The sample for the study was selected using stratified random sampling technique. The number of teachers was randomly selected from each school within the sample using the Hat and Draw method of simple random sampling.

Instrument for Data Collection

The instrument used for the study was a 30 item scale titled "Teacher efficacy scale (TES)" which was developed through the adoption of the items from the Megan Tschannen-Moran, College of William and Mary Anita Woolfolk Hoy, the Ohio State University Teacher self-efficacy scale (TSS) and additional items was generated by the researcher. The items relate the areas of teaching efficacy (TE) which are efficacy of teachers' instructional strategies, efficacy of classroom management and organization, and efficacy of student engagement. These items focused on the two dimensions of teaching-efficacy and outcomes expectation of teachers for each of their activities (Bandura 1977).

Scoring Procedure of the Instrument

The response format for the scale will be the Likert (1932) type with five options of SA= strongly Agree(5), A=Agree (4), U=Undecided (3), D = Disagree (2) and SA = Strongly Disagree(1). These ratings depend on wording of the statements. If the items are in positive statements then the rating takes the above scoring pattern but if the statements are worded negatively, the scoring takes the reverse form starting from the Strongly Disagree taking 5 points and downward in that order with Strongly Agree scoring 1.

Validity of the Instrument

The 30 items generated was subjected to the scrutiny of two measurement and evaluation experts for content validation. These experts were requested to judge the comprehensiveness, appropriateness and clarity of the items and their judgment guided the revision and reduction of the items. The responses of raters to the items were subjected descriptive statistics to obtain both the minimum and maximum scores, cronbach alpha method to establish the internal consistency of the instrument and the use of Pearson Product Moment Correlation tool to determine the relationship of the sub-scale of the teacher effectiveness scale.

Reliability of the Instrument

To ensure the reliability of the instrument, a pilot study was carried out.

25 copies of the instrument were administered to 25 teachers which are entirely different from the teachers to be studied; the rationale behind this is to test the suitability, usability and reliability of the instrument. The responses of the respondents on two administrations were obtained and correlated using test retest reliability to test for stability consistency of the items. The co-efficient reliability obtained was 0.75 at the double administration carried out. This value showed that the test was reliable by this high coefficient.

Administration of the Instrument

The researcher personally administered instrument to the teachers with the assistance of the school Clerk to ensure hitch free administration. Every respondent was given ample time to react to the items and assist was provided where a respondent would ask for explanations.

Data Analysis

The hypotheses formulated were subjected to statistical testing for the purpose of either accepting or rejecting them. The data collected from the instrument was treated statistically using Validity, reliability coefficient analyses technique and coefficient cronbach's alpha to establish the internal consistency of the scale. And the use of Pearson product Moment Correlation statistical tool to test for correlation coefficient of all the sub-scales in the Teacher Effectiveness Scale (TES). All hypotheses formulated were tested at 0.05 level of significance.

Discussion of the Results

The results of this study are presented analytically hypothesis by hypothesis.

Results of the analysis

Hypothesis 1:

The scores of the teacher effectiveness scale validation instrument (TES) will not yield significant high coefficient of validity.

Determination of the coefficient Validity of the Instrument (TES) with the of Content Validity Ratio.

$$CVR = \frac{N_e - N/2}{N/2}$$

CVR= Content Validity Rate.

N_e =Number of panels that rated the items good.

N = Total number of panels.

$N = 10, N_e = 6$

$$CVR = \frac{6 - 10/2}{10/2} = \frac{6 - 5}{5} = 1/5 = 0.2 \text{ (for item 1 only) calculate same for all the 41 items}$$

In the TES and sum up the scores.

Total score by computation is 10.9 and with this high content Validity rate of 10.9 is far greater than the high standard scale of significance level of 0.70 for content validity. It therefore means that the posited null hypothesis which states that the scores of the teacher effectiveness scale validation instrument (TES) will not yield significant high coefficient of validity is rejected while we upheld the alternative hypothesis hence there is high coefficient of validity in the scores of the teacher effectiveness scale validation instrument.

Hypothesis 2:

The scores of the teacher effectiveness scale validation instrument (TES) will not yield high coefficient internal consistency and reliability.

Table 2 Scores of TES validation instrument with high coefficient internal consistency and reliability.

Reliability Statistics

Cronbach's Alpha	N of Items
.680	39

The table shows a high reliability coefficient (0.68) which is closer to 0.70, a high standard for reliability coefficient using Cronbach Alpha. It follows therefore that the scores of the teacher effectiveness scale validation instrument (TES) yield significant high coefficient of reliability. It should be noted that the coefficient value (0.68) is as a result of deleting items 9 and 35 from the scale.

Hypothesis 3:

The scores of teachers in the factor structure of TES will not be high.

Table 3: Descriptive Statistics of the high scores of teachers in the factor structure of TES.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
TES	160	141.00	193.00	168.3250	8.25806
Valid N (listwise)	160				

From the table, the minimum score is 141 and the maximum is 193. The expected maximum score is 205 (5 x 41 items). The mean score is 168, a value far above the mean of the expected score. Therefore, it can be concluded that the scores of teachers in the factor structure of TES are high.

Hypothesis 4: There will be no significant correlation among the sub scales of the TES.

Table 4: Showing the relationship among the sub-scale of the teacher effectiveness scale.

Correlations

		Instructional Strategy	Class Management	Students' engagement
Instructional Strategy	Pearson Correlation	1	.410**	.403**
	Sig. (2-tailed)		.000	.000
	N	160	160	160
Class Management	Pearson Correlation	.410**	1	.335**
	Sig. (2-tailed)	.000		.000
	N	160	160	160
Students' engagement	Pearson Correlation	.403**	.335**	1
	Sig. (2-tailed)	.000	.000	
	N	160	160	160

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4 above shows the correlation matrix, it reveals that there is significant correlation between, instructional strategy and class management ($r=0.41$, $P<0.05$), between instructional strategy and students' engagement ($r=0.403$, $P<0.05$) and between class management and students' engagement ($r=0.335$, $P<0.05$). It follows therefore that the sub-scales are well harmonized in the Teacher Effectiveness scale

Discussion of Findings

The findings in the study is to develop and validate instrument known as "Teacher Effectiveness scale" have revealed that the four formulated null hypotheses for the study were all rejected while all the alternative hypotheses were obtained. The scores of the teachers effectiveness scale (TES) will not yield significant high coefficient of validity was rejected; it therefore means that the alternative hypothesis is upheld as the computed value of content validity ratio of 10.9 is greater than the high standard score of coefficient validity. This implies that the scores of the teachers' effectiveness scale (TES) yield significant high coefficient of validity. This finding is supported by Nzewi (2010) refers to validity as the degree to which a test or any other measuring instruments is truly measuring what it is intended to measure. He further explained that to determine validity coefficient is by using the Content validity ratio (CVR) formula for credible result of validity coefficient. Other way of assessing test validity is by assessing content validity which is concerned with the test's ability to include or represent all of the content of a particular construct.

The scores of the teachers' effectiveness scale validation instrument yield high coefficient internal consistency and reliability. This statement was buttressed by the assertion that reliability is the degree to which such an instrument measures the same way each time it is used under the same condition with the same subjects. It is expressed by an index known as the coefficient of reliability, which is a correlation coefficient. Enochs (2000) confirmed that assessing reliability of a research instrument for internal consistency requires some approaches for estimating internal consistency: The Cronbach's alpha technique: This method uses a single administration of the test instrument to collect scores.

The scores of the teachers in the factor structure of TES are high. This statement was supported by Ilogu (2006) reiterated that descriptive statistical methods summarize numerical data in terms of average and other measures for the purpose of description. In line with Descriptive Statistics employed in this study, table 3 revealed that the minimum score is 141 and the maximum is 193. The expected maximum score is 205 (5 x 41 items). The mean score is 168; this value is far above the mean of the expected score. It therefore means that the scores of teachers in the factor structure of TES are high.

There is significant correlation among the sub- scales of teachers effectiveness scale. Nworgu (2006) asserted that correlation is employed to study the magnitude and the direction of the relationship between two or more variables or sub-scales. Sometime as educators, we might want to see if scores or items in sub-scales are related to scores or items in another so that we can make predictions of the scores or items in another highly correlated subject. The correlation matrix in Table 4, reveals that there is significant correlation between, instructional strategy and class management ($r=0.41$, $P<0.05$), between instructional strategy and students' engagement ($r=0.403$, $P<0.05$) and between class management and students' engagement ($r=0.335$, $P<0.05$).

CONCLUSION AND RECOMMENDATIONS.

None of the null hypothesis formulated for this study was accepted for the study, all were rejected while the alternative hypotheses were obtained. This implies, that the scores of the teachers' effectiveness scale validation instrument yield significant high coefficient of validity, the scores of the teachers' effectiveness scale validity instrument yield high coefficient internal consistency and reliability, the scores of teachers in the factor structure of TES are high and there is significant correlation among the sub-scales of TES.

Recommendations

1. Content Validity Ratio (CVR) becomes inevitable to determine validity coefficient of instrument because this formular will require the number of panels that will rate the items good and the total number of panels. The summation of the scores of the items will give the true picture of the validity coefficient.
2. Validation of instrument will yield good result if the psychometric properties of the instrument are taking into consideration.
3. Croanch's Alpha technique is required to refine and isolate the bad items from the good ones and also to ensure high validity and reliability coefficient of the questionnaire.
4. Adequate knowledge of descriptive statistics is important to enable the developer to describe logically the minimum, maximum, mean and standard deviation in the table.
5. Correlation matrix can be run to be able to correlate and predict items in the sub-scales or variables in the instrument.
6. Possess basic knowledge of parametric and non- parametric statistics.
7. Must be items developer or Measurement and Evaluation expert.

Acknowledgement.

I find it a pride, privilege and great pleasure to express my sincerely gratitude to God Almighty for His guidance throughout the span of writing this study. Special gratitude goes my two supervisors, Dr. O.M. Alade and Dr. I.P Nwadingwe of the department of Educational Foundations, University of Lagos, Akoka- Yaba, Lagos Nigeria for their assistance and contributions towards the progress of this study, may the good Lord bless them abundantly. Amen. Am also, using this medium to express my appreciation to the Dean of faculty of education, University of Lagos Prof. Olasupo Iyiola Jegede and the head of Department, Educational foundations Prof.G.C Ilogu who contributed in one way or the other to the success and realization of making my dreams coming true, may God almighty bless them abundantly. Amen.

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ASSESSMENT AND MANAGEMENT OF OCCUPATIONAL STRESS AMONG NURSES IN OGUN STATE: IMPLICATIONS FOR GENDER.

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ABSTRACT

This study examined the effect of Solution Focused Brief Therapy and Guided Enquiry Method on occupational stress among nurses in Ogun State, Nigeria. Nursing was identified as an occupation that has high levels of stress. It was found that job stress brought about hazardous impacts not only on nurses' health but also their abilities to cope with job demands. The study was carried out in five government hospitals in Ogun states. This seriously impairs the provision of quality care and the efficacy of health services delivery. Quasi-experimental pretest/post test control group design was adopted for the study. Simple random sampling was used to select a sample size of 150 nurses comprising of 13 male and 137 female nurses drawn from five government hospitals randomly selected from the state. The two research instruments used to gather data for the study are Stress Inventory (SI) and Experience of Work and Life Questionnaire (WLQ) which were adapted for use by the researchers. Participants were drawn to participate in the study using the SI while the WLQ was used for both the pre and post test. The study revealed that there is no significant impact of gender on occupation stress, however among female nurses there are higher stress levels possibly due to multiple levels of responsibility. Solution Focused Brief therapy was however more effective in assisting nurses to cope effectively with stress resulting from their jobs.

Keywords: Occupational stress, Nursing, Solution Focused Brief Therapy, Guided Enquiry Method.

INTRODUCTION

Work is an all important issue in human life. Nurses belong to a profession tagged as a lifelong vocation (Liu, Chang, Fu & Wang, 2012) their functionality in every society is vital. We need nurses to take care of the all important health of the populace. Nursing has been identified as an occupation that has high levels of stress. In an investigation conducted by the National Institute for Occupational Safety and Health in the USA (NIOSH, 1999) nurses were found to be in one of the occupations that had a higher than expected incidence of stress related health disorders.

Women career choices are traditionally streamlined to fit their natural catering and nurturing roles. There is therefore a preponderance of women in careers such as catering, banking, nursing, and teaching, mainly in the services sector according to the United Nations Development Fund for Women (UNDFW, 2001).

It was found that job stress brought about hazardous impacts not only on nurses' health but also their abilities to cope with job demands. This seriously impairs the provision of quality care and the efficacy of health services delivery (Gholamzadeh, Sharif, and Riad, 2011). They provide prophylactic, recuperative and preventive care. Most nurses are passionate about their vocation; however some pertinent issues are making them an endangered species. Lack of control on organizational issues, negative impact of work problems on home life predicates occupational stress among nurses (Pino & Rossetti, 2012). The endemic characteristic of nursing includes issues of timing-shifting and night duties, combining duties and long work hours as a result of short staffing, risks of contracting diseases from patients

among others increase a high risk of occupational stress among nurses (Irinoye, 2011). Nursing duties are often in direct conflict with fulfillment of conjugal duties especially for female married nurses who are predominant in the profession. Women partake in gainful employment to assist their husbands financially; to maximally utilize their educational qualification while gaining respect for their career attainment (Makinde, 2004). Today's woman is called upon to balance her duties both at home and work effectively. However, juggling the two can often be detrimental to the psychological wellbeing of both men and women in the profession if not managed effectively.

WHO (1999) reports on the occupational health of women reveal the vulnerability of nurses to mental stress due to long working hours, rotational shift and night work being sources of occupational stress. Its findings reveal that occupational stress is more pronounced among women health workers than men due to the dual workload of family care and professional work.

Nurses' issues include interrupted sleep, loss of contact with friends, strains on family relationships, increased stress related illness, worry, depression, anxiety, anger and lack of energy.

Statement of the Problem

Occupational stress is a recognized problem among health care workers, while nursing is an occupation that has proven susceptible to high levels of stress (Burbeck, Coombe, Robinson & Todd, 2002). Nursing was found to be one of the occupations that had higher- than-expected incidences of stress related disorders in a study for the National Institute for Occupational Safety and Health in the United States of America (Lee, 2003).

This impact negatively on nurses' health and their ability to cope with job demands (Farrington, 1995). This affects the provision of quality care and the efficacy of health service delivery. Liu, Chang, Fu & Wang (2012) discovered in a recent study that health care professionals are exposed to high levels of occupational stress and are at a high risk of suffering than the general population. However, it's a profession that has a majority of women than men.

Women nurses when married have multiple responsibilities which makes them susceptible to occupational stress. Incidentally, the nurse/patient ratio in Nigeria is high, often 1:61 which far surpasses WHO recommendation of 1:4 (Bulletin of World Health Organization, 2010). This places high demand on the nurses in government employment. In Ogun state with a population of 3,728,028 (Ogun State Handbook, 2014) nursing staff strength is less than 2000.315 had also left government services without replacement in the past five years. The nurses in the system are faced with tremendous stress issues which makes them susceptible to ultimate illness.

This study investigates the effects of two psychological methods on occupational stress among Nurses in Ogun State based on gender.

Purpose of the Study

The purpose of this study is to determine the effects of Solution Focused Brief Therapy and Guided Enquiry method on occupational stress of professionals in the nursing profession in Ogun State. The specific objective of the study was to:

1. To examine the effect of Solution-Focused Brief Therapy and Guided Enquiry method on occupational stress due to gender of participants.

Hypothesis.

The hypothesis tested as part of this study, emerged directly from the purpose of study as listed above.

1. Gender does not significantly influence occupational stress among study participants.

Scope of Study

The study was carried out on nurses between five years to twenty and above in government hospitals at Abeokuta, Ijebu-Ode, Sagamu, Ifo and Ota, all in Ogun State.

This study covered male and female nurses in Ogun state. The emphasis was on the effectiveness of SFBT and Guided Enquiry method on occupational stress experienced by professionals specifically nurses in Ogun State.

Stressors and Stress Schedules

Stress is a part of everyday life and moderate amounts keep us efficient and healthy (Gilmer, 1985) he however says that prolonged high stress produces psychological and medical problems. Gilmer postulates three stages of stress responses according to Selye's General Adaptation Syndrome (1976).

1. Alarm Reaction-When one encounters a stressful event; fatigue, disease, injury, extreme environmental stimulation-there is a shock effect such as a drop in blood sugar level. It is followed by a surge/rebound to compensate as recovery of previous sugar level.

2. Reaction Stage-The body draws from its resources to keep normalcy during stressful periods, the body works hard at such periods to maintain normalcy.

3. Exhaustion Stage-The body's resources are depleted and evidence shows in pathological symptoms of ulcers, stroke, infections due to lowered resistance, Such stress disorders can lead to death.

Signs and Symptoms of Stress

Occupational stress can lead to various negative consequences for the individual and the workplace (Oginska-Bulik, 2006) in the healthcare sector. Stress produces a range of undesirable, expensive, and debilitating consequences (Ross, 2005), which affect both individuals and hospitals. The negative effects of occupational stress include impaired performance or a reduction in productivity, diminishing levels of customer service, absenteeism, turnover, accidents, alcohol and drug use and purposefully destructive behaviours (Liu et al. 2012).

Other than that, it can lead to health problems like heart attack, migraine, blood pressure, headache among employees (Yahaya, Yahaya & Tannyes, 2010). A job stressed individual is likely to have greater job dissatisfaction, increased absenteeism, increase frequency of drinking and smoking, increase in negative psychological symptoms and reduced aspirations and self esteem (Jayashree, 2010). Workers suffering from stress exhibit increased number accidents, lower morale and greater interpersonal conflict with colleagues and superiors. The U.S. Bureau of Labor Statistics showed that employees who are highly stressed or anxious tend to take more time off (Cosio, Olson & Francis, 2011).

Another study shows occupational stress negatively affects the immune system and even increases the occurrence of the common cold. Over the years, work organizations have introduced health promotion and wellness programs as part of stress management interventions. However, the effectiveness of such programs has been questioned as they mainly target the individual employees and their ways of coping with stressful conditions, rather than the causes of stress that are inherent to the workplace or the kind of work that people do (Plattner & Mberengwa, 2010).

Prolonged or intense stress can have a negative impact on the individual's mental and physical health (Cooper & Marshall, 1988)

Instructional Method of Counselling and occupational stress among Nurses

This therapy was propounded by Garth Sorenson who believes that all behaviour was learnt and can also be unlearned. He regarded counselling as a teaching-learning relationship in which the counselee could be taught to learn to solve his/ her problems. (Olayinka, 1993). This study utilized the guided enquiry method to guide the client about how to cope with their stressors. The counsellor taught the participants to estimate probable outcomes of alternative courses of action which takes note of how to cope with his/her present conflicts.

Solution-Focused Brief Therapy

This treatment is an offshoot of problem focused strategic treatment. It is a time limited approach of counseling restricted to not more than six to ten counselling sessions focusing only on symptoms or complaints specified by the client. (Cleveland and Lindsey, 1999). Attempted solutions or interventions are not to 'fit' the complaint. De Shazer and Berg (1997) explain this using the analogy of a key and lock, the solution to a given problem is like a skeleton key. It must fit but not necessarily match, it is not necessary to know all about the problem but just what is required to solve it.

Methodology

The study examined the effect of Solution focused Brief Therapy and Guided Enquiry Method on occupational stress among nurses in Ogun State, Nigeria. Quasi-experimental pretest/post test control group design was adopted for the study. Simple random sampling was used to select a sample size of 150 nurses comprising of 13 male and 137 female nurses drawn from five government hospitals randomly selected from the state. The two research instruments used for the study are Stress Inventory (SI) and Experience of Work and Life Questionnaire (WLQ) which were adapted for use. Participants were drawn to participate in the study using the SI while the WLQ was used for both the pre and post test. Seven research questions were raised and seven research hypotheses generated to guide the study. The pre and post test scores were analyzed using ANCOVA at 0.05 level of significance.

Data Analysis

Ho: Gender does not significantly influence occupational stress among the experimental groups.

The hypothesis was tested using one way analysis of covariance (ANCOVA). The results of the analysis are presented in Table 1 and 2.

Table 1: Descriptive Data on Pre and Post Test Scores of Occupational Stress Intervention in the three experimental groups among according to gender of the participants.

			Pretest		Posttest		Mean difference
Gender	Group	N	Mean	Std. dev	Mean	Std. dev	
Male	Control	3	176.00	17.32	176.33	17.03	-0.33
	Guided Enquiry	6	236.17	43.21	192.83	24.14	43.34
	SFBT	4	181.00	32.72	115.75	15.39	62.25
	Total	13	205.31	44.53	165.31	39.73	40.0
Female	Control	38	194.91	37.28	195.42	37.92	-0.51
	Guided Enquiry	63	184.87	23.82	159.56	26.01	25.31
	SFBT	36	187.53	37.14	128.36	21.24	59.17
	Total	137	188.36	31.78	161.31	37.81	27.05
Total	Control	41	193.54	36.41	194.02	37.01	-0.48
	Guided Enquiry	69	189.33	29.44	162.45	27.36	26.88
	SFBT	40	186.88	36.39	127.10	20.92	59.78
	Total	150	189.83	33.22	161.65	37.86	28.18

Table 1 revealed that female participants with a mean difference -0.51 had the least occupational stress in control group compared with their male counterparts with a mean difference of -0.33. Also, female participants with a mean difference of 25.31 exhibit lower post tests of occupational stress in instructional therapy treatment when compared with the male counterparts with a mean difference of 43.34. In the same vein, female participants

with mean difference of 59.17 exhibit lower post test occupational stress than male participants with a mean difference of 62.35 in the solution focused treatment. The mean difference of the control group (-0.48) is the lowest followed by guided enquiry (26.88) while SFBT had 59.78 when compared with pretest and posttest of occupational stress.

Table 2 : Analysis of Covariance on the Difference in Occupational Stress based on gender exposed to the three experimental groups

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	92959.089 ^a	2	46479.545	56.644	.*
Intercept	743.788	1	743.788	.906	.NS
Pretest	92769.009	1	92769.009	113.057	.*
Gender	912.902	1	912.902	1.113	NS
Error	120620.884	147	820.550		
Total	4133350.000	150			
Corrected Total	213579.973	149			

Table 2 revealed the calculated f of 1.113 at a degree of freedom of 2,147 is less than critical F of 3.99. This indicates that gender has no significant influence on participants exposed to the experimental groups. The null hypothesis is therefore accepted.

Discussion of findings

The hypothesis states that that gender will have no significant impact on occupational stress among nurses while results also show an insignificant impact. The results however show consistently higher levels of stress for the women. Also, SFBT was shown to be more effective in managing stress than GEM.

For women, life events and changes appears to be less controllable and more negative. Men and women may also differ in their perceptions of stress sources and outcomes, and their use of social support across stressors (Bellman, Forster, Still & Cooper 2003; Cooper, 1998).

However, literature examining the relation between gender and stress reveals conflicting findings, it argues that dual responsibilities are likely to add a significant load on nurse's physical and mental health, and the load itself might be additional sources of work-related stress (Boey, 1998).

A study of 101 Australian female nurses found that work interfered with family more than family interfered with work agrees with this study. (Bryant, Fairbrother, & Fenton, 2000) The investigators noted, however, that most of the nurses, who were in their mid-40s, were between the demands of child care and elder care and are thus more susceptible to stressors beyond work which increase work stress levels

Solution Focused Brief Therapy has proven effective in helping people to deal with current problems drawing from previous experiences and solutions in problem solving in a short period of time. Participants were thus empowered to draw on inner resources to deal with current problems.

Implications for Gender

Nursing is an occupation that has a predominance of women. Women's natural home keeping and nurturing roles often come in conflict with the stressful duties of nursing,

Occupational stress is obviously debilitating and affects nurses negatively, especially female nurses who play multiple roles both at home and in their families.

Counselling is essential to help them and indeed all professionals in high stress jobs cope effectively with their jobs and families, especially if they are women and also married which increases multiplicity of their roles and responsibility.

Hospital administrators should also take note of the added stress issues of childbirth, family care has on a woman and thus allocate duties to enable women fulfill their natural roles. More nurses should be employed in Ogun state to alleviate the pressure on the ones in service.

Implications for counselling

The government is enjoined to comply with prevailing world standards of staffing hospitals adequately to ensure nurses can do their jobs with less stress.

Hospitals should be provided with counselling units adequately manned by qualified counselors who can provide counseling as at when needed.

Solution Focused Brief Therapy is highly recommended for usage to counselors among professionals in professions predisposed to high occupational stress as it is effective both in time and effectiveness.

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Assessment and Remediation of Secondary School Students' Poor Achievements in Some Perceived Difficult Concepts in Mathematics

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ABSTRACT

This study investigated the Assessment and Remediation of Secondary School Students Poor Achievements in Some Perceived Difficult Concepts in Mathematics in Lagos, Nigeria. The participants were 300 students consisting of 150 male and 150 female SSIII students drawn from three Senior secondary schools in Educational District IV of Lagos State through Stratified Random Sampling Procedure.. The study used Quasi-Experimental Pre-test, Post-Test Control group design. Mastery Learning and Problem-Solving were used as treatment approaches while a control group was exposed to the traditional teaching method. The relevant data were generated using a researcher designed Mathematics Achievement Test (MAT). The instrument has a reliability coefficient of 0.80 when tested during the pilot study.. Two hypotheses were formulated and tested at 0.05 level of Significance. The analysis of the result shows that there was a significant difference in the students' level of perceived difficult concepts and there exists a significant main effect of gender on the post test scores of the (MAT). The Mastery Learning Approach (MLA) was efficacious in remediating students' achievements in mathematics while Problem Solving Approach (PSA) proved to be more effective in improving students' skills in solving problems in mathematics. The study thereby recommends among others that teachers should redouble their efforts in the teaching of topics that are perceived difficult by students in mathematics, they should ensure adequate coverage of syllabus and its applications so as to demystify the topics.; teachers are also encouraged to have diagnostics and remedial evaluation with their students, which should includes frequent revision exercises so as to enhance students' mastery/ of various knowledge and skills gained in previous lessons.

Keywords: Assessment, Remediation, Perceived Difficult Concepts.

INTRODUCTION

Mathematics has been of social and economic importance to man, its place in man's way of life and development cannot be over-emphasized. There is however more to mathematics than numbers and calculations. It is this importance of mathematics in everyday life that justifies its inclusion in the curricula at all levels of education. Every man requires a certain amount of mathematical knowledge in order to survive in the present highly technological and complex society, this is to assist individual to be able to compare and estimate values of articles, determine prices of foodstuff, reckon distances and time, weigh evidences and sift substance from chaff. The ordinary citizen needs a certain level of mathematics. Mathematics abounds everywhere from the mundane issues that are taken for granted to the most sophisticated breath-taking inventions and discoveries.

There is no single and all embracing answer to what mathematics is. This is because mathematics means many and various things to different people. In view of its universality and diversity, it is referred to as the language of science and technology; queen of science; the science of counting; science of numbers, quantity and space; study of abstraction and their relationship; (Adedayo, 2006; Abakporo, 2005; Usman 2002) Mathematics is a compulsory subject for all students at the secondary school level in Nigeria. Although, not all the students are expected to become mathematicians, yet, it is compulsory because of its application in everyday life (Oladele, 2004). The professional knowledge of rudimentary mathematics is very necessary for a person to be able to function very well within his immediate environment,. The role of mathematics in the commercial, scientific and technological development of the civilized nations is always acknowledged.

The general objectives of school mathematics, irrespective of the level can be summarized as follows: Develop computational skills; develop ability to think deductively; produce the mathematical background needed in other school subjects; develop originality, creativity and curiosity in the students; develop and

appreciate the aesthetic values of mathematics; develop ability to solve mathematical problems and provide solid foundation for further studies in mathematics (Usman, 2002; Adedayo, 2006).

There had been incentives for promoting better mathematics teaching/learning at all levels by the Federal and State Governments, private companies and individuals among others. Special mention would be made of:

1. The National Mathematics Centre Abuja, which organizes National Mathematics competitions for all levels of education. Awards are presented to winners and runners up. The centre generally aims at promoting and popularizing the teaching and learning of mathematical sciences.
2. Promasidor Nigeria PLC, makers of Cowbell milk, which also organizes Mathematics competition at the State and National levels, also offers awards and many prizes to winners and their teacher.
3. Some Petroleum Companies award Prizes and Scholarship in all STM subjects, such as Chevron, Mobil Producing oil and many others.
4. Some State Governments and philanthropists such as Lagos State Government, Babs Fafunwa Educational Foundation and many others award prizes and scholarships to best students in mathematics.
5. Science Teachers Association (STAN) and
6. Cadbury Nig. Plc, makers of Bournvita organizes mathematics competition for students and the best mathematics teacher. Their efforts are all highly commended.

In Nigerian secondary schools, students are exposed to two types of Mathematics namely:

- a. General Mathematics, which all students are expected to pass at credit level before gaining admission into any of the universities, and other tertiary institutions of higher learning
- b. Further Mathematics, for those gifted in mathematics and it is recommended for science and commercial students because in future, their profession cannot do without mathematics. However, this study was limited to the General Mathematics Curriculum, which is compulsory for all Secondary School Student.

The Nigerian Mathematics Curriculum is student-centred. It emphasizes meeting of learner's developmental needs and interest (Adedayo, 2006). There is evidence to show that student's cognitive and affective domain in mathematics fall below expectation (WAEC Chief Examiner, 2003 – 2013). Concerned stakeholders have been making concerted efforts to ensure that these problems, which are attributed to poor achievement in mathematics as well as poor attitude towards the subject, are identified and tackled effectively. Some of the key issues affecting poor performance were detected through critical examination of students' selection of questions at terminal examinations (SSCE/NECO) and their general performance in the questions so selected. It has been observed that students like avoiding questions in some particular topics during examination. Another observed fact is the recurring pattern of poor performances in some selected topics. This may be due to the fact that either they have not been taught the topics or that students do not understand when taught. It is therefore, highly imperative to identify some of these topics which students fail, fear and perceived difficult. There is the need to look at the characteristics of such concept and reasons why students fail them in examinations so that corrective measures can be taken to avert such failures in the nearest future. Some of the identified perceived difficult topics in Mathematics and the specific areas where students are having challenges include:

- **Statistics:** Confusion between bar chart and histogram; not computing class boundaries when drawing histogram and cumulative frequency curve of grouped data, not being able to answer questions from the cumulative frequency curve, inability to find median and mode of ungrouped frequency table, probability involving combinations of multiplication and addition.
- **Angle of Elevation and Depression:** Inability to draw the correct diagram, to apply the correct Trigonometric Ratio. And carryover of JSS difficulty
- **Graph:** Not identifying the part to shade in Linear inequality, not finding gradient and answering questions on quadratic graphs: graphs of trigonometry ratio are difficult to plot and draw.
- **Construction:** If parallel lines are involved, then there is difficulty solving problems through construction.
- **Longitude and Latitude:** Drawing, distance along line of latitudes.
- **Bearings:** Problem of drawing, identifying what to find and using appropriate technique like trig ratios etc.
- **Word Problem:** Especially those that lead to simultaneous quadratic and linear equations, profit and loss, variation etc.
- **Plane Geometry:** Proofs of standard theorem, drawing of diagrams, identifying the appropriate theorem or principles to use etc.

- **Solid Shapes:** Drawing of diagram, use of appropriate formulas. Making appropriate construction, identifying angles, sides, areas, volumes to calculate.
- **Set Theory:** Estimating elements of sets written in inequality form, drawing Venn diagrams when 3 or more circles are involved. Answering questions using Venn diagram.
- **Quadratic Inequality:** Especially of $ax^2 + bx + c > k$.
- **Directed Number:** This topic affects so many topics like those equations involving division by negative numbers, quadratic Formula involving negative numbers etc.
- **Logarithmic Equations:** Problem of conversion of logarithmic equation to linear or polynomials.
- **Number Basis:** Multiplication, operations on number basis that involve decimals.
- **Variation:** Inverse and partial.
- **Algebraic Fraction:** Solving equations involving surds, simplification etc.

(WAEC, Chief Examiners Report 2003- 2013)

According to Smith & Olaoye (2002) some of the most common reasons for disliking Mathematics and perceiving it as a difficult concept includes : rigidity and lack of creativity, anxiety of the students, difficulty and complexity of Mathematics and poor teaching method. These mean that Mathematics has become difficult because:

- i. There are changes in the material;
- ii. Old methods of learning are not adequate anymore;
- iii. Introduction of new topics into the curriculum of the subject;
- iv. Phobia for the subject and
- v. Inability of reasoning fast.

Adedayo [2006], opined that some topic are not easily understood by students due to their demanding and abstract nature. These are difficult topics which the students also find difficult to solve during examinations. He stated that such difficult topics have the following characteristics;

- i. They are not easily understood by most students’;
- ii. They require more effort and skills before one can understand and solv
- iii. They are topics that stimulate fear and anxiety in students’;
- iv. Students do not find the topics easy to solve in examinations and the few that attempt questions in them usually score low;
- v. High achievers in mathematics experience a little difficulty in solving questions on such topics when compared to other topics;
- vi. Students are prone to various errors while solving such topics;
- vii. They are mostly abstract topics;
- viii. They are usually found in theory papers and carry more marks;
- ix. Usually responsible for general poor performance in mathematics;
- x. If handled properly, students will discover that they are not as difficult as they think (Adedayo, 2006)

These topics can be regarded as perceived difficult topics because of the following reasons:

- i. Students omitted answers on these topics deliberately because they do not understand them;
- ii. Those who venture into it usually leave it in a hurry and answer only the rudimentary aspect;
- iii. Students usually avoid attempting questions set on such topics especially if given a choice [Adedayo, 2006; Abakporo,2005]

However, Brunner (1962) asserted that any topic, no matter how difficult it may be, can be taught to a student at any point in time provided that such a student is ready to learn. According to Lobachevsky (1980), there is no branch of Mathematics however abstract which may not in some ways be applied to phenomena of the real world. Ilogu (2005) asserted that if students are satisfactorily equipped physiologically, psychologically and experimentally to tackle learning tasks and such tasks are organized in a logical sequence so that enough background experiences are available to tackle a more difficult task. Hence ,their is the need for students to be motivated by their teacher to have interest in the subject..

However, Ilogu (2005) opined that it is good to apply a statistical technique called Item Analysis to review every item in a test with a view of refining the whole test. Item Analysis helps in detecting poor items, improving test quality and making the teacher a better test developer. Item Analysis consists essentially of two stages, which are: Item difficulty and Item discriminating power. He Stated further that for a test to be good therefore, each item must be relevant to the curriculum content, moderately difficult (neither too difficult nor too easy) and discriminate positively between the good and weak students. The test that the

researcher gave to the students was refined and assessed using Item analysis method in order for the test not to be too difficult nor too easy and to discriminate positively.

It is therefore imperative that mathematics teacher should not remain complacent while our Senior Secondary School students fail, fear, get frustrated, developed negative attitude and derailed from careers of their interests in which they might have had job satisfaction to another profession in which they might lack interest in the nearest future. There was the need to assess and remediate our secondary school students' poor performances in mathematics in order for them to have bright future and excel in life. The Mastery Learning and Problem-Solving Approaches were identified as the treatment to be used. The study determined how these two methods could be used in improving our senior secondary school students' weak performance in mathematics.

Purpose of the Study

The primary purpose of this study was to :

- i. Find the relative effect of the Mastery learning approach (MLA) and Problem Solving approach on student performance in mathematics
- ii. Examine the role of gender on students' academic achievements on the perceived difficult concepts.
- iii. The effect of **MLA** and **PSA** on the three domains of learning (cognitive, affective and psychomotor);
- iv. To proffer solutions and offer suggestions on how to reduce the difficult level of the perceived difficult top

Research Methodology

The research design used for the study was quasi-experimental pre-test / post-test control group design.

This type of design requires that participants be tested with the same instruments before and after treatment. To determine the effects of the treatment, the result of the participants in the treatment group will be compared with the scores of participants in control group. The design comprised of two independent variables: experimental conditions for treatment and another two group for the control, which received a Placebo treatment. The population for the study were senior secondary school students in Lagos-state. The participants for this study consisted of 300 students from three Public Senior Secondary Schools in Educational district IV. The participants were chosen using stratified random sampling technique. From the list of Public Schools in Educational District IV. Their age ranges between 14-18 years with the mean age of 16 years. The participants are made up of 150 males and 150 females.

Research Instrument

To generate relevant data, The Mathematics Achievement Test (MAT) was used as instruments. This is 30-item multiple choice standardized objective test compiled and prepared by the researcher from past mathematics question papers of WAEC/NECO for seven years (2006-2012) covering some perceived difficult topics. It has a high stability co-efficient of 0.97 at 0.05 level of significance when tested during the pilot study. The items covered only the topics studied during the experimental period. The research instrument was validated using face and content validity procedure.

Administration of the Instruments

The actual studies spanned a period of 8-weeks: one week before the treatment sessions, the Mathematics Achievement Test (MAT) was administered to all the participants. The researcher actually visited the school and taught the student using Mastery Learning Approach (MLA) and Problem Solving Approach (PSA) as treatment procedure. The control group were given placebo treatment. The same instrument was re-administered to the participants a week after the 6 weeks treatment sessions.

Treatment Package

There were two treatment approaches which are~

- i. **Mastery Learning Approach**
- ii. **Problem solving approach**

The Mastery Learning Approach was developed by Bloom (1971). It was based on a theoretical model developed by Carroll (1963) which states that the degree of learning acquired by a learner is proportional to the time spent on the learning divided by the time needed for the learning. The model is based on the assumption that instructions will be of good quality and appropriate for the students, if instruction of poor quality is given more time which will be needed to master the learning.

Mastery learning consists of six components, each component with its own peculiar functions. The components are as follows

- I. **Pre-Assessment /Pre-test (Entry Behaviour):** It is the pre-test which helps in identifying the areas of weaknesses and strengths of the students before the instructions of the programme. The goals and objectives of the programme as well as the selection of the materials and instructional methods are determined as a result of pre-assessment.
- II. **I Instructional Objectives:** The Mastery Learning Approach lays much emphasis upon the selection of objectives; this is because an objective to the teacher is just like a compass to the sailor. A sailor without a compass will be sailing at the fog of his own making without any direction. Hence objectives determine the content and amount of instructional time.
- III. **Instruction Towards the study:** There is no restriction on the type of instruction that can be used in a mastery learning programme. The content selected to be taught and the emphasis given to the specific aspects of the contents are the two variables affecting students learning.
- IV. **Diagnostic Test:** This model employs evaluation procedures which were classified as formative evaluation. This assessment measures what each student has learned and what he has failed to learn in the course of the programme. It is usually arranged at regular intervals, that is, at the end of each unit, throughout the instructional programme. The information obtained here is used to improve upon those segments of the instructions that have not been effective. Instruction can be adapted to the needs of individual students.
- V. **Prescription:** This consists of instruction activities recommended on the basis of diagnostic assessment. When the information obtained as a result of the diagnostic assessment suggests that the students still needs further instruction on the unit in which his performance was below the mastery level, the prescription is refer to as the Remediation. The student may be given additional instruction or he is asked to repeat the instruction, or he may receive special instructions to develop his pre-requisite skills. When a student does not demonstrate mastery on a diagnostic assessment measure, the student's problem need careful analysis in order to determine the appropriate prescription. The students continue recycling through remediation and diagnostic evaluation until he performs at the minimum pass level. This recycling continues until the students have mastered the crucial skills.
- VI. **Post – Assessment:** This is the last and final component of this model. It is to measure whether each student has reached the goals identified in the objectives. If a student has failed to attain a minimum pass level or failed to master a crucial objective, the student is recycled through the instructional programme or additional instruction is prescribed for him. The student will continue to receive instruction until he reaches the minimum pass level.

The Problem - Solving Approach: The problem-solving approach means finding a way out of a difficult situation that is unique and novel to the students. According to skinner (1968) ,problem solving is a process of overcoming difficulties that appear to interfere with the attainment of a goal. Woodworth and marquis (1948) sees problem solving as a situation that occurs in novel or difficult situations is not obtainable by the habitual methods of applying concepts and principles derived from past experience in very similar situations.

It leads to the learning of new Mathematical concepts and principles. The teacher (researcher) emphasized on the method of solution to a problem rather than the solution itself. It was noted, that the process of solving one problem or the solution often created a solution to some other problems. Polya (1957) identified four phases of problem solving. They are ;

Phase 1: Understanding the Problem- This is often the most difficult and probably the most fundamental step, at this stage. It involves forming a suitable mathematical model defined in related terms, rejected extraneous information and analyze the questions. In the process, the researchers attempted to search for a pattern, a relationship or a similarity with the student's mathematical problems.

Phase 2: Devising a Plan- To devise the plan for the solution of a given problem. All mathematical skills and techniques previously acquired were called to play and if the required skills were not possessed, we consult others or refer to texts books.

Phase 3: Carrying out the Plan- This involves the use of the plan obtained earlier to find the solutions to the given problem.

Phase 4: Looking Back - At this stage, it involves checking of the result, checking the argument used, exploring the possibility of deriving the result through a different approach and finally looking into the possibility of deducing or generalization of such a result

Results and Discussions

Hypothesis: There is no significance difference in the students level of perceived difficult concepts in the Mathematics Achievement Post-test scores of participants in the treatment and control groups.

Table 1: Summary of the Descriptive Statistics of Pre and Post Test Mathematics Achievement Test (MAT) Across Groups. Experimental

Experimental Condition	Pre-test Scores			Post-test Scores		Mean differences
	N	Mean	Std. Deviation	Mean	Std. Deviation	
Mastery Learning	100	54.91	4.50	79.25	4.91	24.34
Problem-solving	100	53.47	2.95	77.26	4.06	23.79
Control	100	53.08	4.92	53.51	3.19	0.43
Total	300	53.82	3.46	70.00	4.05	16.18

* Higher mean scores on the (MAT) scores are indicative of higher achievement. .

As shown in table 1, the Mastery Learning method recorded the highest increase in the performance of students with mean difference of 24.34, followed by the Problem-Solving and then the control group. It was also observed that the Mastery Learning group had the highest post test mean score of 79.25, followed by the Problem -Solving group with mean score of 77.26 and then the control group with a mean score of 53.51. Also, the Mastery Learning had the highest standard deviations followed by the Problem Solving and the Control group. Results are presented in table 2 and 3 .

Table 2: ANOVA Test of Differences in Mathematics Achievement Test (MAT) Scores across Groups.

Source of variations	Sum of Squares	Df	Mean Square	F-cal	F-crit
Between Groups	358.49	2	179.25	5.91	3.02
Within Groups	13557.03	297	30.33		
Total	13715.52	299			

P < 0.05; df = 2 and 297;

From table 2, The one-way ANOVA showed F to be significant beyond 0.05 level: $F(297) = 3.02$ and $F_{cal} = 5.91$; $P < 0.05$. From the evidence in table 2 and 3, calculated $F = 5.91$ is greater than the tabulated F which has a value of 3.02. Hence, the null hypothesis was rejected and the alternate accepted, which means that there is significant difference between the performance of students in their Post-test Mathematics scores between the Mastery learning group, Problem-solving group and the control group. Since the F-test shows that there is a significant difference, Post-Hoc test was performed in order to determine where the significant difference lies that is the method that is most efficient in the study.

Table3: The Scheffe Multiple Comparison Test

Experimental Treatments				
(I) Class of Treatment	(J) Class of Treatment	Mean Difference (I-J)	F-crit.	Remark
	Problem-Solving	1.99	2.05	N.S
Mastery Learning	Control	5.74 *	2.11	Significant
Problem Solving	Control	3.75 *	1.95	Significant

Shows that it is significant at 0.05 level of significance.

From the table 3, it is evident that there is a significant difference between the performance of students in the Mastery learning group and the Control group and that there is a significant difference between students in the Problem-solving and the Control group but the difference between the students in the Mastery Learning and the Problem-solving group is not significant at 0.5 level of significance. The Mastery Learning method was observed to be the best method of improving students' achievements in Mathematics.

Hypothesis two: There will be no significant main effect of gender on the Post-test scores of Mathematics Achievement Test between the treatment and control group.

In order to find out the significant difference between the experimental and the control groups of the post-test scores of Mathematics Achievement Test with respect to gender, the table of statistics for the data under study was taken and is displayed in table 4:

Table 4 : Descriptive Distribution of Pre and Post Test of Gender Across the Groups

Sex	Experimental Conditions	N	Pretest Scores		Post test scores		Mean Differences
			Mean	Sd	Mean	Sd	
Male	Mastery Learning	50	39.52	4.78	47.23	4.02	7.71
	Problem-Solving	50	39.25	4.09	46.56	4.12	7.31
	Control Group	50	39.36	4.11	46.20	3.99	6.84
	Total	150	39.37	4.32	46.66	4.04	7.29

Female	Mastery Learning	50	40.15	3.95	46.35	4.11	6.20
	Problem-Solving	50	39.23	4.01	46.00	4.09	6.77
	Control Group	50	40.11	3.98	44.89	3.99	4.78
	Total	150	39.83	3.98	45.41	4.06	5.91

Higher mean scores for post test on MAT are indicative of higher performance after treatment.

In order to investigate the level of interactive effect between gender and treatment of the post test scores of Mathematics Achievement Test, a 2-way ANCOVA analysis was carried out to verify if the interactions between the gender and treatment have significant effect on the student's achievement in mathematics. The results of the analysis are presented table 5:

Table 5: 2-Way ANCOVA Showing the Significance of Gender and Treatment

Source	Type I Sum of Squares	df	Mean Square	F ratio
Model	75894.77	6	12649.13	382.70
Gender	72310.44	2	36155.22	1093.88
Treatment	1723.10	2	861.55	26.07
Gender * treatment (experimental conditions)	1861.23	2	930.62	28.16
Error	14675.23	444	33.05	

P < 0.05; df = 2 and 444

Looking at the ANCOVA table we see that the value for the calculated F (of the combined effect of gender and post-test score that is the experimental condition) of the analysis which is 28.16 greater than the tabulated F score of 3.00 at 0.05 level of significance, at 2 and 444 degree of freedom. Under which circumstance, we reject the null hypothesis and accept the alternative hypothesis. This implies that the interaction effect between gender and treatment in the Post-test Scores of mathematics achievement test is significant. Hence, the difference observed is as a result of the interaction between gender and treatment conditions. Base on the significant differences observed between gender and treatment condition. Further analysis of the data became necessary, using the Least Significance Difference (L.S.D.) Pair Wise Multiple

Table 6: LSD Pair Wise Multiple Comparison

Source	Type I Sum of Squares	df	Mean Square	F ratio
Model	75894.77	6	12649.13	382.70
Gender	72310.44	2	36155.22	1093.88
Treatment	1723.10	2	861.55	26.07
Gender * treatment (experimental conditions)	1861.23	2	930.62	28.16
Error	14675.23	444	33.05	

*** Shows that is significant at 0.05 level of significance**

It was observed that at the P-value (0.74), the interaction between gender and the experimental conditions is significant for all the groups, except for the males in the PSA group. Hence it can be concluded that the Mastery Learning is more efficacious in interaction effect among gender.

Discussions

Hypothesis1 stated that There is no significance difference in the students level of perceived difficult concepts in the Mathematics Achievement Post-test scores of participants in the treatment and control group. The hypothesis was rejected. However further evidence yielded by the study revealed that students who received mastery learning had higher achievement than those who received Problem Solving Approach. This is consistent with earlier studies demonstrating the efficacy of the Mastery Learning Approach. This support many earlier findings: Block (1971); Bloom (1976); Babalola (1983); Salami (1987); Rao, Moenly & Sachs (2012). The reason for the better achievement may be due to the efficacy of the method in which stresses the fact that almost every student can learn the basic skills that form the core of the school i.e criterion reference. Students who could not achieve this were sent back to re-learn the topic during the remedial and tutorial classes thereby spending adequate time on the learning until the topic was mastered. These justify the Bloom's developmental approach of the Mastery Learning on the proposition that almost every student can learn the basic skills that form the core of the school curriculum when the instruction is of good quality is appropriate for the learner and student spends adequate time on the learning. This means that an average Mathematics teacher in a normal Nigerian secondary classroom can use the MLA effectively for students of secondary schools.

Instructional Strategies of MLA and PSA had significant effect on learners performance, these findings is consistent with the assertion that strategy improves content learning and vice – versa as earlier indicated by Zimmerman (2010) which is in line with the work of some researchers (Akinsola, 1987; Abakporo, 2005; Adedayo, 2006).

Significant levels for differences were established between experimental and control groups using F- Test confirmed significant main effect of treatment in Mathematics scores for achievement in Mathematics. The Scheffe Multiple Comparison showed that the two (2) experimental groups had Mean Scores that were higher than that of the control group with Mastery Learning Approach (MLA) having the highest. The

MLA best learning outcomes could be attributed to the fact that MLA consists of activities which help process materials with short-term memory by keeping them active in consciousness, so that it can be more deeply processed for recall for long periods. One other issue raised by this finding is that MLA is more effective in enhancing cognitive achievement of students in Mathematics while PSA is more effective in the psychomotor skills.

Hypothesis two: Stated that there will be no significant gender difference in the Post-test scores of students' Mathematics achievement test between the treatment and the control group.

The hypothesis was therefore rejected. It follows that significant gender difference does exist between gender and performance in the post-test score of student's achievement in Mathematics across the experimental conditions. The table reveals that the treatments (MLA & PSA) were found to be effective in enhancing the outcomes of the learners in Mathematics. There was a general increase in post-test scores over pre-test scores for affective (attitude) outcomes in the two (2) experimental groups. Further analysis using Two-Way ANCOVA to verify the level of interaction between gender and treatment have significant effect of the students achievement in Mathematics which confirmed the main effect of treatment on subject scores for achievement in Mathematics. The findings of the present study give empirical support to the fact that the MLA and PSA are more effective than the traditional/ conventional method commonly used in Nigerian classrooms. However, MLA enhances higher achievement in Mathematics than PSA and the traditional teaching method. The present study emphasized reception learning and learners active involvement in the learning process so as to arouse his/her interest and performance towards the learning and teaching of Mathematics. The male students were doing better than the female students after treatment, this was expected and the result supports Tobias (1976) which claimed that Mathematics results from a culture that makes Mathematics ability a masculine attribute. Some of the reasons for this differential gender achievement could be due to the fact that male generally love and dominate careers such as engineering pilot, surveying etc. However, empirical reviews also gave reasons for some no differential gender achievements, which could be due to common aspirations in careers as both male and female are in all types of career. Secondly, the influence of peer groups in solving Mathematical problem together motivates students and eliminates gender bias. The result also support Mangal (2013) who studied gender difference in standardized college entrance test scores in eight subjects area. Female outscored males in five areas, two results were mixed, in one, males outscored females. However, the result supports that of Fennama (2009) which found that there are no gender related differences in Mathematics achievement of elementary school pupils.

Summary of the Study

The study was conducted primarily to determine the relative effect of Mastery Learning and Problem-Solving on student achievements in Mathematics unlike the traditional methods of teaching Mathematics in our secondary schools. The study also investigated the interaction effects of gender and experimental conditions on the dependent measures. Two hypotheses were Stated, tested, analyzed and interpreted. Based on the research hypotheses the following were the highlights of the findings:

1. There is a significant difference in student's levels of perceived difficult concepts in Mathematics between the three experimental groups. Therefore the first hypothesis that there will be no significant difference in student's levels of perceived difficult concepts in Mathematics between the three experimental groups was rejected
2. There is a significant main effect of gender in the Post-test scores of Students Achievement in Mathematics between the treatment and control group. There were interaction effect between the experimental conditions and gender. The males perform significantly better than the female. Therefore, the second hypothesis that there will be no significant main effect of gender in the Post-test scores of Mathematics Achievement Test (MAT) between the treatment and control group was rejected.

Conclusions

On the basis of the findings of this study, the following conclusions were made.

1. Mastery Learning Approach which takes into consideration both the slow and fast learners' active involvement in knowledge enhances meaningful learning of the subject matter. It allows the teacher to pay attention to individual students to assess the mastery level attained by each student. Hence, it can be inferred that the MLA can be used to teach those concepts that are perceived to be difficult in Mathematics with ease.
2. The MLA & PSA turned students into active participants in the class and promoted in-depth learning throughout the period.

Recommendations

The following recommendations are made based on the findings:

1. Teachers should redouble their efforts in the teaching of topics that are perceived difficult in mathematics; they should ensure adequate coverage of syllabus and its application so as to demystify the topics.
2. Teachers are encouraged to do frequent revision exercises with their students in order to enhance students' mastery/ retention of various knowledge and skills gained in previous lessons.
3. The three tiers of Government should ensure that more qualified mathematics teachers are recruited to teach the subject in the schools so that the class size of 30-35 students teacher ratio is maintained in order to ensure maximum teacher control on the students.
4. Teacher should lead the students to solve many problems using the PSA to ensure that the topics are well comprehended by the candidates.
3. Teachers should ensure that the three domains of learning are inculcated in their teaching, assessment methods and lesson notes.

Contributions to Knowledge

The study contributed to knowledge in the following ways:

1. Mastery Learning Approach (MLA) which takes into consideration both the slow and fast learners' active involvement in knowledge enhances meaningful learning and good mastery of the subject matter.
2. The study contributed to knowledge by creating improved instructional programmed plan for discovering learning difficulties and detecting the needs to allocate-more time to the teaching of Mathematics and remedial work on the school time table.
3. The MLA and PSA methods turn the students to active participants in the class there by promoted in-depth learning of the subject matter by the students throughout the period of the study
 - 4 The use of comprehensive instructions that emphasizes students' mastery of learning enhances good classroom teaching and learning of the next prerequisite topic in the subject.

The study has shown that there is no topic or concept that is to be perceived difficult by students of Mathematics but all that is needed by students is doing regularly class work/assignment, remediation/ correction of extra work, practicing, solving problems and mastery of concept This study also documents the impact of MLA and PSA in the remediation of students poor achievement in some perceived difficult concept

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A CRITICAL APPRAISAL OF THE IMPLEMENTATION OF BUSINESS STUDIES CURRICULUM AT THE JUNIOR SECONDARY SCHOOLS IN LAGOS STATE.

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ABSTRACT

The major aim of this study was to critically appraise the implementation of Business Studies curriculum at Junior Secondary school in Lagos state, in order to discover the areas of deficiency and proffer workable solutions, amongst which is the implementation must agree with main objectives of the programme. Some of the specific objectives were to determine the appropriateness of the curriculum, assess the infrastructure and equipment, find out the teaching methods and assess the entrepreneurial skills students have acquired. Descriptive survey research design was adopted. The target population for the study comprised all Business studies students and teachers in the forty-eight (48) public secondary schools and twenty (20) registered private junior secondary schools under the jurisdiction of the District IV of Lagos state. Data instruments used were Questionnaire, Checklist, and Observation schedule while Mean and Percentages were used for the analyses. Random sampling technique was used in this study, 15% of the population were used as the sample. Total of 500 students were used {public (350) and private (150)}, 18 teachers were used to answer questionnaire while 8 teachers were used for observation purposes. This study revealed that the curriculum content was appropriate in contents and objectives of implementation. Many of the schools have facilities and equipment but not adequate for effective learning of Business studies to enhance the acquisition of the self employable: Shorthand (25.4%), Typewriting (33.4%), are still relevant in Business studies curriculum. Based on the results, it is recommended that government should employ more qualified Business educators.

Keywords: Appraisal, Implementation, Business studies, Curriculum and Junior secondary school.

BACKGROUND OF THE STUDY

The implementation of the 6-3-3-4 education system in Nigeria began in 1982 and brought many reforms into the educational system in Nigeria. At the junior secondary level prevocational subjects were introduced into the curriculum while vocational subjects were introduced into the senior secondary level. The focus of the prevocational was to expose students at the junior secondary school level to the world of work through exploration. Such exposure would enable junior secondary school students make intelligent career choice. Business Studies has Typewriting, Shorthand, Book/keeping, Office practice, Commerce and Computer science as components. Fafunwa (2002) stated that the specific objectives of the Junior Secondary School Education are to develop in the students' Manipulative skills (Manual dexterity) invention, respect for dignity of labour and above all healthy attitude towards things technical.

One of the objectives in splitting secondary education into junior and senior secondary education was to create an exit point after completing junior education. The implementation of the terminal objective plan at the end of junior secondary has been problematic. Prior to 1982 the Nigerian secondary education system prepared students for basic white collar jobs and consisted of little more than basic numeracy and literacy education modelled on the British system of education. New policies contained in the National Policy on Education proposed a system of education that would be cost-effective while simultaneously making students more marketable by equipping them with skills for a wide range of employment opportunities.

Business studies is synonymous with Business education at higher institution Business Education is education for and about business or training in business skills and competencies required for use in business offices. Esene (2012) described Business studies at JSS level

were the subjected is taught as a single subject but these subjects can stand alone at Senior secondary school level. Business Studies is expository and discovery in nature which enable students to discover those skills and potentials that help individuals in future for Life long education. The curriculum is broad and rich in skills acquisition subjects and students are expected to cover all the various subjects to enable them possess the prevocational skills therein. It helps in training the students on those skills that are relevant to develop skills, aptitudes, potentials and competencies to be useful citizens and contribute economically to the society. The objectives were to create an opportunity for students to have a broad understanding of business activities, their functions, interrelationships between business organizations, and to provide students with skills for processing information, as well enable them to participate meaningfully in production in future. Business subjects fall under Creative, Technical and Vocational Subjects within the entire secondary school programme. The subjects are classified as “practical subjects”

Objectives of any level of education cannot be achieved if the planned programme for such level of education is not well implemented. Observing this, Onyeachu (2008:1) asserted that: “No matter how well a curriculum of any subject is planned, designed and documented, implementation is important.” This is because the problem of most programmes arises at the implementation stage. Recognizing this, Babalola (2004) and Mkpa (2005) remarked that, it is at the implementation stage that many excellent curriculum plans and other educational policies are marred without any trace.

Statement of the Problem

The implementation of Business Studies programme at the junior secondary school level seems to have been haphazard and treated with levity (Esene, 2012). Like any other new educational programme, successful implementation of the Business Studies curriculum at the junior secondary school depends on the availability of necessary equipment and materials as well as competent teachers (Iyeke & Okoro, 2004) and (Amaewhule & Okwuanaso 2004). The importance of qualified teachers in an educational programme cannot be overemphasized. Makeri (2006) found out that teachers identified lack of instructional facilities, inadequate qualified teachers, inadequate administrative support and students’ lackadaisical attitudes towards the subject. The inadequacy of instructional facilities and teachers seems to have resulted to poor method of instructions because of lack of equipped typing pool to take care of the teeming population of the students. Most secondary schools do not offer Business Studies rather they prefer Home economics or Agricultural Science. The subject seems to have been neglected; unfortunately, the subject has also been made elective in some Junior Secondary Schools by the Basic Education Certificate examination in Lagos state. The curriculum of Business Studies at the Junior Secondary level does not seem to be achieving its objectives. Achieving the objectives of Business Studies at this level is dependent on the mode of implementation. Therefore, it is imperative to critically appraise the implementation of Business Studies curriculum at this level, if it is worthwhile.

Purpose of the Study

The overall aim of the investigation is to assess how the business studies curriculum is being implemented in junior secondary schools with a view to identifying the root cause of the problem, to ascertain the extent to which it has empowered students for self-employment, as well as the underlying factors that might account for disparity, if any, on curriculum implementation.

The purpose is to:

1. establish whether the Business Studies curriculum objectives have been achieved at the junior school.

2. identify practical (entrepreneurial) skills students have learnt in the subject with which they can create self-employment.
3. assess infrastructural facilities and equipment available for successful implementation of Business Studies curriculum.
4. examine the qualification and adequacy of Business Studies teachers in school.
5. evaluate the teaching methods and instructional materials employed by the Business Studies teachers.

Research Questions

1. Are the Business Studies curriculum objectives being achieved at the Junior Secondary School level?
2. What practical (entrepreneurial) skills have students learnt in the subject with which they can create self-employment?
3. Are there enough facilities and equipment in school to enhance effective implementation of Business Studies curriculum?
4. Do we have adequate and qualified Business Studies teachers in schools?
5. What methods of teaching and instructional materials do Business Studies teachers employed in teaching Business Studies?

Significance of the Study

This study is significant in many ways. Most importantly, it will sensitize policy makers, educational administrators, and curriculum planners on the need to plan towards effective curriculum implementation in junior secondary schools. Also, the result of the study will contribute to policy formulation and practices, as inspectors from Federal and State Ministries of Education will be sensitized on what to look out for during inspection. The Federal and state Ministries of Education as well as the Nigerian Educational Research and Development Council (NERDC) will find the result of this study valuable particularly in the current government effort towards implementation of the new Secondary Education Curriculum.

Scope of the Study

This study covered ten (10) Junior Secondary Schools (seven public schools and three private schools) in Education District IV of Lagos State. This study touched the objectives of Business Studies curriculum at Junior Secondary School level, teaching methods and instructional materials adopted, facilities and equipment availability, roles of Business Educators in curriculum implementation, factors that impedes the implementation of Business Studies curriculum and as well the school type.

Research Methodology

The research design adopted for this study was descriptive survey. The independent variables include teacher qualifications, school type. The dependent variable is mode of curriculum implementation measured in terms of: appropriateness of business studies curriculum, teaching method, availability of infrastructural facilities, availability of business educators, entrepreneurial skills students have learnt in the subject. The target population of the study consists of all Business Studies students and teachers of junior secondary schools in the three local governments that made up the District IV in Lagos state. The total number of public junior secondary schools in the district was forty-eight (48). There were few Governments approved private junior secondary schools in the district. The study adopted random sampling procedure. Fifteen percent (15%) of the population of the public junior secondary schools were used as the sample

The researcher administered questionnaires to fifty (50) students in each junior secondary school selected which gives us a total of five hundred (500) questionnaires distributed. Twenty (20) teachers were targeted for questionnaires but the questionnaires were

administered to only eighteen (18) teachers of business studies under the ten (10) junior secondary schools investigated. One teacher was randomly selected in each of the sampled public and private schools for the purpose of classroom observation.

This study utilized both quantitative and qualitative techniques for the purpose of enriching the findings. The quantitative instrument titled “ Business Studies Students Questionnaire (BSSQ) for students and Business Studies Teachers Questionnaire(BSTQ), for teachers on implementation of Junior secondary school Business Studies curriculum” in Lagos state. The qualitative instrument is checklist of infrastructural facilities available in school for the teaching and learning of business studies and Classroom Teaching Observation Protocol. The questionnaire will be structured on 4-point type Likert Scale of strongly agree (4points), Agree (3 points), Disagree (2points) and strongly disagree (1 point), designed to elicit respondents’ opinions. The face and content validity of the instruments was determined through the perusal, scrutiny and expertise judgment of the course lecturer, an expert in measurement and evaluation and in the field of research and curriculum. Data for this study will be collected during regular school hours in the first term of 2014/2015 academic session. In analyzing the research question, item, the mean scores which fall below 2.50 will be **Rejected** response, while the mean score which is above 2.50 will be **Accepted** response.

Results

Research Question One

How appropriate is the present junior secondary schools Business studies curriculum in terms of the objectives and content in meeting the philosophy of Nigerian junior secondary education system?

Students’ Responses

Table 1: showing the appropriateness of the current junior secondary school business studies curriculum

SN	ITEMS	SA	A	D	SD	MEAN SCORE	REMARK
1	The knowledge and skills I have acquired in Business Studies are enough to help me set up a business enterprise of my own or work in any modern business organisation.	237 47.4%	201 40.2%	42 8.4%	20 4%	3.31	Accepted
2	I can conveniently operate computer system to transact business with individuals or organisations using internet.	137 27.4%	229 32%	87 17.4%	47 9.4%	2.91	Accepted
3	I can practically demonstrate the procedures involved in setting up a mini business organisation.	117 23.4%	223 44.6%	114 22.8%	46 9.2%	2.82	Accepted

Teachers’ Responses

Table 1: showing the appropriateness of the current junior secondary school business studies curriculum.

SN	ITEMS	SA	A	D	SD	MEAN SCORE	REMARK
1	The present JSS Business Studies curriculum is quite appropriate in terms of the objectives and the contents in meeting the philosophy of Nigeria JSS education system.	6 33%	12 67%	0	0	3.2	Accepted
2	Any JSS student graduate can be	316%	10	528%	0	2.90	Accepted

	gainfully employed in any of the modern business organisations because the content of Business Studies is adequate in terms of knowledge and skills to produce that.		56%				
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Judging from the responses of the students and teachers, the current business studies curriculum can be said to be appropriate in making junior secondary schools graduate self-employed and employable in a labour market, with the least mean score of 2.82, which represent Accepted.

Research Question Two

What type of teaching method is used in implementing the Business studies curriculum in junior secondary schools in Lagos state?

Students' Responses

Table 2: show the type of teaching applies in implementing junior secondary school business studies curriculum.

SN	ITEMS	SA	A	D	SD	MEAN SCORE	REMARK
4	Our Business Studies teacher only gives detailed explanation of the topic and writes notes any time he/she teaches the subject.	236 47.2%	160 32%	59 11.8%	45 9%	3.17	Accepted
5	At times, Guest Speakers are being invited from outside (e.g. from companies) to give us seminars on Business Studies.	89 17.8%	107 21.4%	153 30.6%	151 30.2%	2.27	Rejected
6	Our teacher uses projector to demonstrate/illustrate the content of the lesson.	88 17.6%	98 19.6%	127 25.4%	187 37.4%	2.17	Rejected
7	Our teacher occasionally sends us to companies to obtain their brochures on which discussion is based in the classroom to examine their areas of specialisation.	55 11%	67 13.4%	147 29.4%	231 46.2%	1.89	Rejected
8	Sometimes our teacher asks us to dramatise how people work in an organisation during Business Studies lesson.	147 29.4%	156 31.2%	98 19.6%	99 19.8%	2.70	Accepted
8	Sometimes our teacher asks us to dramatise how people work in an organisation during Business Studies lesson.	147 29.4%	156 31.2%	98 19.6%	99 19.8%	2.70	Accepted
9	At times, we are being taken to companies or business organisations to observe how things are done practically.	65 13%	84 16.8%	135 27%	216 43.2%	2.00	Rejected
10	Our teacher, first of all, demonstrates a skill such as keyboarding/typewriting in the classroom before asking us to do the same.	181 36.2%	127 25.4%	85 17%	107 21.4%	2.76	Accepted

Teachers' Responses

Table 2: show the type of teaching applies in implementing junior secondary school business studies curriculum.

SN	ITEM	SA	A	D	SD	MEAN SCORE	REMARK
3	The use of ICT is both relevant and indispensable to the teaching and learning of Business Studies.	9 50%	9 50%	0	0	3.5	Accepted

Judging from the responses by the teachers and the students both accepted that the type of teaching method adopted in implementing the Business studies curriculum in schools is by textbook, discussion and lecture methods, which show the least mean score of 2.70. To the teachers the use of Information Communication Technology (ICT) material will aid their teaching; the mean score of 3.5 supported this.

Research Question Three

What are the Infrastructural facilities and the Instructional materials/ equipment available in junior secondary school in Lagos state for the teaching and learning of Business studies?

Students' Response

Table 4b : Checklist of infrastructural facilities expected in schools for teaching and learning of Business studies.

SN	ITEMS	SA	A	D	SD	MEAN SCORE	REMARK
11	Our typing-pool/word-processing room is adequately equipped with computer systems.	183 36.6%	147 29.4%	81 16.2%	89 17.8%	2.85	Accepted
12	We only have manual typewriters in our typing-pool and they are very few in number.	91 18.2%	133 26.6%	134 26.8%	142 28.4%	2.35	Rejected

Teachers' Response

Table 4c : Checklist of Infrastructural facilities expected in schools for teaching and learning of business studies.

SN	ITEMS	SA	A	D	SD	MEAN SCORE	REMARK
4	Our school library is well equipped with relevant, adequate and current textbooks on Business Studies.	2 11%	9 50%	6 33%	1 6%	2.66	Accepted
5	Our school has a befitting Typing-pool/Word-processing room for the practical teaching and learning of Business studies.	5 28%	4 22%	4 22%	528%	2.50	Accepted
6	There is relatively constant power supply in our school.	5 28%	7 39%	4 22%	2 11%	2.83	Accepted
7	We have a stand-by generator in our school whenever power supply fails.	6 30%	7 35%	2 11%	317%	2.80	Accepted
8	Our typing-pool/word-processing room is adequately equipped with computer systems.	6 30%	2 10%	4 22%	6 30%	2.40	Rejected
9	We only have manual	0	5	4	9	1.80	Rejected

	typewriters in our typing-pool and they are very few in number.		25%	20%	50%		
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Research Question Four

What is the proportion of qualified Business studies teachers available in the junior secondary schools in Lagos state?

Table 5: shows the qualification(s) of the Business studies teachers.

QUALIFICATIONS	FREQUENCY	PERCENTAGE
NCE	4	22%
B.SC (ED)	10	55%
B.SC	2	11%
OND	1	6%
HND	1	6%
TOTAL	18	100%

It was discovered that 75% of the teachers has the teaching certificates to teach the subject at the junior secondary school, while 25% of the teachers, though they have higher institutions certificate but not in the teaching lines.

Research Question Five

What practical (entrepreneurial) skills have students acquired in business studies to make them self-employed?

SN	SKILLS	STUDENTS	TEACHERS
1	SHORTHAND SKILLS	127 25.4%	6 30%
2	KEYBOARDING/TYPEWRITING SKILLS	167 33.4%	4 22%
3	MICROSOFT WORD/ WORD PROCESSING	111 22.2%	1 5%
4	E-COMMERCE	41 8.2%	0 0%
5	RUNNING A MINI- BUSINESS ENTERPRISE	54 10.8%	7 39%

From the table above, it has been discovered that shorthand, keyboarding and Word processing are the essential ingredients and major entrepreneurial skills students have acquired in which they can be self-employed with the 25.4%, 33.4% and 22.2% respectively. The installation of computers in schools by the government of Lagos state under the EKO Project, has also aided the students learning of Business studies.

Research Question Six

To what extent has the provision of the new Business studies curriculum being adhered to by the teachers in terms of Methodology, Lesson design, Content and Curriculum implementation?

Table 7: showing the extent the provision of the new Business studies curriculum being adhered to by the teachers in terms of Methodology, Lesson design, Content and Curriculum implementation.

TEACHING PROTOCOL		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	TOTAL MARKS	PERCENTAGE
Class control and management	TM	20	20	20	20	20	20	20	20	20	20	200	
	TS	13	15	16	14	15	16	13	14	14	14	144	72%

Lesson design	TM	20	20	20	20	20	20	20	20	20	20	200	
	TS	9	11	11	11	13	9	10	14	12	15	115	57.5%
Content (knowledge)	TM	20	20	20	20	20	20	20	20	20	20	200	
	TS	14	12	11	12	14	12	11	15	14	16	131	65.5%

Note that: **T** = Teachers; **TM** = Total mark; **TS** = Total score

From the data analysed above, it shows that the teachers are rated 72% in Class control and Management, Lesson design is 57.5%, while the mastery of the subject matter was rated 65.5% in implementing the curriculum.

Conclusion

In this research work effort has been made to examine the way and methods employed in implementing the Business studies curriculum at junior secondary school level in Education district IV in Lagos state, it was concluded that the curriculum is moderately implemented above average.

Recommendations

The following recommendations are made based on the research carried out:

- Government should provide more facilities such as IBM typewriters and computer system in the ratio of four students to a system.
- More periods should be created for any subject that promotes psychomotor domains in education such as Business studies, Basic technology etc.
- Many of the teachers have been attending seminars and workshop on effectively delivery of lesson content, but the seminars for business studies teachers should be on their area of specialisation like attending workshop organised by Association of Business Educators of Nigeria (ABEN).

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EFFECT OF COGNITIVE RESTRUCTURING AND TIME MANAGEMENT ON ACADEMIC TASK PROCRASTINATION: ASSOCIATIONS WITH SELF-ESTEEM AND GENDER.

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ABSTRACT

The study examined the effect of cognitive restructuring therapy, time management training on academic task procrastination and its association with self-esteem and gender among Senior Secondary School students in Ogun State. Three research hypotheses were equally generated to guide the study. Quasi-experimental pre-test/post test control group designs were adopted for the study. Simple random sampling technique was utilized to select sample size of 126 students comprising of 69 male and 57 female students drawn from three educational zones in Ogun State. Four research instruments were used in data collection which included: Tuckman's Procrastination Scale (TPS), Index of Self-Esteem (ISE). All the instruments were used for the pre- test and post-test. The pre- test and post-test scores were analyzed using the Analysis of Covariance (ANCOVA) at 0.05 level of significance. Two hypotheses were accepted while one was rejected. The study revealed that both Cognitive Restructuring Therapy and Time Management Training were effective in reducing academic task procrastination among the participants. The study also revealed that there is a significant interaction effect of self-esteem on participants' academic task procrastination. Therefore self-esteem was found to be a significant predictor of participant's academic task procrastination. Finally, it was revealed that gender was not significant on the level of academic task procrastination among the participants and that there were no interactions effects between gender and the experimental conditions among the participants. Discussion based on the findings of the study was done.

Keywords: academic task procrastination, self-esteem and gender.

INTRODUCTION

Every student has a lot of tasks to perform but for one reason or the other completing the task is often postponed so as to enjoy spare time and extra curricular activities which may lead to academic incompetence. The tendency to engage in such a maladaptive behaviour is called procrastination. Procrastination is a common phenomenon among students particularly at college and university levels. For example, research indicates that between 80 and 95 percent of college students engage in procrastination (Ellis & Knaus, 2000). Approximately 75 percent of college students consider themselves procrastinators and almost 50 percent procrastinate consistently and problematically (Onwuegbuzie, 2000). The lowest level of procrastination is considerable with students reporting that procrastination typically occupies over one third of their daily activities, often enacted through sleeping, playing, or television watching (Pychyl, 2000). These percentages appear to be on the rise, in addition to being endemic at college, procrastination is also prevalent in the general population, chronically affecting some 15–20percent of adults (Kachal, 2001).

Researches point in the direction that procrastination raises students' anxiety and sinks their self-esteem. The most convincing research in this regard was done by Burka and Yuens (1983). According to their model of procrastination, low self esteem is a central constituent of procrastination. A person who procrastinates starts feeling powerless and hopeless; his confidence suffers and future seems dark. Procrastinators usually avoid revealing information about their abilities, prefer menial tasks, make poor time estimates, tend to focus on the past, and do not act on their intentions. Interestingly, research has confirmed that all these characteristics have been related to low self-esteem. On the other end, people with low self-esteem are more vulnerable to the psychological impact of everyday lives. They are less

likely to have satisfactory self-knowledge. They suffer from a motivational conflict. They easily get manipulated as they are flexible, and are strongly affected by persuasion and influence. Hence, these facts are more likely to delay their task completion as well as responsibilities (Baumeister, 1999).

Burka and Yuen (1983) associated low sense of self-esteem as a personality trait most commonly present among procrastinators. Various theoretical approaches endorse that low self-esteem as a concomitant of procrastination. Burka and Yuen (1983) highlight that procrastination is a self-induced strategy that guards against a susceptible sense of self-esteem. Delaying of things has a buffering effect for those with unsteady feelings of self-worth (Burka & Yuen, 1982). Beswick, Rothblum and Mann (1988) gave psychological explanations for procrastination. The researchers studied 245 students, multiple regression analyses depicted that self-esteem and, to some extent, indecision accounted for significant portion of the variance in procrastination. Ferrari (1991) found that procrastinators report feelings of low self-esteem and greater social anxiety. Significant gender differences were reported by the researchers: female procrastinators had significantly lower self-esteem compared to female non-procrastinators. Ferrari (1994) in his further research on dysfunctional procrastination and its association with self-esteem, interpersonal dependency, and self-defeating behaviors. He found that low self-esteem, dependency and self-defeating acts were significantly associated with procrastination in young adults.

The present study is an attempt to explore the relationship between procrastination and self-esteem among students. Research findings from this study will help in identifying whether procrastination and self-esteem are related as far as student population is concerned. Once a relationship is highlighted, this research can lay grounds for designing psychological intervention strategies which can facilitate in raising self-esteem. Raising students' self-esteem can act as a cure for their habit of procrastination. Proper and timely intervention to enhance self-esteem can ultimately lead to better academic outcomes for students; that can be beneficial for laying grounds for a more productive future.

Statement of the problem

Academic task Procrastination is clearly known to be a problem for many secondary school students. Even though they are aware that it has a negative effect on their academic achievement, they do not quit procrastination easily. Estimate shows that 80 to 95 percent of secondary schools students procrastinate, with about 50 percent of them procrastinating consistently and problematically (Onwuegbuzie, 2000).

Procrastination considerably wastes significant time, if there is something that is supposed to be performed (Hobbs, 2008). In modern society, time and punctuality are considered important standards. Those who procrastinate do carry a heavy cost due to inability to abide by these values, whereby affecting all domains of life. Despite the fact that procrastination is being discouraged, it is still highly frequent in students and is regarded as detrimental to academic progress and success. Problem arises when a student fails to realize that he does not have all the time to carry out the entire task that will lead to his educational goal and at the end he fails. It is also disturbing to note that adolescents want to determine when to study, when to relax without an effective time management practice. This is bound to lead to low performance or outright failure which is a disappointment to the adolescents and their parents.

Academic task procrastination has many negative consequences including loss of time, increased stress, low grades, poor health, decreased long-term learning and low self-esteem (Hoover, 2005). Besides the negative effect on the student's academic performance, it increases the risk of course drop-out (Wesley, 1994). Several studies associate procrastination with some different personality variables, such as low self-esteem, low self-

confidence, high perfectionism, dysfunctional impulsivity, depression, and anxiety (Ferrari & Díaz-Morales, 2007).

Obviously, academic task procrastination can also cause delay in studying behaviours such as drafting of works or reports, missing deadlines to hand in papers, and putting off administrative tasks related to academic life, such as returning library books, registering for examination and so forth (Scher & Ferrari, 2000). Skipping classes or delaying in handing in works are also consequences of academic task procrastination as well as emerging conflicts with parents or friends. Procrastinators seem to have a deficit in regulating their cognition; they do not use effective learning strategies and often lack metacognitive knowledge and skills. They underestimate the amount of time necessary to complete a task and failed to allot sufficient time. They also have poor time management skills and engage in disorganization. It is in this vein that this study sets out to investigate the effect of two counselling therapies: - Cognitive Restructuring and Time Management Training on academic task procrastination among secondary school students in Ogun State.

Purpose of the Study

The purpose of the study was to investigate the effectiveness of Cognitive Restructuring and Time-Management training on procrastination among senior secondary school students in Ogun State.

Specifically, this study was therefore designed to meet the following objectives:

1. Determine the relative effectiveness of Cognitive Restructuring and Time management on academic task procrastination.
2. Investigate the effect of experimental conditions on participants' post-test scores on self-esteem.
3. Determine the effect of participants' gender on their academic task procrastination behaviour across experimental conditions.

Research hypotheses

1. There is no significant difference in the post-test scores of participant's academic task procrastination across the three experimental groups.
2. There is no significant difference in the post- test scores of participant's academic task procrastination due to self-esteem and experimental conditions.
3. There is no significant difference due to gender in the scores of participants' academic task procrastination across the three experimental conditions.

Methods

Research design

The current research investigated the relationship between procrastination and self-esteem among secondary school students. Quasi experimental, pre-test post test control group research design was used to identify the relationship between procrastination , self-esteem and gender.

Study Area

The study was carried out in Ogun State, Nigeria. The state was created in 1976 from the old Western State with Abeokuta as the Capital and is in the South-west geo-political zone of Nigeria. The state is dominated by four major sub-ethnic groups which are Remo, Ijebu, Yewa, and Egba (RIYE) The state is strategically located; bordered to the south by Ondo State and to the north by Oyo and Osun State. It is situated between Latitude 6.20N and 7.6N, Longitude 3.00E and 5.0E, and covers a total land mass of 16,409.25sqkm. The State is otherwise known as the Gateway state, this is in recognition of its pioneering role in education, medicine, law and divinity on one hand and its strategic position as the link road, air and sea to the rest of the country. The State has three hundred and one (301) public Senior Secondary Schools and numerous private Schools. The State has four Educational

Divisions, Twenty (20) Local Government Areas and Twenty (20) Educational zones; Ogun State was selected because Education is seen as a major industry in the State. (Ogun State Handbook, 2007).

Population

The target population for this study comprised all Senior Secondary School two (SS2) Students in Ogun State. The SS2 students were used because they were in the semi-terminal class in the Senior Secondary School. The class is considered suitable as the participants (SS11 Students) will benefit more from this study because it is believed that it will correspondingly affect their performance positively when they sit for West African School Certificate Examination and the National Examination Council Examinations.

Sample and sampling

Multi-stage sampling technique was employed for this study. Three educational zones (Abeokuta north, Abeokuta south and Odeda) were randomly selected out of the twenty educational zones in Ogun state, using the hat and draw sampling method. The same hat and draw method was also used to select one co-educational school from each of the three educational zones. All the available three hundred and eighty four (384) Senior Secondary School II students in the three selected co-educational public Senior Secondary schools were assessed for baseline data using the Tuckman's Procrastination Scale (TPS). The maximum score obtainable by the participants was 64 and only participants whose scores fell below 40 were adjudged qualified for the study as their procrastination behavior is considered a concern. The total sample for the study comprised 126 Senior Secondary School II students (male and female). The schools were randomly assigned to experimental groups- Group A (Cognitive Restructuring; CR= 46 participants) Group B (Time Management Training; TMT=42 participants) Group C (Control Group; CG=38 participants). The average age of the participants in this study was 15 years. The distribution of the participants for the baseline assessment and the intervention programme is presented in table

1.

Table 1: Distribution table of participants for the study

Zone	School	Baseline			Intervention			Intervention type
		Male	Female	Total	Male	Female	Total	
Abeokuta North	A	52	71	123	20	26	46	CR
Abeokuta South	B	50	44	94	24	18	42	TMT
Odeda	C	92	75	167	25	13	38	CG
TOTAL		194	190	384	69	57	126	

Table 1 presents the three randomly selected educational zones in Ogun State and the three selected co-educational schools used for the study. It shows 194 male and 190 female participated in the baseline assessment while 69 male and 57 female, participated in the intervention programme. The table also shows the total number of participants from each school and the type of intervention given to each group.

Instrument for data collection

Two research instruments were used for the study. These were validated through a pilot study. They are: Tuckman's Procrastination Scale (TPS), Index of Self-esteem (ISE),

1. Tuckman procrastination scale (TPS)

This is a Sixteen (16) item instrument by Tuckman (1991) which was adopted by the researcher to measure academic task procrastination. The items are on a four-point Likert scale and scored 1= that's me for sure, 2= that's my tendency, 3=that's not my tendency, 4 =that's not me for sure. It has an excellent internal consistency with a mean alpha of.86 and a test re-test reliability coefficient of 0.92 as reported by its author.

Samples of the items include:

- When I have a deadline, I wait until the last minute.
- I delay making tough decisions.

2. Index of Self-esteem (ISE)

The index of self-esteem (ISE) is a 25-item inventory originally designed by Hudson (1982) and was adopted by the researcher to measure the degree, severity or magnitude of a problem the individual has with self-esteem. The items are on a five -point scale and scored 1=rarely or none of the time, 2=a little of the time, 3=sometime, 4= a good part of the time, 5=most or all of the time. Hudson (1982) obtained a co-efficient alpha of .93 and a test-retest coefficient of .92.

Sample of the items include:

- "I think I have a good sense of humour".
- "I feel that I have a number of good qualities."

PROCEDURE

Administration of Instruments

A letter of introduction was obtained from the Department of Educational Foundations, University of Lagos, Akoka. With this letter, the researcher sought permission from the Ogun State Ministry of Education and permission was granted. Letter of permission was taken to the Zonal Educational officers who gave them to the principals of the selected Secondary Schools. The research was carried out over a period of eight weeks in the selected schools.

The study was conducted in three phases:

Phase One: Pre-treatment Assessment

This phase had two stages: first the researcher had screening test for 384 students to select those who are qualified for the main study. The instrument used was Tuckman Procrastination Scale. After screening 126 participants were selected for the intervention

programme. Second stage: the researcher used the two instruments: Index of Self-esteem (ISE) to obtain pre-test scores of all the participants in the experimental groups.

Phase Two: Treatment: Treatment procedure:

Participants in this study were exposed to Cognitive Restructuring, Time Management Training or the control group which was used as the waiting group. The participants were randomly assigned to the experimental group. The control group did not receive any treatment; however, two weeks after the treatment were concluded they were exposed to Cognitive Restructuring because it was the treatment that worked better.

Phase Three: Post Treatment Assessment

A week after the treatment, the researcher re-administered the Tuckman Procrastination Scale (TPS) and the Index of Self-esteem (ISE) to the participants in both the treatment and control groups. This was to evaluate the treatment effect of cognitive restructuring and time management on academic task procrastination.

Procedure for data analysis

Descriptive and inferential statistical tools were used. All the hypotheses were tested with Analysis of Covariance (ANCOVA). All the hypotheses were tested at 0.05 level of significance.

RESULTS

Hypothesis One: There is no significant difference in the post-test scores of participant's academic task procrastination across the three experimental groups. The hypothesis was tested using the analysis of covariance (ANCOVA). The result is presented in tables 1, 2, 3.

Table 3: Descriptive Data on effects of the experimental conditions on academic task procrastination among the Participants.

GROUPS	N	PRE-TEST		POST-TEST		Mean Difference
		Mean	SD	Mean	SD	
Cognitive Restructuring	46	51.55	8.15	32.92	6.23	18.63
Time Management Training	42	53.47	7.64	36.72	6.77	16.75
Control Group	38	53.32	9.27	55.92	8.52	-2.60
TOTAL	126	52.78	8.35	41.85	7.17	10.93

Table 3 shows that participants who were exposed to CR had the highest mean difference score of 18.63 on academic task procrastination followed by those exposed to TMT with a mean difference score of 16.75. The control group had the least mean difference score of 2.60 on level of academic task procrastination. To determine whether significant difference existed on level of academic task procrastination due to experimental condition among the groups. The analysis of Covariance statistics (ANCOVA) was done. The result is presented in Table 4.

Table 4: Analysis of covariance on difference in scores on academic task procrastination across the experimental groups

Source of Variation	Sum of Squares	df	Mean Square	F-ratio
Model	1160.50	3	386.83	8.66
Covariate	221.36	1	221.36	4.96
Experimental Groups	560.76	2	280.38	6.27*
Within Groups	5447.38	122	44.65	
TOTAL	28596.84	128		

* Significant at $P < 0.05$, $df=2$ and 122 ; critical $F=3.09$

From table 4 a calculated F-value of 6.27 resulted as the difference in the level of academic task procrastination of participants due to experimental conditions. This value is significant since it is greater than the critical F-value of 3.09 given 2 and 122 degrees of freedom at 0.05 level of significance. This implies that there is a significance difference in the level of academic task procrastination among the experimental groups. Based on the significant difference in the post-test scores in the level of academic task procrastination among the experimental groups, a post hoc test analysis was done to determine which of the groups differ from others using Fisher's Protected t-test method. The result of the analysis is presented in table 5.

Table 5: Fisher's Least Square Method on Differences in participant's level of academic task procrastination across Experimental conditions.

Experimental Condition	CR (n = 46)	TMT (n = 42)	CG (n = 38)
CR	32.92 ^a	-2.48*	-14.28*
TMT	-4.01	36.72 ^a	-11.82*
CG	-22.76	-18.7	55.92 ^a

a= group means are in the diagonal; difference in group mean are below the diagonal while protected t- value are above the diagonal. *significant at $P < 0.05$

From Table 5, the pair- wise comparison of group means show that participants exposed to cognitive restructuring significantly performed better in reducing the level of academic task procrastination than participants exposed to time management (calculated $t=2.48$; $df=86$; critical $t=2.00$; $P < 0.05$). Again, participants who were exposed to cognitive restructuring significantly did better in reducing level of academic task procrastination than the control group (cal=14.28; $df=82$; critical $t=2.00$; $P < 0.05$). Similarly, participants exposed to TMT performed significantly better in reducing the level of academic task procrastination than the control group (cal $t=11.82$; $df=78$; critical $t=2.00$; $P < 0.05$). This means that cognitive restructuring was more effective in reducing the level of academic task procrastination than time – management training, thus the null hypothesis is therefore rejected.

Hypothesis Two: There is no significant difference in the post-test scores of participant's academic task procrastination due to self-esteem in the three experimental conditions. The hypothesis was tested using analysis of co-variance statistics. The result is presented in Table 6.

Table 6: Pre and Post Test academic task procrastination scores due to self-esteem of participants in the three experimental groups.

GROUP	Level of Self-Esteem	N	Pre-Test Scores		Post-Test Scores		Mean Difference
			Mean	SD	Mean	SD	
Cognitive Restructuring	High	15	53.78	9.89	26.67	4.61	24.11
	Low	30	46.20	4.25	33.28	5.60	12.92
	Total	45	99.98	14.14	59.95	10.21	37.03
Time Management Training	High	17	51.54	8.06	31.95	6.13	19.59
	Low	26	52.62	6.23	39.62	4.10	13.00
	Total	43	55.40	14.29	40.80	10.23	32.59
Control Group	High	20	50.23	9.40	51.23	9.40	-1.00
	Low	18	51.92	11.56	54.20	9.44	-2.28
	Total	38	50.15	20.96	46.87	18.84	-3.28
TOTAL	High	52	51.85	9.12	36.62	6.71	14.23
	Low	74	50.25	7.35	42.37	6.38	7.88

Table 6 shows that participants who ranked high in self-esteem and were exposed to CR had the highest mean difference score of 24.11 followed by those who ranked high in self-esteem and exposed to TMT with a mean difference score of 19.59. The control group had the lowest mean difference score of -2.28 on the level of academic task procrastination. Also participants who ranked high in self-esteem in the control group demonstrated the high mean difference score of 14.23. To determine whether significant difference existed in academic task procrastination due to the impact of participant's self-esteem and experimental condition, an analysis of covariance (ANCOVA) statistics was done. The result of the analysis is presented in Table 7.

Table 7: Analysis of Covariance on the influence of participants' self-esteem and Experimental Conditions on academic task procrastination.

Source of Variation	Sum of Squares	Df	Mean Square	F-ratio
Model	615.39	3	205.13	102.4
Covariate	223.20	1	223.20	5.61
Experimental Groups	392.14	2	196.07	4.93*
Self-Esteem	153.25	1	153.25	3.90*
Exp. Groups/Self-Esteem	72.28	2	36.14	0.91
Within Groups	4851.21	122	39.76	
TOTAL	17051.76	125		

*significant at $P < 0.05$; $df = 2$ and 122 ; critical $F = 3.09$

Table 7 shows that calculated F-value of 4.93 resulted as the influence of experimental conditions on academic task procrastination among the participants. This is calculated F-value is statistically significant since it is greater than the critical F-value of 3.09 given 2 and 122 degrees of freedom at 0.05 level of significance. This means that the experimental condition significantly lower the level of academic task procrastination among the participants. Evidence from table 5 also shows that a calculated F-value of 3.90 resulted as the difference in level of academic task procrastination due to participants' self-esteem. This F-value is significant since it is greater than the critical F-value of 3.09 given 2 and 122 degrees of freedom at 0.05 level of significance. Further evidence from the table revealed that a calculated F-value of 0.91 resulted as the difference in the level of Academic Task Procrastination due to interaction effects between experimental conditions and participants' self-esteem. This calculated F-value is not significant since it is less than the critical F-value of 3.09 given 2 and 122 degrees of freedom at 0.05 level of significance. Consequently the null hypothesis is rejected. Due to the significant effects of the experimental conditions on the level of academic task procrastination, Post-hoc test comparison were carried out to

determine which pair of the group means exhibited significant difference. This is reported in Table 8.

Table 8: Fisher's protected t-test on Difference in participant's level of academic task procrastination across the Experimental Group.

Experimental Condition	CR (n = 46)	TMT (n = 42)	CG (n = 38)
CR	29.98a	2.58*	-7.94*
TMT	-3.99	35.79a	-11.56*
CG	-13.21	-18.64	52.72a

a = group means are in the diagonal differences in group means are below the diagonal while protected t-test values are above the diagonal.

*significant at $P < 0.05$

Table 8 shows that participants exposed to CR performed significantly better in reducing procrastination than participants exposed to TMT due to the influence of self-esteem (calculated $t=2.58$; $df=86$; critical $t=2.00$; $P < 0.05$). Again the participants who were exposed to CR significantly had lower level of academic task procrastination than those in the control group (cal $t=7.94$; $df=82$; critical $t=2.00$; $P < 0.05$). Similarly, participants exposed to TMT significantly demonstrated lower level of academic task procrastination than those in the control group (cal $t=11.56$; $df=78$; critical $t=2.00$; $P < 0.05$).

Hypothesis six: There is no significant gender difference in the post-test scores of participants academic task procrastination across the three experimental conditions. To test this hypothesis, analysis of Covariance (ANCOVA) statistics was used and the results of the analysis are presented in table 15.

Table 15: Descriptive data on influence of Gender and experimental conditions on Procrastination among the participants.

GROUP	Gender	N	Pre-Test Scores		Post-Test Scores		Mean Difference	Gender Difference
			Mean	SD	Mean	SD		
Cognitive Restructuring	Male	20	48.42	6.53	33.32	6.12	15.10	8.84
	Female	26	54.55	8.58	30.61	6.00	23.94	
	Total	46	51.49	7.56	31.97	6.06	19.52	
Time Management	Male	24	52.12	7.46	36.38	6.62	15.74	3.54
	Female	18	54.90	7.28	35.62	6.45	19.28	
	Total	42	53.51	7.37	36.00	6.54	17.51	
Control Group	Male	25	51.33	10.42	55.63	9.10	-4.30	1.32
	Female	13	53.46	7.92	56.46	7.84	-3.00	
	Total	38	52.40	9.17	56.05	8.47	-3.65	

From table 15, the mean difference for gender among the participants exposed to CR was 8.84 and higher than the gender mean difference score for TMT (3.54). The control group had the lowest gender mean difference score of 1.32 on Academic Task Procrastination level. To determine whether significant difference existed in Academic Task Procrastination due to gender and experimental conditions, Analysis of Covariance (ANCOVA) statistics was used. The result is presented in table 16.

Table 16: Analysis of Covariance on influence of Gender and experimental conditions on academic task procrastination among the participants.

Source of Variation	Sum of Squares	Df	Mean Square	F-ratio
Main Effect	11494.07	6	1915.64	37.85
Covariate	0.58	1	0.58	0.01
Experimental Groups	11331.13	2	5606.14	111.92
Gender	82.04	1	82.04	1.64
Exp. Groups/Gender	18.49	2	9.36	0.19

Within Groups	5559.72	122	50.73
TOTAL	19065.89	125	

* significant at $P < 0.05$

The results in table 16 shows that a calculated F-value of 111.92 resulted as the difference in academic task procrastination level among the participants due to experimental conditions. This calculated F-value of 111.92 is significant since it is greater than the critical F-value of 3.09 given 2 and 122 degrees of freedom at 0.05 level of significance. This implies that there is significant difference in the post-test scores on academic task procrastination among the participants. Also a calculated F-value of 1.64 resulted as the influence of gender on the level of academic task procrastination. This calculated F-value is not significant since it is less than the critical F-value of 3.94 given 1 and 119 degrees of freedom at 0.05 level of significance. This implies that there is no significant difference in the post-test scores on academic task procrastination that can be accounted for because of gender. The table also revealed that the interaction effect between experimental condition and gender resulted in a calculated F-value of 0.19. This is not significant since it is less than the critical F-value of 3.09 given 2 and 119 degrees of freedom at 0.05 level of significance. However, due to significant effect of the experimental conditions post hoc test comparison was carried out to determine which pair of the group mean exhibited significant difference using Fisher's protected t-test as reported in table 17.

Table 17: Fisher's Least square method in difference in level of academic task procrastination across the experimental conditions.

Experimental Condition	CR (n = 46)	TMT (n = 42)	CG (n = 38)
CR	31.62a	-2.48	14.34*
TMT	-4.02	35.99a	-11.72*
CG	-22.72	-18.77	54.86a

a= group means are in the diagonal; while protected t-values are above the diagonal.
*significant at $P < 0.05$.

Table 17 shows that participants exposed to CR significantly performed better in reducing levels of academic task procrastination than participants exposed to TMT (calculated $t=2.48$; $df=86$. Critical $t=2.00$; $P < 0.05$). Also, participants exposed to CR significantly performed better in reducing level of academic task procrastination than the control group (cal $t=14.34$; $df=83$, critical $t=2.00$; $P < 0.05$). In the same vein, participants exposed to TM performed significantly better in reducing level of academic task procrastination than the control group (cal $t=11.72$; $df=77$; critical $t=2.00$, $P < 0.05$). This means that the two treatment strategies were effective.

Discussion of findings

Hypothesis one stated that there is no significant difference in the post-test academic task procrastination scores of participants in the three experimental conditions. The finding revealed that there was a significant difference in the post test scores of participants' level of academic task procrastination. The differences may be as a result of the intervention of Cognitive Restructuring and Time management training. This finding was supported by Karas & Marcantonio (2009) showed that a cognitive approach was quite effective in addressing procrastination among individuals who were assessed and found to have high level of procrastination. This finding is also in line with a position maintained by Van Erde (2003) that procrastination is affected positively by time management training as it reduces the level of procrastination among students.

Hypothesis two stated that there is no significant difference in the post-test academic task procrastination scores of participants due to self-esteem across the three experimental conditions. The findings revealed that there is an interaction effect of self-esteem on the participants' scores on academic task procrastination. This agrees with Beswick, Rothblum &

Mann (1988), they gave psychological explanations for procrastination. The researchers studied 245 students and revealed that self-esteem accounted for significant portion of the variance in procrastination behaviour of the students. Similarly researches points in the direction that procrastination raises students' anxiety and sinks their self-esteem. The most convincing research in this regard was done by Burka & Yuens (1983), according to their model of procrastination, low self-esteem is a central constituent of procrastination in that a person who procrastinates starts feeling powerless and hopeless, his confidence suffers and future seems dark. Procrastinators usually avoid revealing information about their abilities, prefer menial tasks, make poor time estimates, tend to focus on the past and do not act on their intentions. Interestingly, research has confirmed that all these characteristics have been related to low self-esteem.

Hypothesis three stated that there is no significant gender difference in the post-test academic task procrastination scores of participants in the three experimental conditions. The study revealed no difference between male and female students on procrastination. Though the difference was not statistically significant, but procrastination did exist in both groups. The findings are consistent with that of Effert and Ferrari (1989). These researchers were also unable to find significant gender differences on procrastination. This corroborates the view of Ferrari & Beck (1998) that procrastination is no respecter of gender. Similarly Tuckman (1991) asserts that procrastination tend to describe themselves as people who doubt their capabilities and each gender unit have it own share of such people.

Conclusion & Recommendation

1. The finding revealed that there was a significant difference in the post test scores of participants' level of academic task procrastination. The differences may be as a result of the intervention of Cognitive Restructuring and Time management training.
2. The findings revealed that there is an interaction effect of self-esteem on the participants' scores on academic task procrastination.
3. The study revealed no difference between male and female students on procrastination. Though the difference was not statistically significant, but procrastination did exist in both groups.

A number of implications have emerged from the results of the present study. Due to procrastination, students lose their precious time as well as quality of work. It can lower their self-esteem, as they start feeling bad at the end of the day when they fail to do anything productive. Research results point in the direction of therapeutic intervention for students who procrastinate. Suggestions can be given for enhancement of self-esteem. Improving self-esteem is a better way to cure procrastination in students. Self-appraisal and self-worth leads students to do their tasks scrupulously and make important decisions on time. Timely intervention can help students improve their skills like time management and study habits.

Psychological interventions designed for enhancement of self-esteem and time management need to be incorporated within the academic structure of colleges and universities. Student counseling and assessment centers should be set up in the universities for timely help of students who have low self-esteem or for those in the habit of procrastination.

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THE EFFECTS OF DIFFERENTIATED INSTRUCTIONS ON STUDENTS' ACHIEVEMENT IN JUNIOR SECONDARY SCHOOL BASIC SCIENCE.

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ABSTRACT

Teaching and learning basic science (BS) in place of integrated science became operational since 2008 and the implementation of the new BS curriculum has been a concern to various stakeholders especially in achieving its objectives as stated in the National Policy on Education document. The study investigates the effects of differentiated instructions on students' academic achievement in junior secondary school basic science. Ninety (90) pupils from two intact classes from a randomly selected secondary school from schools in Shomolu Local Government Area, Lagos State formed the sample size for the study. The study adopted quasi-experimental design and Basic Science Achievement Test (BSAT) developed by the researcher was used to collect necessary data for the study. The data collected were analysed using ANCOVA at 0.05 level of significant. The findings of this study revealed that; there is significant main effect of treatment on students' achievement in basic science, there is no significant main effect of gender on students' academic achievement and there is no significant interaction effect of treatment and gender on students' academic achievement. Based on the study findings, it was recommended that; basic science teachers should adopt differentiated instructional strategy in their teaching and that students should be encouraged to explore different method of learning to enhance their performance in science subjects.

Keywords: Differentiated Instructions, Students' Achievement, Junior Secondary School Basic Science, Students

INTRODUCTION

Following the decision of the Federal Government of Nigeria to introduce the Universal Basic Education (UBE) programme in September 1988, the Nigerian Educational Research and Development Council (NERDC) re-structured and re-aligned all extant primary and Junior Secondary School (JSS) curricula into 9-Year Basic Education Curriculum for implementation in Nigerian schools with effect from September, 2008.

The 9-Year Basic Education Curriculum emphasises value re-orientation, poverty eradication and employment generation capabilities in learners. In these curriculum reform initiatives, science, technology, mathematics, and vocational education and training are specifically designed to provide the contents, learning experiences and skills for the socio-economic transformation of the Nigerian nation.

The 9-Year Basic Education Curriculum was particularly developed for the attainment of the Education for All (EFA) goals, the critical targets of the National Economic Empowerment and Development Strategies (NEEDS), and the Millennium Development Goals (MDGs). It was developed in response to Nigeria's need for relevant, dynamic and globally competitive education that would ensure that learners at the Basic Education level are capable to compete favourably anywhere in the world in terms of knowledge, skills, techniques, values and aptitude.

Integrated science now called basic science (BS) is one of the subjects offer at basic education level in Nigeria. Basic science is an integrated subject comprising biology, chemistry and physics at the basic level. Federal Government renamed the subject as BS and the reform of our educational system to 9-3-3-4 system of education were done to ensure that societal needs are met.

BS is expected to provide contents and further learning experiences that will engender the acquisition of functional skills for job creation and wealth generation that will lead to the reduction of poverty within the communities and the nation, at large. The activities are also expected to be both learner-centred and problem solving –centred, and encourage student-

teacher, student-student interaction, working in groups or pairs and student interaction with resource materials. In an attempt to realise the objectives of setting up BS; there must be adequate teaching of the subject on the part of the teacher as well as adequate learning on the part of the students. Interestingly, the quality of basic science teaching is directly related to the quality of instruction in the basic science classroom.

Globally, the list of teaching science is inexhaustible due to the fact that knowledge is dynamics. Some teaching strategies are general to all subjects and some specific to some disciplines. Recent work on teaching strategies however, pointed out that teaching strategies used for impacting knowledge depends much on individual differences. According to Tomlinson and Strickland (2005), differentiated instruction is a systematic approach to planning curriculum and instruction for academically diverse learners. It is a way of thinking about the classroom with dual goals of honouring each student's learning needs and maximizing each student's learning capacity. It is a philosophy of teaching premised on the fact that students learn best when their teachers accommodate the differences in their readiness levels, interest and learning profiles (Tomlinson, 2001). It is a way of teaching that compels a teacher to pro-actively respond to a range of diverse learner characteristics (Kromberge, Walker & Zimmerman, 2009). Nutley (2006) defines differentiated instruction simply as providing instruction in a variety of ways to meet the needs of a variety of learners.

Differentiated instruction therefore simply means creating multiple parts so that students of different abilities, interests or learning needs experience equally appropriate ways to absorb, use, develop and present concepts as a part of the daily learning process. It allows students to take greater responsibility and ownership for their own learning and provides opportunities for peer teaching and cooperative learning.

Differentiation is defined as "an approach to teaching in which teachers proactively modify curriculum, teaching methods, resources, learning activities, and student product to address the needs of individual students and small groups of students to maximize the learning opportunity for each student in the classroom." (Conover, & Reynolds, 2003). These student differences include variance in interest, background knowledge, and ability. In addition, these variations are influenced by language, gender, culture, and ethnicity. Although often used in the discussion of supporting students whose achievement is lower than the class average, differentiated instruction was conceived as a way to meet the needs of learners identified as talented or gifted, especially as more of these students were moved into heterogeneous classrooms (Willard-Holt, 1994). The goal of differentiation is to make classrooms more responsive to the needs, talents, and interests of the students in them.

It is common knowledge that no two students enter a classroom with identical abilities, experiences and needs. Learning disability varies from one person to another. In other words, one person with learning disability may not have the same kind of learning problem as another person with learning disability. For instance, one person may have trouble with reading and writing, another with understanding mathematics, yet another may have trouble in each of these areas as well as with understanding what people are saying. Learning styles, language proficiency, background knowledge, readiness to learn and other factors can vary widely within a single class group. However, regardless of their individual differences, students are expected to master the same concepts, principles and skills. The idea of differentiated instruction was employed to carry all students along by providing them multiple parts for maximizing their learning potentials.

Differentiated instruction is one of the novel instructional strategies which benefits have not been harnessed by teachers in Nigeria. In this study attempt was made to find out the effects of differentiated instructional strategy on junior secondary school (JSS) students' achievement in basic science taking gender as a moderating variable. Most studies on it

Concept of Differentiation in Teaching

Today's teachers are faced with an inclusive classroom, where all students are expected to be challenged academically. Meeting this challenge is difficult but can be accomplished using differentiated teaching strategies that focus on individual student strengths and build on prior learning (Lewis & Batts, 2005; Nugent, 2006). Look inside almost any classroom today and you'll see a mirror of the nation. You'll find students from multiple cultures, some of whom are trying to bridge the languages and behaviours of two worlds. Students with very advanced learning skills sit next to students who struggle mightily with one or more school subjects. Children with vast reservoirs of background experience share space with peers whose world is circumscribed by the few blocks of their neighborhood. All these students have the right to expect enthusiastic teachers who are ready to meet the students as they are, and to move them along the pathway of learning as far as possible.

Classrooms and schools are rarely organized to respond well to variations in student readiness, interest, or learning profile (Archambault, 1993; Bateman, 1993; International Institute for Advocacy for School Children, 1993; McIntosh, Vaughn, Schumm, Haager, & Lee, 1993; Tomlinson, 1995; Tomlinson, Moon, & Callahan, 1998; Westberg, Archambault, & Salvin, 1993).

The goal of a differentiated classroom is maximum student growth and individual success. However, when an entire class moves forward to study new skills and concepts without any individual adjustments in time or support, some students are doomed to fail (Buswell, 1999)

Differentiated instruction is an approach to teaching and learning for students with different abilities in the same classroom. The theory behind differentiated instruction is that teachers should vary and adapt their approaches to fit the vast diversity of students in the classroom. (Tomlinson, 1999; Hall, 2002). Differentiation constitutes an innovating, constant reflective procedure of effective teaching and learning that cannot be met by readymade lesson plans. The planning and the instructional choices of a lesson plan based on differentiation can only be used effectively when chosen by the teacher, according to students' needs and other personal characteristics (Valiande & Koutselini, 2008, 2009; Valiande, 2010). Students' learning style, their interests, their talents, their skills, their competences and their cultural background will guide the teachers through his final decision concerning the kind of differentiated teaching to be chosen (Hall, 2002).

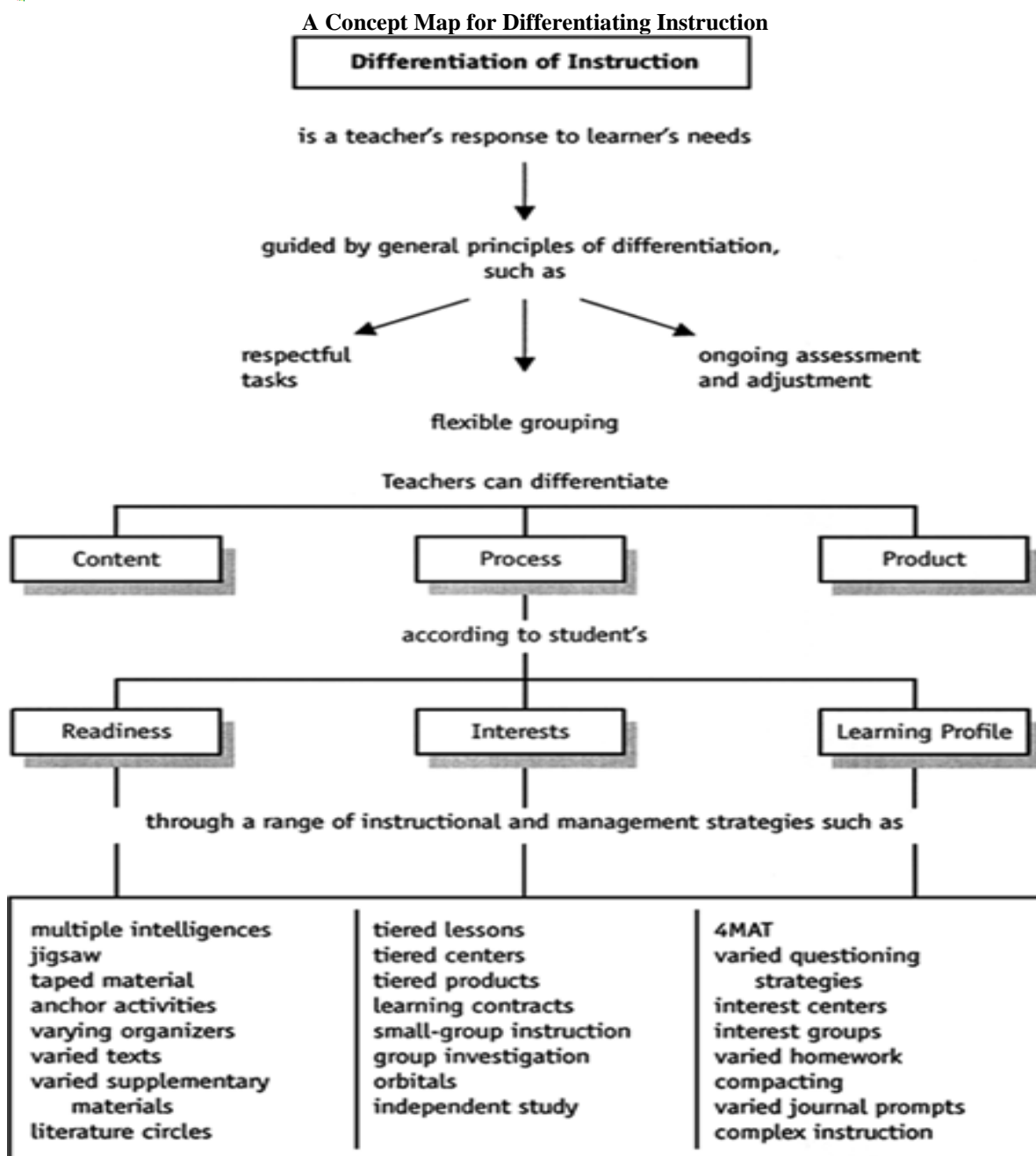


Figure 1: A Concept Map for Differentiating Instruction by Carol Ann Tomlinson and Susan Demirsky Allan, 2000

Statement of Problem

Teachers are familiar with the use of a number of teaching methods but more especially the conventional methods like lecture, discussion and demonstration methods. The use of these methods is yet to produce the expected results as regards students' academic achievement. Consequent upon the observed deterioration in the academic achievement, attitude and values of junior secondary school basic science students in public secondary schools, one wonders if the poor quality of the students is not a reflection of the instructional quality in the schools. In other words, the ineffectiveness of the teacher as regards to the method of teaching employed in the classroom interaction with the students could be responsible for the observed poor performance in basic science. Based on the above stated points and the crucial role of basic science instruction and the need to stimulate, increase achievement and sustain students'

interest in the subject prompted the researcher to investigate effects of differentiated instruction on students' achievement in basic science.

Purpose of the Study

The main purpose of this study is to investigate the effects of differentiated instruction on the academic achievement of junior secondary school basic science students. Specifically, the study was set out to;

1. Investigate the main effect of treatment on students' achievement in basic science.
2. Investigate the main effect of gender on students' achievement in basic science.
3. Investigate the interaction effect of treatment and gender on students' achievement in basic science

Research Questions

The following questions were answered in the study;

1. What is the effect of treatment on students' achievement in basic science?
2. What is the main effect of gender on students' achievement in basic science?
3. What is the interaction effect of treatment and gender on students' achievement in basic science?

Research Hypotheses

The following hypotheses were tested in the study

1. There is no significant main effect of treatment on students' achievement in basic science.
2. There is no significant main effect of gender on students' achievement in basic science
3. There is no significant interaction effect of treatment and gender on students' achievement in basic science

RESEARCH METHOD

Research Design

A pretest posttest quasi-experimental design was adopted for the research study. Treatment is at two levels; differentiated instruction and conventional method, gender is at two levels; male and female. Experimental group was subjected to treatment using differentiated instruction technique; while the control group was subject to conventional teaching method.

Sample and Sampling Technique

A school was randomly selected out of a 14 secondary schools in Shomolu Local Government Area of district IV of Lagos State. Ninety (90) JSS 2 basic science students from two intact classes in the selected school formed the sample for the study. The two classes were randomly assigned to treatment and control groups.

Research Instruments

The instruments used for this study was Biology Achievement Test (BAT). was designed by the researcher to test the homogeneity of the two groups (differential and conventional group) and it was administered to all the students before treatment was applied. The instrument consisted of two sections; section A sought information on respondents bio data such as sex, school, etc. Section B consisted of 20-item questions constructed based on the selected topics used in study. Face and content validity of the instrument was done by three experts in basic science and test item construction. The achievement test was given to three experts in item

construction. The reliability index (0.73) of the instrument was calculated using Kuder-Richardson formula 20.

Procedure for Data Collection

The researcher took permission from the school authority of the school where the study was conducted. The researcher administered a pre-test on both the experimental and control groups using BSAT. Thereafter, the treatment was administered on the experimental group while the control group was taught using conventional method and this lasted for two weeks.

Treatment Procedure

Students in the experimental group were sub grouped based on their different learning preferences. When differentiation is based on learning profiles, students are provided with opportunities to learn in ways that are natural and efficient. For example, some of the students chose to work alone, some with partners, or some as a group, and each categories were allowed to choose their own way of learning from : visual or kinesthetic; verbal or auditory. Through this; pupils in experimental group were taught using differentiated instruction based on their learning profiles. According to Santangelo & Tomlinson, (2009) the key factors in student learning profile include learning environment preferences, group orientation, cognitive styles, and intelligence preferences. At the end of the Treatment, post-test was administered to both the experimental and control group using the same instrument BSAT.

The data collected were analysed using ANCOVA. The statistical package for social sciences, SPSS 20.0 version was used for all analyses.

Results and Discussion

Research Question One

What is the effect of treatment on students' academic achievement in basic science?

Table 1: Descriptive Statistics of Treatment on Students' Achievement

Variable	N	Mean pretest	SD	Mean	SD	Mean Gain
Differentiated	45	7.26	2.7636	13.8	2.4271	6.54
Conventional	45	7.22	2.8356	8.62	2.1351	1.40

Table 1 shows that the mean score of the experimental (differentiated method) group (Mean score =6.54) was greater than that of the control (conventional method) group (Mean score=1.40) after exposure to treatment. In order to test whether there was a significant main effect of treatment, analysis of covariance was conducted as indicated in Table 2

Hypothesis One

There is no significant main effect of treatment on students' achievement in basic science

Table 2: Analysis of Covariance of Treatment on Students' Achievement

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	18.258 ^a	28	.652	9.376	.000	.811
Intercept	4.758	1	4.758	68.414	.000	.529
Pretest Achievement	.441	1	.441	6.342	.014	.094
Gender	5.041	1	5.041	.000	.993	.000

Treatment	15.364	13	1.182	16.994	.000	.784
Treatment *gender	.990	13	.076	1.095	.380	.189
Error	4.242	61	.070			
Total	45.000	90				
Corrected Total	22.500	89				

a. R Squared = .811 (Adjusted R Squared = .725)

Table 2 indicates that there exist significant main effects of treatment (differentiated method) on students' achievement in basic science ($F_{C_1, 61} = 16.994$, $p = 0.000$, Partial Eta Square = 0.78. The null hypothesis was rejected. The Partial Eta Squared indicated that treatment accounted for 78.4% of the variances. The overall model as indicated by adjusted R square show 72.5% variance.

Research Question Two

What is the main effect of gender on students' achievement in basic science?

Table 3: Descriptive Statistics of effect of Gender on Students' Achievement

Treatment group	N	Mean pretest	SD	Mean	SD	Mean Gain
Male	44	7.31	3.4152	11.25	3.2787	3.94
Female	46	7.13	2.1355	11.77	3.6533	4.64

Table 3 shows that the mean gain of the female students on their achievement in biology (Mean gain=4.64) was greater than that of the male students (Mean gain=3.94). It can be inferred that female students had a higher score. In order to test whether there was a significant main effect of gender on students' achievement in basic science, analysis of covariance was conducted as indicated in Table 4.

Hypothesis Two

There is no significant main effect of gender on students' achievement in basic science.

Table 4: Analysis of Covariance of Basic Science Students' Achievement based on gender

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	16.411 ^a	14	1.172	14.438	.000	.729
Intercept	2.437	1	2.437	30.012	.000	.286
Gender	1.700	1	1.700	.000	.996	.000
Posttest	16.411	13	1.262	15.548	.000	.729
Error	6.089	75	.081			
Total	45.000	90				
Corrected Total	22.500	89				

a. R Squared = .729 (Adjusted R Squared = .679)

Table.4 indicates that there is no significant difference based on gender ($F_{C_1, 75} = 0.00$, $p = 0.996$, Partial Eta Square = 0.00. The null hypothesis was accepted. The overall model as indicated by adjusted R square show 67.9% variance.

Research Question Three: What is the interaction effect of treatment and gender on students' achievement?

Reference is made to Table 5 to answer the question.

Table 5: Descriptive Statistics of Interaction Effects of Treatment and Gender on Students' Achievement in Basic Science

Treatment group		N	Mean	SD
Experimental	Male	24	9.28	3.3469
	Female	21	9.45	2.8944
Conventional	Male	20	7.95	2.3473
	Female	25	7.82	2.4853
Total	Male	44	8.61	2.8471
	Female	46	8.64	2.6899

Result from table 5 showed that in the experimental group, the mean achievement score in basic science of the male students (Mean=9.28) was less than that of the female students (Mean=9.45). However, in the control group, the mean score of the female students (Mean=7.82) was lesser than that of the male (Mean=7.95). In order to test for whether significant interaction occurs, analysis of covariance was conducted in Table 6.

Hypothesis Three

There is no significant interaction effect of treatment and gender on students' academic achievement in Basic Science.

Table 6: Analysis of Covariance of interaction effects of treatment and gender on Students' Achievement in Basic Science

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	229.731 ^a	27	8.509	1.104	.365
Intercept	3133.395	1	3133.395	406.572	.000
Treatment	109.627	13	8.433	1.094	.381
Gender	5.773	1	5.773	.749	.390
Posttest * Gender	135.996	13	10.461	1.357	.206
Error	477.825	62	7.707		
Total	5402.000	90			
Corrected Total	707.556	89			

a. R Squared = .325 (Adjusted R Squared = .331)

It can be observed from Table 6 that there was no significant interaction effect of treatment and gender on students' achievement in basic science ($F_{(1, 62)} = 1.357$, $p = .206$). Thus, the null hypothesis stated was accepted and it is concluded that treatment and gender did not combined together to produce a significant joint effect on students' achievement in basic science.

Discussion of Findings

This study examined the effect of differentiated instruction on senior secondary school students' academic achievement in biology. Three research hypotheses postulated were tested using ANCOVA. Out of the three tested hypotheses, two of the null hypotheses were accepted while, one was rejected.

The result of hypothesis one revealed that there is significant main effect of treatment on students' achievement in basic science. This implies that the treatment which involves

differentiated method in teaching influences performance of students in basic science. The finding corroborates the previous findings that students at the primary and secondary school levels achieve more when instruction matches their learning preferences (Sternberg, 1997; Sternberg, Torff & Grigorenko, 1998). This finding is also in agreement with that of Osuafor and Okigbo (2013), who found out that there is a significant difference between biology students taught with differentiated instruction and those taught using conventional method. It's also in line with the finding from the study of McAdams (2001) who reported a significant improvement in the mean score of students taught using differentiated instruction and conventional method.

The result of hypothesis two revealed that there is no significant main effect of gender on students' academic achievement. This implies that the main effect does not have any significant difference in the mean score of students based on their gender. This agreed with Onwirhien (2005) findings who reported that gender does not have effect on students' achievement in science subject like, chemistry, biology and the rest. The result is also consistent with Borich (2004) findings that gender does not necessary influence students performance in a subject.

The result of hypothesis three showed that the null hypothesis stated was accepted and it is concluded that treatment and gender does not combine together to produce a significant interaction effect on students' achievement in basic science.

Conclusion and Recommendations

It is common knowledge that no two students enter a classroom with identical abilities, experiences and needs. Learning ability varies from one person to another. Differentiated instruction involves providing students with different avenues for acquiring content, processing, constructing or making sense of ideas and for developing teaching products so that all students within a class can learn effectively regardless of differences in ability. In observing the main effect differentiated instruction had on students achievement in basic science, this study establishes that there is a significant main effect of treatment on students achievement. The study also revealed that gender as well as interaction of the treatment and gender did not have effects on students' achievement in basic science.

Based on the study findings, the following recommendations were made: It is recommended that science teachers and in particular basic science teachers should adopt differentiated instructional strategy in the teaching of basic science at junior secondary school in order to stimulate learning process. For teachers to be conversant with the use of differentiated instruction, seminars and workshops should be organised for them to get them acquainted with the use this teaching strategy. Moreover, students should be encouraged to explore different method of learning to enhance their performance in a subject like basic science where missed ability is more pronounced.

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LEARNING TO LEARN: STUDENTS' STRATEGIES FOR LIFELONG LEARNING IN AND OF ENGLISH IN THE POSTMODERN WORLD

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ABSTRACT

The importance of learning to learn has become even more apparent in the 21st century post-modern world, where lifelong learning is the recommended education strategy. Furthermore, the use of various learning strategies for different situations underline the use of critical thinking for achieving this goal. The problem, however, is that even if students would be encouraged to make a shift from their “education is just about schooling” orientation to a lifelong learning approach, there is little evidence to confirm that they have the strategy capacity to make it happen. The purpose of this study therefore was to ascertain if students explore various learning strategies required for lifelong learning, where English is the medium as well as the content of learning. The study utilized a descriptive survey design involving a sample of two hundred (200) students drawn from four secondary schools in the Mainland area of Lagos State, Nigeria. Data were collected using a “Student Learning Strategies for Lifelong Learning in and of English” questionnaire. The Statistical Packages for Social Science (SPSS) was used to analyse the data. The findings revealed that students are generally lacking in the use of various learning strategies for lifelong learning in and of English. Since the use of various learning strategies for different situations is considered sacrosanct to effective lifelong learning, it was recommended that students should be helped to improve on their learning strategies so as to increase the likelihood to engage in lifelong learning in and of English, both as students and after graduation.

Keywords: Learning to learn, learning strategies, lifelong learning, English learning

INTRODUCTION

The 21st century is one described as a constantly changing global knowledge economy, where people are faced with the need to constantly update and upgrade their capacities in order to remain relevant and function successfully. This has brought about a renewed focus on what Smidt & Sursock (2011:15) describes as a “new old concept” concerning learning – the concept of lifelong learning. The World Bank (2003) sharply describes the fit: “*Lifelong learning is education for the knowledge economy* (p. xiii).” In Nigeria, also, the National Policy on Education (FME, 2004:4) indicates that “*Lifelong education shall be the basis of the nation’s educational policy.*”

The case for lifelong learning has been quite strong. The World Bank (2003), for instance, notes that “*Lifelong learning is crucial to preparing workers to compete in the global economy, increase social cohesion, reduce crime, and improve income distribution* (p. xvii).” Similarly, the European Commission (2007:22) cites the scale of current economic and social change, the rapid transition to a knowledge-based society and demographic pressures resulting from an ageing population, as some of the challenges that demand “*a new approach to education and training, within the framework of lifelong learning.*”

In terms of clear benefits, the Organisation for Economic Co-operation and Development (OECD, 2004) maintains that lifelong learning provides “*long-term benefits for the individual, the enterprise, the economy and society more generally* (p. 2).” Specifically,

- It “takes into account the broader view of education in its horizontal and vertical perspectives” (Obanya, 2007a:57).
- It “provides second chance to update basic skills and to offer learning opportunities at more advanced levels” (European Commission, 2007:23).

- It “enables learners to acquire more of the new skills demanded by the knowledge economy as well as more traditional academic skills” (Wikipedia, http://en.wikipedia.org/wiki/Lifelong_learning).
- It is also “a health club for the mind, body and spirit, and using this health club every day helps ensure that our later years will be richer, more stimulated, and far more fulfilled” (Nordstrom, 2009).

Despite its popularity and immense benefits, there is hardly a universal meaning or definition of lifelong learning. This is because

- its definitions vary according to the perspectives and priorities of policy makers at a given moment (European Commission, 2002:7);
- the term is open to multiple interpretations (The OECD, 2004:1); and
- it is a commonly employed phrase, which is tacit in its use depending on the user's context, meaning and background (Berglund, 2004) cited in Adams (2007).

In any case, one dominant thought in defining lifelong learning is that the concept has gone beyond previous narrow focus on the *time-dimension* which underlines the fact that learning activities occur in different phases over the lifecycle, to include the *lifewide-dimension* which takes into account that learning increasingly takes place in a multitude of settings and situations in real life (European Commission, 2002).

In line with this thinking, the European Commission (2002:7; 2007:22), defines lifelong learning as “*all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective.*” Similarly, Obanya (2007a:57-58) explains lifelong learning for “contemporary Africa”, in terms of a K-99 curriculum, where the letter K stands for the totality of early childhood care and socialisation experience of the individual and not simply the pre-primary grades, while the figure 99 stands for both in-school and out-of-school educational opportunities and experiences that should continue through life in a chronological trend (i.e. life-long) as well as in all experiential circumstances (i.e. life-wide).

From a different perspective, this time, focused on individual qualities, Hojat et al. (2003:434) define lifelong learning as “*a set of self-initiated activities (behavioural aspect) and information-seeking skills (capabilities) that are activated in individuals with a sustained motivation (predisposition) to learn and the ability to recognize their own learning needs (cognitive aspect).*” It is, perhaps, on this basis that “*lifelong learners are not defined by the type of education or training in which they are involved, but by the personal characteristics that lead to such involvement*”(Wikipedia, http://en.wikipedia.org/wiki/Lifelong_learning).

While Ikonta (2010:41) argues that personal characteristics of learners are factors that affect learning, the personal characteristics, in this case, that lead to lifelong learning engagement are generally seen in terms of what has been popularly termed “generic skills” (European Commission, 2002; Obanya, 2007a; George, 2011). George (2011:15) puts it quite plainly in his assertion that “*lifelong learning and employability is contingent upon well-developed generic skills. The competencies and knowledge which form the basis of lifelong learning are often referred to as generic skills.*” A major implication of this is that, “*the role of education in school is now seen as to provide the generic skills needed to acquire new knowledge and specialist skills in the future: learning how to learn* (Graddol, 2007:72).”

Interestingly, while there is no single universally accepted list of what constitutes generic skills, it is noteworthy that English seems to have joined this list of basic skills (Graddol, 2007:72), performing the role of a functional skill (Esu, 2010:17). This conclusion may not be unconnected with the status, role and relevance of English in both local and the global community, as attested to by Arizechi (2011), Dike (2010), Federal Ministry of Education (FME), Nigeria (2006), Graddol (2007), Ikonta (2010), and Obanya (2007a).

Within the scope of learning to learn, learning strategies have been identified as some of the critical requirements which more or less determine the tendency to engage in effective lifelong learning (Klein, 1986; Ellis, 1990; Kiley & Cannon, 2000; Artelt, et. al., 2003; Ikonta, 2010).

Statement of the Problem

Lifelong learning has since been identified nationally and globally as the desired and effective approach to education in the postmodern world (Eaton, 2010; European Commission, 2007; Graddol, 2007; Nordstrom, 2009; FME, 2004; Obanya, 2007a; OECD, 2004; World Bank, 2003). English has also been asserted to be one of the basic, functional skills in the new world (Graddol, 2007:72; Esu, 2010:17) that fosters lifelong learning, given its indisputable status, role and relevance in both local and the global community (Arizechi, 2011; Dike, 2010; FME, Nigeria, 2006; Ikonta, 2010). This notwithstanding, learning in and of English in Nigeria is still myopically constricted to schooling and for the purpose of passing examinations (Esu, 2010; Fakeye, 2010; Obanya, 2007a). Incidentally, even if students would decide or be encouraged to make a shift from their “education is just about schooling” orientation to a lifelong learning approach, there is little research evidence to confirm that they actually have what it takes to go about this ideal, particularly, whether they explore various learning strategies for different situations, requisite for effective lifelong learning in and of English, because their perennial poor performance in English (< 50% pass) in external examinations may be an indication of the level of use of those strategies.

Purpose of the Study

The purpose of the study was to determine if students explore various learning strategies relevant to lifelong learning in and of English. In achieving this purpose, the following objectives were addressed:

1. To determine whether Nigerian students explore cognitive strategies for lifelong learning in and of English.
2. To determine whether Nigerian students explore control strategies for lifelong learning in and of English.
3. To determine whether Nigerian students explore multiple opportunities for lifelong learning in and of English.
4. To infer from the study whether Nigerian students are likely to engage in lifelong learning in and of English after graduation.

Research Questions

Based on the objectives of the study, these research questions were raised:

1. Do Nigerian students explore cognitive strategies for lifelong learning in and of English?
2. To what degree do Nigerian students explore control strategies for lifelong learning in and of English?
3. To what extent can Nigerian students be said to explore multiple opportunities for learning for lifelong learning in and of English?
4. Can it be inferred that Nigerian students are likely to engage in lifelong learning in and of English after graduation?

Theoretical Framework

This study has its foundation on the Constructivist theory, known in Philosophy of Education as *Constructivism*. The Constructivist theory posits that learning is an active mental and experiential constructive process in which learners explore various learning strategies that

involve working with previous learning as well as other individuals and resources to construct their own subjective understandings of objective reality.

Emphasizing students' active participation in the learning process via various activities (mental, physical, and social), Shuell (2013) reports that:

Modern-day conceptions of learning and teaching recognize that students are active, often proactive participants in the learning process, even if they appear otherwise. This dynamic nature of the learning process is one reason why instructional interventions that appear the same to the teacher can result in very different student outcomes and why different instructional methods can result in very similar outcomes (Nuthall & Alton-Lee, 1990; Olson, 2004).

The bottom line in the teaching-learning process is the learning activities in which the students engage, not the instructional activities in which the teacher engages.

The implication of this theory is that rather than passive beings who acquire new knowledge as transmitted by teachers, students are active participants in the learning process, constructing their own subjective knowledge and understanding by exploring various learning strategies, while teachers only act as facilitators. This, by its very nature, is at the heart of lifelong learning.

Conceptual Framework

According to Artelt, et. al. (2003:13), citing Zimmerman & Martinez-Pons (1990) and Brown *et al.* (1983), learning strategies are the plans students select to achieve their goals: the ability to do so distinguishes competent learners who can regulate their learning. Strategies relevant for lifelong learning include:

Cognitive strategies: These basically involve information processing skills (Artelt, et. al., 2003:13). These strategies include:

1. **Memorisation** – This involves verbatim representations of knowledge stored in memory with little or no further processing.
2. **Elaboration** – This is used to connect new material to prior learning, which allows students acquire greater understanding than through simple memorisation. Lifelong learners “*will think about and want to understand their learning experiences . . . [and] adapt their learning to other situations*” (Adams, 2007).
3. **Transfer** – This is the ability to transfer information from one medium to another.
4. **Investigation** – This is where students seek knowledge by actively acquiring and filtering information. A lifelong learner is “an active investigator” (Queensland curriculum document cited in Lawson, Askill-Williams & Murray-Harvey, 2006:99), and “*an active and creative explorer of the world*” (Medel-Añonuevop, Ohsako & Mauch, 2001:9-10).
5. **Integration** – This involves integrating knowledge from different subject areas. A lifelong learner is “*an integrator of learning*” (Medel-Añonuevop, Ohsako & Mauch, 2001:9-10). Lifelong learners “*integrate knowledge from different subject areas when required*” (Kiley& Cannon, 2000:3).

Control strategies: Metacognitive strategies, implying conscious regulation of learning, are summed up in the concept of control strategies. According to Artelt, et al. (2003:13), “*control strategies are used to ensure one’s learning goals are reached*”. They involve checking what one has learned and working out what one still needs to learn, allowing learners to adapt their learning to the task at hand (Artelt, et. al., 2003:13). Furthermore, “control of the learning process is to some extent an outcome in its own right – helping students to become autonomous lifelong learners” (Artelt, et al. 2003:33). Indeed, lifelong learners “desire to have control over their own learning experiences” (Adams, 2007). Control strategies include:

1. **Planning** – i.e., goal setting to determine learning needs. Lifelong learners “plan their own learning” (Kiley& Cannon, 2000:3).

2. **Resource and time management** to source and use appropriate resources effectively for learning, one of the most critical of such resources for the 21st century being computers and the internet.
3. **Self and peer assessment** measures to monitor and evaluate own learning. Lifelong learners “assess their own learning” (Kiley & Cannon, 2000:3). In the use of self-assessment and peer assessment, students learn to take control of the crucial first step in learning: finding out what it is they do not know, so they can monitor their learning in an on-going way (Kiley & Cannon, 2000:7).

Relating cognitive and control strategies to language learning, Ikonta (2010:75), drawing on Murphy (1987) and O'Malley, Chamot & Kupper (1989), reports: “research studies have confirmed that effective L2 listeners make better use of inferencing, self-monitoring, and elaboration strategies than do less effective ones.”

Multiple opportunities for learning: Chiang (1998) cited in Li & Tsai, 2007:63 – <http://www.hraljournal.com/Page/7%20Ai-Tzu%20Li.pdf>) asserts that a lifelong learner “should love to try any learning opportunities”. These opportunities include 1) **independent and group learning**, as well as 2) **regular engagement/practice**.

Citing Baumert, Feld, O'Neil and Peschar (1998), Artelt, et al. (2003:14) note that a good learner needs to be able to learn both independently and in a group. Kiley and Cannon (2000:3) explain that lifelong learners “learn in both formal and informal settings, learn from their peers, teachers, mentors etc.” Also, peer assessment and group learning help students to learn from each other and also develop explicit peer learning skills (Kiley & Cannon, 2000:8). Since the classroom provides ample opportunity for group learning, Ikonta (2010:42) maintains that “*learners are likely to do better if they participate in class activities*”. Furthermore, “*the more practice learners have, the more effective will be their learning and retention*” (Ikonta, 2010:42)

Relating multiple opportunities to language learning, Klein (1986:28) argues that there are two ways for adult learners to gain proficiency in a second language: subconscious acquisition and conscious learning. The former which is by far the more important of the two, is based on constant meaningful and purposeful communication with speakers of the target language. Explaining further, access is an indispensable component of any language learning (Klein, 1986:34), because the language processor cannot operate without access to its raw material: the amount of ‘input’ available, and the range of opportunities for communication (Klein, 1986:43-44).

Corroborating this, Ellis (1990:12) insists that second language acquisition occurs most efficiently when learners have plentiful opportunities to negotiate meaning whenever there is some kind of communication difficulty. Ikonta (2010) also agrees that a rapid reader in training must have a strong urge/desire to practise regularly, carry out practice on his own outside organized class practice. Then after the course, he must continue to read extensively, that is read as widely as possible. The expert reader must spend enough time practising in order to develop basic skills and techniques (p. 153). Even more, constant writing helps students learn how to write well (Ikonta, 2010:166).

Methodology

The study utilized a descriptive survey design to describe Nigerian students’ strategies for lifelong learning in and of English.

For the study sample, four (4) secondary schools comprising two private and two public schools in the Mainland area of Lagos State were selected using stratified random sampling technique. Fifty (50) senior secondary school students were further selected from each

school, using cluster random sampling technique, to arrive at a sample of two hundred (200) students.

The research instrument was a Student Learning Strategies for Lifelong Learning in and of English questionnaire developed from the extensive review of literature, as well as adapting and modifying the Programme for International Student Assessment (PISA) (2000) questionnaire items of the Organisation for Economic Co-operation and Development (OECD) designed to measure student characteristics as learners (Artelt, et al. 2003:80-82). The questionnaire comprised items, statements which students were required to respond to by indicating whether they “Strongly Agree”, “Agree”, “Disagree”, or “Strongly Disagree”.

The validity of the questionnaire was established by carrying out a pilot study using non-participating students and by subjecting it to experts in English as a Second Language (ESL) whose assessment and input ensured face and content validity of the instrument. The reliability of the questionnaire was carried out using split-half reliability technique where the scores on one half of the questionnaire (odd numbered items) were correlated with scores on the other half (even numbered items) using Spearman-Brown formula of measuring internal consistency. A coefficient of 0.87 was obtained.

Upon administration of the questionnaires, the data collected were analysed using Statistical Package for Social Sciences (SPSS), involving descriptive statistics of frequency count (FC), percentage (%), mean, as well as qualitative inferential reasoning. First, a scale from 1 to 4 was used to rate each student’s response to the questionnaire items, with scales 1 and 2 for “Strongly Disagree (SD)” and “Disagree (D)” respectively indicating low and negative (L&N) rating, while scales 3 and 4 for “Agree (A)” and “Strongly Agree (SA)” respectively indicating high and positive (H&P) rating.

The Results

Table 1: Students’ Use of Cognitive Strategies

S/N	Cognitive Strategies		SA (4)	A (3)	D (2)	SD (1)	Mean Score	Std
	When I study English and other subjects...							
1	I try to memorize what I need to learn by saying the material to myself over and over.	FC %	50 25.0	29 14.5	104 52.0	17 8.5	2.5600	0.95969
2	I try to understand what I am studying better by relating it to things I already know or have learned in other subjects.	FC %	49 24.5	14 7.0	115 57.5	22 11.0	3.4500	0.98097
3	I try to understand the deeper meaning and usefulness of what I am studying by relating it to the real world outside school.	FC %	17 8.5	63 31.5	65 32.5	55 27.5	3.2100	0.94358
4	I ask myself a lot of questions concerning what I am studying so as to get a deeper understanding.	FC %	25 12.5	68 34.0	53 26.5	54 27.0	3.1200	1.00631
	Average of four items	FC %	35.25 17.6	43.5 21.8	84.25 42.1	37 18.5		
	Students’ overall % rating		H&P = 39.4		L&N = 60.6			

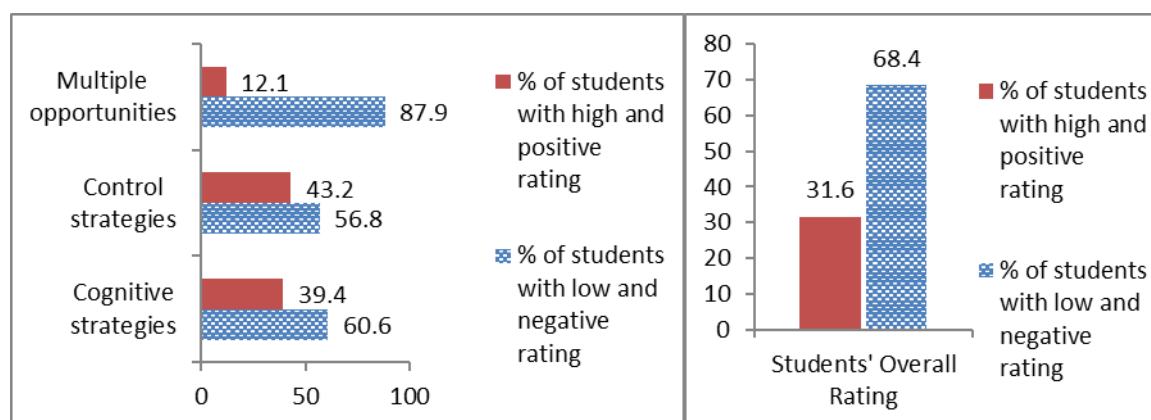
Table 2: Students Use of Control Strategies

S/N	Control Strategies		SA (4)	A (3)	D (2)	SD (1)	Mean Score	Std
	When I study English and other subjects...							
5	I set goals to determine exactly what I need to learn	FC %	36 18.0	32 16.0	74 37.0	58 29.0	3.2300	1.05958
6	I search for information and relevant materials from the library and the internet.	FC %	25 12.5	35 17.5	73 36.5	67 33.5	3.0900	1.00346
7	I time myself so that I can cover everything I need to study.	FC %	6 3.0	125 62.5	69 34.5	-	3.6850	0.52646
8	I test myself or find somebody to test me so that I can demonstrate what I have learned and realize the areas I still need to work on.	FC %	-	86 43.0	75 37.5	39 19.5	3.2350	0.75673
	Average of four items	FC	16.75	69.5	72.75	41		

	%	8.4	34.8	36.4	20.5		
Students' overall % rating		H&P = 43.2		L&N = 56.8			

Table 3: Students Use of Multiple Opportunities for Learning

S/N	Control Strategies		SA (4)	A (3)	D (2)	SD (1)	Mean Score	Std
9	I read a lot of books and different materials on my own, to help me understand what I am studying better.	FC %	8 4.0	41 20.5	59 29.5	92 46.0	3.8250	0.89351
10	I try to learn from my teachers and other students and my friends by asking questions and working in a team.	FC %	-	16 8.0	126 63.0	58 29.0	3.7900	0.57231
11	A lot of learning can take place outside school, so I try to learn a lot of English at home from my parents, friends, siblings, watching television and on the internet.	FC %	8 4.0	8 4.0	184 92.0	-	3.1200	0.43189
12	I always find opportunities to practice whatever I learn in English and other subjects, both in and outside school.	FC %	-	16 8.0	184 92.0	-	3.1600	0.54395
	Average of four items	FC %	4 2	20.25 10.1	138.25 69.1	37.5 18.8		
	Students' overall % rating		H&P = 12.1		L&N = 87.9			



Figures1& 2: Charts showing ratings on students' learning strategies

Discussion of the Findings

Quite disheartening is the result from the study showing that only very few students (39.4%) explore cognitive strategies for lifelong learning in and of English at high and positive levels, while 60.6% do not (see table 1). This is really worrisome since cognitive strategies are described as imperative for effective lifelong learning: (Adams, 2007; Kiley & Cannon, 2000; Queensland curriculum document cited in Lawson, Askeff-Williams & Murray-Harvey, 2006; Medel-Añonuevop, Ohsako & Mauch, 2001).

Only slightly better than that result on cognitive strategies, the study reveals that less than half of the respondents (43.2%) explore control strategies for lifelong learning in and of English at high and positive levels, while 56.8% do not (see table 2). Again, this raises serious concerns considering the importance of control strategies, as noted by many, including Adams (2007), Artelt, et al. (2003), and Kiley and Cannon (2000:3). The Queensland curriculum document cited in Lawson, Askeff-Williams and Murray-Harvey, 2006:99) notes that a lifelong learner is a “self-directed learner”.

The most severe of the research outcomes is that only 12.1% of students explore multiple opportunities for quality lifelong learning in and of English at high and positive levels, while as high as 87.9% do not (see table 3). What this means is that apart from students rating low on learning strategies for different situations, this characteristic is even further relegated and almost non-existent, showing clearly that students do not explore multiple opportunities for learning, but perhaps depend solely on their teachers. This raises serious concerns

considering the importance of this characteristic, as indicated by Ellis (1990), Chiang (1998, as cited in Li & Tsai, 2007), Kiley and Cannon (2000), and Ikonta (2010).

To crown it is the ugly reality that students' ability and willingness to explore Information and Communications Technology (ICT) for learning is quite low, despite the fact that ICT is a major defining/critical element of the 21st century learning (Adams, 2007; European Commission, 2007, 2011; Lawson, Askill-Williams & Murray-Harvey, 2006:6). Based on this finding, it can hardly be said that these students can become good lifelong learners.

Overall, less than half of the students have high and positive ratings on the characteristics measured, the most critical being that student do not explore multiple opportunities for learning (see figures 1 & 2). If the characteristics are taken together as a whole, only 31.6% of the respondents rate high and positive while 68.4% rate low and negative, which leads to a logical inference that it is really not likely that Nigerian students will engage in lifelong learning in and of English after graduation from secondary school. This is more or less a threat to the development of this modern education strategy in Nigeria and urgent steps are required to address the ugly trend.

Recommendations and Conclusion

Based on the outcomes of the study, the following are recommended to improve students' learning strategies and the likelihood to engage in lifelong learning in and of English, both in and out of school:

1. Students, parents, teachers and other education stakeholders should decisively change their thinking from "education is about schooling and passing examinations" and adopt a lifelong learning orientation as the education strategy for the 21st century.
2. Government and schools should re-engineer their education policies and curriculum efforts to promote the primary role of education in school, which is to teach learning to learn, with emphasis on learning strategies.
3. Even more, with English having become a basic and generic skill, learning strategies taught in school should reflect the reality that English is not just a subject of learning, but also a tool for learning.
4. Teachers should teach and model learning strategies for students using group and pair activities. For instance, to integrate various learning strategies in an English/Communication Skills class, the teacher can begin by defining the task, and then organize students into groups. Members of each group can then work co-operatively and collaboratively to define their goal(s) with regard to the task, identify and allocate resources relevant to the task, break down the task into sub-tasks that individual members can work on in a self-directed manner to source and organize relevant information. Content generated by individual members can then be evaluated and integrated at group level. Presentation of the final work can be rehearsed a number of times before the actual class presentation. In this way, students as the most crucial driver of learning in a lifelong situation, will learn to develop learning strategies for different situations and take responsibility for their own learning.

In conclusion, since these students are generally lacking in ability and willingness to explore learning strategies for different situations, it means that they really are not armed with the relevant strategies to engage in lifelong learning in and of English. If this situation remains unchecked, Nigeria may as well forget about being part of the global knowledge economy. Therefore, to stop the trend, all stakeholders in education must put in a lot of efforts and commitment to encourage students to embrace lifelong learning strategies so that they can match forward with their counterparts worldwide. The time to act is now.

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MOTIVATING AND RETAINING TERTIARY INSTITUTION ACADEMICS FOR NATIONAL TRANSFORMATION

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ABSTRACT

This study was carried out to investigate the mechanisms for academic staff retention in tertiary institutions that are feasible in Nigeria under the current financial constraints, and to gauge their effectiveness in offsetting the risk of staff loss commonly associated with motivation efforts in the country. The specific objective was to understand factors that militate against academic staff retention and to find feasible mechanisms for addressing them. Relevant research hypotheses were put forward to guide the investigation. The study employed descriptive survey as the research methodology. It involved collection of data from a sampled group of three hundred (300) academics using three sampled institutions through a stratified random sampling technique. The split-half method using the Spearman-Brown Prophecy Formula was used to ascertain the reliability of the instrument for data collection. The questionnaire was administered and results were analysed with percentage, Chi-square and Pearson Product Moment Correlation Coefficient. Some of the findings showed that there is significant relationship between motivation and job performance of academic staff, there is significant relationship between reward system and academic staff retention and there is a significant difference between economic and non-economic rewards as motivational strategies in the Nigerian higher education system. The study then concludes that a favourable work environment and adequate reward system must be put in place to improve the job performance, motivation and retention of the academic staff in order to achieve national transformation through an improved higher education system.

Keywords: Motivation, Retention, National Transformation, Academics

INTRODUCTION

Education is important to the growth and development of the society as it integrates an individual into his society to become a promoter of its culture, values and development. It is a potent weapon to acquire necessary knowledge, skills and competencies for survival in a dynamic world. It is a key instrument for achieving national transformation. However, Nigeria's educational system has been plagued with myriad of challenges. It is low in quality and standard, limited in its reach and disturbing in its future. Recent graduates in Nigeria are not only derided, but are also described as lacking in quality, low in perception, unfit in skills, and unemployable. Developed countries subject graduates of Nigerian schools to fresh training and examination in an attempt to ensure their fitness into their own system (Kazeem and Ige, 2010). Causes of this menace are linked to underfunding of the system; bribery, embezzlement and corruption; acute shortages of infrastructures and facilities at all levels of education; lack of political will; policy inconsistencies; over-centralization of control; incessant industrial strikes, paucity of quality teachers, poor or polluted learning environment to mention but a few. The resulting effects of these include the exodus of Nigerian students and academic staff to other countries. The former CBN governor, Sanusi Lamido, stated that a revelation by the Network of Migration Research on Africa (NOMRA), shows that Nigerian migrating in 2009 who were granted visas into the United Kingdom (UK) numbered about 10,090 and they paid not less than N42 billion to their host nation (Orgu, 2012). He stressed that Nigeria was ranked third on the list of countries with the highest number of students studying overseas. Statistics also showed that over 71,000 Nigerian students in Ghana in 2010 paid about N155 billion annually as against Nigeria's annual budget of N121b for all federal universities in the same year (Orgu, 2012). Other ills associated with fallen standards of education in Nigeria include numerous social vices like examination malpractices, cultism, and hooliganism in the school system (Kazeem and Ige, 2010). This is exacerbated by poor

remuneration for teachers, which triggers a lackadaisical attitude to work; high dropout of students from schools, quantitative rather than qualitative oriented education, campus prostitution, rape and sex abuse, to mention but few. The decay and rot especially in Nigerian universities have most recently assumed unprecedented, unmanageable, and alarming proportions. In a bid to force the Nigerian government to revamp and reposition these citadels of learning, the Academic Staff Union of Universities (ASUU) in Nigeria, embarked on a total and indefinite strike in 2009. This was repeated in 2013 as university lecturers embarked on an indefinite strike which lasted six months and the almost a year strike embarked upon by the academic staff of polytechnics and colleges of education in Nigeria. Furthermore, no Nigerian university features in the first 1,000 ranking of top universities in the world. All these are manifestations of the sorry state of the educational system, especially the tertiary level which is expected to produce the middle and high level manpower resources needed to drive the nation's economy.

Central to higher education development is the motivation and well-being of the academic staff. They are the egg-heads that constitute the intellectual reservoir of the nation. They engage in teaching and training, research, planning and policy analysis as well as community service. Their conditions of work and job satisfaction influence the quality of service rendered to domiciliary institution and the society at large. Pay scale in Nigerian universities has been cited in this analysis. A 2007 survey conducted by the National Universities Commission (NUC) found that a full professor in Botswana earned \$27,000 per annum, in Namibia between \$21,000 and \$35,000, and in South Africa between \$58,000 and \$75,000. In Nigeria, even with all the adjustments that Academic Staff Union of Universities was able to negotiate back then, a full professor still earned about \$12,000 per annum in 2006 (Yaqub, 2007). The recent salary figures that resulted from a 4-month strike in 2009 only closed the gap with Namibia.

Clearly, unless something is done to enhance the ability of these institutions to attract and to retain the requisite levels of academic staff, the situation can only get worse. Unsatisfactory working conditions of academics will only continue to push them towards the attractive lifestyles that they can enjoy in other countries or establishments outside of higher educational institutions.

Problem Statement

Attracting and retaining high calibre academic staff pose a serious challenge to many tertiary institutions. Due to global competition for staff, it is often difficult for tertiary institutions in developing countries to retain indigenous staff with special skills and academic experience. Unfortunately, much of the expertise base of these institutions has been eroded to the extent that there is not enough capacity to provide quality training for new generations of citizens. This is due to poor motivation and lack of job satisfaction due to non-monetary reasons.

Against this background, this study investigated academic staff motivation and retention in tertiary institutions in Lagos State. This was to identify the level of motivation and retention of academic staff, with a view to preventing the continuous loss of valuable academic staff to competitor organisations and tertiary institutions overseas, and for administrators and other policy makers in the education sector to identify and apply appropriate retention strategies that will help in reducing the frequent turnover of these academics.

Purpose of the Study

The purpose of this study was to identify mechanisms for academic staff retention in tertiary institutions that are feasible in Nigeria under the current severe financial constraints, and to gauge their effectiveness in offsetting the risk of staff loss commonly associated with

motivation efforts in the country. It was also to seek non-salary solutions to staff retention problems.

Literature Review

Higher education is now recognized as a major contributor to the solution of major problems facing the world today at the global, regional and local levels, such as removing inequalities, alleviating poverty and environmental degradation, improving health, arresting large-scale pandemics such as AIDS, etc (UNESCO, 2004). It also plays a decisive role in building social cohesion and in laying the foundation of healthy civil societies, based on good governance and participatory democracy.

Motivation is the inner drive that pushes individuals to act or perform. Specific theories may propose varying set of factors influencing motivation (Harder, 2008) but many scholars agree that motivation is the psychological process that causes the arousal, direction, intensity and persistence of behaviour (Locke and Latham, 2004; Pinder, 1998). Motivation, from a Latin word “movere” means *to move*. Motivation is the activation or energization of goal-oriented behaviour (Wikipedia, 2010). Pinder (1998) defines work motivation as the set of internal and external forces that initiate work-related behaviour, and determine its form, direction, intensity and duration. Hence, we can take it to be the inner force that drives individuals to accomplish personal and organizational goals. The essence of individual motivation in management or an organizational setting is to align employees’ behaviour with that of the organization. That is, to direct the employees’ thinking and actions (performance) towards effective and efficient achievement of the organizational goals.

Theoretical Framework

Motivation is the answer to the question “Why we do what we do?”. The motivation theories try to figure out what the “M” is in the equation: “M motivates P” (Motivator motivates the Person). The existing literature reveals several classifications of motivation theory. Motivational theories are generally classified into two: *content* motivation theories and *process* motivation theories. Content theories try to explain why people are motivated in different ways and in different work settings. Process or cognitive motivation theories attempt to understand how and why people are motivated. Vroom’s Expectancy Theory, Adam’s Equity Theory, Locke’s Goal Setting Theory and Skinner’s Reinforcement Theory, etc. are examples of process theories. For this study, Skinner’s theory was adopted for the framework.

Skinner’s Reinforcement Theory

Reinforcement theory of motivation was proposed by BF Skinner and his associates. It states that individual’s behaviour is a function of its consequences. It is based on “law of effect”, i.e., individual’s behaviour with positive consequences tends to be repeated, but individual’s behaviour with negative consequences tends not to be repeated. Skinner’s theory proposes that behaviour can be controlled through the use of reward. The theory simply states those employees’ behaviours that lead to positive outcomes will be repeated and behaviours that lead to negative outcomes will not be repeated (Skinner, 1953). Managers should positively reinforce employee behaviours that lead to positive outcomes. Managers should negatively reinforce employee behaviour that leads to negative outcomes.

Reinforcement theory of motivation overlooks the internal state of individual, i.e., the inner feelings and drives of individuals are ignored by Skinner. This theory focuses totally on what happens to an individual when he takes some action. Thus, according to Skinner, the external environment of the organization must be designed effectively and positively so as to motivate the employee. This theory is a strong tool for analysing control mechanism for individual’s behaviour. However, it does not focus on the causes of individual’s behaviour.

The managers use the following methods for controlling the behaviour of the employees:

- **Positive Reinforcement-** This is giving a positive response when an individual shows positive and required behaviour. Reward can be a positive reinforcer, but not necessarily. If and only if the employees' behaviour improves, reward can be said to be a positive reinforcer. Positive reinforcement stimulates occurrence of behaviour. It must be noted that the more spontaneous in the giving of reward, the greater reinforcement value it has.
- **Negative Reinforcement-** This implies rewarding an employee by removing negative / undesirable consequences. Both positive and negative reinforcement can be used for increasing desirable / required behaviour.
- **Punishment-** It implies removing positive consequences so as to lower the probability of repeating undesirable behaviour in future. In other words, punishment means applying undesirable consequence for showing undesirable behaviour. For instance - Suspending an employee for breaking the organizational rules. Punishment can be equalized by positive reinforcement from alternative source.
- **Extinction-** It implies absence of reinforcements. In other words, extinction implies lowering the probability of undesired behaviour by removing reward for that kind of behaviour. For instance, if an employee no longer receives praise and admiration for his good work, he may feel that his behaviour is generating no fruitful consequence. Extinction may unintentionally lower desirable behaviour.

Managers who are making attempt to motivate the employees must ensure that they do not reward all employees simultaneously. They must tell the employees what they are not doing correct. They must tell the employees how they can achieve positive reinforcement.

Benefits of a well-motivated workforce

Motivation is pivotal in employee recruitment, retention and management. A well-motivated workforce can provide several advantages. These include: Better productivity; Lower levels of absenteeism; Lower levels of staff turnover; Improved industrial relations with trade unions; Contented workers give the firm a good reputation so making it easier to recruit the best workers; and motivated employees are likely to improve product quality or the customer service associated with a product.

Methods of motivation

Though there are many reasons why people work for a living, it is undeniable that money, or other financial rewards, play a key role in motivating people in the workplace. Riley (2012) provided a wide variety of ways in which a business can offer financial rewards as part of the "pay package", including: **Salaries; Benefits in kind** (fringe benefits); **Time-rate pay** (pay based on time worked); **Piece-rate pay** (pay per item produced); **Commission** (based on the value of sales achieved); Other **performance-related pay** (e.g. bonuses for achieving targets);

Shares and options; and Pensions. Employees expect a mixture of the above in a pay package.

Most businesses recognise the need for non-financial methods of motivation. The main ones are job enlargement, job rotation, job enrichment as well as team working and empowerment.

Regardless of the strategy used, there are basic principles that should govern all strategies of staff motivation. These include: All staff should be motivated; Clarity of expectations; Taking into account what staff see as important; Clear systems and structures that promote motivation; and Continuous efforts at motivation.

Staff Retention

Employee retention is the ability of a business to convince its employees to remain with the business (Riley, 2012). Unmotivated staff cannot be retained. A motivated workforce is crucial to the success and survival of any business in today's uncertain and turbulent business climate with its ever-rising competition (Smith, 1994; Field, 2003). Bushe (2012) posits that academic staff retention refers to the process of the ability of an institution to not only recruit qualified academic staff but also retain competent staff through establishing a quality of

work-life, motivated staff climate, best place of work and being an employer of choice contingent upon committed formulation and execution of best practices in human resource and talent management.

Conceptual Framework

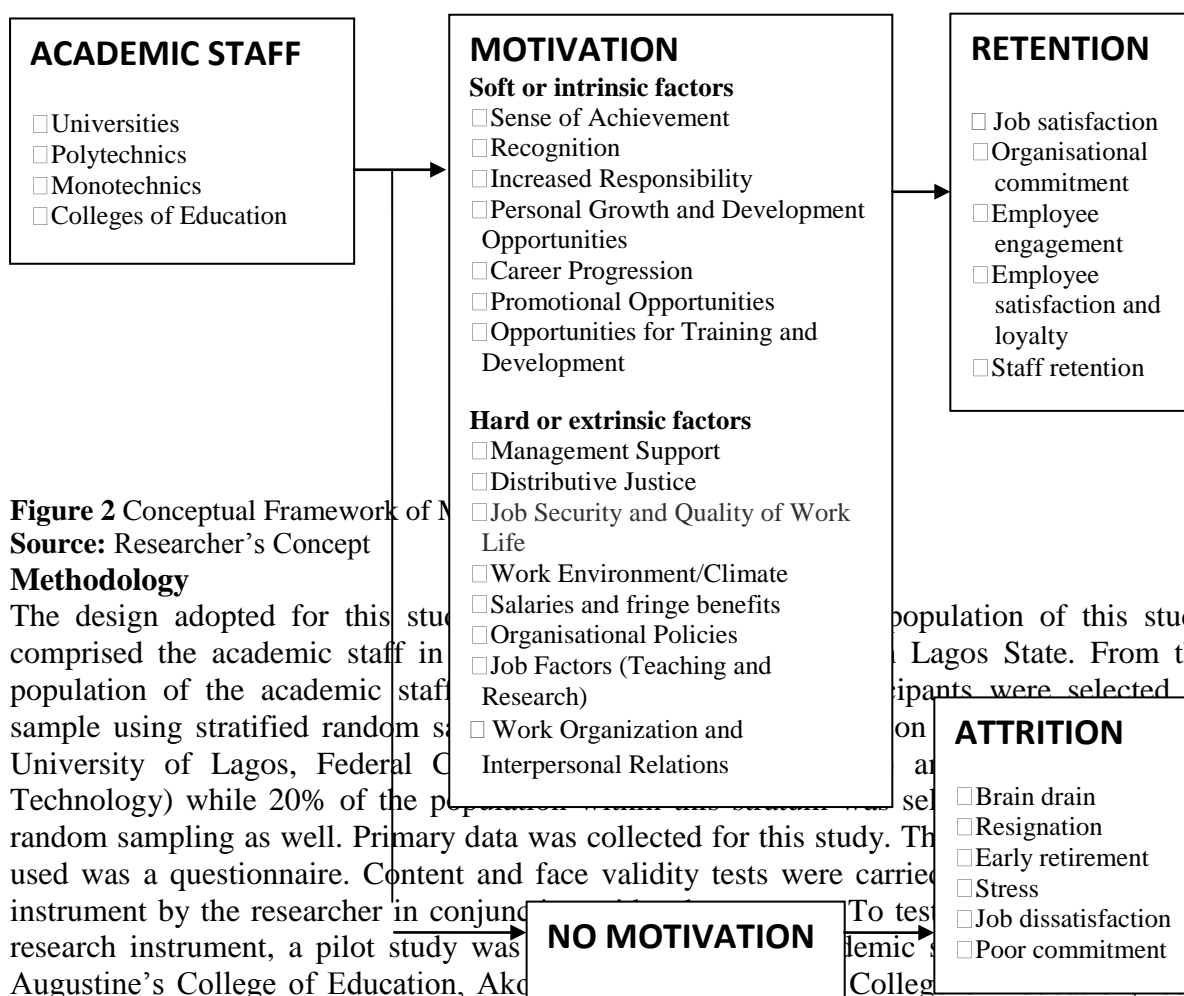


Figure 2 Conceptual Framework of the Study
Source: Researcher's Concept

Methodology

The design adopted for this study comprised the academic staff in the population of the academic staff sample using stratified random sampling. The population of this study was the academic staff of the University of Lagos, Federal College of Education (Technical Education) while 20% of the population was selected as sample using random sampling as well. Primary data was collected for this study. The research instrument used was a questionnaire. Content and face validity tests were carried out on the instrument by the researcher in conjunction with experts in the field. As a pre-test research instrument, a pilot study was conducted at Augustine's College of Education, Akoka, Lagos State. A split-half reliability test was done using the Spearman-Brown Prophecy Formula and a correlation coefficient of 0.76 was obtained, thus indicating that the instrument was reliable. The data collected were analysed using frequency counts, percentage and inferential statistics. The biographic data were analysed using frequency distribution and percentages. The research hypotheses were tested using Chi-Square and Pearson Product Moment Correlation method at 0.05 level of significance with the aid of SPSS.

Results

Hypothesis 1: There is no significant difference between economic rewards and non-economic rewards as motivational strategies in the Nigerian higher education system.

Table 1 Test Statistics

	Chi-Square	df	Asymp. Sig.
There is no significant difference between economic rewards and non-economic rewards as motivational strategies in the Nigerian higher education system.	262.200	14	.000

From Table 1, the Chi-test statistic (χ^2) was calculated as 262.200, at 5% level of significance at 14 degrees of freedom. The returned p-value (0.000) is less than 0.05, thus the null hypothesis was rejected and alternative hypothesis was accepted. Thus, there was a significant difference between economic rewards and non-economic rewards as motivational strategies in the Nigerian higher education system.

Hypothesis 2: There is no significant relationship between motivation and job performance of academic staff.

Table 2 Relationship between staff motivation and job performance of academic staff

		Job Performance of Academic Staff
Staff Motivation	Pearson Correlation	.236**
	Sig. (2-tailed)	.000
	N	300

From Table 2, it was observed that the returned Pearson Correlation Coefficient (r) was 0.236 and the returned p-value (0.000) is less than 0.05. Thus, the null hypothesis is rejected. Hence, there was a significant relationship between motivation and job performance of academic staff.

Hypothesis 3: There is no significant relationship between reward system and academic staff retention.

Table 3 Relationship between reward system and staff retention

		Staff Retention
Reward System	Pearson Correlation	.368**
	Sig. (2-tailed)	.000
	N	300

Table 3 shows that the returned Pearson Correlation Coefficient (r) was 0.368 and the returned p-value 0.000 is less than 0.05. Thus, the null hypothesis which states that there is no significant relationship between reward system and academic staff retention was rejected. Hence, there was a significant relationship between reward system and academic staff retention.

Findings and Discussion

There was significant difference between economic rewards and non-economic rewards as motivational strategies in the Nigerian higher education system. Though, all staff care about adequate reward for the services they render at one time or the other, some prefer to receive their reward economically (e.g. in cash), while the some others cherish non-economic rewards because of their belief in the fact that money will eventually finish but non-economic reward in most cases last longer. Hence, this also testifies to the fact that there is a significant difference between economic and non-economic reward. Similarly, Highhouse et al (1999) recommended that pay alone is not sufficient to retain the employees. He argued that low pay package will drive workers out the organization but it is not necessary that high pay package bring and keep the workers in the organization. Ultimately, the workers stay in the organization due to others factors i.e. work environment, co-workers behaviour and supervisor support etc. which compel the employee to retain in the organization.

There was also a significant relationship between motivation and job performance of academic staff. Staff motivation enhances good performance and high productivity. In fact, Yorubas (predominant tribe in Lagos and Southwest Nigeria) believe that "Self-happiness

motivates” and that “Appreciation enhances effectiveness.” Motivation and job performance are inextricably connected because every worker has to have some degree of motivation just to go to work in the first place. This finding concurs with the findings of Geoffrey (2010) in Makerere University, where it was observed that motivational factors have a significant effect on lecturers’ teaching and research activities. Isaac’s (2008) study established a significant relationship between motivation and employees’ punctuality to work, motivation and indolent behaviour, motivation and attitude to work, motivation and fraudulent behaviour, and motivation and absenteeism. This finding also agrees with Abejirinde (2009) who established a strong relationship between motivation and job performance among the staff of private and public organizations in Nigeria.

The study also found a significant relationship between reward system and academic staff retention. The result above is also rational because it is also evident that many staff’s choice of work today is to a large extent determined by the organisation’s reward system. A typical instance of this is the movement of the international footballers from one football club to another due to better offers in terms of rewards. The movement of the shareholders from one firm to another just to maximise their dividends also accentuates this. Metcalf et al (2005) found that retention of academic staff is affected by the rewards and benefits of the job relative to other employment. These include pay and fringe benefits (pension and gratuity, comparative pay levels, pay systems, pay discrimination), intrinsic aspects of the job, job security, work environment, etc. Tetey (2006) also found dissatisfaction with salaries as one of the key factors undermining the commitment of academics to their institutions and careers, and consequently their decision or desire to leave. Hence, the reward system is a major determinant in academic staff’s decision to stay in or leave an organisation.

Implications of Findings for Policy

1. There is need for the government to increase the funding of tertiary education in the country to address the infrastructural and academic staff deficits currently plaguing the institutions of higher learning. This is also necessary to create an enabling environment where effective teaching, learning and research will take place.
2. The regulatory agencies for tertiary institutions (NUC, NBTE and NCCE) need to enforce the operational standards for these institutions especially in the areas of student admission, student-academic staff ratio, accommodation, research output and infrastructure, to mention but a few.

Recommendations

Some of the recommendations for the management tasked to manage and motivate academic staff towards successful attainment of institutional goals are:

1. The institution needs to further improve its culture as it has the potential to retain its valuable assets (employees).
2. Exit interview system may be introduced to help management address the issues responsible for the departure of academic staff and those elements they would have loved to see in the institution which could have also made them stay.
3. Turnover rate should be monitored and considered as important in policy formulation regarding Human Resources (HR) factors and organization factors; it will help management in retaining the employees.
4. Recognition of the employee’s inputs and outcomes is needed. This can be done through a formal recognition system e.g. certificates, employee of the year, etc.
5. Reward should be applied on merit and promotion should be both on seniority and merit, which helps in improving productivity and retention.
6. The salary of academics should be increased and made competitive with jobs of similar status. This will not only retain the present employees but also attract others.

7. Management should adopt a combination of both intrinsic and extrinsic motivation variables as an effective retention strategy.
8. To avoid inordinate workloads which are not only morale-deflating, but physically and psychologically draining, the institutions have to insist on the need to balance intake with resources when undertaking student admission.

Conclusion

The study investigated the academic staff motivation and retention in tertiary institutions in Lagos State. It found a significant relationship between motivation and retention of academic staff in the tertiary institutions. A favourable work environment and adequate reward system (economic and noneconomic) must be put in place to improve the job performance, motivation and retention of the academic staff. This is necessary to engender effective teaching and learning in the tertiary educational institutions. This will ultimately result in the production of qualitative manpower that will transform the political and economic fortune of the nation.

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PARTICIPATION OF RURAL WOMEN IN REPRODUCTIVE HEALTH EDUCATION PROGRAMMES IN LAGOS STATE, NIGERIA

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ABSTRACT

The reproductive health situation of rural women in Nigeria is very critical. Despite the efforts of various governments, women living in the rural areas, within their reproductive years (15-49 years) lose their lives daily as a result of reproductive ill-health and complications, making the mortality and morbidity ratios very high. Some barriers are often responsible for this loss to various families, communities and the nation at large. A key and very effective remedy to counter this trend in the rural areas is Reproductive Health Education (RHE), which aims at providing them with the education and services that will help counter vulnerability to complications and death. This study focused on identifying RHE programmes available to rural women in Lagos State, as well as examines how well the rural women participated in the programmes. It recommends that Adult and Non-Formal Education be used to root out challenges to rural women's participation in RHE.

Keywords: Reproductive Health, Reproductive Health Education, Rural Women, Maternal Mortality, Maternal Morbidity.

INTRODUCTION

Deaths as a result of reproductive health problems and complications are leading causes of high mortality ratio the world over and especially in the developing world. Globally, more than half a million women die each year because of pregnancy and childbirth complications, 99 percent of them in developing countries (World Bank, 2010). The World Health Report (2005) shows that every minute, a woman dies of childbirth in the developing world and twenty or more women experience pregnancy related complications while many are left with infections and severe disabilities every day. The widespread of sexually transmitted infections among women, according to the report, could be attributed to inadequate health care and lack of information According to a joint report by United Nations Agencies(WHO, UNICEF, UNFPA, and World Bank, 2012), many of the sub-Saharan countries of Africa are still lagging behind in the expected Millennium Development Goal 5 (MDG5) of reducing maternal mortality by year 2015. According to the report, globally, an estimated 287 000 maternal deaths occurred in 2010, showing a decline of 47% of maternal deaths from levels in 1990. Sub-Saharan Africa accounted for 56% of the global burden.

The Nigeria Situation

Available statistics show that the reproductive health situation in Nigeria is still poor especially in the rural areas. The situation deteriorated further in recent times. Among others, Nigeria's maternal mortality has remained one of the highest in the world, neonatal mortality is on the increase, and the nation has one of the largest populations of people living with HIV/AIDS globally (WHO,2013).

According to the World Health Organisation and other United Nations statistical sources, Nigeria's maternal mortality is estimated to be 1,000 maternal deaths per 100,000 live births. An estimated 40 % of pregnant women experience pregnancy-related health problems during or after pregnancy and child birth. More than 70% of all maternal deaths are due to five major complications: hemorrhage, infection, unsafe abortion, hypertensive disease of pregnancy, and obstructed, labour with 15% of them suffering from serious or long-term complications such as pelvic inflammatory disease and infertility (WHO,UNFPA,World Bank,2013).

Reports from the Federal Ministry of Health (Annual Report, 2004) show that between 500 000 and 1 000 000 women/girls are living with VVF, and an estimate of up to 80 000 new cases annually. These estimates are based on information gathered from women who attend established medical facilities, especially Primary Healthcare Centres seeking healthcare. According to the report, the reality however, is that most sufferers are rural dwellers who due to either distance or cost, never make it to any formal medical establishment for appropriate attention before and during pregnancy.

For a reversal of the ugly situation and the actualization of the MDG5 of curbing maternal mortality by year 2015, there is a dire need for the adequate provision of Reproductive Health Education as a means of educating, enlightening as well as providing services on reproductive health for these women and thus, emancipating them from the shackles of slavery to reproductive ill health and death.

METHODS

Descriptive survey design was utilized to carry out the study. This involved the use of questionnaire and interview, as well as Focus Group Discussions (FGD) for data collection. The population of the study comprised all the women within the ages of 15-49 years living in the rural areas of Lagos State and all the health educators in all the rural primary healthcare centres of Lagos State. The samples consisted of 300 rural women and 260 health educators, while there were 32 rural women for the FGDs. These subjects were selected using cluster survey and simple random sampling techniques. The instruments for the study consisted of one set of questionnaire for health educators, one interview schedule guide and Focus Group Discussions (FGD) for rural women.. Five research questions and four hypotheses were developed, tested and analysed for the study. The hypotheses were analyzed using chi-square statistic, inter correlations statistic and Pearson Product Moment Correlation statistic. The Focus Group Discussions were analysed using content analysis. A conceptual model was developed on the influence of RHE programmes on the entire lifestyles of rural women based on the submissions of Paulo Freire's Theory of Conscientization, JurgenHabermas' Critical Social Theory and Rosenstock's Health Belief Model.

RESULTS

This section presents the results of the analyses of data. In all, four main hypotheses were formulated and tested. The four null hypotheses were rejected while alternative hypotheses were held significant at 0.05% level of confidence.

Table 1 indicates that the calculated r-value of 0.57 is greater than the critical r-value of 0.113 given 298 degree of freedom at 0.05 level of significance. This means that there was a significant relationship between the availability of Reproductive Health Education programmes in the rural areas and the participation by the rural women.

From table 2, it can be confirmed that women utilization of Reproductive Health Education have comparatively higher statistical significant mean(x) scores of 63.14; followed by women participation in Reproductive Health Education with the mean(x) score of 58.13; and women life style due to their participation and utilization of Reproductive Health Education have a lower statistically significant mean(x) score of 54.70. This implies that women utilization of Reproductive Health Education have influence on their subsequent life style. Further analysis of the data shows inter-correlations of the effects of the variables on women life style as shown in Table 3.

As revealed from table 3, there was a significant relationship between utilization Reproductive Health Education by women and their life style ($r = 0.305$, $P < 0.05$); women participation in Reproductive Health Education and their life style ($r = 0.470$, $P < 0.05$); women utilization of Reproductive Health Education and their life style ($r = 0.335$, $P < 0.05$).

Table 4 reveals that the calculated χ^2 -value of 23.21 is greater than the critical χ^2 -value of 21.03 given 12 degree of freedom at 0.05 level of significance. This means that participation of rural women in reproductive health education programmes is significantly hindered by external factors.

Table 5 indicates that the calculated χ^2 -value of 26.82 is greater than the critical χ^2 -value of 21.03 given 12 degree of freedom at 0.05 level of significance. This means that the culture friendly packages put in place would have a significant effect on the rural women's participation in RHE programmes.

Discussion of Findings

Findings on relationship between the availability of reproductive health education programmes and participation by the rural women

The results of the analysis of the first hypothesis revealed that there is a meaningful interaction between the availability of Reproductive Health Education programmes in the rural areas and the participation by the rural women. This is evidenced from the result of the research question one which showed that all the rural women participants in the reproductive health education (RHE) programmes identified antenatal care, immunization, information on HIV/AIDS, family planning and exclusive breast feeding as predominantly major types of RHE programmes and services which were common and rendered by health care givers mostly in their respective rural parts of Lagos State used for the study. The implication of this result is that large numbers of respondents were aware as well as utilizing services rendered through the programme.

Findings on the relationship between participation and utilisation of RHE and the entire lifestyle of rural women

The findings for hypothesis two revealed that there existed a significant relationship between participation and utilization of Reproductive Health Education and the entire life style of rural women in Lagos state. Further, the analysis of the data showed that a majority (70.7%) of the rural women who participated in RHE programme confirmed that RHE programme has helped them to space children, practising exclusive breast feeding resulting in their children being healthier, and that their participation in RHE has helped them to be more productive in their respective business. Also, majority of the rural women agreed that participation in antenatal sessions really made child delivery easier and safer than ever.

Findings on effect of environmental factors on participation of rural women in RHE programmes

The result of the analysis of the third hypothesis showed that participation of rural women in RHE programmes could be hindered by environmental factors. Also, the findings showed that all health care givers (100%) affirmatively expressed and identified ignorance and harmful traditional and cultural beliefs as hindrances to the rural women's effective participation in RHE programmes while the majority identified high cost of care and attitude of health care givers as hindrances. Yet, others agreed that inadequate facilities, long distances and lack of awareness hindered the rural women from participating.

Findings on the culture friendly packages that can be put in place for better participation of rural women in RHE programmes

The findings for hypothesis four indicated that culture friendly packages put in place would have a significant effect on the rural women's participation in RHE programmes. Further analysis of the data revealed that a vast majority of rural women participants (100%) believed that creating more awareness, involving both their spouses and traditional birth attendants, provisions of more health care centres and free drugs and materials, and involving religious and community leaders in RHE programmes are good strategies to ensure more and better participation of the rural women.

Findings of the Influence of Participation and Utilization of Reproductive Health Education on the Entire Life-Style of Rural Women

The hypothesis sought to find out the influence reproductive health education can have on the entire life style of rural women. This hypothesis was postulated to validate the conceptual model below which was developed for this study. The conceptual model developed initially suggested that the rural women's lack of reproductive health education leads to ignorance of certain knowledge needed to have a satisfying and viable reproductive health life. With reproductive ill-health there will be less productivity which leads to poverty. The reproductive ill-health also leads to disability and then stigmatization. However, as shown by the results, the rural women had not got the maximum benefits expected for total transformation to viable health. It was revealed that education on HIV/AIDS, cancers of the reproductive organs, prevention of STDs, female genital mutilation and causes of infertility and prevention had not been adequately provided.

The results also revealed that ignorance was one of the factors that hindered them from doing this. They were ignorant of some form of reproductive health education programme and as such did not take part fully in programmes such as HIV/AIDS counselling, prevention of STDs, information on female genital mutilation and causes of infertility and prevention. According to the information supplied by healthcare givers, the same ignorance is revealed. According to the healthcare givers, many of the rural women did not take part in HIV/AIDS education because they did not believe it is real. It was further shown that many of the women did not come for family planning services because of their cultural/traditional beliefs and that they also had preferences for traditional birth attendants and religious leaders over going to health care centres where they would get prompt and adequate care and this also shows that to a large extent, there was still a grip on traditional beliefs and cultural practices that have always beclouded them, making them more ignorant and leading them to slavery of ill-health, poverty and misery.

Conclusion and Recommendation

The study has shown that one key factor that debars rural women's participation in RHE is ignorance of the programmes and the benefits participation. It has also been shown that factors such as distance to and from the primary health care centres, unavailability of health centres as well as equipment in most localities, cost of transportation, unfriendly attitude of health care givers, traditional beliefs, poverty, cost of materials are significantly responsible for low participation of rural women in reproductive health education programmes in Lagos State. One major tool that can be used to combat this ignorance is education and this is what Freire's conscientization implies, that is, bringing the rural women to the state that they will know and acknowledge the need as well as what they stand to benefit from RHE. If rural women are going to participate fully in RHE Programmes, they must be aware that education is the key. It is very crucial to ensure that all rural women get at least, literacy education. This will to a large extent boost their participation in RHE programmes.

The redesigned model assumes that for rural women to get maximum benefits needed from reproductive health education to attain to viable health, the educational programme should be more specific by focusing on six factors which are family planning information and counselling services, ante-natal participation, post-natal participation, reproductive cancers awareness and counselling services, education on effects of harmful traditional practices and HIV/AIDS awareness and counselling services.

Recommendations include the need to create awareness, renovate and equip the already existing primary health care centres in rural areas with instruments and drugs, provide RHE/services at little or no cost, involve traditional with religious leaders and women's spouses in RHE programmes, involve traditional birth attendants in the provision of RHE programmes as a means of culture-friendly strategy to boost participation in RHE programmes, as well as make it a priority to provide health centres in every locality for easy accessibility. Conclusively, it was also recommended that involving rural women's spouses in the educational programmes would be another culture-friendly strategy that will go a long way in enhancing chances of better participation by rural women.

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TABLES

Table 1: Relationship between the Availability of Reproductive Health Education Programmes and Participation by the Rural Women

Variables	N	Mean Scores (x)	SD	MD	Df	r-cal	r-critical
Availability of RHE	300	25.12	5.39	1.42	298	0.5*	0.113
Women participation	300	23.70	5.52				

*Significant $P < 0.05$

Table 2: The Mean and Standard Deviation among the Variables

Variables	Mean Scores	Std. Deviation
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Participation	58.13	7.13
Utilization	63.14	5.39
Life style	54.70	4.68

Table 3: Inter-correlation matrix among the variables

Variables	Participation	Utilization	Life style	Reproductive Health
Participation	1.000			
Utilization	0.305*	1.000		
Life style	0.265*	0.470*	1.000	
Reproductive health	0.271*	0.194	0.335*	1.000

*Significant $P < 0.05$

Table 4: Chi-Square Analysis on Factors Hindering Rural Women's Participation in RHE Programmes

Environmental Factors	Rural Women's Participation in Reproductive Health Programmes			χ^2 -cal	χ^2 -tab
	To a large Extent	Somehow	Hardly		
Inadequate facilities for pre and postnatal care	12 (14.4)	11(9.2)	6(5.5)	23.21	21.03
High cost of care	25(21.8)	11(13.9)	8(8.3)		
Long distances	16(14.9)	6(9.5)	8(5.7)		
Ignorance	24(27.3)	20(16.5)	5(9.1)		
Lack of awareness	28(32.1)	6(10.6)	8(12.9)		
Traditional/cultural beliefs	18(26.2)	20(13.9)	6(7.2)		
Attitude of healthcare givers	6(8.5)	8(12.1)	8(10.3)		

Table 5: Chi-Square Analysis on Strategies Put in Place to Better Participation by the Rural Women in Reproductive Health Education Programmes

Variables	Enhancing Participation in Reproductive Health Education			χ^2 -cal	χ^2 -tab
	To a large Extent	Somehow	Hardly		
More awareness creation	22 (20.2)	16(17.2)	9(9.6)	26.82	21.03
Provision of more centres	25(18.9)	11(16.1)	8(8.9)		
Religious and community leaders' involvement	16(17.2)	16(14.6)	8(8.1)		
Attitudes of healthcare givers	20(135)	15(16.5)	10(9.1)		
Husband's involvement	12(18.9)	24(16.1)	8(8.9)		
Traditional birth attendants' involvement	18(16.3)	10(13.9)	10(7.2)		
Provision of free drugs & materials	16(18.1)	18(15.4)	8(8.5)		

Figures

Figure 1: Conceptual Model on the Influence of Reproductive Health Education on the Entire Life Style of Rural Women

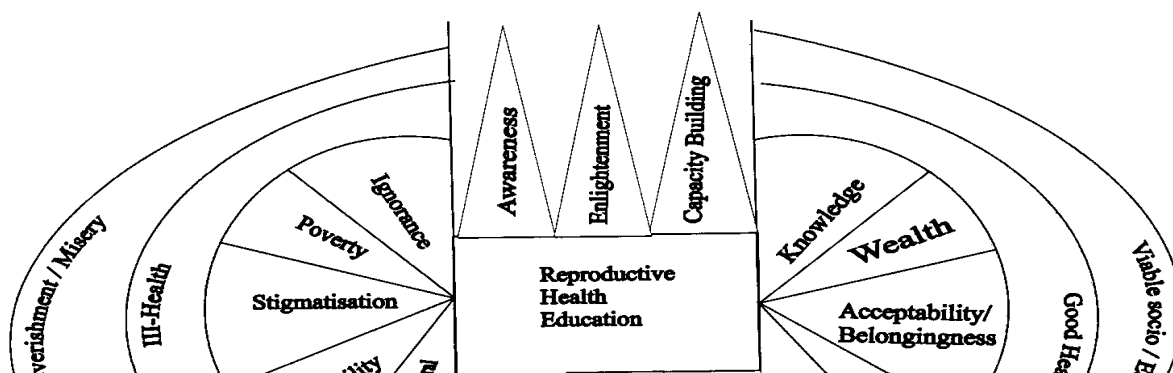
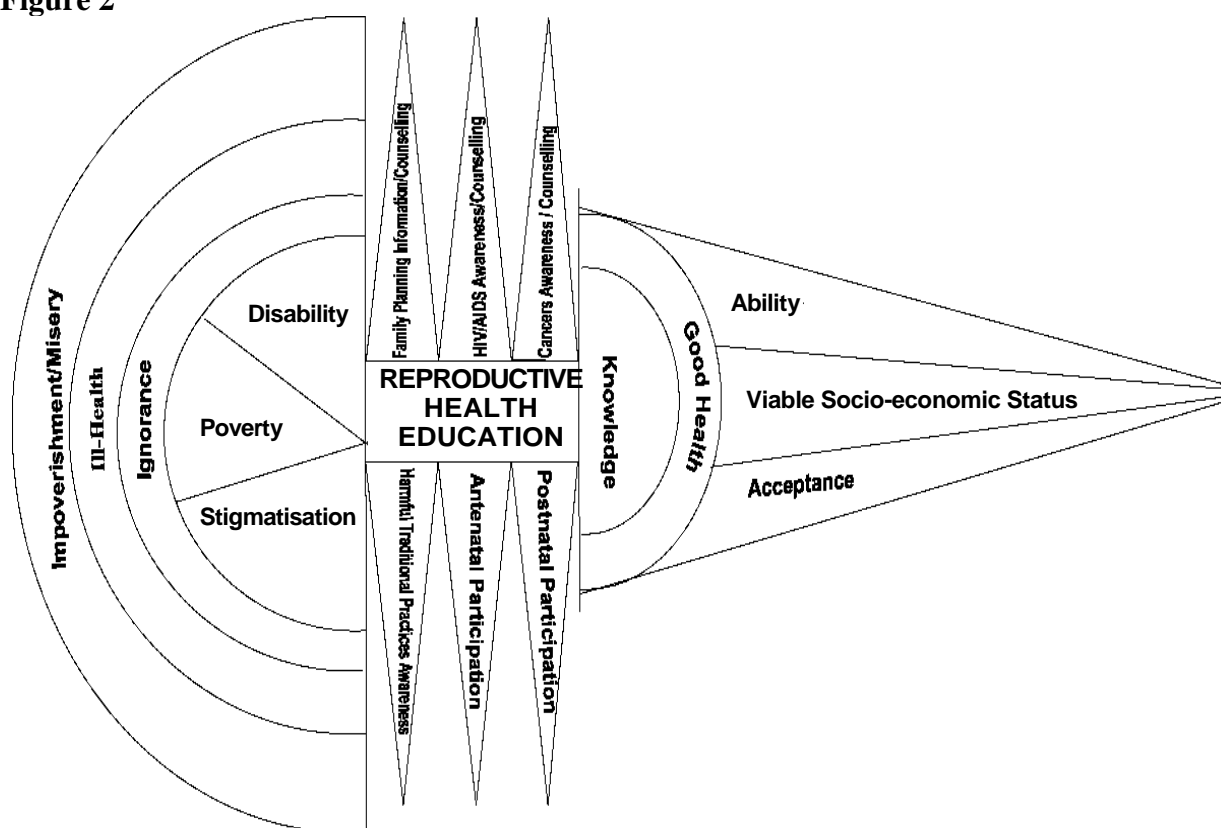


Figure 2: Redesigned Conceptual Model on Influence of RHE on entire lifestyle of rural women.

Figure 2



Developed by the Researcher

THE ASSESSMENT OF WATER POLLUTANTS USING GAMMA DISTRIBUTION IN LAGOS STATE, NIGERIA.

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ABSTRACT

Some stake-holders believe that most health and socio-economic problems in Nigeria are caused by water pollution.

The **main objective** of this study was to examine water pollution in Lagos metropolitan city using a model called gamma distribution. It is of great importance to give attention to water pollution monitoring in the country, considering the rate at which people are being seriously affected by polluted water in the society.

Methods

Generalized Linear Model (GLM) was used to monitor the concentration of five water pollutants in Lagos State reservoir distribution, the variables involved are (**turbidity, colour, pH, dissolved oxygen and alkalinity**). W-test was also used to know if the distribution is normal or not

Results

The average amount of turbidity is 2.6818 mg/l which was higher than the World Health Organisation standard of less than 1mg/l for treated water. The pH of water in the reservoir was 7.49 which conforms with the WHO standard, between 6.5 and 8.5 mg/l. The mean amount of colour in the water was 5.0333 H.U; this is above the WHO standard value of 5.0 HU, while the dissolved oxygen and total alkalinity quantity in the reservoir were 7.5967 mg/l and 38.6833 mg/l respectively, that are in consonance with the WHO standard of portable water quality. **In conclusion**, It was discovered that all the pollutants were significant except the dissolved oxygen. The results presented provide a basis for the use of gamma distribution to model water pollutants. The study therefore recommends that, model used as decision support tools for the management of the Lagos state reservoir, as the attention of government and stake-holders are drawn to keeping water safe.

Keywords: Water Pollution, Kolmogorov Test, Gamma Distribution, Estimation

INTRODUCTION

Some stake-holders believe that most health and socio-economic problems in Nigeria are caused by water pollution. It is therefore important to give attention to water pollution monitoring in the country, considering the rate at which people are being seriously affected by polluted water. Water Corporation, one of the major sources of water supply to people of Lagos State, Nigeria is perceived to be undergoing gradual pollution from human related activities at a rate that may constitute health and socio-economic problems to the people. There are many probability distributions that could be successfully utilized to parameterize water pollutants as the critical component of these distributions is their flexibility to represent a variety of events. It should therefore be noted that there is little difference between many of the commonly used distributions when estimating parameters based on limited number of points. One of these available distributions is gamma, making it a good choice for application in this study.

However, a lot of improvement and development has been recorded over decades as probability functions are used in environmental pollution monitoring. Annete (2001) affirmed that, among other probability density functions, those that are extensively used as lognormal, Weibull, beta, gamma, and chi-square distribution. Liu et al. (2003) noted that, the application of water quality model in the white-cart water catchments, Glassglow, UK has received some good results in monitoring the quality of water. Donigian et al. (1981) and Zhang et al. (2004) confirmed the watershed hydraulic processes affecting water quality and

offered an overview on the computer models developed and that water quality models with computer. The scale and shape parameters that are common in probability distributions make them to take a variety of shapes and can be used to model both right and left skewed data sets. Weber et al., (1995) carried out a study on statistical methods for assessing ground water compliance and clean-up. They continued by recommending statistical procedures for making regulatory decisions to include hypothesis tests, statistical interval estimates, and trend analyses. Application of these methods within the context of regulatory ground-water monitoring programmes in USA was very much effective. Mu et al, (2004) established a hydrologic statistical model for the river-basin of Jialu-River and Juweil River by applying multiple regression method. In the year 2001, Chen and Yaang, (2001) established an econometric model for urban water pollution loss. The regulations which clearly defined the analysis performance criteria to be met by laboratories carrying out environmental regulatory analysis of pollutants were discussed (Thompson et al., 2006). They focused on the importance of employing model fitting for the purpose of analysis to monitor pollution. Rice et al. (1995), and Wackerly et al. (1996) described in some details, the ideas of estimation and modelling by giving a clear account of basic probability theory, as well as good overview of statistical methods. Chandler et al. (2001) and Gregory et al, (2006) in their study gave an overview of linear model in climate research and the use of the gamma distribution to represent monthly rainfall in Africa for drought monitoring applications demonstrated the feasibility of fitting cell-by-cell probability distributions to grids of monthly interpolated and continent-wide-data. They went further with the discovery that the gamma distribution is suitable for 98% of the locations over all months. The model was used as decision support tools for the management of water, agricultural resources and food reserves. Consequently, an understanding of what statistical method is appropriate, given the type of data that have been collected is clearly important and crucial to realize that different statistical methods have much in common, as one method leads to another. In some cases, it may be necessary to fit different distributions for the data, in a way to see which are best fit by carrying out a goodness of fit test. For instance, the Kolmogorov-Smirnov (Ks) test to unravel the true distribution of the data.

The primary objectives of this paper are to estimate and assess distribution parameters that may be used to describe the amount of pollutants in Water Corporation (Lagos). More specifically, probability distribution parameters are estimated from monthly data on water quality measures collected from the ministry of water resources, Lagos State, and the goodness of fit of the parameters were examined.

Materials and Methods

Gamma Distribution

In probability theory and statistics, the gamma distribution is a two-parameter family of continuous probability distributions. It has a scale and shape parameters, say θ and K respectively. If K is an integer then the distribution represents the sum of K independent exponentially distributed random variables, each of which has a mean of θ (which is equivalent to a rate parameter of θ^{-1} (Wackerly et al., 1996). The gamma distribution function is shown in equation (1), where k and θ represent the shape and scale parameters respectively, as x represents amount of pollutants.

$$f(x, k, \theta) = x^{k-1} \frac{e^{-x/\theta}}{\theta^k \Gamma(k)} \text{ for } x > 0 \text{ and } k, \theta > 0 \quad (1)$$

Alternatively, the gamma distribution can be parameterized in terms of a shape parameter $\alpha = k$ and an inverse scale parameter $\beta = \frac{1}{\theta}$ called a rate parameter:

$$g(x; \alpha, \beta) = \frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x} \text{ for } x > 0 \quad (2)$$

$$\Gamma\alpha = \int_{-\infty}^{\infty} e^{-x} x^{\alpha-1} dx \quad (3)$$

If the above gamma function is divided by $\Gamma\alpha$, it becomes a gamma function distribution.

$$f(x) = \frac{e^{-x} x^{\alpha-1}}{\Gamma\alpha} \quad \alpha > 0; x > 0 \quad (4)$$

This is called a one-parameter case of gamma distribution. However, for a continuous random variable x such that α and β are fixed then the two parameter case of gamma distribution is defined in equation (5).

$$f(x) = \frac{e^{-1/\theta} x^{\alpha-1}}{\Gamma\alpha \beta^\alpha} \quad \alpha > 0; \beta > 0; x > 0 \quad (5)$$

The r^{th} moment about the origin of equation (5) is obtained as:

$$E(x^r) = \mu_r^1 = \frac{\beta^1 \Gamma(r + \alpha)}{\Gamma\alpha} \quad (6)$$

Setting 'r' equals 1 and 2 in equation (6) gives the mean and variance of the gamma distribution function as obtained in (7) and (8).

$$E(x) = \mu_1^1 = \frac{\beta^1 \Gamma(1 + \alpha)}{\Gamma\alpha}$$

$$E(x) = \frac{\alpha \beta \Gamma\alpha}{\Gamma\alpha}$$

$$E(x) = \alpha \beta \quad (7)$$

Similarly for $r = 2$

$$E(x^2) = \frac{\beta^2 \Gamma(\alpha + 2)}{\Gamma\alpha}$$

$$E(x^2) = \frac{(\alpha + 1) \Gamma(\alpha + 1)}{\Gamma\alpha} \beta^2$$

$$E(x^2) = \alpha^2 \beta^2 + \alpha \beta^2$$

$$s^2 = E(x^2) - (E(x))^2$$

$$s^2 = \alpha \beta^2 \quad (8)$$

For this study, the gamma distribution parameters are estimated through the maximum likelihood estimation (MLE). Taking the natural log of likelihood function of equation (5), we obtain

$$\begin{aligned} \ln \pi_{i=1}^n f(x) &= \ln e^{-\sum x / \beta} \pi_x^{\alpha-1} \\ &= -\frac{\sum x}{\beta} + \ln \pi_{i=1}^n x^{\alpha-1} - \ln \Gamma(\alpha)^n - \ln \beta^{n\alpha} \\ &= \frac{\sum x}{\beta} + (\alpha - 1) \sum \ln x - \ln \Gamma(\alpha)^n - n\alpha \ln \beta \end{aligned} \quad (9)$$

The partial derivative of (6) with respect to β yields its estimate as in (7):

$$\begin{aligned} \frac{\partial \ln \pi^n f(x)}{\partial \beta} &= \frac{\sum x}{\beta^2} - \frac{n\alpha}{\beta} = 0 \\ \Rightarrow \hat{\beta} &= \frac{\bar{x}}{\hat{\alpha}} \quad (10) \end{aligned}$$

Also, differentiating (6) partially with respect to α giving the estimate in (11):

$$\hat{\alpha} = \frac{1}{4A} \left[1 + \sqrt{1 + \frac{4A}{3}} \right] \quad (11)$$

$$\text{where: } A = \ln(\bar{x}) - \frac{\sum_{i=1}^n \ln(x_i)}{n} \quad (12)$$

(Husak et al., 2006).

The calculation of MLEs starts with the derivation of an intermediate value 'A' as shown in equation (12) (Wilks et al., 1995; Ozturk et al., 1981; and Thom et al., 1958), where x_i , equal respective values of pollutants, and the mean (\bar{x}) is the arithmetic mean of all pollutant values. Ultimately, 'A' is a measure of the skewness of the distribution, whose value is then used to estimate the shape parameter ' α ' in (11). Interestingly, the product of the shape parameter (α) and the square of the scale parameter (β^2) equals the variance as established in (8).

Generalized Linear Model (GLM)

The GLM is a flexible generalization of ordinary least square regression. It generalizes linear regression by allowing the linear model to be related to the response variable via a link function, and by allowing the magnitude of the variance of each measurement to be a function of its predicted value (Cullagh et al. 1989).

In this paper, it has been attempted to embed the work and the procedure within the framework of a probability model. In most cases, if there are two x values that are the same, the associated Y values will differ. Considering Y , as observed value of a random variable Y , whose distribution depends on X . an appropriate model for such a situation is:

$$Y_i = \beta_0 + \beta x_i + \epsilon_i$$

Where ϵ_i are independent random errors with zero mean and common variance σ^2 .

$$\text{Then: } E(Y_i) = \beta_0 + \beta x_i = \mu(x_i), \text{ say}$$

If $X_i = x_i$, and we are making extra assumption that the ϵ_i are normally distributed, then predicting a probability distribution for Y given x means that:

$$Y_i \approx (\beta_0 + \beta x_i, \sigma^2) \quad (\text{Krzonowski et al., 1998})$$

The problem considered here is to determine the concentration or amount of pollutants in Lagos reservoir. The quantity of interest is called the dependent variable and other quantities are explanatory variables, predictors, or covariates. The response variable here is Turbidity and the potential predictors are pH, Colour, Dissolved Oxygen and Alkalinity. Using the statistical package 'SPSS' we obtain the GLM for the pollution data, and the results are summarized in table 3.

Goodness of Fit Test

Having tried to model with gamma distribution, the need to determine the goodness of fits arises. Statistical intervals and test are often on specific distributional assumptions, before computing any analysis on observed data in any area of interest. There is a need to verify if some assumptions are justified, otherwise the correction has to be done on the data after pre-test to make it valid and suitable for intended analysis.

The W-Test

This test developed by Shapiro and Wilk (1965) is an effective method for testing whether data set have been drawn from an underlying normal distribution. The null hypothesis to be tested is

H₀: The population has a normal distribution.

H₁: The population does not have a normal distribution.

If H_0 is not rejected, then the data set is consistent with the H_0 distribution, although a retest in using additional data could result in rejecting H_0 .

The Kolmogorov – Smirnov Test

Once the parameters are estimated, their accuracy in approximating the true distribution must be confirmed. To do this, the estimated gamma distribution is compared against the empirical distribution (Ison et al., 1971). This is done with Kolmogorov – Smirnov (KS) goodness of fit test (Crutcher et al., 1975). The Kolmogorov – Smirnov test compares the cumulative distribution functions of the theoretical distribution – the distribution described by the estimated shape and scale parameters – with the observed values and returns the maximum difference between these two cumulative distributions (Wilks et al., 1995). This maximum difference in cumulative distribution functions is frequently referred to as the KS – Statistic.

The acceptable KS value for rejection depends on the number of points in the empirical distribution being used to test the theoretical distribution, and the rejection level chosen for the study (Crutcher et al., 1975). Because the acceptable value of the KS-statistic is a variable, the confidence in accepting or rejecting the theoretical distribution may be measured by the P-value, which incorporates the number of values used in the test into the calculation of its value. Small P-value calls for rejection of the null hypothesis, while a P-value larger than the selected significant level means the null hypothesis cannot be rejected (Wilks et al., 1995).

Table 1: Estimates of Parameters

Probability Distribution	Parameters	Turbidity	Colour	pH	Dissolved Oxygen	Alkalinity
Gamma	A	8.6729	162.6217	199.9002	85.6105	19.3603
	B	0.3092	0.0309	0.0374	0.0887	1.9980

Table 2: Summary Table for the Fitted Two-parameter Gamma Distribution

Mean and Variance	Turbidity	Colour	Pollutants pH	Dissolved Oxygen	Alkalinity
$A\beta$	2.6818	5.0333	7.4900	7.5967	38.6833
$\alpha\beta^2$	0.8297	0.1553	0.2796	0.6742	77.2941

Table 3: Generalized Linear Model Results

	Coefficients	Standard Error	P-Value	95% Confidence Interval	Remark
Col	0.12952	0.24281	0.019	-0.34637, 0.60542	Significant
pH	0.03197	0.19134	0.026	-0.34304, 0.40700	Significant
DO	0.08623	0.12796	0.500	-0.16457, 0.33704	Not significant
Alk	0.01187	0.01167	0.039	-0.01100, 0.03474	Significant

Table 4: Shapiro-Wilk Test Result

Variable	Obs	W	V	Z	Prob>z
Turbidity	30	0.89675	5.612	3.718	0.00010
Colour	30	0.95278	2.567	2.032	0.02108
pH	30	0.94523	2.977	2.352	0.00935
Dissolved Oxygen	30	0.85915	7.656	4.388	0.00001
Alkalinity	30	0.90214	5.319	3.603	0.00016

Obs – Observation; W – quantiles of Shapiro-Wilk test for Normality provided in the table ($W\alpha = 0.967$); V – index for departure from normality; Z – test of statistical significance.

Table 5: Shapiro-Francia Test Result

Variable	Obs	W	V	Z	Prob>z
Turbidity	30	0.90470	5.705	3.269	0.00054
Colour	30	0.95893	2.458	1.729	0.04190
pH	30	0.95199	2.874	2.020	0.02167
Dissolved Oxygen	30	0.85551	8.650	4.003	0.00003
Alkalinity	30	0.89355	6.372	3.466	0.00026

$W\alpha$ – Shapiro-Wilk W test for Normality

Table 6: Kolmogorov-Smirnov Test Result

Parameters	Turbidity	Colour	pH	Dissolved Oxygen	Alkalinity
D	1.0000	1.0000	1.0000	1.0000	0.5284
P-value	0.100	0.070	0.100	0.080	0.074

D – the maximum difference between the empirical and theoretical distributions

Results

Parameter Estimation

Having obtained the expressions for the shape parameter “ α ” and scale parameter “ β ” as in (10) and (11) above using the method of maximum likelihood estimate, the estimates of the two parameters “ α ” and “ β ” for each of the water pollutants considered using statistical package “R” are as summarized in Table1.

From table 1 above, we observe that turbidity observation ‘X’ has gamma distribution.

Fitting Two – Parameter Gamma for Pollutants

With shape parameter $\alpha = 8.6729$ and scale parameter $\beta = 0.3092$, statistically written as: $x \sim \text{gamma}(\alpha, \beta)$

$$x \sim \text{gamma}(8.6729, 0.3092)$$

$$f(x; 8.6729, 0.3092) = \frac{e^{-x} / 0.3092 \times 8.6729}{(8.6729) 0.3092^{8.6729}} \quad (13)$$

$$E(x) = \alpha\beta = 2.6818$$

$$v(x) = \alpha\beta^2 = 0.8297$$

Also for colour: $X \sim \text{gamma}(162.6217, 0.0309)$

$$f(X, 162.6217, 0.0309) = \frac{e^{-x} / 0.0309 \times 162.6217}{\Gamma(162.6217) 0.0309^{162.6217}} \quad (14)$$

$$E(x) = \alpha\beta = (162.6217)(0.0309)$$

$$E(x) = 5.0333$$

$$V(x) = \alpha\beta^2$$

$$V(x) = (162.6217) 0.0309^2 = 0.1553$$

Following the same procedure as above we obtain estimate of means and variances for all other pollutants, and the results are tabulated in table 2.

Discussion

In table 2, the average amount of turbidity is 2.6818 mg/l which was higher than the World Health Organization (WHO) standard of less than 1mg/l for treated water. Also, the pH of water in the reservoir was 7.49 which conforms with the WHO Standard, between 6.5 and 8.5 mg/l. The mean amount of colour in the water was 5.0333 H.U; this is above the WHO standard value of 5.0 HU, while the Dissolved oxygen and Total Alkalinity quantity in the reservoir were 7.5967 mg/l and 38.6833 mg/l respectively, which are also in consonance with the WHO Standard of portable water quality. However, it is evident here that the reservoir was polluted considering the level of turbidity it contained. It was also observed from the generalized linear model results that the coefficient of all the variables considered are significant except that of Dissolved Oxygen (DO) with P-values greater than 0.05. This means that the dissolved oxygen is the weakest of all the considered pollutants.

More so, fitting the response variable against the independent variables, the model yielded R^2 of 0.4203. This simply means that 42% of the variation in pollution is jointly explained by all the variables (pollutants), an indication of the level of pollution in Water Corporation, informing that the water was fairly polluted. The results obtained from Shapiro-Wilk and

Shapiro-Francia are also discussed as shown in tables 4 and 5 above. Since we will reject hypothesis of supporting a gamma distribution at a significant level if W is less than the quantile provided in table (quantiles of Shapiro-Wilk test for Normality) Values of W , such that 100P% of the distribution of W is less than W_p on table at $\alpha = 0.05$ i.e. $W_\alpha = W_{0.05} = 0.967$.

Setting

W_a = Shapiro – Wilk statistics for Normality

W_b = Shapiro – Francia statistic for Normality

In the above results, all pollutant values and the response variable have W_a less than 0.967 (tabulated value). This clearly indicates that the data can arise from another distribution other than normal distribution, and of course buttressing the fact that all the variables are not normally distributed. The general results also follow a strong support for the claim that environmental data are positively skewed, hence the application of the gamma distribution.

Moreover, once the gamma distribution parameters have been estimated, they should be evaluated to understand how accurately they reflect our data, and therefore represent the modeled probability of pollutants in the reservoir. The KS test offers a straightforward method for assessing the relationship between the empirical distribution and the estimated distribution, leading to either acceptance or rejection of the null hypothesis. As used here, the null hypothesis of the KS test is that the pollutants follow gamma distribution with parameters as estimated in equations (10) and (11). The critical region (acceptance or rejection region) is arbitrary, as $\alpha = 0.05$ was used in this work, meaning that we reject the null hypothesis that the theoretical distribution is performing adequately in modeling the pollutants with p-value less than 0.05. The test produced α P-value > 0.05 for all the variables; hence, we fail to reject the null hypothesis that the data follow a gamma distribution.

Conclusion and Recommendations

Summarily, this paper presented estimation of water pollution parameters for the gamma distribution using the maximum likelihood estimates. The ability of the gamma distribution and parameter estimates to adequately fit the empirical distribution of values in the model was tested using the Kolmogorov Smirnov (KS) test of goodness of fit. The test showed that the gamma distribution and the estimated parameters could not be rejected as a suitable distribution for the water pollution data at α 0.05 level of significance. The hypothesis testing here indicates that the gamma distribution provides a reasonable description and evaluation of pollutants in the reservoir. Through analysis of the distribution parameters, it is possible to examine the amount of pollutant in the Water Corporation and see if it is outside the World Health Organization (WHO 2011) standard for portable water or not. The ultimate application of the information presented in this paper reveals the true value of this research as we conclude that the Water Corporation is polluted and we recommend that:

- Government should set up a committee, which will ensure that statistically verifiable ideal standards are maintained before the water is treated and passed out to the people for drinking.
- Waste organic materials generated from the plant (company) which are washed into the drain should be reduced so that the Dissolve Oxygen will rise and survival of aquatic life will be better, and
- Regular environmental audit on Water Corporation is done, so that government will ascertain the level of pollutants in the effluents as compared with the existing standards.

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RESEARCHES IN EDUCATION STUDIES: DISSEMINATION AND IMPLEMENTATION CHALLENGES IN NIGERIAN HIGHER INSTITUTIONS

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ABSTRACT

The study investigated the challenges of disseminating and implementing research findings in Nigerian higher institutions. Specifically, the study sets out to examine the extent to which researchers in higher institutions take their research activities, ascertain the various means of disseminating researches in the institutions and the frequency of implementing the findings among others. Four Research Questions were raised to guide the study. The study adopted the survey design. The simple and stratified random sampling technique was used to get a total of 400 participants from four higher institutions in Lagos State. A research instrument titled Research Dissemination and Implementation Challenges Questionnaire (RDICQ) was constructed to collect data. The research questions were answered in tables of frequencies and percentages. The findings revealed that though most academics in higher institutions conduct researches, their findings are sparsely disseminated and implemented due to political and government factors. Recommendations such as involving the institutions in the implementation stage and indulging in the politics of the implementation agencies were proffered to ensure the realisation of turning research findings into practice.

Keyword: Researches, Education Studies: Dissemination, Challenge, Higher Institutions

INTRODUCTION

There have been growing needs for more researches in the education sector in Nigeria. This is as a result of the importance of research - the major tool for discovering problems in education and proffering solutions to them. It is interesting to see the increasing attention aimed at improving research in fields such as engineering, medicine, public health, and education. This includes the growing emphasis on utilising research findings for the development of the educational system and the nation in general. This trend continues to be encouraged and supported through the high priority placed by the federal, state, and local governments in allocating funds to institutions for research purposes. Thus we have an aspect of the Tertiary Education Trust Fund (TETFUND) meant for higher institutions to access institution based research.

In order to actualise the objective of using research as a tool for national integration, national security, peace studies and economic development, research has been given great prominence. This is reflected in series of researches that are now conducted (Crow, 2002). Most worthy of note are researches in education on Impact of Non-Formal Education on the Mitigation of Spread of HIV/AIDS; Evaluation of NTI programme; Evaluation of University Education Curriculum; the studies on Mode of Implementation of Nigerian Secondary School Curriculum - Towards Socio-economic Empowerment of Youth; Universal Basic Education and Socio-Economic Prospect of the Girl-Child in South-South Nigeria; collaborating learning; inclusive learning, e-

teaching etc. Researches conducted under the above topics have turned out various laudable findings deserving more attention than they are receiving (Odukoya, 2012). The higher institutions (universities, colleges of education) are the centre for researches in education. These institutions have not been found wanting in conducting researches. The fact still remains that these researches hardly leave the shelves of the institutions.

Findings on most researches in Nigeria especially in the education sector suffer from dissemination and implementation challenges (Nworgu, 2006). Dissemination encompasses the numerous channels involved in dispersal of information, ideas, and recommendations of researches to individuals, groups, government and organisations. If the results of researches in education are poorly disseminated how then would the findings be implemented? The implementation process refers to efforts to ensure that recommendations from research findings are put into practice. Thus researchers in education seemed to be saddled with the fact that most of their research findings are hardly disseminated while implementing them seemed also a mirage. This has resulted in the tendency for some researchers, educational practitioners to undermine the fundamentals of research when little is being realised from various efforts.

The National Education Research and Development Council (NERDC) an institution armed with the responsibility of funding, disseminating and creating steps for the implementation of research findings, seemed to be inefficient (Moroz, Hindle, and Anderson, 2008). How can we explain the various politics surrounding the granting of research loan, acceptance of research findings and making the results public for policy makers to implement? The higher institutions which make it mandatory for lecturers to conduct research have also seemed to be lacking in the area of disseminating and implementing the research findings. Most research works in the higher institutions are seldom given serious attention or publicity. The best done to most researches in education is to place them on the internet. As widely spread as the internet seemed, assessing these researches and putting their findings into practice lie mainly in the hands of government, agencies, policy makers, organisations and interest groups (Nworgu, 2006). It is almost an impossibility for researches in the net to pass through these bodies and be given prominence. The objective of research in education which provides framework for improving learning through curriculum reviews and other policies is almost being neglected.

The processes of circulating and implementing research findings are faced with challenges to the extent that most researches do not leave the researchers' desk. Lecturers and other researchers tend to conduct researches just to gain promotion, achieve their career development and as a requirement in their field. As a result, the whole objectives of using research as a means of nation building through the various policies and other implementation ventures are mostly defeated. Researches in education therefore are mere façade as the TETFUND and the institutions grant given to enable research go unhindered are not yielding the desired results. Findings in improved learning through collaboration, inclusive learning are yet to be implemented while the Universal Basic Education programme is yet to fully take off despite various research findings and recommendations that have been proffered.

STATEMENT OF THE PROBLEM

Researches in education are conducted at an alarming rate. This stems from the fact that higher institutions base staff promotion and career growth on the number and quality of researches conducted. The researches are also meant to enhance educational practices and aid national development through the implementation of their findings. More often than not, these research findings are hardly disseminated nor put into practice. The tendency is for researchers to develop apathy and lukewarm attitude towards conducting research knowing that their researches and their findings might not be made known or put into practice (Oduwaiye, Owolabi, Onasanya and Shehu, 2010).

When research findings are seldom disseminated and implemented, it creates a vacuum in the Nigerian educational system; leaving in its wake unachieved objectives of improving our educational standard and the nation as a whole through research. The glaring fact that cannot be ignored is the inability of the government, agencies, institutions and other organised groups to effectively disseminate these researches thereby making them widely acknowledge for prompt implementations. How would the government invest so much on researches and not utilise their findings to achieve the desired results? Why would higher institutions be saddled with the responsibility of conducting researches and will not be able to properly project them for their findings to be implemented? Thus it is against this background that it is pertinent to investigate the various challenges of disseminating and implementing the research findings in Nigerian higher institutions.

RESEARCH QUESTIONS

1. How do researchers in higher institutions take their research activities?
2. What are the various means of disseminating researches in higher institutions?
3. How often are research findings implemented in higher institution?
4. What are the challenges of research dissemination and implementation in higher institutions?

LITERATURE REVIEW

The importance of research to the educational sector and the development of the entire nation cannot be overemphasised. The Nigerian government in attempt to utilise research and its findings maximally made it mandatory for the NERDC to be responsible for sponsoring researches, monitoring and disseminating such researches. Efforts to improve dissemination and implementation of good research findings have been the bane of several institutions, groups, researchers and individuals (Bostrom, Kajermo, Nordstrom and Wallin, 2012).

The National Policy on Education in Nigeria has as one of its objectives that tertiary institutions are to contribute to national development through high level manpower training, promotion of scholarship and development of the intellectual capability of individuals (FRN 2004 p.36). Thus the pursuit of research as means of development activities by tertiary institutions in Nigeria derives from this mandate; whereby universities are seen as centres for research and community development (Odukoya, 2012).

Egwunyenga (2008) has attributed academics involvement in research to the fact that research is made compulsory for lecturers and academics, in order to strap their subsistence and promotion within the academic environment. Specialised research institutions also constitute another focal point for research activities in Nigeria. Ideally, research findings addressing issues endemic to the nation should be given wide circulation so that their results can be applied in addressing the issues that they sought to tackle. Unfortunately, these outputs gather dusts in the various departmental offices and institutional libraries without getting desired attention (Oduwaiye et al, 2010). In the process of conducting research, academics are faced with many challenges. These according to (Oduwaiye et al) are funding, accountability, ethics, quality and the attitude of academics towards research. Moroz et al (2008) also pointed out that involvement in research brings the academics face to face with the challenges of research dissemination, utilisation and commercialisation.

Given the increasing attention on early stage of development related to dissemination and implementation in research, training, practice, and policy, it was not surprising when the National Implementation Research Network (NIRN, 2013) concluded:

"... very little is known about the processes required to effectively implement evidence-based programs on a national scale. Research to support the implementation activities that are being used is even scarcer."

Several analyses as posited by Adomi and Mordi (2003) suggested that improving the state of the research in higher institutions requires taking a step back to address some basics. In particular, we find too little attention has been paid to:

- (1) understanding the nature and scope of phenomena encompassed by the terms dissemination and implementation;
- (2) classifying important differences in the prototypes to be implemented; and
- (3) clarifying key direct implementation process concerns.

Consequently of the above challenges, it was discovered that too little attention has been paid to differentiating direct implementation from the process of creating opportunities for implementation; and differentiating implementation of a specific practice or program from efforts to transform institutions such as schools (Chisenga, 2006). For centuries, institutional libraries and scholarly publishing was the conventional model adopted in preserving and disseminating knowledge from academic and research institutions (Christian, 2008). Though institutional libraries housed research outputs in the form of literatures, they play a greater role in terms of preservation than dissemination.

Dissemination according to Emcee (2008) is a system of distribution of information or knowledge through a variety of ways to potential users or beneficiaries. Dissemination starts after research has been completed. This can take the form of documentation such as the journals, books, monographs or other such scholarly papers. Research implementation on the other hand has to do with fulfilling the essence of the research which is the practice. It addresses the question of why we want people to get the

research outcomes, what people will make from the research outcomes and how such will be used. Most research findings die at the institutional level as those who need to apply the knowledge are unable to access them (Fatunde, 2008). This situation thus buttressed the need for an effective process of research dissemination by academics and research institutions in developing country. In order to address this challenge of dissemination and implementation, UNESCO organised an expert meeting on utilisation of ICT for Higher Education in Asia and the Pacific in 2007. This according to Emcee will connect research to community service which is the actual implementation

In order to achieve the goal of connecting research with practice, researchers agreed that the major solution was to promote collaboration in research (Oduwaiye et al, 2010). Thus it is a common conceptual starting point for researchers and institutions to formulate implementation phases. Moroz et al (2008) delineated five diffusion stages: knowledge, persuasion, decision, implementation, and confirmation. Also Emcee (2008) formulated three phases of research implementation in evidence-based practices, they include: pre-implementation, initial implementation, and sustainability planning. It is collaboration that will lead to information sharing and the eventual utilisation of research findings.

METHODOLOGY

The survey research method was used for the study. Four higher institutions: two universities and two colleges of education in Lagos State form the population of the study. A total of 400 academics were sampled from the various faculties and departments in the institutions. The research instrument is a constructed questionnaire titled Research Dissemination and Implementation Challenges Questionnaire (RDICQ). The research questions were answered in tables of frequencies and percentages.

ANALYSIS OF DATA

Research Question One: How do researchers in higher institutions take their research activities?

Table 1 : Researchers' Attitude Towards Research
Researchers' Attitude

	Responses			
	S/A	A	S/D	D
1. Research activities are cumbersome	40	20	15	25
2. My research activities are exciting	25	30	25	20
3. My research activities are only for promotion	55	20	15	10
4. My research activities are not profitable	65	27	6	2
5. My research activities are done diligently	48	25	10	17
6. I publish annually	34	26	17	23

Responses on researchers attitude as shown in Table 1 revealed that most academics (60%) see research as cumbersome but are moderately excited about it as it is meant

for their promotion(75%).Majority of the respondents do not see research as profitable but try to be diligent in the activities by publishing regularly.

Research Question Two: What are the various means of disseminating researches in higher institutions?

Table 2: Media of Research Dissemination

Media	Responses		
	Always used	Seldom Used	Never Used
1. Departmental seminars	60	32	8
2. Public Lectures	12	49	39
3. Conferences	88	12	-
4. Departmental/ Faculty Journals	66	32	2
5. International Journals	54	41	5
6. Books	36	44	-
7. Online Journals	17	63	20

Table 2 showed that the most frequently used media of research dissemination by academics is the conference (88%) , this is followed by departmental/faculty journals (66%).Public lectures and the online journals are seldomly used while international journals and book publications do not rank high in being always used.

Research Question Three: How often are research findings implemented in higher institutions?

Table 3: Frequency of Implementing Research Findings

No of researches	Attempted Implementation	Not Attempted	Implemented
5-15	12	88	-
16-26	13	74	3
27-37	10	83	7
38-48	15	72	13
49-59	21	62	17

Table 3 revealed that majority of academics (88%) with ranges of 5-15 publications are yet to have attempt at implementing their findings, while 13% of academics with about 38-48 publications have had their findings implemented. Thus the highest research findings that were implemented was 17% of those with researches between the range of 49-59.

Research Question 4: What are the challenges of research dissemination and implementation in higher institutions?

Table4: Challenges of Research Dissemination and Implementation

Challenges **Responses**

Most probable	Less Probable		
1. Funding	84	16	
2. Inadequate publicity	92	8	
3. Lack of appropriate distribution channels	82	18	
4. Politicisation of implementation agencies	95	5	
5. Institution inability to implement findings	93	7	
6. Institution less attention on dissemination of findings	78	22	
7. Government unresponsiveness towards implementation	96	4	

Table 4 revealed that the higher institution lecturers all agreed to having challenges on dissemination and implementation of findings. The most probable challenge are politicisation of implementation within the agencies designated, the institution inability to implement and the government unresponsiveness in implementing research findings.

DISCUSSION OF FINDINGS

The findings showed that researches are conducted regularly in higher institutions as it is a basic requirement for promotion. Consequently, though research is taken seriously, academics attitude towards research seemed not to be too encouraging, they see it as cumbersome and do not experience the gains of research as most of their studies suffer dissemination challenges. This is understandable as the study further revealed that most academic works are disseminated in conferences with little exposure to the targeted audience for whom the research outcome is intended (Benkler, 2006). Lecturers in the higher institutions seldomly make use of public lectures, online and international journals in disseminating their researches. These findings are in line with Emcee (2008) assertion that most researches are not widely published and those that eventually get published are in local journals that have minimal circulation due to poor distributorship, marketing or prestige.

In line with the objective of research which is development, the study showed that majority of academics findings are yet to be implemented (see Table 3). This is in relation to the various challenges of research dissemination and implementation as found out from the academics. Majority of academics (88%) are yet to have attempt at implementing their research findings while only those within the range of 49-59 publications had 17% of their findings implemented. The next to zero implementation level of research findings in higher institutions is buttressed by Oduwaiye et al (2010) study that the major challenge is in translating the core research findings into implementable policies. Consequently, many of our past research reports have been virtually lying on the shelves. This is quite pathetic as this is tantamount to waste of multiple financial, manpower and material resources. The most probable challenge identified by the study are: politicisation of implementation within the agencies designated, the institution inability to implement, the government unresponsiveness in implementing research findings, funding and inadequate publicity.

CONCLUSION AND RECOMMENDATIONS

The results of the study clearly show that though researches are conducted in higher institutions the real essence of utilising their findings for policy development, aimed at finding solution to problems in education is yet to be realised. It seemed the whole energy, time, money and other resources invested in research are almost unrewarding. This is best explained when academics seemed to have lost out on the core objective of research which is disseminating and implementing the findings for national development (Adomi and Mordi, 2003). The institutions are handicap to some extent in research implementation while their attempt at disseminating these findings for action to be taken seemed inadequate (see Research Question 3 and 4). These findings are as weighty as their consequences are, considering the fact that academics are almost developing apathy for research (Fatunde, 2008). There seemed to be little reward for most academic as their work done diligently, lie unutilised except for promotion exercise.

Thus after so much painstaking attempt at conducting research, academics are faced with challenges of dissemination and implementation. These biting challenges of dissemination and implementation of research findings in higher institutions can be tackled if the core challenge is resolved, which is dissemination. If research findings are not widely disseminated to the target audience and implementation agencies, they will not be read or mapped out for action. There is need to transfer evidence-based recommendations into practice. Thus the institutions should track all researches and send them for implementation.

Also the researches in higher institutions should be so done to attract implementation. This lie within the researchers and the higher institutions. There is dire need for academics to understand effective research methodology, reporting system and process of policy formulation. This will enhance the acceptability of research findings for implementation.

Politics within the implementation agencies was found to be one of the challenges on research implementation. This involve the ability to canvass, lobby and advocate for the research findings to be implemented. Thus there is a great need for researchers and the higher institutions to be acquainted with the principles of lobbying in order not to be sidelined during selection process.

In the same vein, funding should be adequate and made attractive to enable academics do research with minimal stress. The higher institutions should practically involve academics through collaboration on how best to disseminate their research findings. This will stem the tide on lack of access to most research findings thereby spurring agencies to be interested in most research findings leading to implementation.

The frantic efforts of government, institutions, agencies and other organised sector at promoting research, based on its indisputable importance should yield greater dividends by having findings of most researches turn into action. This study is one that should be taken seriously for Nigerian higher institutions to rank highest in turning out best policy statement and actions.

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CONSEQUENCES OF SUBSTANCE ABUSE ON ADOLESCENTS' BEHAVIOUR IN CROSS RIVER STATE, NIGERIA.

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ABSTRACT

Adolescents are the future generation of all nations globally. Therefore, their existence, well-being, survives, education and development are of utmost priority to all nations. A nations' investment on their well-being, education and development holistically is a rightful agenda. Substances which are drugs have both positive and negative effects on those that consume them. Studies reveal that when substances are abuse, they tend to have negative effect on the users. Adolescents are young people who are full of energy and dare to experiment things around them. So, a lot of them attempt to experiment on these substances which include alcohol of all kinds, tobacco, India herm, cocaine, kola-nut, and snuff among others. When there are taken without recommendations, they affect the users negatively. This study was specifically designed to investigate the consequences of substances abuse on adolescents. Two research questions and two hypotheses were formulated to guide the study. The sample for the study was 300 teachers in the three education zones in the study area. The respondents were randomly selected. Percentages were used to determine the response rate in the two research questions and Pearson Product Moment Correlation Statistics was used to analyze the two hypotheses. The results revealed a high percentage rate and strong significant relationship between the investigated variables. Thus, the calculated r-value of 13.14 and 13.28 at 0.05 level of significance with 298 degrees of freedom and critical value of 0.196 which showed a significant relationship between substance abuse and adolescents' educational attainment and their holistic development.

Keyword: Abuse, Adolescents' Behaviour, Cross River State

INTRODUCTION/BACKGROUND OF THE STUDY

Adolescents globally constitute the larger population that the society needs to sustain from generation to generation. Adolescents are described as the youths, who are equally viewed as the future of tomorrow. Akinboye, (1987) considered adolescents as a stage of growth that chronologically falls between childhood and adulthood. It is period of heightened social awareness, a period of a formal cognitive operation and a period when youngsters reach maturational stage of primary and secondary sex characters that enable them to produce their kind. It is a period when an individual is expected to be able to work, agile, full of vitality and energy. He/she is at the prime of activities. The energies are still intact and have mental energy to transform. Their productivity level is high.

The adolescents are as precious to the community as they represent the future; they represent the largest segment of the society. They form the bastion of the society. They make up the strength and life of any organization. And any nation or society without the youths or adolescents is dead, because there will be no continuity of such nation or society. They are the major workforce in any sector of the economy; hence they are always given preference in recruitment into the forces and some organizations because of their anticipated strength.

Youth's education and development is predicated on the understanding that all young people need support, guidance and opportunities during adolescence, a time of rapid growth and change. It is aimed at helping to develop the will and capacity to act as positive, productive citizen and engaged in their community development. A positive youth education and development also facilitates the growth of youth into active, caring citizens with the will and capacity to contribute positively to their local and globally communities (Udida,2008). Adolescence education also provides resources and technical assistance for attitude change and positive modification of perception. Absence of this type of

education and orientation to the youths may cause them to be engaging in various kinds of substance or drugs to meet with the challenges of life.

Substance Abuse can simply be defined as a pattern of harmful use of any substance for mood altering. There are chemicals substances, which when taken give rise to physiological and psychological effects which may be positive or negative depending on the body constitution of the individual. It also refers to inappropriate self-medication or the administration of a drug in abnormally low or high dose, or on account of physical dependence, functional impairment and a deviation from approved social norms (Udida, 2008). Skipwith (1988), described it as inadequate prescription, over-dose or under-dose and inappropriate drug combinations. Nwachukwu & Ekanem (2007), described substance abuse as a pattern of use of substances that places the users on unacceptable high level of health risk.

Substance abuse has affected the adolescents group tremendously in their educational, social, economic, physical, emotional and moral developments. The effects of these substances have caused families to lose their loved ones. In short, substance abuse has become an apparently endless vicious cycle that has the image of the country and the dignity of those persons concerned. The commonly abused substances include alcohol, tobacco, (cigarettes and snuff), analgesics, narcotics such as barbiturates and tranquilizers, stimulants such as amphetamines and cocaine, heroin and morphine, marijuana, hallucinogens such as LSD, phencyclidine (PEP) mescaline among other substances.

Adolescents who take these substances in abused manner turn out to exhibit some anti-social behaviours. Behavior disorder is one of the glaring evidence of substances abuse used among adolescents. The substances are usually mind-altering, depressants, or stimulants. They become vicariously reinforced to engage in behaviour patterns which are socially undesirable and may terminally affect their vitality and reduce their longevity (Udida, 2008). Aggressiveness is also one of the effects on substances abuse users' exhibit. The users become aggressive unnecessarily; they become cruel, assaultive, and malicious and have no feelings of guilt. They defy authority figures such as police officers, teachers, parents, and sometime show no attachment to anyone except their peer-gang group. McDowell & Hostetler (1996), revealed in their correlation studies between drugs use among youths and teen sexual activity that the use of alcohol and other drug hasten many kids in sexual involvement. Alcohol being the most usually acceptable drug is found to a great extent with teens' first intercourse. The risk of engaging in teenage sexual intercourse is highly dependent on one's drug use status. Renvioize, (2002) affirmed that substance abuse are stimulants such as amphetamines, cocaine, India- helm etc that affects the nervous system by an increase in alertness and reduction in fatigue, as well as preventing sleep. Korem, (1992) added that drug abuse may results in euphoria, increase in pulse rate, blood pressure, insomnia and loss of appetite. This effect makes the learner not to function adequately during the day and in school work. These equally reduce their learning abilities and may gradually cause them to drop- out of school as a result of non-performance. Kobiowu, (2006) states that substance abuse users usually develop low self- esteem and a feeling of personal inadequacy or unworthiness in response to a wrong act. This results to a poor social adjustment, preference for passive life styles and low purpose in life, and experience low dignity in the society. Kobiowo, (2005) also affirmed that drug abusers experience difficulty in concentration, increased heart beat, irritability and inability to sleep. McDowell, (1996) maintained that substance abuse cause premature death. Hill's study, (in Udida 2008) supported this statement when he found in his studies at Texas South Western Medical Centre that small amount of cocaine can decrease blood flow to the heart, thus, increasing the risk of a heart attack which results in early death.

STATEMENT OF THE PROBLEM

Substance abuse which are drugs of various forms have been found to be very destructive to the educational attainment of the young people, hinders their psychological, emotional and social stability of the adolescents. It is also found to have caused physical and total death of a lot of adolescents. It has led adolescents to engage themselves in several anti-social behaviours, to become excessively aggressive, engage in early sexual experience, and attention deficit disorder. It also observed by Udida, (2008) that some of the consequences of substances abuse on adolescents include dependence on the substance by the users, nervousness, bladder cancer, destruction of the liver, damage of brain

cells, loss of self-esteem, high rate of school drop-out, low body immunity, lack of concentration, economic waste, hallucination and premature death. Also, adolescents who are users of these substances are found to engage in examination malpractices because of lack of strength and energy to study, cause them to sleep all night in most cases. The users of the substances are also found to be members cultism and arm robbers and in most cases end up their lives not being useful to themselves, to their parents and the society at large. Some of them turn out to be societal nuisance without contributing to the development of their families and the society. It is against this background that the researchers embarked on this study to find out the consequences of substances abuse to the holistic development of the adolescents with particular reference to Cross River State –Nigeria.

PURPOSE OF THE STUDY

This study is designed to investigate the consequences of substance abuse on adolescents in Cross River State- Nigeria. It is specifically set to;

Find out the consequences of substances abuse on educational attainment of adolescents.

Determine the holistic development of adolescents who are users of substances abuse.

RESEARCH QUESTIONS

The following research questions were formulated to guide the study.

To what extent does substance abuse affects the educational attainment of adolescents?

How does substance abuse affect the holistic development of adolescents?

HYPOTHESES

The following null hypotheses were tested.

There is no significant relationship between substance abuse and adolescents' educational attainment.

There is no significant relationship between substance abuse and adolescents' holistic development.

METHODOLOGY

Design:

This study is a descriptive survey research which involved a survey on the consequences of substance abuse on adolescents' educational attainment and holistic development in Cross River State- Nigeria.

Population, Sample and Sampling Technique:

The population comprised of all teachers in Cross River State. There are 240 public secondary schools in the study area and about 5,128 teachers.(source: ministry of education, exams department) 30 secondary schools were selected from the three Education Zones in Cross River State. This was done through a stratified random sampling approach. 10 schools were selected from each of the three Education Zones. A sample of 300 respondents made of 30 teachers per school and 100 respondents per education zone were selected for the conduct of the study. This was done through multi-stage approach involving both stratified and simple random techniques. This was to ensure a wider coverage of the zone.

Instrumentation

The instrument for data collection was a questionnaire designed by the researchers and validated by a test and measurement expert in education. The questionnaire was titled" Consequences of Substance Abuse on Adolescents Questionnaire". The instrument was designed in clusters. Section "A" contained demographic information of the respondents, and section "B" contained ten items each on each of the variables. A total of 20 items were developed for this purpose. The respondents were only required to tick () Strongly agreed,(SA), Agreed(A), Disagreed (D) and Strongly disagreed (SD) to all the statements that are suitable to them. The instrument was administered by the researchers and through the assistance of school principals in all the schools selected for the study.

Data Analysis

Simple percentages and Pearson Product Moment Correlation were used to answer the research questions and all the null hypotheses respectively.

Results

The results of the analyzed data are presented based on the research questions and hypotheses. There are presented in tables 1-4.

Table 1:

Percentage response of the extent of substance abuse on educational attainment of adolescents' users.
N=300

		RESPONSE RATE IN %	
S/N	ITEMS	SA/A	D/SD
1.	Most students in my school smoke and take Alcohol.	269 = 89%	31 = 10.3%
2.	Most of these students missed class lesson.	255 = 85%	45 = 15%
3.	Some of them always try to cheat during tests and examinations.	281 = 93.7%	19 = 6.3%
4.	They are not regular at school.	248 = 82.7%	52 = 17.3%
5.	They fail to do assignments.	196 = 65.3%	104 = 34.7%
6.	Some of them perform generally poor in academics.	206 = 69%	94 = 31%
7.	They easily get angry against their classmates	214 = 71.3%	86 = 28.7%
8.	They often leave school before the close hours.	238 = 79.3%	62 = 20.7%
9.	Most of them do not have study material such as text-books.	265 = 88.3%	35 = 11.7%
10.	Most of them drop out of school.	272 = 90.7%	20 = 9.3%

The response rate on the above variable revealed that adolescents who indulge in substance abuse are affected negatively in their educational attainment. The respondents first, established that most the adolescents are substance abusers with a percentage response rate of 89.6%, while 10.3% disagreed with the fact.

Table 2

Percentage response of the users of substance abuse and their holistic development.

N=300

		RESPONSE RATE IN %	
S/N	ITEMS	SA/A	D/SD
1.	They do not participate in school manual labour.	203 = 67.7%	97 = 32.3%
2.	They appear very neat always	39 = 13%	261 = 87%
3.	They are well behaved	47 = 15.7%	253 = 84.3%
4.	Most of them beat up other students at slightest Provocation	281 = 93.7%	19 = 6.3%
5.	Their parents and other members of the community speak well of them	107 = 35.7%	193 = 64.3%
6.	Most of them have scars on their body.	184 = 61.3%	116 = 38.7%
7.	Most of them are usually found in the street fighting.	206 = 68.7%	94 = 31.3%
8.	They usually make the best results in their final year(SSCE).	43 = 14.3%	257 = 85.7%
9.	Most of them are not socially, emotionally, Psychologically and intellectually stable.	209 = 69.7%	91 = 30.3%
10.	Most of them die prematurely.	196 = 65.3%	104 = 34.7%

Table 2 results also showed a very high percentage response that those adolescents who indulge in substance abuse are negatively affected in their holistic development. See table 2 for details. This result generally implies that adolescents who abuse drug are prone to ruin their lives and are likely not to be productive to them-selves and to contribute to the development of the society therein.

Table 3: Pearson Product Moment Correlation Analysis on the Relationship between of Substance Abuse and Adolescents' Educational Attainment.

N=300			
Variable	X	SD	r-value
Users of substance Abuse	74.2	14.3	13.14*
Educational Attainment	41.31	11.04	

*significant at .05 level, critical $r=0.196$, $df=298$.

The result on table 3 revealed that the calculated r-value of 13.14* is greater than the critical r-value of 0.196 at .05 level of significance with 298 degrees of freedom. This result implies that the null hypothesis was rejected. This simply means that substance abuse has a significant relationship with educational attainment of the adolescents' users. The implication here is that, substance abuse has a negative effect on the educational attainment of the adolescents' users. It makes them not to participate fully in school activities.

Table 4: Pearson Product Moment Correlation Analysis on the Relationship between Substance Abuse and Adolescents' Holistic Development

N=300			
Variable	X	SD	r-value
Substance abuse users	74.3	14.3	13.18*
Holistic development	42.4	10.4	

*significant at .05 level, critical $r=0.196$, $df=298$.

The result on table 4 showed a calculated r-value of 13.18 at .05 levels of significance with 298 degrees of freedom and a critical r-value of 0.196. This means that the null hypothesis was rejected, showing that there is a strong relationship between substance abuse users and their holistic development. The implication here is that adolescents who take substances in abuse manner are negatively affected in their holistic development. This is to say that these victims are likely not to be functional to them-selves and to the society at large if the users do not desists from taking it.

DISCUSSION

Two research questions and two null hypotheses were formulated to elicit responses on the consequences of substance abuse on adolescents' educational attainment and their holistic development. Tables 1 and 2 provided the answers to the research questions. The answers from the two research questions revealed a very high percentage on the negative effects of substance abuse on the educational and holistic development on the users of the substances. Also, in a correlational analysis of the investigated variables to determine the level of relationship, the result revealed a very strong significant relationship between adolescents' substance users and their educational attainment with a calculated r-value of 13.14 at 05 levels significance with 298 degrees of freedom and at a determined critical r-value of 0.196. This means that substance users are affected negatively in their educational attainment. (see table 3 for details). Result on table 4 also revealed a strong significant relationship between adolescents abuser and their holistic development with a calculated r-value of 13.18 at 0.05 level of significance with 298 degrees of freedom and determined at a critical r-value of 0.196, implying that adolescents who indulge in substance abuse hinders or impede their holistic development.

These findings gained the support of Udida (2008), who affirmed that adolescent who take these substances such as marijuana, heroin, cocaine and alcohol turn out to exhibit some anti-social behaviours which affects them in learning and general development. She further adds that the users become vicariously reinforced to engage in behavior patterns which are socially undesirable and may terminally affect their vitality and reduce their longevity. The researchers also lend their support to this finding when they observed generally that adolescents, who are substance abusers exhibit unnecessary aggressiveness, become cruel, assaultive, and malicious and show no feelings of guilt on

offences committed by them. Renvoize (2002), equally affirmed that substance abuse such as stimulants affects the nervous system, by an increase in alertness and reduction in fatigue, as well as preventing sleep. Korem, (1992) added that drug abuse may result in euphoria, increase pulse rate, blood pressure, insomnia and loss of appetite. This makes the learners not to function adequately during the day and in school work. This thus reduces their studying ability and may gradually lead them to drop out of school as a result of non-performance.

Kobiowu (2006) also supported the findings by stating that substance abusers usually develop low self-esteem and a feeling of personal inadequacy or unworthiness in response to a wrong act. He added that the abusers experience difficulty in concentration, increase heart beat, irritability and inability to sleep well. McDowell and Hostetler, (1996) concluded that substance abusers may die prematurely.

CONCLUSION

This study was designed to investigate the consequences of substance abuse on adolescents' educational attainment and their holistic development in Cross River State. The findings revealed a very high and significant relationship between substance abuse users and their educational attainment and holistic development negatively. This implies that substance abuse has a negative consequence on adolescents that indulged in them.

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Youth education and development programmes should be taught in schools to expose the adolescent youths to the values of education and human development.
2. The dangers of substance abuse should be explained to adolescents in schools, by religious worships, by parents and by non-governmental organizations to enable them to appreciate the consequences of substance abuse in order to avoid taking them.
3. Adolescents should be encouraged and motivated for good behaviours.
4. They should be let known that, they are future of tomorrow, thus, good behaviours are expected of them.
5. Guidance and counseling services should be provided and utilized in schools to offer services to adolescents on better pattern of living and behaviours.
6. School administrators should be sensitive enough to identify students who are habitual users of substance abuse to provide necessary assistance to them to avoid taking them.
7. Government at all levels and well to do individuals should fund schools including the provision of teaching and learning facilities to enhance the achievement of educational objectives/goals.

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RELEVANCE OF SELF-DESIGNED SPORTS ACADEMIC RESOURCES DATABASE MANAGEMENT INFORMATION RETRIEVAL SYSTEM

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ABSTRACT

This study proved the relevance of Sports Academic Resources Database Management Information Retrieval System (SARDBMIRS). Databases with the tools for capture, storage, management, retrieval, integration, analysis, interpretation, reporting, and dissemination have the potential to be the single most powerful tools in sports administration. Knowing how to collect, store, access, retrieve, and integrate information is critical to effective performance analysis and decision making. Database should form the underlying foundation of most other tools used in sports administration as they provide structure and access to the information that is the catalyst for most other applications. Purposive sampling technique was adopted in selecting 100 (n=100) sports academicians and 100 sports academic resources were imputed into the system database to test the relevance of self-designed SARDBMIRS. Self developed SARDBMIRS questionnaire was used to collect data from the user after testing. The instrument used was validated by the experts in Information Science and Sports Administration and reliability of the instrument used was 0.82. Results for the study were analyzed using descriptive statistics of frequency counts and percentages. The study concluded that SARDBMIRS is highly relevance to sports academics research and the resources imputed into the database are usable for Sports Administrators, sports researchers, coaches and others in related discipline researches.

Keywords: Database, Sports, Resources

INTRODUCTION

A database management system is a set of computer programs that control the creation, maintenance, and use of a database (Bamitale, 2003), that is, it allows the designer to create tables with columns of a specific data type and size, and relationships between the tables; it allows for the insertion, update, and deletion of rows in the tables; and it allows for the retrieval of information from the tables using Structure Query Language (SQL). SQL is a database computer language designed for managing data. Two of the most commonly used desktop DBMS' are Microsoft Access and Apple's Filemaker Pro (cross platform). A course in database management has emerged as one of the most important courses in the information systems curriculum today. Other disciplines have adopted database management course to be able to design and implement their discipline based databases, to help them to monitor and keep their resources records. Many schools have added an additional elective course in data warehousing or database management and administration to provide in-depth coverage of this important topic. One of these disciplines is Sports Management and Administration.

The ever-increasing publication of academic documents is rendering traditional information search and retrieval processes in libraries ineffective and inefficient. As data volume continues to grow, it becomes increasingly difficult to manage in libraries and other information centres, yet many Nigerian scholars and researchers largely depend on traditional information sources, particularly print, for their scholastic activities and research (Manir, 2008). Traditional librarians have not helped matters for they so pre-occupy themselves with the acquisition, charging out and discharging of books, cataloguing and maintaining routine statistical records of the number of people that enter the library daily, that they have no time

to reflect on the mission of the library as a service organization (Ifidon, 2000). The emergence of Online Theses and Dissertation databases have increased the awareness of, access to and demand for theses among academicians, as they no longer have to regularly visit the library to read the theses content in order to fulfill their information requirements. The initiative has encouraged the information resources sharing among the academicians and libraries, thereby improving the quality of research (Zulkefli, 2005).

A large scale study of academic libraries conducted from 2002-2004 indicated that average weekly reference transactions declined 2.2%. Additionally, a 2005 report from the Association of Research Libraries (ARL) stated that references dropped an average 4.5% per year while circulation transactions fell 1.2% per year dating to 1991 (Racheal, 2007). A general change in attitude regarding libraries has become apparent, especially in younger generations. Students now enter college with a much different idea regarding libraries and how to go about finding information they need. A study of around 2,000 American college students in 2001 showed that 93% felt that finding information online “made more sense” than going to the actual library. Furthermore, 83% stated they were frequently unable to get the information they needed due to library hours and another 75% said they just didn’t have time to go to the library because the time for searching through manual method its time consuming (Troll, 2001). Likewise, the issue has been of particular relevance in the United Kingdom. A nationwide report in March 2004 indicated that over the previous 10 year period, overall library usage declined 21% and circulation fell 35%. The report further claimed that libraries within the United Kingdom could be unused and irrelevant by 2020 (ALA, 2004).

Unavailability syndrome is yet another problem that inhibits efficient and effective service to users. Unomah (1986) cited in Ifidion (2000) did a study on users' frustrations occasioned by the unavailability of the items they want. According to Unomah, six major factors account for this and these are:

- a. failure of the library to acquire the desired item;
- b. failure of the user to locate an item on the shelf even though it is listed in the catalogue;
- c. failure of the user to locate the properly shelved item on the shelf because of the user's carelessness;
- d. failure of the user to locate an item in the catalogue even though it was acquired;
- e. failure on the part of the library staff to properly keep and display records of books that are in the bindery;
- f. restricted access to certain collections such as the research collections whose use is open to only final year students and researchers.

Automation of library processes is still in its infancy. Most of the library operations are still being manually performed.

In an information age where there is hardly any field of human endeavour that has not been touched by the new technology, automation will be the answer to most of Readers' Services problems. Circulation of material resources will be done much faster, the records will not only be in the computer memory but they can also be analyzed by type of material and status of borrowers. The computer database makes it much simpler and process adequate information. Besides, computer-aided searching has a number of other advantages. The first is that the computer has affected the format of the material used by the reference librarian: he now relies more on machine-readable than on printed materials. Secondly, the computer is noted for its accuracy and speed of searching. It is estimated that the computer reduces the time spent on manual searching between 90 percent and 95 percent. An intelligent computer

program uses knowledge and inference procedures to solve problems that are difficult enough to require significant expertise for their solutions (Ifidion, 2000).

One of the responsibilities of libraries and information centres is to cater for the information needs of users by providing effective and efficient information retrieval system database for their clients (Meddamelle, 1998). Several projects to develop information retrieval system for online access to Electronic Theses and Dissertation (ETD) have been sponsored by Several institution and governmental agencies. For instance, the Malaysia Theses Online (MYTO) which is an Electronic Theses and Dissertation initiative to manage the collection of theses and dissertation of public Universities in Malaysia. This system store information about theses and can be accessed by users Worldwide. Vireo is another information retrieval system developed by Texas Digital Library for ETD. Vireo is build to handle the submission, management and publication of electronic theses and dissertations (Zulkefli, 2005).

Research Question

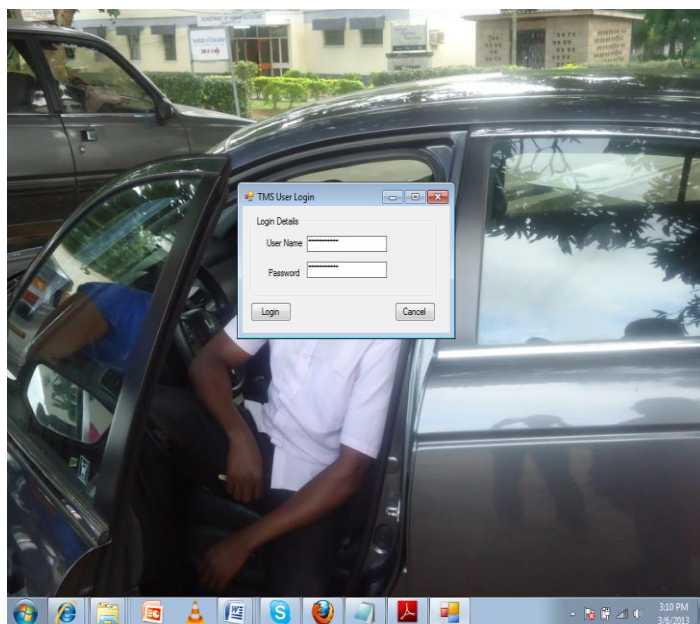
Is the academic resources in the Self-Design Database Management Retrieval Information System relevant to sports research?

Methods and Procedure

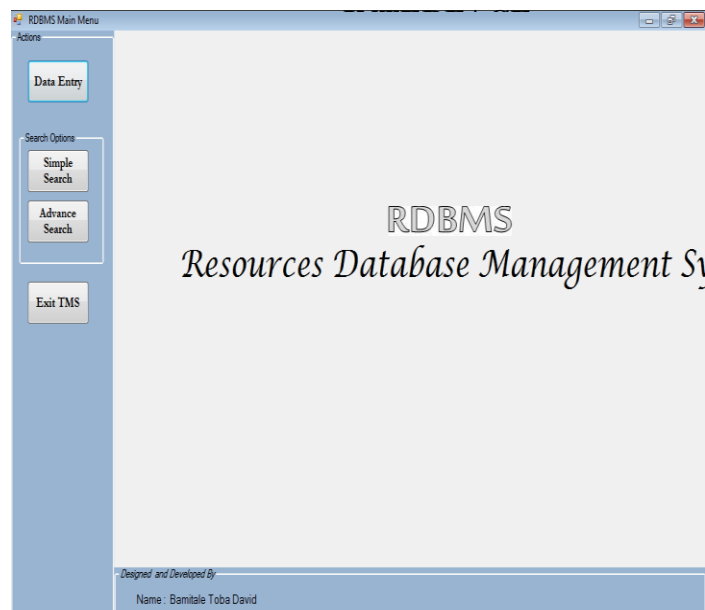
The descriptive survey research design was adopted, one hundred (100) Sports Academicians in University of Ibadan. One hundred (100) Master's projects and PhD's theses abstracts were imputed into the database system.

The research instruments used for data collection are Self-Design Sports Academic Resources Database Management Information Retrieval System (SRDBMIRS) Application Software installed on ten networked computers and Self Developed Questionnaire (SDQ) to test the relevance of the SRDBMIRS. The instrument used was validated by the experts in Information Science and Sports Administration departments and reliability of the instrument used was 0.82. Results for the study were analyzed using descriptive statistics of frequency counts and percentages.

SARDBMIRS LOG IN



SARDBMIRS MAIN MENU



SARDBMIRS RECORDS INPUT INTERFACE

RDBMS Main Menu

Actions

Data Entry

Search Options

Simple Search

Advance Search

Exit TMS

Thesis Record Form

Save Delete Close

Thesis No: 2013/03

Book Type: M.Ed

Title: DESIGN AND EFFECTIVENESS OF NIG

Author: BAMITALE TOBA

Issue Date: JUNE, 2013

Issue Year: 2013

School and Discipline: SPORTS ADMINISTRATION

Abstract: Over the past two decades there has been enormous growth in the number and importance of database applications. Database are used to store, manipulate, and retrieve data in nearly type of organization, including business, health care, education, government, and libraries. Database technology is routinely used by individuals on personal computers, by workgroups accessing databases on network servers, and by employees using

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Keywords: Database, Resources, Sport Administrator

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Results

The results of this study are presented in Tables 1 – 2:

Table 1: Percentage distribution of respondents by socio-demographic characteristics.

Socio-demographic Characteristics	Frequency	%
Sex		
Male	61	61
Female	39	39
Age		
20-25	38	38.0
26-30	33	33.0
31-35	11	11.0
36-40	4	4.0
41-50	10	10.0
51 and above	4	4.0
Religion		
Islam	30	30
Christianity	70	70
Educational Qualification		
B.Ed	42	42.0
M.Ed	56	56.0
Ph.D	2	2.0
Work status		
Sports Administrator	39	39.0
Coaches	7	7.0
Physical and Health educator	54	54.0

Table 2

Relevance of Resources to Sports Research	Frequency (%)			
	Strongly Agreed	Agreed	Disagreed	Strongly Disagreed
The resources in the database are good for sports field research	78 (78)	22 (22)	-----	-----
The resources help me to get some research information relating to my study area	97 (97)	3 (3)	-----	-----
Some of the information retrieved from this database are sports oriented resources	74 (74)	26 (26)	-----	-----
The materials available in the system are relevant to sports and its related field	91 (91)	9 (9)	-----	-----
Availability of this information retrieval system will solve the problem of looking for sports	89 (89)	11 (11)	-----	-----

Presentation of Result

From the data presented above, the research questions formulated for the study are explicitly answered in this section.

Table 1 shows the percentage distribution of respondents by Socio-demographic characteristics. According to the Table 1, more than half of the respondents are males (61%) while others are females (39%). Thirty-eight percent of respondents are within age group 20-25, 33% respondents are within age group 26-30; in addition, 10% of them are within age group 41-50 and 4% respondents are fifty one year and above. However, 70% of the respondents are Christians; others are Muslims (30%).

More than half (56%) of the respondents have Masters of Education; 42% respondents holds B.Ed qualification while respondents with PhD are 2% of the total respondents. In addition, among the respondents, 54% of them are Physical and Health educators, 39% respondents are Sport Administrator, while others are Coaches (7%) by profession.

Research Question: Is the academic resources in the Self-Design Database Management Retrieval Information System relevant to sports research?

A large majority of the respondents says the academic resources in the self-design database management information retrieval system is relevant to sports and related field research, Table 2 presents responses to questions put to the respondents on the research questions. All respondents disclosed that the resources in database are good for sports research (79% strongly agreed and 22% agreed). 97% strongly agreed and 3% agreed that the resources in the database help them to get some research information relating to their study areas. 74% strongly agreed and 26% agreed and reported that some of the information retrieved from this database are sports oriented resources. In addition, nine of every ten respondents (91%) strongly agreed and 9% agreed that the materials available in the information retrieval system are relevant to sports and its related field. Almost 90% of the respondents strongly agreed and remaining agreed and reported that availability of the information in the retrieval system will solve the problem of looking for sports research materials.

Discussion of Findings

This study revealed that the academic resources in the self-designed sports academic database management information retrieval system is highly relevant to sports, coaching, physical and health education and its related field's researches based on the responses of the respondents. This is supported by Kayode (2007) and Vincent, Stergiou and Katz (2010), that database management system specifically designed for a particular field and if resources imputed into it is based on that field, will be highly relevant to the field and the users and they will get what they really want.

This study also showed that the resources imputed into sports academic resources database management Information retrieval system is highly usable for researchers in sports administrators, exercise physiology, sports psychology, sports medicine, coaching, physical and health education and other related fields. Resources database management information system is highly relevant in this digital information age (ALA, 2004).

Conclusion and Recommendations

Based on the findings of this study the following conclusions and recommendations were made;

Self-Designed Sports Academic Database Management Information Retrieval System software had been designed, programmed and implemented to solve research resources

problems of the sports administrators, sports researchers and other sports and health scholars in University of Ibadan. This database and the resources imputed into it is relevant based on the findings. One of the remarkable developments in modern society has been what is variously described as information explosion, which is as a result of rapid innovation in information technology for creating, processing, disseminating, and using information (Tiamiyu, 2003). Every department in the University of Ibadan and other higher institutions of learning in Nigeria especially those in sports science, human kinetics and health education and related discipline should key into this vision, so that we can move our research to another realm and be in the same level with the developed countries. What the government of Japan, American and other developed countries had started since late in the 1970s, every African government needs to do now. A substantial sum of money need to be set aside for designing resources database management information retrieval system, in all academic institution and libraries, so that African countries may begin to move in the same pace with the world. We either start now or find ourselves rumbling and fumbling has always in the past.

There is need to expand the knowledge base of this database and to make it web based programme, where all sports administrators, sports researchers, coaches and others in related discipline can have access to it globally, after following the due registration, like Sportdiscuss.

There is need for all the postgraduate students in all Nigeria universities, to be submitting the soft copy of their projects or theses, so that it can be very easy for the database administrator to input the abstracts inside the database software for proper record, storage and retrieval for upcoming researchers. There is need for the all disciplines to design their own professional based resources database, to have an e-library or e-research rooms and employ a database administrator that will be managing the their database resources and there is need for the e-library or e-research centers to be linked with the main library for general and global access. Finally, for the effective furtherance of work in any area, fund is necessary. Such time and energy consuming research surely require adequate fund to ensure sustainable interest. Many advantages could be derived by governmental and non-governmental organizations, if they support resources database management information system research.

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CURRENT TRENDS IN RESEARCH AND INNOVATION: IMPROVING TEACHER FORMATION THROUGH QUALITATIVE RESEARCH OF LECTURERS IN CROSS RIVER STATE

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ABSTRACT

The Study sought to assess the level of research publications in journals by University Lecturers drawn from University of Calabar and Cross River State University of Technology (Unical and Crutech). The instrument for data collection was a structured questionnaire while percentages and chi-square ratio were used to analyze the data. The findings of the study revealed that 62% of the lecturers had no publications in international journals while only 15% had 6-7 publications in local Journals, 70% had barely 1-5 publications in local Journals. The implication of this finding is that there is low publication of research work through international Journals. Suggestions were made to stimulate dissemination of research results for sustainable academic and industrial growth in Nigeria. More so, the primary goal of this paper is to consider how Qualitative Educational Research (QER) could be used to bring about salutary change in the production of teachers as well as in the classroom work of such products. The paper recommends on integration of quantitative and qualitative approaches as complimentary techniques for data collection, analysis and interpretations.

Keywords: Research, Innovation, Teacher Formation, Quality Education.

INTRODUCTION

Nature has provided all that man needs in life but, it is man's responsibility to search out and discover the hidden secrets and treasures of life. In these modern times of science and technology, the instinct and necessity to search is on the increase. Renowned persons who have made marks in the success world, had to discover, invent, create and initiate things.

The Nature of Research

The term research suggest "to investigate", "to examine", "to find out", "to look for", and "to discover". Research has been defined by many writers however; all of them have a major focal point which is investigations to provide information for decision making. According to Chike-Okoli (2003), research can simply be considered as to re-appraise or to look into carefully, critically, analytically and thoroughly so that, the true position of an issue, event, process, observation, theory, preposition can be brought out. Research is a systematic search for new knowledge of the subject of study or application of knowledge to the solution of a novel problem in the area of study. One thing that is common to all areas of research is the

methodology. All researchers including those in social sciences tend to adopt what is called the scientific method (Akuezuilo, 1990).

According to Osuala (1982), research is the process of arriving at reliable solutions to problems through planned and systematic collections, analysis, and interpretation of data. It helps man to relate more effectively to his environment, accomplish his purposes and resolve his conflicts (Olawuji and Famojuro, 1998).

Research can then be simply conceptualized as a means which enables us search for the truth. Research is reserved for activities designed to discover facts and relationships that will make knowledge more effective.

However, Kerlinger (1970) provides us with a precise definition of research. This has been defined as the systematic, controlled, empirical and critical investigation of hypothetical prepositions about the pressured relations among natural phenomenon. Summarizing Kerlinger's thoughts on research, Mouly (1978) writes:

Research is best conceived as the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis and interpretation of data. It is a most important tool for advancing knowledge for promoting progress, and for enabling man to relate more effectively to his environment, to accomplish his purpose and to resolve his conflicts.

Three major characteristics can so far be deduced from what is known about research. In the first place, it is a planned task. In the second place, it is systematic. Research involves systematic collection, analysis and interpretation of data which give rise to objectivity. And in the third place, it is a process which enable us arrive at dependable solutions to problem. These three characteristics are important in our attempt to carry out research.

The question of what constitutes educational research as Nwana (1981) argued refers either to those research activities from which the investigator derives or hopes to derive educational benefits or to those research activities, which are focused on the solution of an educational problem.

The Nature of Educational Innovation

A critical examination of the concept of innovation reveals that there are four major elements in a continuum (Hayle and Bell in Denga, 2000)

Innovation: Invention –Development-Diffusion-Adaption.

At one end of this continuum we have invention which involves the creation of something new. At the other end of the continuum, we have adaption which involves the acceptance of what is an innovation as far as the adopting individual group or organization is concerned, but which has its origin elsewhere. Experience however shows that the two extreme forms of innovation probably occur only very rarely on the grounds that “there is nothing new under the sun”. Inventions are usually adaptations of what already exists. The most prevalent aspect of innovation practiced in curriculum renewal is development. An innovation often has to undergo a process of development before it is adopted on a large scale. When applied to educational practices ‘Research and Development’ (R&D), involves a variety of activities – it involves basic research such as the building and testing of theories of learning. Some of the elements of curriculum development are the writing of programmes by a team of curriculum specialists, the testing of these materials in trial schools, and the conducting of evaluation research designed to assess the effectiveness of the curriculum innovation.

The third element diffusion is often erroneously used synonymously with dissemination. While the diffusion process is the 'natural' spread of an innovation, dissemination refers to a more deliberate pattern of diffusion in which an agency takes specific steps to ensure that an innovation reaches the maximum number of people.

In education, innovation often requires a visionary pioneer who is willing to take the leap into the unknown with incomplete knowledge of what the final product will be but with drive that leads one in the process of design.

Trend in Educational Research and Innovation

For a workshop on research to be conceived and supported by a policy making body shows a shift in the attitude of policy makers to research. In a number of African countries, policy makers with political ambitions have condemned or at the very most, paid lip-service to research out of our tertiary institutions. They argue that tertiary institutions, universities to be specific provide irrelevant information and that even then, these information arrive too late. Moreover the information is also considered to be on many occasions biased, inaccurate and non-confirmable. Worse still, academics in education are accused of being too theoretical, insensitive to practical and political realities, and dismissive of the financial implications of their research proposals.

In education and especially teacher education, a lot of criticism had been levied against, classroom practices that call for expensive curriculum innovation. Decisions to adopt an educational system as a radical departure from existing ones are not backed with research evidence provided by our educators. Decisions and major ones at that had been taken on the bases of experiences and reasoning rather than on the basis of research.

Let us illustrate with some decisions which had been taken nationally which are now being implemented by teacher education policy makers like the National Commission for Colleges of Education (NCCE). The introduction of integrated science into our school system has received a lot of attention. But, surprisingly we are now finding out that not much research on curriculum innovation was done on integrated science and integrated teaching in this state before its introduction. The decision to introduce integrated science was based more on experience and reasoning than on research. It is only now that a reasonable amount of policy oriented research is being done on integrated science. One important national service which NCCE can give in that area is to massively support that research into integrated science teaching in Nigerian schools.

Policy makers in the various Ministries of Education in the country are still asking questions about what is meant by integrated science? They are the ones who direct the policy on education and if the necessary empirical research information is not available to them, how can informed research decisions be taken? The one is first and foremost on NCCE to provide such research information before we lead our classroom teachers and students too far from our hopes and aspirations.

In the area of science teaching and in particular chemistry at the secondary school level, we took a decision to introduce and use the West Africa Examination Council (WAEC) public examinations as a nomenclature which is styled (IUPAC) International Union of Pure and Applied Chemistry. Today several years after that introduction, no research evidence is easily available to policy makers in this country on the superior quality of IUPAC nomenclature over conventional/modified IUPAC nomenclature. Our teachers are being put through that ordeal of learning IUPAC nomenclature, which were not used in preparing them for a degree in chemistry. Neither the national universities nor the universities in the developed world

with noble prize winners in chemistry use this elaborate IUPAC nomenclature we have adopted. Where is the research evidence, we have often been asked by policy makers?

In developing this paper and with a focus on trends in educational research, we would urge that we draw attention to paucity of research evidence that can influence education in this country. We must begin to think about focused research, which can be undertaken, co-operatively in our educational institutions where teachers trained. Only recently, emphasis is being placed on what is described as inter-disciplinary research. We must consider research in education, which cut across disciplines so that we can have what the biologist, refers to as cross-fertilization. With the amount of curriculum innovation taking place across our educational system, we must fall back or perhaps lean heavily on research to provide policy makers, our students and us with pragmatic evidence.

Methodology

A structured questionnaire was constructed and validated by other professional colleagues in the institution. The subjects were drawn from a random sample of 100 lecturers (about 22% of the study population) from Unical and Crutech. Data for analysis were provided by 90% respondent (45 respondents from each university) who returned their completed questionnaires (90% response rate). The instrument for data collection consisted of two sections: Section 'A' was used to elicit information from the respondents about their – name of institution, qualification, area of specialization, number of years served with institution and source of fund for research. Section 'B' consisted of the number of researches carried out: number of publication in local journals and number of publication in international journals. The data item (subjects) was categorized according to the number of publications (ranging between 0-25). Data were analyzed with simple descriptive percentages. In addition, chi-square test of independence and homogeneity was used to determine whether there was a significant difference in their publications in the local and international journals. The analysis was at 0.05 level of significance.

The following hypothesis was tested:

H₁₀: There is no significant difference in the number of publications of lecturers in the local and international journals.

Results and discussion

Table 1: Qualification of University Lecturers

Qualifications	Frequency	%
B. Sc	18	19.0
M. Sc	66	73.0
Ph. D	16	18.0
Total	90	100

Table 2: Number of years served with institution by lecturers

Number of years	Frequency	%
1-3	41	45.0
6-10	34	38.0
11-13	10	11.0
16-20	5	6.0
Total	90	100

Table 3: Number of research findings published in journals by university lecturers

No. of publications	Local Journals		International Journal	
	Frequency	%	Frequency	%
1-51	63	70	31	35
6-10	13	15	1	1
11-15	1	1	0	0
16-20	1	1	0	0

21-25	0	0	2	2
None(0)	12	13	56	62

Table 4: Chi-square analysis of difference in the number of publications in Local and International Journals

Publications	Df	Calculated Chi-square	Critical Value at 0.09	remarks
Local and International	5	53.66	11.075	significant

The data in Table 3 indicate that all the subjects for the study had been carrying out research activities in the universities. Thus, it is expected that they know that publication of research findings was part of their professional responsibilities. Among the subjects (table 3) sixty two percent (62%) had no publication in international journals while 35% had barely 1 to 5 publications in international journals. 70% had barely 1 to 5 publications in local journals while 15% had 6 to 10 publications in the local journals. An attempt was made to determine whether there was significant difference in the number of publications in local and international journals. The chi-square test result is shown in table 4. This revealed a significant difference in the number of publication in local and international journals ($X^2 = 53.66 > X^2 = 11.070$). This shows that the subjects had more publications in local journals than in international journals. The implication of this is that quite a number of research findings among these subjects were not reposition in the national science and technology information service for industrial growth. This is because foreign (international) journals provide easy access to international and national science and technology (Garba, 2000).

FINDINGS

The findings revealed that University lecturers in the University of Calabar and Cross River University of Technology have more publications in local journals than in international journals. This is so in spite of the fact that foreign journals provide easy access to international and national science and technology information. The 21st Century poses an increasingly important challenge to seek to improve the volume of research findings available through international journals for sustainable industrial growth in Nigeria.

RECOMMENDATIONS

To induce and sustain strong and viable linkages between the outputs of the research community and the potential users of those outputs (commercial and industrial interests), it is imperative to stimulate the publication productivity of our university lecturers. There is no need to rediscover the National Science and Technological Information Service (NSTIS) to serve as a technological data repository and clearing – house. Its functions would be expedited by statutorily requiring that all data and reports emanating from research centres and supported in any form by public funds should be deposited with NSTIS for reproduction and public dissemination.

A second approach to research – industry linkage promotion, which should be encouraged, is the emergence of Research and Development Advisory Service (RDAS) in the universities to foster the development and exploration of the structural linkage between researchers, and industry for promoting the commercialization and dissemination of research result.

CONCLUSION

This heuristic account is simply as a whetstone to sharpen the focus. Research is viewed as a dynamic instrument of change in a kinetic rather than static world. A good knowledge of research is a means of resolving problems that hinder development in the new world order.

Our research efforts must lead to sustainable development, which is desperately needed by development nations.

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THE EFFECTS OF ENVIRONMENTAL LITERACY ON THE WASTE MANAGEMENT PRACTICES OF SLUM DWELLERS IN LAGOS STATE: A STUDY OF MAKOKO & ILEJA COMMUNITIES.

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ABSTRACT

Most countries in the world experience challenges in proper waste management practices and these seem to be more prominent in urban centers'. These challenges range from reducing waste generation to proper waste disposal practices. All over the world there is a slum population of more than one billion people and unfortunately by 2020, this figure is expected to double. There are so many underlying factors contributing to poor waste management in urban slum areas which include; a high rate in population growth and consumption patterns, poor management by local authorities in provision of waste management facilities, inadequate law enforcement by the government, lack of community participation due to lack of awareness and literacy, and increase in urbanization and industrialization. The study therefore intends to evaluate the effects of environmental literacy on waste management practices among slum dwellers in Lagos state. In carrying out the study quasi-experimental design was used. The population for the study was made up of adults above 18 years who have resided in the locality for over 6 months. A stratified random sampling technique was used to select sample size of 104 respondents. Of the 104 respondents used, 52 were assigned to the experimental group and 52 to the control group. At the end of the study the result showed that there is a significant difference in the waste management practices of the experimental group when compared to the control group. Based on the findings, recommendations were made.

Keywords: Environmental Literacy, Waste management, Personal Hygiene, Slum settlement

Introduction

The word "slum" is often used to describe informal settlements within cities that have inadequate housing and squalid miserable living conditions (Ogwueleka, 2009). A slum is usually a suffocating overcrowded environment surrounded by mounds of uncollected dirty waste with residents who lack access to clean portable water, improved sanitation, and waste management services; and supporting secure land tenure and affordable housing. According to (Ogwueleka, 2009), the major characteristics of slums are over crowdedness, dirty and unkempt environments and very small living spaces. Slums settlements usually lack basic municipal services such as good roads, drainages, sanitation (in form of toilet facilities), street lighting, portable or safe water and waste disposal measures. Apart from all these, most slums also lack access to schools, hospitals and health centers, children's play grounds and parks. The United Nations Human Settlements Programme (UN-HABITAT) defines a slum as a household that cannot provide one or more of the following basic living conditions:

- Durable housing of a permanent nature that protects against extreme conditions.
- Sufficient living space, of not more than three people occupying the same room.
- Easy access to safe water in sufficient amounts at affordable price.
- Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people.

- Security of tenure and prevention of forced eviction.

Most houses in slums are built on land that the occupants do not have any legal claim and which lack any planning or adherence to government regulations. This makes most slums informal settlements and lacking in security of tenure, but made up of diverse groups of people with different backgrounds and interests. More than one billion people in the world today live in slums all over the world today, and unfortunately by 2020, this figure is expected to double, (UN- HABITAT).

Slums have been a part of the history of most urban cities of the world especially as urbanization and industrialization increased. As the struggle for accessibility to the few landed spaces increases among the rich and affluent in the society, slums become the only type of affordable settlement for the poor masses.

Waste is a universal and highly visible phenomenon which can be generated in all human settlements. According to environmental literacy council (2013), waste is a natural part of the life cycle, which occurs when any organism returns substances to the environment. Wastes are generated in our households, offices, schools, hospitals, and industries and this leads to the day-to-day issues associated with its proper disposal. The waste generated from residences, commercial buildings, institutions such as hospitals and schools, and light industrial operations is most often categorized as municipal solid waste. The waste from urban slum settlements therefore consists primarily of paper, containers and packaging, food wastes, yard trimmings, and other inorganic wastes.

Solid waste management in growing and expanding cities is often affected by all kinds of problems especially as it concerns population influx and slum development. Hence the urban poor and slum dwellers are left to contend with waste disposal on their own, consequently leading to a great effect on their health and general surrounding. In most cases, the slum environments are littered with human excreta, repulsive wastes, assortments of polythene waste and all sorts of debris. Some of the issues relating to waste management in urban centers include:

- Waste generation
- Waste minimization
- Waste transportation
- Waste treatment
- Waste re-cycling and re-use
- Waste storage, collection, transport and transfer
- Waste treatment
- Waste disposal
- Policy and regulation
- Environmental considerations
- Financial and marketing aspects
- Education and training
- Planning and implementation (Wikipedia, 2011)

How waste is handled and disposed is often dependent on its source and characteristics, as well as any local, state, and federal regulations that govern its management. Practices generally differ for residences and industries, in urban and rural areas, and for developed and developing countries. In Nigeria like most developing countries, wastes are commonly dumped in open spaces and uncontrolled landfills along major roads and human habitations. Waste management is hence one of the greatest challenges facing environmental protection agencies in developing countries (Ogwueleka, 2009). Waste management activities include collection, transportation, treatment and disposal on one

hand, control, monitoring and regulation on the other. However with continuous industrialization in most urban cities, so much modification, re-use and re-cycling is being done to waste. But at the end of the day, the main purpose of waste management is to reduce the adverse effects of waste on the health of the residents, on their environment and on their aesthetics generally. Ways by which waste can be effectively managed include:

Landfill

Incineration

Recycling

In most cases, inappropriate policies have often contributed to the growth of life-threatening slums where urban waste management services are often woefully inadequate (UNHABITAT, February, 2014).

According to Thomas-Hope (200), successful waste management is dependent only in part upon the technology required for each stage in the cycle, and the economic or financial capabilities to implement them. The primary aspects of solid waste management are collection and disposal, while the secondary effects of waste itself are; threat to health and ecological destruction. In developing countries especially, new forms of participation are required in the management of solid waste, because the causes and consequences go beyond the capacity of a single national authority to address them satisfactorily hence this has propelled government to enact various laws and programmes to create the needed awareness in the management of Waste. One of such programmes is environmental education in secondary schools. The trust of this programmes were to create the needed awareness in the management public waste among the citizen. Literacy is a term which initially referred to the ability to read and write, but which has in recent years has extended in scope to include so many other areas such as environmental literacy. According to UNESCO (1997) “Environmental literacy is a basic functional education for all people, which provides them with the elementary knowledge, skills, and motives to cope with environmental needs and contribute to sustainable development”. Also, environmental literacy requires a fundamental understanding of the systems of the natural world and the relationships and interactions between living and non-living environments, as well as the ability to deal sensibly with problems that involve scientific evidence, uncertainty, economic, aesthetic, and ethical considerations (Koren, 2004). According to Tbilisi Declaration 1978 cited in Moseley 2000, “environmental education is a life-long, multidisciplinary approach to teaching, mass communication, community participation or some other activity aimed at the development of a world population that is aware of, and concerned about the environment, and its associated problems and that has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones”. For any developing nation such as Nigeria to progress in all ramifications, the government must strive to ensure that its population is made up of environmentally literate citizens. Nigeria’s future relies greatly on a well-educated public to be wise stewards of the environment that sustains us, our families, our communities and future generations. This can only be achieved through environmental education (which we commonly refer to as environmental literacy) which can help us in so many ways to benefit our society, provide environmental health, prosper our economy and bring about our general wellbeing (Campaign for Environmental Literacy, 2007).

STATEMENT OF THE PROBLEM

Waste management practices among slum dwellers are increasingly becoming a major problem in most developing countries of the world today. Slums and squatter settlements can be found in major urban cities of the world, and Lagos despite being a growing megacity has not been left out of this development. Though these slums are generally inhabited by illiterate and semi-literate members of the community, the presence of literate and learned citizens cannot be completely eliminated. As with households in most cities of the developing world, slum dwellers in Lagos State are vulnerable to deprivation and easy eviction because they lack tenure security. Most of these slum dwellers dwell rent-free on lands that do not have any title deeds or approval from the government. As a result of this lack of tenure security, slum dwellers lack access to basic public services that are typically provided to urban residents by the government. Notable among these is the waste disposal opportunities. Successful waste management in any community depends solely on the regulatory measures taken by

the government and populations. Extensive education and literacy campaigns on how to re-cycle, re-use, reduce and respond to waste is therefore needed to enable populations understand the importance of sustainable resource use and waste management at point source. This research is therefore designed to find out the waste management practices among slum dwellers in Lagos state, and to determine the effects of environmental literacy on such practices.

PURPOSE

1. Determine the effect of environmental literacy education intervention programme on personal hygiene practices of residents of makoka and Ilaje slum communities.
2. Establish the impact environmental literacy education intervention on involvement sanitation practices of residents of Makoka and Ilaje slum communities.
3. Ascertain the effect of environmental literacy education intervention on waste management practice of residents of Makoka and Ilaje slum communities.
4. Determine the effect of environmental literacy education intervention on waste disposal practice of Makoko and Ileje slum communities

RESEARCH QUESTIONS

1. Would there be any significant effect of environmental literacy education intervention programme on personal hygiene practices of residents of Makoka and Ilaje slum communities.
2. Would there be any significant effect of environmental literacy education intervention on sanitation practices of residents of Makoka and Ilaje slum communities.
3. Would there be any significant effect of environmental literacy education intervention on waste management practice of residents of Makoka and Ilaje slum communities.
4. Would there be any significant effect of environmental literacy education intervention on waste disposal practice of Makoko and Ileje slum communities

RESEARCH HYPOTHESIS

All the hypothesis are stated in null form

1. There is no significant effect of environmental literacy education intervention programme on personal hygiene practices of residents of makoka and Ilaje slum communities.
2. There is no significant effect of environmental literacy education intervention on sanitation practices of residents of Makoka and Ilaje slum communities.
3. There is no significant effect of environmental literacy education intervention on waste management practice of residents of Makoka and Ilaje slum communities.
4. There is no significant effect of environmental literacy education intervention programme on waste disposal practice of Makoko and Ileje slum communities

METHODOLOGY

The study adopted a quasi-experimental research involving pretest-posttest control method. In this type of design, a pretest is given then a treatment is administered and a post-test is given while the control group excludes the treatment without the knowledge of the control group (Nachmias & Nachmias, 2006).

Lagos state is presently one of the leading mega cities in the world with over 15 million people and it is expected that by 2025, her population would rise up to about 25 million people (Selvanayagam, 2011). According to World Bank (2001), there are 8 major slump areas in Lagos. They include Agege, Ajegunle, Amukoko, Badia, Bariga, Ilaje, Ijeshatedo/Itire and Makoko. Many of these areas are terribly cramped, poorly ventilated, unclean and generally inhabitable thus the general population consisted of residents of the above affected communities in Lagos State.

In other to determine the sample size for this study, Yemani (2001) sample size formula was adopted:

$$N = \frac{Z^2 \times p \times (1-p)}{D^2}$$

Where Z = 1.96 provides 95% confidence to avoid Type I error;

P = 0.5 being the proportion of participants observing proper waste management practice, while (1-p) constitute proportion not observing appropriate waste management practice, p(1-p) is the variance at 0.25;

D= the difference or error defining 20% change desired to be derived from the intervention, above what is currently at baseline (.20²)

$N = 1.96^2 \times 2 \times 0.25/0.2^2 = 48$, 10% response bias giving 52 persons per group. Thereafter random sampling technique was used to select 52 adults each from the two communities earlier identified in the study. In all, 104 respondents formed the sample for the study, 52 for control group and 52 for intervention groups.

Table 1: Tabular Presentation of Sample

S / N	Study Location	Groups	Sample Size
1	Makoko	Treatment	52
2	Ilaje	Control	52

The major instruments for the study include

- Researcher's developed and content validated questionnaire
- Standard checklist titled "Policy Guidelines on Environmental Sanitation and Waste disposal practice of the Lagos Ministry of Environment-Lagos, 2005

The questionnaire has two sections: A and B. Section A contains the demographic information of the respondents such as age, gender, type of business operation, number of years with the association and so on while section B was a close ended questionnaire with few open ended questions designed in line with the research questions. The responses were analyzed using likert scale of preferences in descending order, rated strongly agree attracting a score of four; agree; a score of three, disagree; a score of two, and strongly disagree a score of one.

Standard checklist titled "Policy Guidelines on environmental sanitation by Lagos ministry of environment 2005. The policy was developed by the Lagos Ministry of Environment in 2005 to define the minimum standard of hygiene in the market and community level. It was created to ensure proper implementation of hygiene problems, improper refuse dump and inadequate sanitary facilities. This instrument will be adapted to observe the environmental situation at the study location. The researchers carried out the external and internal inspection using observation method without prior knowledge of participants. The external inspection consist of seventeen (17) items while the internal inspection section consist of thirteen (13) items

Intervention Tool

- Self-developed Training Manual on hygiene practices and waste management in communities

A self-developed training manual was used as intervention tool for the participants. The manual was segmented according to the variables in the study; Personal Hygiene, Waste Disposal, Sanitation practices, safety education practices and waste management practices in the communities. This training manual was used during the Environmental Literacy training

sessions in order to modify the behavior of participants on standard waste management and disposal practice in the communities

To ensure that the instruments measure what they are purported to measure, the Researchers developed instrument was given to experts and specialist in environmental education and other lecturers in the department of health education to check the content validity and scrutinize accordingly in order to ensure that the instrument covers the areas of the study. The standard checklist titled “a policy guideline on environment by Lagos ministry of environment is a validated instrument that has been used to ascertain the status of environment. The training guide was presented to experts in Adult Education because of their expertise in social work and community development, to scrutinize the face and content validity. A pilot study was later conducted with 20 members of the communities who were not part of the original sampled respondents for the main study. In measuring the internal consistency of the instrument, Crombach’s alpha coefficient test of reliability was applied at alpha level of 0.05 using Statistical Package for Social Sciences (SPSS) software. The result yielded an alpha co-efficient of 0.709 high enough to justify the adoption of the instrument for data collection.

After due consultation to communities leaders in the sampled communities, a consent form was given to all participants in the study so as to understand basically what the study is about and be able to agree or decline participation in the study. The researchers explained in detail what the study entails, its benefit and possible consequences of participation in the study. The training lasted for six weeks for the intervention groups. Four trained research assistants were used during the course of the study. Trainings held every Thursdays and Saturdays respectively for 6 weeks covering all the five segment of the programme. The lecture lasted for 30 minutes every Thursday and Saturday.

The data collected was subjected to descriptive statistics, which includes mean, range, frequency counts and percentages to describe the basic features of the data in the study while inferential statistics-t-test was used to test hypotheses.

Results

Table 1: t-test analysis of pre and post-test scores difference in personal hygiene practice of resident of Makoko and Ilaje settlement due to intervention programme

Groups	N	Pre-test scores		Post-test scores		Post Mean	t-value	p-value
		Mean	Std Dev.	Mean	Std Dev.			
Intervention group	52	1.88	.543	3.06	.548	1.34	13.604	0.00
Control Group	52	1.78	.556	1.72	.466			

t- value is significant at $p < 0.05$

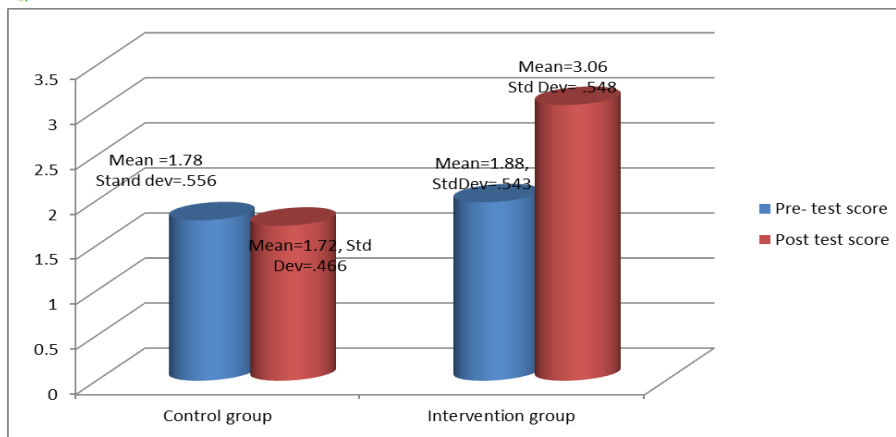


Figure 1: t-test analysis

of pre and post-test scores difference in personal hygiene practice of resident of Makoko and Ilaje settlement due to intervention programme

Table 1 presents the t- test analysis of difference in scores between the intervention and the control groups. The intervention groups appeared to have made differential improvements over the control group. This is because the intervention group recorded a higher mean value of 3.06; Sd= .548 as against the control group with a lower mean score of 1.72; Sd=.466 in the post test scores. The difference in the mean score (M=1.34) was however statistically significant as t-calculated= 13.604, $p > 0.05$. Thus the null hypothesis that states that there is no significant effect of environmental literacy education intervention programme on personal hygiene practice of residents was rejected.

Table 2: t-test analysis on pre and post-test scores of difference in sanitation practices of resident of Makoko and Ilaje settlement due to intervention programme

Groups	N	Pre-test scores		Post-test scores		Post Mean	t-value	p-value
		Mean	Std Dev.	Mean	Std Dev.			
Intervention group	52	1.92	.596	3.44	.415	1.54	11.604	0.00
Control Group	52	1.91	.331	1.90	.475			

t- value is significant at $p < 0.05$

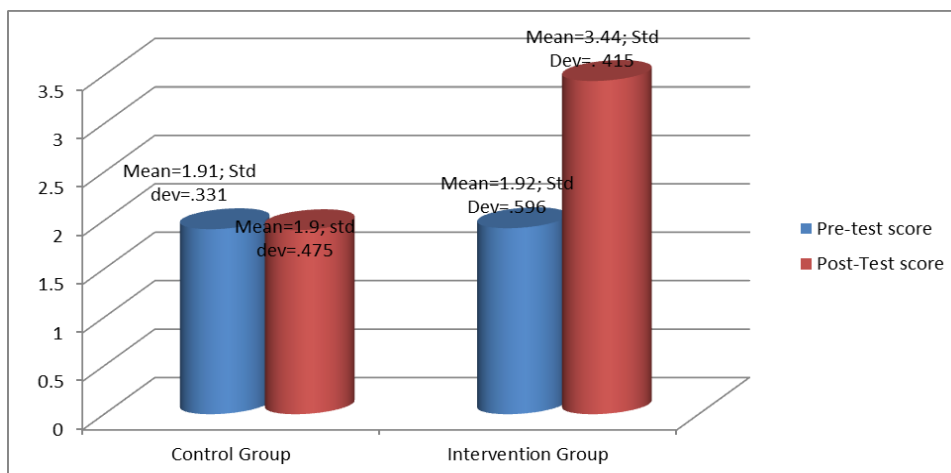


Figure 3: T-test analysis on pre and post-test scores of difference in sanitation practices of resident of Makoko and Ilaje settlement due to intervention programme

Table 3 presents the t- test analysis of difference in scores between control and intervention groups. The intervention groups appeared to have made differential improvements over the control group. This is because the intervention group recorded a higher mean value of 3.44; Sd= .6.15 as against the control group with a lower mean score of 1.90; Sd=0.3784 in the post test scores. The difference in the mean score (M=1.54) was however statistically significant as t-calculated= 11.604, $p > 0.05$. Thus the null hypothesis that states that there is no significant effect of environmental literacy education intervention programme on sanitation practices was slums residents was rejected.

Table 4: t-test analysis on pre and post-test scores of difference waste management practice of resident of Makoko and Ilaje settlement due to intervention programme

Groups	N	Pre-test scores		Post-test scores		Post Mean	t-value	p-value
		Mean	Std Dev.	Mean	Std Dev.			
Intervention group	52	1.78	.434	3.26	.400	1.54	9.417	0.00
Control Group	52	1.73	.356	1.72	.516			

t- value is significant at $p < 0.05$

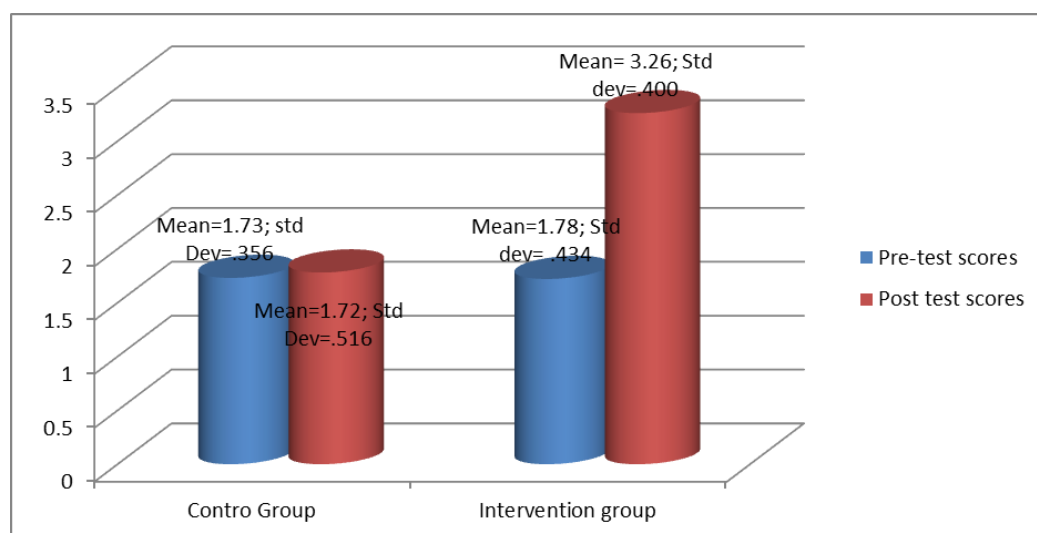


Figure 4: t-test analysis on pre and post-test scores of difference waste management practice of resident of Makoko and Ilaje settlement due to intervention programme

Table 4 presents the t- test analysis of difference in scores between control and intervention groups. The result from the table shows that the intervention group appeared to have made differential improvements over the control group. This is because the intervention group recorded a higher mean value of 3.26; Sd= .400 as against the control group with a lower mean score of 1.90; Sd=0.3784 in the post test scores. The difference in the mean score (M=1.54) was however statistically significant as t-calculated= 9.417, $p > 0.05$. Thus the null hypothesis that states that there is no significant effect of environmental literacy education intervention programme on waste management practice of residents was rejected.

Table 5: T-test analysis on pre and post-test scores of difference in waste disposal practice of Makoko and Ileje slum communities due to intervention programme

Groups	N	Pre-test scores		Post-test scores		Post Mean	t-value	p-value
		Mean	Std	Mean	Std			

			Dev.	n	Dev.			
Intervention group	52	1.75	.338	2.98	.491			
						1.54	11.03	0.00
Control Group	52	1.77	.431	1.80	.516		7	

t- value is significant at $p < 0.05$

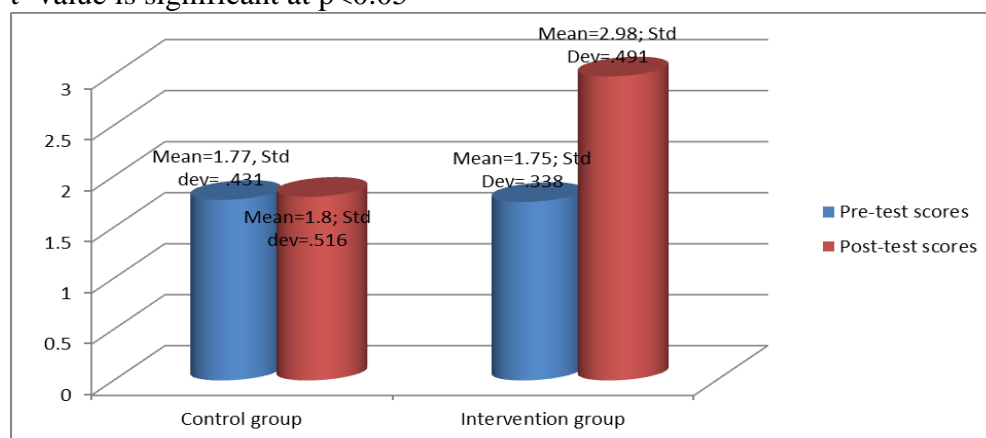


Figure 5: T-test analysis on pre and post-test scores of difference in waste disposal practice of Makoko and Ileje slum communities due to intervention programme

Table 5 presents the t- test analysis of difference in scores between control and intervention groups. The intervention groups appeared to have made differential improvements over the control group. This is because the intervention group recorded a higher mean value of 2.98; $Sd = .491$ as against the control group with a lower mean score of 1.8; $Sd = 0.516$ in the post test scores. The difference in the mean score ($M = 1.18$) was however statistically significant as $t\text{-calculated} = 11.073$, $p > 0.05$. Thus the null hypothesis that states that there is no significant effect of environmental literacy education intervention programme on waste disposal practices residents was rejected.

CONCLUSION

In conclusion, the pursuit of environmental literacy across the globe is widespread and popular, but it still has much room for improvement particularly in developing countries like Nigeria. Literacy is a never-ending process, like any form of education, environmental literacy must never stop, and it has to be promoted and encouraged at all levels and sectors. There are always new people and new thing to learn. True environmental literacy arises from a deft weaving of an intricate education fabric. Knowledge must be deep, skill developing and experiences real for environmental education to work best. But the tools are all there for those who need them. Environmental education should be much more practical than theory. The many hands-on learning experiences that environmental education offers ultimately translate into better knowledge of personal hygiene, job, career, and people skills. On a broader scale, environmentally literate community leaders have a deep understanding of environmental issues – with often complex causes and effects – enabling them to make sound decisions in stewarding our air, land, and water. Effective environmental education is not a panacea for society's entire waste management problem, but it is a responsibility that we owe both ourselves and future generations for a secured environment.

RECOMMENDATIONS

1. Personal hygiene training is fundamentally important for all community members. All community members should be aware of their role and responsibility in protecting their environment from contamination or deterioration. Community leaders should have the necessary knowledge and skills to enable them to handle community hygienically. Those

- who handle strong cleaning chemicals or other potentially hazardous chemicals should be instructed in safe handling techniques.
2. Sanitation systems should be monitored for effectiveness, periodically verified by means such as audit pre-operational inspections where appropriate and regularly reviewed and adapted to reflect changed circumstances. Sanitation laws and programmes should be routinely reviewed and updated where necessary. Systems should be in place to ensure that community members remain aware of all procedures necessary to maintain safety and friendly environment.
 3. Literacy Education in schools programmes should be compulsory at all level of education and should also cover areas like personal hygiene, environmental awareness, waste management and disposals. Such programmes should enable the participants to understand the importance of friendly environmental and make informed choices.
 4. Extending environmental/waste management training to cover both local people and professionals will go a long way in addressing the environmental literacy gap in the communities.

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SURVIVAL ANALYSIS OF A UNIVERSITY DISTANCE LEARNING SCIENCE EDUCATION STUDENTS FROM MATRICULATION TO GRADUATION: LESSONS FOR NATIONAL TRANSFORMATION

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ABSTRACT

A nation hardly develops beyond the level of science and technological vision, skills and expertise acquired and put to application by her citizenry and that can only be facilitated through sound and effective teacher preparatory programs in a right mix of quality and quantity. Full-time teacher preparatory programs are inadequate to cater for the ever increasing number of personnel requirements for effective teaching and learning. That explains why distance learning the world over has become a veritable means of bridging the gap with regard to teacher supply. Analysing how a distance learning institute provides the right mix of quality and quantity was the pivot of this study. Five research questions and four hypotheses were tested using a retrospective cohort study design. Sample employed was componential of 227 science education students in four science education programs over a period of nine academic sessions from 2005-2006 to 2013-2014. Data were analysed using Kaplan-Meier procedure using descriptive statistical tools and non-parametric inferential statistics of Wilcoxon and Chi-square tests. Female students are significantly more likely to complete their programme than male students. Cohorts was also significant with regard to survival. Lessons for national transformation revolves around the development of a model to estimate the proportion of science education teachers graduating at the right time as well as the quality of grades on graduation.

Keywords: Survival Analysis, Matriculation, Graduation, Distance Learning, Science Education

INTRODUCTION AND BACKGROUND

Survival Analysis basically model time to an event. It was first developed in clinical studies to analyse the duration from the out-set of a disease to the time when death occurs. In sociology, it is referred to as event history analysis, in engineering, it is called reliability analysis and duration analysis in economics. In Medicine where it is most common, Survival Analysis could take the form of: viral load measurements, leukemia patients and time in remission, time to develop a heart disease for normal individuals, elderly population and time until death, heart transplant and time until death (Kleinbaum, 2005). Smith and Smith cited in Singh and Mukhopadhyay (2011) also listed: examples to include: time until stock market crash, time until equipment fail as well as time until earthquake. In behavioural studies of which education is a part, survival analysis can take the forms of: time from matriculation to graduation, time to complete a doctoral dissertation, time from graduation to marriage, time from graduation to employment, time required for a task to be learned, time from being employed as an academic staff in the university up to the time of becoming a professor, time from retirement until death, time from intrapreneurship up to the time of becoming an entrepreneur, time from being employed as secondary school teachers up to the time of out-of profession migration etc.

One of the earliest studies on survival analysis can be traced to Christian Huygen's 1669 curve showing how many out of 100 people survive until 86 years and the probability was far less than 1% (Allison, 2003). Survival Analysis is particularly more suited in modelling time

to an event especially in Education as it provides the opportunity to determine when students are most likely to drop out of their academic career, trajectory of their academic careers, which particular group is more vulnerable in this regard, at what stage are students more at risk in dropping out of their academic career. Survival Analysis is also capable of predicting when they are likely to drop out.

Specific terminologies are of key interest in the study of Survival Analysis. One of such is staggered entry. It implies that individuals are not all enlisted into the study at the same time. Another relates to individuals dropping out or being lost in the study prior to an event occurring or individuals not experiencing the event as at the end of the study. The first description is referred to as left censoring and the latter being referred to as right censoring. Hazard rate, hazard function and hazard ratio (relative risk) are also of interest in survival analysis. Hazard represent the event of interest occurring and in this case it is graduation.

Education is the most viable instrument for fostering socio-economic development of a country as well as fulfilling the aspirations of an individual in life. Without sound education, it would be impossible for the realization of national transformation which we clamour for. Osisioma, (2012) notes that transformation is a strong word that portends a radical, structural and fundamental reappraisal of the basic assumptions that underlie our reforms and developmental efforts. Transformation Agenda among other things in education is expected to re-invigorate the system, produce teachers that are better trained, ensure that students acquire entrepreneurial skills that can make them to be self-sustaining as well as create jobs for more people with the potential of creating wealth and putting the country on the sound track of sustainable development.

It is however inconceivable for all people who wants to acquire education to be provided the opportunity to do so especially within the traditional brick and mortar classrooms. Thus, there is a radical departure from such, in form of Open and distance learning. UNESCO (2002) view Open and Distance learning as approaches that focus on opening access to education and training provision, freeing learners from the constraints of time and place and offering flexible learning opportunities to individuals and groups of learners. In this definition, open and distance learning are defined together and clear-cut meaning of each is somehow missing. Peratton, Robinson & Creed (2001) defined distance education as ‘an educational process in which a significant proportion of the teaching is conducted by someone far removed in space and/or time from the learners. They also defined open learning as organized educational activity, based on the use of teaching materials, in which the constraints on study are minimized in terms of access, entry, or time and place, pace, method of study, or any combination of these. Okebukola (2013) notes that Open Education is an umbrella name which is componential of open and distance education, flexible learning, and distributed learning with three major characteristics of flexibility, technology-mediation and learner control.

The revised National Policy on Education documents the specific goals of distance education as follows:

- i. To provide access to quality education and equity in educational opportunities.
- ii. To meet special needs of employers by mounting special certificate courses for their employees at their work- places.
- iii. To encourage internationalization, especially of tertiary education curricula.
- iv. To ameliorate the effect of internal and external brain drain in tertiary institutions by utilizing Nigerian experts as teachers regardless of their locations or places of work (FRN, 2004). UNESCO (2007) estimated that between 15 and 35 million new teachers would be required globally by 2015 as a result of the Education for All Goals

as well as Millennium Development Goals. It is estimated that 25% of this would be required in Africa. This translates to 3.75 – 8.75 million.

Science Education in this study is referred to as courses such as Education Chemistry, Education Biology, Education Mathematics and Education Physics. In these courses, students are often required to take courses from their cognate faculty where they take subject specific disciplines such as chemistry, physics, biology and mathematics. Students in Science Education are usually loaded with course work to be taken. A summary of what students are expected to take at the end of 6-years is shown as follows

Table 1: Summary of Courses for Bachelor of Science Education Programs

Course	University Wide Courses	Faculty of Education Courses	Departmental Course	Principal Teaching Subject	Total
Biology Education	10	40	10	89	149
Chemistry Education	10	44	10	98	162
Mathematics Education	10	48	10	94	160
Physics Education	10	45	7	91	151

Source: Department of Science and Technology Education University of Lagos Handbook

It can thus be seen that the total units required to graduate for a 6-year course varied from 149-162 units. Other disciplines outside Science Education may not be as much as this. Yes, it could be argued that the students will spread these units over a period of 6 years and the load will not be much on a yearly basis. A counter-argument could also be that these set of students are the working type, committed family members with other social and community commitments and by virtue of the arrangement of the programs, they have limited number of contact hours to be taught including time for practical and experimentation. All these may also weigh in on the trajectory of their academic careers which may determine whether students are left-censored, graduating at the appropriate time or right censored.

STATEMENT OF THE PROBLEM

Distance Learning Education is a veritable instrument for producing teachers in sufficient number as well as ensuring quality when it is properly executed. It is also an avenue to achieve self-fulfillment on the part of those who would have taken courses in a full-time programme but are denied the opportunity to do so based on a number of factors which could range from job demands to inability to compete effectively for the few spaces in the full-time programme as well as other inconveniences. The traditional classroom system is inadequate in producing the sufficient number of science teachers who would teach at the various levels of the schooling system. Various studies have been carried out on open and distance learning education to improve its effectiveness and to understand problems and challenges facing open and distance learning education. However, studies are rarely directed at finding out the relative risk of different groups of interest undergoing science education programs, which students are more at risk of leaving during particular stages of their careers, whether the profile of risk differ among groups as well as the quality measured by the grades of certification. This cannot be easily achieved using traditional statistical methods and this can best be actualized using survival analysis. A powerful advantage of survival analysis is that

by constructing models of students' careers, it is possible to investigate and compare the trajectory of their academic careers not only whether particular groups of interest (e.g. gender or cohort) drop out but also when they are most likely to do so. It is in view of this that the study investigated survival analysis of distance learning science education students from matriculation to graduation with a view to drawing lessons for national transformation.

PURPOSE OF THE STUDY

The purpose of this study was to investigate the survival analysis of distance learning science education students with a view to drawing lessons for national transformation. Specifically, it addresses the following objectives

- (1) To compute basic descriptive statistics for proportion surviving, hazard rate and median survival time
- (2) To ascertain whether survival and hazard functions differ by gender
- (3) To determine whether survival and hazard functions differ by cohort
- (4) To assess differences in frequencies of grades on graduation by gender
- (5) To ascertain whether differences exist in frequencies of grades on graduation by cohort

RESEARCH QUESTIONS

The following research questions were answered in this study

1. What are the proportion surviving, survival function, hazard rate, mean and median survival time of distance learning science education students?
2. What is the influence of gender on the cumulative survival function of distance learning science education students?
3. What is the influence of cohort on the cumulative survival function of distance learning science education students?
4. Do differences exist in the frequencies of grades on graduation at the right time in association with gender?
5. Do differences exist in the frequencies of grades on graduation in association with the cohorts?

Hypotheses

1. There will be no significant mean differences with regard to the survival functions of distance learning science education students based on their gender.
2. There will be no significant mean differences with regard to the survival and hazard functions of distance learning science education students based on their cohorts.
3. There will be no significant difference in the analysis of frequencies with regard to grades on graduation in association with gender of distance learning science education students.
4. There will be no significant difference in the analysis of frequencies with regard to grades on graduation in association with cohort of distance learning science education students

METHOD

The study adopted retrospective cohort study design. This design was deemed suitable as it specifically provided information with regard to the fact that the study was analysed based on the past information and records and not that the researchers had or are presently in contact with the students. In addition, it gives information based on the fact that cohorts of physics, chemistry, biology and mathematics were factored into the study which makes it distinct from a closely related design such as ex-post facto. In addition, this design has an advantage of being more appropriate in answering two research questions on cohort.

The population was the 227 distance learning science education students that enrolled in four different cohorts of physics, chemistry, biology and mathematics from 2005/2006 academic sessions to 2013/2014 academic sessions and this was taken as the sample as the cohorts and population were not large enough to select sample. They were all enlisted into the study.

The instrument used for the data collection was the broadsheets of results for those academic sessions for the various cohorts which had been validated during the processing of results by the various authorities concerned. Data were analysed using documentary analysis which involves careful looking at the broadsheets to extract relevant information and tracing the students which could have even dropped to another cohort until time to an event which is graduation unless being censored. Though, documentary analysis was not used to answer any research question but it provided the platform for which quantitative analyses using descriptive statistics of proportion, median survival time were computed as well as inferential non-parametric statistics of Chi-Square were used. Data was analysed using software known as Statistical Package for Social Scientist (SPSS) Version 20.0 and level of statistical significance was put at $\alpha = 0.05$.

Results

Some of these include: challenges facing the open and distance learning education

Table 1: Descriptive Statistics of Survival Analysis of Distance Learning Institute Science Education Students

Cohort	Year	No. of Entry	No. Withdrawn	No. of Terminal Events	Proportion Terminating	Proportion Surviving	Hazard Rate
Biology	1	565	91	0	.00	1.00	.00
	3	382	87	3	.01	.99	.01
	5	160	74	12	.10	.90	.10
	6	74	28	46	.77	.23	.00
Chemistry	1	204	38	0	.00	1.00	.00
	3	125	32	0	.00	1.00	.00
	5	61	30	1	.02	.98	.02
	6	30	12	18	.75	.25	.00
Math	1	304	51	0	.00	1.00	.00
	3	198	51	0	.00	1.00	.00
	5	95	45	2	.03	.97	.03
	6	48	17	31	.78	.22	.00
Physics	1	158	31	0	.00	1.00	.00
	3	95	26	1	.01	.99	.01
	5	42	27	2	.07	.93	.07
	6	13	5	8	.76	.24	.00

Mean Estimate of Survival: 5.79years

Median Estimate of Survival: 5.88years

Table 1 shows that left-censorship was not as common as right censorship for all the cohorts. This means that the number of science education students in the Distance Learning programme that left or loss to follow up were not as those that could not graduate at the end of six years which is termed right censorship in this study. The proportion terminating at the end of six years-that could not graduate at the end of the six years was highest for math and this was 0.78 and was least for chemistry which was also 0.75. This implies that the number of science education students graduating at the end of the six year programme varied from 22.0-25.0%. This study indicated that science education students' mean estimate of survival was high which was 5.79 years and the median which also represent measure of central tendency indicated 5.88 years at the lower boundary.

Research Question 1

What is the influence of gender on the cumulative survival function of distance learning science education students?

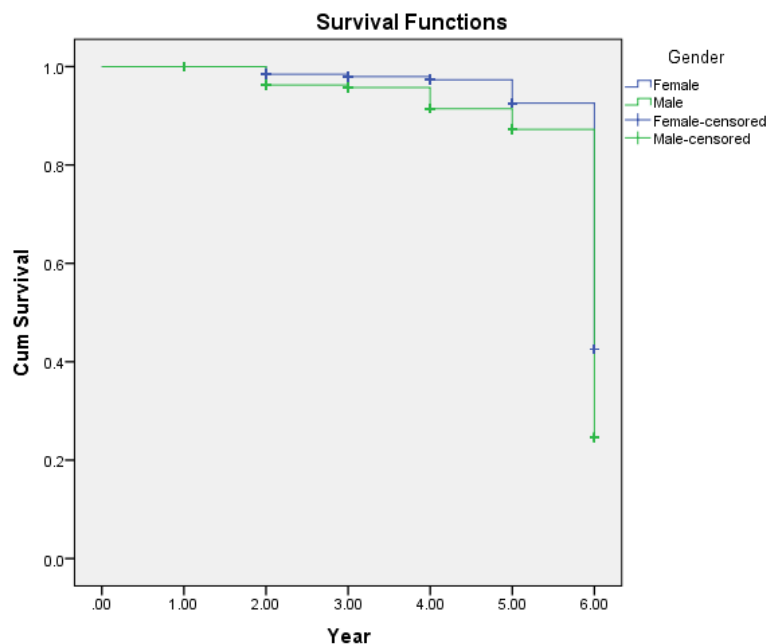


Fig. 1: Survival Function of DLI Science Education Students Based on Gender

It can be seen from Fig. 1 that female students have a higher survival rate in science education programme than male students. It also indicated that there was a close gap between left-censorship between male and female students but the gap was wider for right-censorship in favour of the female science education students.

Hypothesis 1

There will be no significant mean differences with regard to the survival functions of distance learning science education students based on their gender

Table 2: Chi-Square Analysis of Survival Function Based on Gender

Overall Comparisons

	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	13.653	1	.000
Breslow (Generalized Wilcoxon)	11.140	1	.001
Tarone-Ware	13.225	1	.000

Significant at $p < .05$

Table 2 shows that female science education students are more likely to stay to the end of their programme and complete it at the right time when compared to the male students (Chi-square: 11.140, df=1, $p = .001$). Thus, the null hypothesis was rejected as the level of significance was less than 0.05.

Research Question 3

What is the influence of cohort on the cumulative survival function of distance learning science education students?

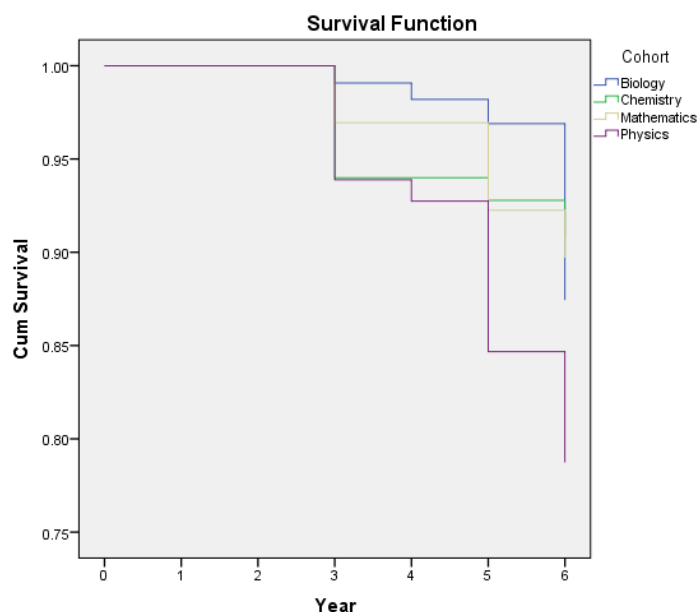


Fig 2: Survival Function of Science Education Students Based on Cohort

Fig. 2 shows that chemistry students are the least likely not to complete their programme, followed by mathematics and biology. Physics students are the most likely to drop out of their programme or most likely not to complete their programme in six years.

Hypothesis 2

There will be no significant mean differences with regard to the survival function of distance learning science education students based on their cohorts

Table 3; Chi-Square of Survival Function Based on Cohort

	Test Statistics	Chi-square	Df	Sig.
1	Breslow (Generalized Wilcoxon)	13.514	3	.004
2	Tarone Ware	10.831	3	.013

Table 3 indicates that was a significant mean difference with regard to the survival function of distance learning science education students based on their cohorts (Chi-square:13.514, df-3, $p=.004$). Thus, the null hypothesis was rejected as the level of significance was less than 0.05.

Research Question 4

Do differences exist in the frequencies of grades on graduation at the right time in association with gender?

Table 4: Descriptive of Frequencies of Grades of Students Based on Gender

			Graduation				Total
			First class	Second upper class	Second lower class	Third class	
GENDER2	Female	Count	1	17	19	2	39
		Expected Count	.6	14.6	20.7	3.0	39.0
	Male	Count	0	7	15	3	25
		Expected Count	.4	9.4	13.3	2.0	25.0
Total	Count		1	24	34	5	64
	Expected Count		1.0	24.0	34.0	5.0	64.0

Table 4 shows that there were differences in frequencies along the lines of grades of students among male and female science education students. There was only one first class student, 24

in second class upper category, 34 in second class lower category and five in third class category. In order to determine whether significant differences exist, chi-square was conducted as follows in the hypothesis

Hypothesis 3

There will be no significant difference in the analysis of frequencies with regard to grades on graduation in association with gender of distance learning science education students

Table 5: Chi-Square of Grades of Science Education Students Based on Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.914 ^a	3	.405
Likelihood Ratio	3.268	3	.352
Linear-by-Linear Association	2.798	1	.094
N of Valid Cases	64		

Table 5 reveals that there was no significant difference in the analysis of frequencies with regard to grades on graduation in association with gender of distance learning science education students (Chi-square value=2.914, df: 3, p=.405). Thus, the null hypothesis was not rejected and it can be inferred that the grades that science education students in the DLI programme come out with when they graduate at the exact time of six years do not differ significantly.

Research Question 5

Do differences exist in the frequencies of grades on graduation in association with the cohorts?

Table 6: Descriptive of Frequencies of Grades of Students Based on Cohorts

			Graduation				Total
			First class	Second upper Class	Second class lower	Third class	
COHORT2	Biology	Count	0	9	15	2	26
		Expected Count	.4	9.8	13.8	2.0	26.0
	Chemistry	Count	0	7	5	1	13
		Expected Count	.2	4.9	6.9	1.0	13.0
	Mathematics	Count	1	5	11	0	17
		Expected Count	.3	6.4	9.0	1.3	17.0
	Physics	Count	0	3	3	2	8
		Expected Count	.1	3.0	4.3	.6	8.0
	Total	Count	1	24	34	5	64
		Expected Count	1.0	24.0	34.0	5.0	64.0

Table 6 shows that differences exist in the categories of degrees obtained by the DLI science education students. In order to determine whether significant differences exist, chi-square was conducted as shown in Table 7

Hypothesis 5

There will be no significant difference in the analysis of frequencies with regard to grades on graduation in association with cohort of distance learning science education students

Table 7: Chi-Square Statistics of Grades Based on Cohort

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.824 ^a	9	.365
Likelihood Ratio	9.899	9	.359
Linear-by-Linear Association	.003	1	.957
N of Valid Cases	64		

It can be seen from Table 7 that there was no significant difference in the analysis of frequencies with regard to grades on graduation in association with cohort of distance learning science education students (Chi-square value=9.024, df:9, p=.365). Thus, the null hypothesis was not rejected.

DISCUSSION

The results of the study basically shows that Distance Learning programme especially with regard to science education is producing quality graduates to fill in the shortage of manpower personnel in the teaching sector. This shows that DLI, University of Lagos is providing access to quality education and equity in educational opportunities. This is particularly important for a country that is aspiring to join the list of 20 industrialized nation by the year 2020. In addition to that, specific needs of the employers are being met as stated in FRN (2004) with the DLI programme especially in science education. However, the study revealed that most of the students are unable to graduate at the exact six years and this cannot be unconnected with the fact that most of the students are engaged in employment and businesses. In addition to this, science education involves some practical activities which enhance the theoretical knowledge and if this opportunity is not fully utilized by the students, it could lead to a situation that prevents students from having conceptual understanding and application of the concepts and this invariably translates to the delay in graduating at the right time which is six years. Though, it is a flexible programme but students are not to take undue advantage of this and spend longer years as the concept of national transformation with regard to producing teachers that are better trained as well as ensuring that students acquire entrepreneurial skills as stated by Osisioma (2012) would be difficult to achieve.

CONCLUSION

Right-censorship is more common than left-censorship. This means that Distance Learning Institute Science Education students are more likely to say up to the end of their programme than opting out of the programme mid-way. Female students are more likely to graduate at the exact time than male students. The proportion of DLI Science Education students surviving at the end of the six year programme is roughly around 25%. Chemistry Education DLI students is the most likely cohort to complete their programme in six years while physics students are the least likely to complete their programme.

RECOMMENDATION

- Periodic workshops and conferences should be organized to look at improvement in the rate at which DLI Science Education students graduate within the time frame of six years.
- There is a need to improve DLI Science Education students' access to counselling services. This is in a bid to be more alive to the challenges they face in their studies.
- Male students should be more encouraged to be more focused on their studies and to manage their time well in order to cater for the various challenges they are facing.

- This study can be used to develop a model to estimate the proportion of science education pre-service teachers graduating at the right time as well as the quality of grades on graduation.

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BONE LENGTH AS A SUBSTITUTE FOR HEIGHT AS AN INDEX OF NUTRITIONAL STATUS IN ELDERLY WOMEN

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ABSTRACT

The effect of age, height and bone length was assessed in 268 elderly females aged 70-99 years. Similar measurements were made on younger females (age 30-40 years) who acted as control. The participants were drawn from rural and urban sections of Lagos and Oyo States. The findings from the study revealed that younger females (30-40 years) had significantly higher ($P < 0.001$) in height values than the elderly females. And among the elderly participants, the height measurement decreased with advancing age. However, arm and leg lengths were similar for all participants (young and old) and did not decrease with age. A positive and significant association ($P < 0.02$) occurred between height and arm length and between height and bone length, thus, the correlation between height and bone length (arm and Kg) suggest that either arm or leg measurement may be substitute for height as an index of stature in the assessment of nutritional status. The relationship also implies that once growth is completed, ageing has no effect on arm and leg length.

Keywords: Bone, Length, Height, Arm, Leg, Age, Nutrition.

INTRODUCTION

Poor growth has been reported by many researchers as one of the features of malnutrition in an individual. Bone serves mechanical and homeostasis functions protecting the internal organs, allowing for locomotion and load bearing, and serving as a home for marrow and as a reservoir for calcium homeostasis. With aging these function becomes impaired, bone becomes more fragile and less able to perform its mechanical function and the calcium stores are often depleted (Chan & Fugue 2002). To understand why this does not occur in all individuals and how the factors that control these processes change with age major area of investigations.

Older people are becoming an increasing important proportion of the population of developing countries, yet little information exists on their nutritional status or social conditions. It is important to assess the nutritional status of older people because of its role in ensuring a better quality of life and its association with functional ability (Galanos et al, 1994; Manandhar et al. 1997a).

There are reports that older individuals may have a 10- fold increase 10-year fracture risk compared with younger individual with the same bone mineral density (Kanis, 2002). Since many investigators and clinicians believe that bone mineral density is a marker of fracture susceptibility, because it declines with age in both women and men, it is important to examine why there is an age- dependent increase in bone fragility or in brittleness of bone. Several studies have reported that cortical bone becomes more brittle and weaker with age (Tommasini et al, 2007). Nyman et al (2007) also found that increasing age affected all parameters except for the elastic stiffness. With age the amount of bone deposited with cycle of remodeling decreases (Szulc and Seeman, 2009), possibly due reduction in the number of cell precursors of osteoblasts a reduction in the number of stem cell from which these precursor are derived, or a reduction in the lifespan of osteoblasts. The signals that lead to differentiation on of osteoblast precursors decreases with age (Lee et al, 2005) which also contribute to the loss in osteoblast numbers.

These studies identify possible relationship between age height and bone lengths in the assessment of nutritional status of elderly women

MATERIAL AND METHODS

Participants

A total of two hundred and sixty-eight female participants were selected using multistage sampling procedure from Oyo State (Urban: Ojo and Monatan:Rural: Eruwa) and lagos state, (Urban: Surulere and Palmgrove; Rural: Oto and Ijanikin). The ages of the participants ranges from 70 years to 99 years. All the participants were ambulatory and in good health with no history of fracture or any disease likely to influence or affect the bone.

Similarly, representative sample of younger women aged 30-40 years was selected from Lagos and Oyo State (Urban and Rural) to serve as the control group.

BONE MEASUREMENT

The purpose of the study was thoroughly explained to the participant after which informed consent was obtained.

ARM LENGTH

The participants were laid on a flat hard surface with the face up, arms relaxed at the sides and legs placed together. A flexible tape was placed at the lateral end of the aeromion and held there with the thumb of the left hand and the tape measure gently pulled and stopped at the distal end of the radius. The reading was taken to the nearest centimeter.

LEG LENGTH

The leg measurement was taken on the same side of the body as for arm length. The iliac crest and the distal border of the medical malleolus were identified. The tip of iliac crest was held there with the thumb. The tape was pulled gently and held at the distal border of the medial malleolus. The measurement were read to the nearest completed unit.

HEIGHT

During the survey there was no available height stand, a site in each household with leveled cement floor was located. The height measurement was obtained by the participants standing erect on a flat solid floor without shoes or head-tie, arms hanging by the sides, ankles and knees together, buttocks, shoulders and back of the head against a measuring axis by a marked wall. A ruler was placed firmly on the participants head to locate the exact height on the wall. Readings were taken to the nearest 0.1m.

STATISTIC ANALYSIS

The mean and standard deviation were calculated from the measurement obtained. The significance between mean were determined by students Hest at 5% or lower level. The relationship between the various parameters was determined by Pearson correlation coefficient and multiple regression analysis.

RESULTS

The elderly participants were classified into 3 groups according to age: 70-79 years, 80-89 years. The mean height, arm and leg length were compared for the control and the different experimental groups. (Table 1).

The value obtained for the height measurement declined with age. However arm and length measurement in the younger women were similar to the corresponding values for all the elderly women. Among the elderly women, both arm and leg length measurements were similar for the three decades studies (70-79, 80-89, and 90 years).

Regardless of the age of the elderly women, a significant association was observed between height and leg length ($r=0.568$, $P<0.002$, $R=0.414$, $P<0.002$; $r=0.580$, $P<0.002$ for age group 70-79, 80-89 and ≥ 90 years, respectively).

Table 1
Mean Height and Bone Length of Younger and Elderly Women

Age	Height	Ann Length (CM)	Leg Length (CM)
Control	1.6	59-: 16	19.4599
30-40	\pm	\pm	\pm
n=100	0.06	3.72	5.04
GP I	1.57	59.68	91.12
		,	-
70-79	\pm	\pm	\pm
n=132	0.07	3.72	5.12
GP II	1.53	59.33	90.06
80-89	\pm	\pm	\pm
n=77	0.07	3.46	5.12
GP III	1.53	58.03	90.87
-90	\pm	\pm	\pm
n= 39	0.06	3.93	4.67

The mean body lengths were compared for both urban and rural elderly women of different age (Table 2). There was similarity in the observed relationship in urban and rural subject ages 70-79, and 80- 89 years because height correlated significantly with arm and leg. While a different pattern of correlation was observed among the group aged 90 years above. For example, height correlated ($p< 0.01$) with leg length in rural participants only.

DISCUSSION

The height measurement obtained for the elderly participant in this study decrease with age. The finding agreed with the report of Santos JL et al 2004, Sorkin JD et al 1999, Dey DK et al 1997. The loss of height in elderly correlated with change in body posture, osteoporosis, vertebrae damage and kiphosis and scoliosis (Rossman, 2006). Height loss also appears to be related to sarcopenia (Szulc P et al 2005) which is defined as the loss of skeletal muscle mass and strength with aging and is association with weight loss and increased mortality. The resulting height loss can affect the normal functioning of the respiratory and gastrointestinal system, which in turn may lead to early satiety and poor nutritional status and weight loss (Ross PD 1997).

Reduction of male height seemed to be lower than female. According to De Lucia et al 2002, height was reduced 2.7 in male and 4.22cm in female in a period between the ages of 60 years to over 76 years. Female elderly experience accelerates bone during the first five year after five years after reaching the period of menopause.

The aging process did not affect the bone length of the arm and leg as well as the height of vertebral bone. The arm span was relatively unaffected by aging. In geriatric group, there was a slower reduction of arm span compared to the reduction of body height. It can be concluded that the arm span tend not to change too much with aging. The arm span can be recommended as a parameter of the body height prediction but not all population has a 1:1 relationship between arms span and body height. Sitting height can also predict the elderly body height but it tends to reduce with aging. (Fatmah, 2005).

Accurate methods are therefore needed to assess the nutritional status of older people. Hurley RS et al (1997) at present, there are no guidelines on the degree of spinal curvature beyond

which the measurement of height would be invalid but there are obviously individuals whose height should not be measured using the usual methods in such cases height has to be estimated or preferably another measurement should be used as a surrogate (World Health Organization Expert Subcommittee 1998).

Several studies have reported the effectiveness of using various parameters in predicting body height (Jalzem PF & Gledhill RB 1993, Yun DJ et al 1995) and the arm span was found to be the most reliable (Jalzem PF & Gledhill RB 1993). However, the association of arm span was found to vary from race to race (Reeves SL, Varakamin C & Henry CJ, 1996).

A simple and reliable measure of height, especially in older people is therefore necessary (World Health Organization Subcommittee, 1998, Reeves SL et al 1996). Since length of lone bone and leg does not reduce with age, arm span and knee heights have been used as surrogate measure of height in older people (Pieterse S et al 1997).

Recent studies also established a significant and positive correlation between arm span and height among elderly participants (Mohanty et al., 2001, Kwot et al 1991). The present study extended the findings of other studies by reporting an association between leg and arm length.

The existence of a correlation between height and arm length suggest that either arm or leg length may be substituted for height as an index of stature in the assessment of nutritional status. The relationship also implies that growth in height during the growth period is reflected increment in the length of the long bones of the arms and legs.

It appears that once growth in length is completed and in the absence of fracture, ageing has no significant effect on arm and leg length measurement. This view is supported by the findings in the present study which indicate that arm and leg lengths did not vary from decade to decade in the elderly. On the contrary, the height measurement varied with age. This is not surprising because of the established physiological changes with aging.

The significant observed in the leg length measurement between urban and rural participants may be attributed to the persistent activities and heavy manual work in the rural areas. And many researchers such as Barry DW & Kohrt WM, 2008 confirmed a positive association between bone mineral density and physical ac

CONCLUSION

It is evident from the data obtained from this study that height measurement change with age. The study also established that length of bones of the arm and leg did not change with age, therefore arm or leg length may be used as a substitute for stature in the assessment of nutritional status.

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CHILD JUSTICE ADMINISTRATION UNDER CHILD RIGHTS LAW OF LAGOS STATE

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ABSTRACT

The main objective of this study was to assess the implementation of Child's Rights Law (CRL) after its introduction in 2007 to identify any challenges in the application of the justice provisions by different child justice administrators. Anchoring on a system theory adapted from that of child protection, the study adopted a qualitative approach to collect both primary and secondary data through desk review of extant literature, key informant interviews and focus group discussion respectively. The study investigated police officers, Judges and Magistrates in four family courts and social workers in four custodial institutions. The study found that only two Specialised Children Police Units were created, police officers in these units were found untrained to handle the children matters, diversionary measures had never been used by the police, precarious court sittings days due to the irregular and non attendance of the assessors, no new family courts were constructed, conflicting provisions in sections 138 and 151, some laws did not prescribe penalties for the violators, the conditions in the custodial institutions had improved and the treatment of the juvenile offenders was better than prior the enactment of the CRL. Major challenges mentioned by all the categories of respondents were ignorance of the law by the general public particularly parents and also corrupt practices of police officers especially in cases of rape and sexual abuse of young girls. Enlightenment campaigns should be organized for the general public among others

INTRODUCTION

In the past five decades or so, the Children and Young Persons Laws (CYPLs) of the various states of the Federation have been the main laws guiding juvenile justice administration in Nigeria. Over these years, several researches like Alemika and Chukwuma (2001), Nwanna and Akpan (2003) have been carried out on the law and practice of juvenile justice administration in Nigeria. They showed amongst others that in almost every aspect of criminal proceedings, the well being and welfare of juvenile offenders are not being adequately preserved and protected (Alemika and Chukwuma, 2001, Nwanna and Akpan, 2003). The Child Rights Act (CRA) has ushered in a new legal framework with the aim of improving the protection for rights of the children in general and of the child offenders. The CRA was adapted as the Child Rights Law (CRL) of Lagos State in 2007. Since Lagos State domesticated the CRA eight years ago, no academic study has been conducted to thoroughly examine its provisions and identify its positive aspects and possibly, areas requiring review and improvement.

The main objective of this study therefore was to investigate the implementation of the CRL by the various child justice administrators with a view to identifying their challenges and proffer recommendations for the effective application of the CRL in Lagos State. Consequently, the study investigated the use of the Law at the Police College, several Divisional Police Headquarters and family courts. It examined the diverse roles of Social Welfare in the CRL. Hopefully, the findings will assist the relevant stakeholders in the formulation and implementation of their policies. The results may also assist other states in the application of their CRL as well as provide an impetus for other independent researches. What has been done in respect of the CRL of Lagos State could be a pilot study that should

stimulate further activity on a national and perhaps, African regional levels by local and international organizations.

Research Objectives

This research sought to investigate the challenges faced by child justice administrators in implementing the CRL with a view to proffering solutions. Specifically to:

- Find out the extent of use of the CRL at the Police Stations.
- Determine the areas of challenges of the child justice provisions by the Police.
- Identify the problems in the application of the justice provisions in the CRL at the Family Courts.
- Examine the treatment of child offenders at some custodial institutions in Lagos State.
- Investigate the challenges of the Social Welfare Officers in applying the child justice provisions.
- Proffer solutions.

Research Questions

- How is the CRL used at the Police Stations?
- What are the challenges of CRL at the police stations?
- What are the problems experienced in the application of the justice provisions in the CRL at the Family Courts?
- How are those committed to custodial institutions treated in Lagos State?
- What challenges do the Social Welfare Officers face in child justice administration?
- What is the way forward?

LITERATURE REVIEW

In this chapter, the important concepts will be defined, followed by an analysis of the normative and conceptual frame works of the child rights laws.

CLARIFICATION OF CONCEPTS

Who is a child?

A child has been variously defined by different laws both internationally and locally. The United Nations Convention on the Rights of the Child (CRC) (1989) and the African Charter on the Rights and Welfare of the Child (i.e. African Children's Charter) (1990) define a child as a human being under the age of 18 years. However, there is a clause in the CRC which stipulates that the definition of a child may be adjusted to accommodate national laws under which a child attains maturity or adulthood at an earlier age (Nwanna and Akpan 2003). The Independent National Electoral Commission (INEC) (2010) defines voting age as anyone aged 18 years or over which implies that anyone under 18 years is a child and cannot vote. However, the Child Right's Act (CRA) of 2003 adopted the definition of the international body and defines a child as a person who has not attained the age of eighteen years. This implies that any child from birth to seventeen years is a child but anybody who is eighteen years and above is not a child. The definition of a child by Child Right's Act (CRA) of 2003 supersedes all other definitions by other Acts. For this work therefore, a child is anyone under eighteen years.

What are child's rights?

The issue of children's rights is poorly defined in legislation and by the courts, partly because many nations have not decided how much of such rights to grant children. For one to comprehend what a child's right is, the terms 'right' and 'human rights' will have to be defined. The term 'right' is often used to describe any advantages conferred on a person by a

rule of law. Rights are those things to which one is entitled or allowed; freedoms that are guaranteed.

Child Rights are expressed as human rights. They are wide-ranging and include entitlement to a name and nationality; freedom from discrimination (race, colour, religion); social security extending to adequate nutrition, housing, recreation and medical care; entitlement to free education and equal opportunities; protection from all forms of cruelty, neglect and exploitation and right to love, understanding and affection (Freeman, 1983). Child's rights therefore are human rights with particular attention to the rights of special protection and care afforded to minors, including their rights to association with both parents, human identity as well as the basic needs for food, universal state-paid education, health care and criminal laws appropriate for the age and development of the child, equal protection of the child's civil rights and freedom from discrimination on the basis of the child's race, gender, sexual orientation, gender identity, national origin, religion, disability, colour, ethnicity, or other characteristics.¹

Child's rights are basic entitlements every child in the world should be able to do or to have. All children have the same rights irrespective their colour or race.. All rights are connected to each other and are equally important. Interpretations of children's rights range from allowing children the capacity for autonomous action to the enforcement of children being physically, mentally and emotionally free from abuse, though what constitutes "abuse" is a matter of debate. Other definitions include the rights to care and nurturing (Bandman, 1999)

What is a child's rights law?

Ahearn, *et al.* (2007) define child's rights law as the point where the law intersects with a child's life which includes juvenile delinquency, due process for children involved in the criminal justice system, appropriate representation, and effective rehabilitative services; care and protection for children in state care; ensuring education for all children regardless of their race, gender, sexual orientation, gender identity, national origin, religion, disability, colour, ethnicity or other characteristics, and; health care and advocacy.

HISTORICAL FRAMEWORK OF THE CHILD RIGHTS LAW IN NIGERIA

Before the First World War (1914-1918), nobody thought of giving special protection to children but it became necessary in 1919 to protect children from child labour. Olowu (2008) provides that the first conscious effort at setting a legal framework for the protection of children was the Minimum Age (Industry) Convention adopted by the International Labour Organisation (ILO) in 1919. Uche (2009) states that in 1959, the United Nations adopted the Declaration on the Rights of the Child (DRC), which affirmed the rights of children everywhere to receive adequate care from their parents and the community. This culminated into the adoption of the United Nations Convention on the Rights of the Child (CRC) in 1989 providing an enabling environment for the United Nations to make concrete attempts to consolidate the international law on the basic rights of children to survival, education, improved health conditions and protection from all forms of abuse and exploitation. Even though it appeared that CRC had gained almost universal acceptance by states, it is incontrovertible that there exists marked disparity in the attitudes of States towards their effective domestic implementation. One formidable obstacle to the realisation of children's rights in numerous States has been the question of cultural relativism.

¹ Amnesty International "[Children's Rights](#)", Amnesty International. Accessed 23 February, 2008.

In Nigeria, prior to the 2003 Child Rights Act, child protection was defined by the Children and Young People's Act (CYPA), a law relating primarily to juvenile justice (Alemika, *et al.* 2005). It was promulgated to make provision for the welfare of the young and the treatment of young offenders and establishment of Juvenile Courts. The Nigerian Government ratified the CRC in March 1991. However, while Nigeria is a signatory without reservation to CRC, it was domesticated and thus had no legal force in Nigeria until 2003 when the Child Rights Act (CRA) was enacted. Lagos State adopted the Act in 2007 and named it the Child Rights Law (2007). Lagos State, in conformity with one of the CRC's provisions that laws relating to children should be made accessible to them, has simplified the Law and presented it in abbreviated format.

EARLIER STUDIES ON THE IMPLEMENTATION OF CHILD RIGHTS LAW

There is limited literature on the implementation of CRL either of Lagos State or of any other state. Most studies only assessed its feasibility considering the cultural milieu of the country. However, there are few studies on the implementation of Child Rights Act of Nigeria.

Lawal (2013) reported that Kwara State government had expressed its displeasure over the nonchalant attitude of parents and stakeholders for not adhering to the state's Child's Rights Law enacted to protect girl child education. He further reported that the State Commissioner for Education and Human Capital Development, Alhaji Saka Onimago, stated that if the laws were strictly adhered to, it would eliminate all abuses against the girl child especially early marriage before the age of eighteen. He also reported that the Commissioner warned that anybody found guilty of this would be sentenced to three years imprisonment or pay a fine of N3,000 (Lawal, 2013).

According to Bassey (2011) and Ayodele (2013), the law relating to hawking appeared to be suffering a setback judging from the number of children seen on major roads, bridges and feeder roads hawking different items and wiping windscreens of vehicles and this they opined, would endanger the lives of the under-aged children. Some of the children interviewed revealed that they were living with their guardians and had to contribute to the family income. They would hawk after school hours. Regrettably, they reported that they did not have time to do their home work assignments. Ayodele (2013) further observed that the penalty for anybody who violated this prohibition of hawking risked a jail term or fine of N200,000 or both.

In April 2013, there was a report in the *National Mirror* by Ketefe *et al.* that the Lagos State government admitted that the implementation of the Child Rights Law was slow. According to the report, five lawyers bemoaned the state government's lacklustre enforcement of the law in the state. This was also confirmed by the Lagos State Solicitor- General and Permanent Secretary in the State Ministry of Justice, Mr. Lawal Pedro, (SAN), who explained the fact that the law was new and also the violations of the law were not being reported.

Nnorom (2010) after reviewing some cases of sexual abuse of children since the enactment of the Child's Rights Act in 2003, observed that sexual abuse of children within and outside their homes was widespread and culprits were hardly ever prosecuted. She reviewed cases of sexual abuse reported to an NGO in Lagos State for two years i.e. 2004 and 2005. Seventeen and ten cases were reported in 2004 and 2005 respectively. Reviewing the actions taken in respect of the crimes, she observed that some of them were not reported to the police or appropriate quarters while for those which were reported to the police or juvenile welfare centres, the culprits were either released on bail or released by the police without being charged to court. Of all the cases charged to court only two attracted jail terms one of which

was one year imprisonment while the other was seven years. She argued that these penalties contravened the provisions of the Act which stipulated life imprisonment for such crimes. She, therefore, concluded that the law was a toothless bull that had not achieved its purpose.

From the foregoing, it could be deduced that there had not been any empirical study to assess or evaluate the implementation of CRL. This study therefore aims to fill this gap.

CONCEPTUAL FRAMEWORK OF THE STUDY

Conceptual framework of this study adapted the system approach of child protection systems as designed by Wulczyn *et al.* (2010). Figure 1 below depicts the different components of the child rights systems: the implementing agencies – justice system, security system and social welfare system in Box 1; the status of the children i.e. their well being in Box 2; goals of the Child's Rights Law in Box 3 and the total social change that will be brought about in the society if children's rights are protected effectively and adequately in the circle in the centre of the chart. These components are organized around a common goal (to serve in the best interest of the child) that holds the system together. The components are interrelated with one another and the changes they produce are bi-directional. Changes to any system, for whatever reason, will change the context (in the circle) and changes in the context in turn will alter the system.

Justice, security and social welfare systems (Box 1) function within the wider society and are influenced by economic, social, political, and cultural contexts including family, community, externalities and emergencies. Externalities and emergencies can have notable impact on the capacity of any child's rights system (justice, security and social welfare systems). Well-designed systems (i.e., those with strong infrastructure) will be better prepared to manage externalities and emergencies. Externalities and emergencies may lead to stronger systems in the long run, provided the actors (judges, magistrates, lawyers, police and social welfare officers) involved respond in a cooperative manner. Justice, security and social welfare systems are also influenced by the normative framework. Normative framework constitutes laws that emanated from both international bodies and local governments (see the section above). Justice, security and social welfare systems are characterized by their structures, functions, and capacities. Children's rights will be effectively protected if there is symmetry between systems' goals, their structures, functions, capacities, the process of care, governance, accountability and the normative context in which they operate. More elaborate system structures e.g. the Child's Rights Laws of Lagos State are required to coordinate the various actors (judges, magistrates, lawyers, police, social welfare officers) who have been assigned responsibilities within that system.

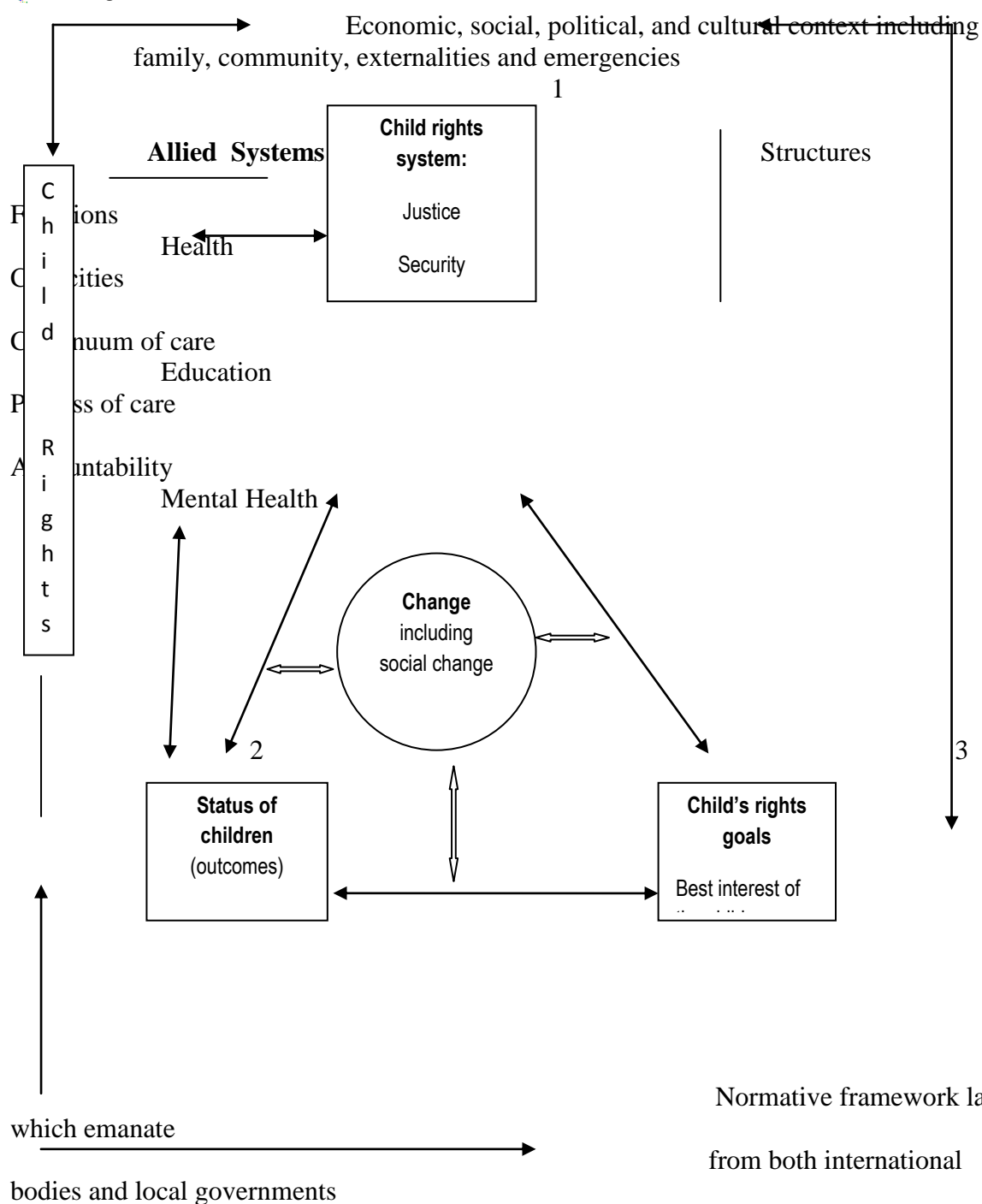


Figure 1: Conceptualization of the Context and dynamics of the child rights systems adapted from the system theory of child protection [Wulczyn *et al.* 2010]

The structural relationship between a child's rights system and other formal systems e.g. education, health, mental health or informal systems e.g. family, kin, community is an important feature of the child's rights system that has implications for how one defines functions, capacities, the process of care, governance, and accountability. To the extent that systems take shape around the goals of the system (Box 3), the impact of the child's rights system on the situation of children (i.e., the well-being of children) (Box 2) is a central dynamic that affects how the system evolves through time. Ideally, where there is a gap between the goals of the system and whether children's rights are being protected, efforts within the system will turn to bringing what the system accomplishes into line with system

goals. Protection of children's rights relies on people and organizations properly equipped to carry out the work such as the judges, magistrates, lawyers, police and social welfare officers.

The multi-sectoral nature of the child's rights system means that structural relationships between component parts of the system have to be identified or established. The components, within the context of the community and the state, may include formal and informal organizations (neighbourhood watch groups) dedicated to protecting children. How the relationships are formed and how they are maintained (or changed) is a matter of local context, efficacy, and other factors affecting child protection. Together with the normative framework, system capacity, the process of care, and system goals, there has to be an accountability mechanism that incorporates data collection, research and management analysis, and communication with stakeholders within and outside the formal system (i.e., the public). Without accountability, the system has no way of knowing how well it is doing, no way of knowing how the context has changed, and no way to adjust its structures, functions, and capacities

It is in the light of the above that the structures, functions, capacities, the process of care, governance, accountability and the normative context of the child rights system were assessed in this study in order to identify the challenges hindering the implementation of CRL.

Methodology

Research Design

The study was an exploratory and a cross sectional survey that adopted a qualitative method to collect data.

Study Settings

The research was conducted in organizations implementing CRL in Lagos State. Juvenile Welfare Centre, Central Police Station, Adeniji Adele, Specialized Children Police Unit, Alakara; Police Headquarters, Ikeja; Police College, Ikeja; Child Networking; Family Courts - Magistrate Court Level, Surulere; Family Court - Magistrate Court Level, Apapa; Family Court – High Level Court, Lagos High Court; Family Court - High Level Court, Ikeja High Court; Special Correctional Centre for Boys, Oregun; Special Correctional Centre for Junior Boys, Birrel Street, Yaba; Special Correctional Centre for Boys, Isheri and Special Correctional Centre for Girls, Idi-Araba, Mushin Local Government

Study Population

The units of analysis were Judges, Magistrates, Police officers and Social workers working in the above-mentioned settings.

Sample size and Sampling techniques

Twelve respondents were investigated. A purposive sampling technique was used to select them.

Data collection

Desk review of extant literature was done to collect secondary data while primary data were collected via instruments constructed for data collection. To collect primary data, the research adopted a triangulation method of Key Informant Interviews (KII), Focus Group Discussion (FGD) and Participant Observation. Under KII module, twelve (12) key officers of the various child justice organs were successfully interviewed. Focus Group Discussion (FGD) was organized for social welfare officers and data collected were analyzed qualitatively. A

minimum of ten persons were intended to participate in the FGD but six of them obliged and were selected purposefully to participate in the FGD. FGD guide was constructed. Since the study was a qualitative one, most of the questions were open-ended. Some of the questions were similar for all the categories of the respondents. Court proceedings were observed in the following: Family Court Lagos High Court; Family Court Ikeja High Court; Family Court Ikeja Magistrate Court; Family Court Surulere Magistrate Court and Family Court Apapa Magistrate Court. Field work took place between 7th July and 30th September, 2013. Four experienced Research Assistants (RAs) were recruited to assist the two principal researchers in collecting data. The RAs were trained for one day to enhance the quality of the data collected. The interviews and the focus group discussion were tape-recorded and transcribed.

Ethical Issues

Ethical issues were observed. The research protocol and the instruments were assessed and approved by the various Institutional Review Boards (IRBs). The researchers ensured that informed consent of the respondents was obtained before interviews. No respondent was coerced. The interviews and the focus group discussion were tape-recorded with full consent of the respondents.

Field work challenges

- A major challenge was getting the FGD participants. Some of them who turned up were late to the venue and this affected the time schedule.
- Interview with 13 officers- in-charge of Divisional Police Headquarters in Lagos State could not be conducted because CRL had not been introduced to them as at the time of the study. According to the Assistant Commissioner of Police (COP) Lagos State, the CRL was only introduced to the Command in July, 2013 so they could not have implemented the law. To buttress this point, the Training Department of the Police College was ignorant of the CRL in Lagos State and therefore still based their training on the Children and Young Persons Law which had been jettisoned since 2007. All these contributed to the reduction of the sample size.

Data Analysis

Secondary data were analyzed adopting content analysis of extant literature while data of both KII and FGD were transcribed and then analyzed qualitatively.

Results

The Police and CRL

The results indicated that only two Specialized Children Police Units were established as stipulated in section 195 of the CRL. Alakara respondent said:

We have 2 centres in Lagos state, one in Adeniji Adele police station and Alakara police station. Alakara was the first specialized unit and is the one in charge of the mainland axis. Then Adeniji Adele is in charge of Island. It covers places like Badagry, Ikorodu, Ikeja and so on. The Child Right Law says anything we do should be in the best interest of the child, so for that we advise that there should be a specialized unit in all the police stations. It is on ground now the IG has sent signals to all police stations, all Area commands, so we have specialized units, it has been implemented in Lagos. I don't know of other states but I heard a signal has already been sent that every command should have a specialized unit because the issues of children are alarming.

To know the calibre of police personnel who worked in these centres, the respondent at Alakara Police Station reported that:

Before a centre can be called specialized unit, there are things that would be in place. For instance, we are supposed to have medical personnel, lawyer and social workers so that when it comes to emergency there should be a worker who will take care of the child. For example, if a child is brought in and requires treatment, it is the medical personnel that are supposed to take the child to the place where he can get it. When it comes to legal issues like taking the child to court for care order and all that, a lawyer should do that. When it comes to counseling, we are supposed to have a social worker who will take care of counseling and all that usually when a child is brought from the street, the child is traumatized and needs to be settled emotionally. We don't have all these trainings. We are compelled to do them so it depends on one's experience and passion. If you don't have passion for children you can't do the work. Some of us who are here generally are here for punishment. This place is called punishment ground because anybody that offends the force, there is a way to punish the person, and then they decide to transfer the person here.

He went on to inform us that the children kept in the units before 2007 were subjected to inhuman treatment and were not taken care of. The situation improved since the establishment of the units

Questions were asked on diversionary measures. UNICEF (no date) defines diversion as the conditional channelling of children in conflict with the law away from judicial proceedings through the development and implementation of procedures, structures and programmes that enable many - possibly most - to be dealt with by non-judicial bodies, thereby avoiding the negative effects of formal judicial proceedings and a criminal record. According to Ogunniran (2013), the Child Rights Act specifically provides for four types of diversionary measures in Nigeria which are supervision, guidance, restitution and compensation of victims. In the CRL of Lagos State, section 197, subsection (1), part (a) prescribes that “*The police, prosecutor or any other person dealing with a case involving a child offender shall have the power to dispose of the case without resorting to formal trial by using other means of settlement, including supervision, guidance, restitution and compensation of victims*”. In view of this provision, police officers' responses on diversionary measures indicated that they were ignorant of the measures and therefore could not describe them.

According to the Assistant COP Lagos State, the CRL was introduced to the Command in July, 2013. There was also a directive that the Command should create Human Rights Desks. It was also revealed that the Training Department of the Police College was not aware of the CRL Lagos State. It was gathered that the training in the College was based on the Children and Young Persons Law meaning that CRL had not been included in their curriculum.

Challenges experienced by the Police

On the challenges the police stations had experienced in using the specialized children police units and in implementing the child justice provisions in the CRL, the following were mentioned: ignorance of the law on the part of the parents, logistics problems to convey children who had been ordered to be remanded in custody, parents' unwillingness to report cases of sexual abuse and defilement and unwillingness to continue prosecution even when they reported. Others challenges included legal constraints such as granting bail to the accused and delay, stigmatization, no subvention to provide food, clothes etc. for the abandoned children.

Family Courts and CRL

The Judges and Magistrates were asked the same questions. The interview guide contained 16 items of open ended questions. They were asked to comment on the jurisdiction of the family court in relation to child offenders, the composition of the Family court, the structure of the court: sitting days, privacy of proceedings in the court and how they used rules of procedure. Others include how they handled evidence of child offenders, the measures taken to achieve fair hearing, how the best interest and right of participation for child offenders could be achieved, to state whether there were any problems with the Assessors, how the role of Assessors and Supervision officers could be enhanced, the disposition method used in the CRL, the challenges faced in implementing CRL in the Family court and to suggest ways for improvement.

Composition and structure of the Family Court

As at the time of the study, there were two family courts at the High Court level located at Ikeja and Lagos Island and four family courts at the Magistrate Court level in Lagos State located at Apapa, Ikeja, Ikorodu and Surulere.

The study wanted to know about the composition of the family courts. The Magistrate at the Ikeja Family Court pointed out that three people should constitute the members of the family courts e.g. a Judge or Magistrate and two Assessors but this was not always possible because sometimes the Assessors would not be in court. The Magistrate had this to say:

In the Magistrate Court, we the Chief Magistrates, just the Chief Magistrate and two Assessors, in the high court the same thing, we have the Judge and two Assessors. One of the Assessors is usually from the social welfare office in Alausa, a senior officer, and then the other one is usually a respected member of the society, parent or whomever. That is the composition. The challenge we have in that aspect, sometimes, the law says, that we must all be there, the three of you, the three persons must be seated together, that is what the law says but sometimes the Assessors will not be there and then the work cannot go on so for criminal matters, we are looking also if the Magistrate or Judge can sit alone that is what we are kind of advocating, the Magistrate or Judge can sit alone when it is a criminal matter, and then if it is a civil matter, at least two of them, the Judge and one Assessor. I have had the experience of one Assessor retiring from service and some of the courts will have months of nothing doing and that is why we are advocating that at least for civil matter cases at least two people one of them the chairman and for criminal the chairman can sit alone.

Family Courts were strengthened in Lagos State in 2007 by the Child's Rights Law of Lagos State (section 138). These courts were set up to replace Juvenile Courts which were established in 1948 in Lagos. Only the Family Courts can exercise jurisdiction in any matter relating to a child whether civil or criminal. The Courts are to enforce the CRL which consolidates all legislations relating to the protection and welfare of children in Lagos State. They were set up to operate at two levels; high court and magistrate's court. The High Court consists of a Judge of the High Court of the State; and two assessors, who are officers not below the rank of Chief Social Welfare Officers and who are experienced in matters relating to children preferably in the area of child psychology education. The Court at the Magisterial level consists of a Magistrate and two assessors; one of whom is a woman and the other a person who is experienced in matters relating to children, preferably in the area of child psychology education. These are provided in sections 141 Article (1) and 142 Article (1) of the CRL of Lagos State: "(1) The High Court shall consist of such number of: (a) Judges of the High Court of the State; and (b) Assessors, who shall be officers not below the rank of Chief Social Welfare Officers, as shall enable the Court to effectively perform its functions

under this Law". 142 "(1) The Court at the Magisterial level shall consist of a number of: (a) Magistrates, not below the rank of Chief Magistrate; and (b) Assessors, who shall be officers not below the rank of Senior Child Development Officer, as shall enable the Court to effectively perform its functions under this Law".

The respondents were asked to comment on the structure of the courts: sitting days, privacy of proceedings in the courts. All the respondents asserted that every day sitting was impossible. Sitting days depend on the set of applications. One Magistrate stressed that courts were different from one another and with different functions. For instance, the Magistrate noted that in one family court, it was only one sitting day in a week because there were other jobs. According to the Magistrate, this family court was a "general purpose" court taking cases such as landlord and tenants' cases, criminal cases or anything. The Magistrate bemoaned that two family courts had been totally saddled with other issues instead of family matters and in the high court level, two courts were in similar situation. The magistrate remarked:

Each court is different from the other; I only have one sitting day because I was doing other jobs so sitting days depend on the Magistrate and the time. Now at least I know that two family courts are now totally deflected on family matters. And in the high court I believe that two courts are totally deflected since, so they normally sit everyday or every other day as the case permit.

One High Court Judge corroborated the assertion of the Magistrate by saying that a Family Court Judge before July 2013 would handle any matter given the constitutional jurisdiction of a High Court Judge. However, family courts handle children issues such as adoptions, welfare, children in conflicts with the law etc. Here again, absence of assessors was reported to be affecting the regularity of sittings as reported by the Magistrate in one family court. According to the Magistrate, few days were designated for applications because Assessors were reported to be working in other ministries in Alausa. The Magistrate noted that the assessors were poorly remunerated and could not afford to come to court every day:

We sit everyday but we have different sets of applications or matters that are handled by the family court, we have adoptions, juvenile cases, children in conflicts with the law. Few days for the application, because the Assessors are people who are regularly working somewhere else but they are badly remunerated.

To corroborate the above assertion, a Judge commented that the court sat only once a week precisely Tuesdays because of the inability of the Assessors to come to court daily due to poor remuneration. The judge had this to say:

Well, what I try to do is this: because the Assessors are people who are also regularly working somewhere else, as at now, they are badly remunerated. What they are being paid hardly covers their fuel cost. So, it is not fair to have them come and sit with you on a daily basis. So what I do is, I pack all my family court sittings involving civil cases to one day of the week (Tuesday) and criminal sittings on Fridays. Now, the criminal matters are not so many, so we may end up not sitting more than twice a month. But the civil ones are billed for every Tuesday and then privacy is guaranteed, of course. What we do is once the first case is called, everybody, be it lawyer, be it litigant that is not involved in that case is excused from the court. Outside the court room, sitting arrangement has been provided as a waiting area. So, if we finish, the Court Registrar goes to that waiting area to invite parties and counsel for the next case and they are the only ones in court when the matter is taken

Jurisdiction of the Family Court in relation to child offenders

There was a unanimous response by the Magistrates and Judges that the family court had unlimited jurisdiction in nature to cases involving child offenders as stipulated in section 140 of the CRL that states *inter alia*: “subject to position of this law and such other legal issue, the court shall have unlimited jurisdiction to hear and determine (a) any civil proceeding in respect of a child.....; and (b) any criminal proceeding involving an offence committed by a child or against a child or against the interest of a child.” (CRL, 2007:74). However, a Judge at the Family Court - High Court, opined that when a child’s case involved an adult offender, that case would be heard in a regular court. The Judge’s assertion was captured thus:

My interpretation of this is that we should not confuse situation where children are victims with where children are offenders. When an adult offends a child, it is the right of that adult that is up for determination, not that of the child. The child is at best a witness and the evidence of that child can be taken in a protected manner that will guarantee the dignity and all that is necessary for the child. Otherwise, we might be running into problems of having adult offenders being taken to children’s courts which are meant to be friendly, whereas these are adults who are fully aware and are deemed to fully know the implications of their conducts and should be held responsible before regular courts. So, my understanding which I have always advocated is that child molesters, traffickers or whatever, when children are victims, it is right of adults that are up for determination and adults should be tried before regular courts. It is when children are offenders that the family courts will come into play.

Probing further, the Judge was asked if there were any conflict between family court and the regular court. The response was in the negative. However, the judge explained that what the courts had done was to harmonize regular proceedings for the dissolution of marriages. The Judge’s clarification was stated thus:

No, the way we have done it is to harmonize regular proceedings for the dissolution of marriages and all that, once there is a dispute of custody or maintenance or issues relating to the children of the marriage, the regular court will transfer the case to the family court for resolution. And when the family court finishes from that, the substantive issue of the dissolution of the marriage will go back to the regular court. That is the harmony we have made and I have advocated for family court and magistrate court level that when they have cases of adult offenders, you know, offenses involving children, they should sit as regular court that is as magistrate without assessors because the family courts sit in camera, without the media and public. Constitutionally, criminal trials are supposed to be in public. The family court is not expected to have a dock. How do you have an arraignment when the defendant is not standing in a dock? Statutorily, family court is supposed to promote reconciliation. How do you start encouraging reconciliation in cases of child molesters and some of these heinous offences, when the perpetrator ought to be given the full measure of the law? So, the intention of the law is that adult offenders are taken before regular court. It is only child offenders that are tried in the family courts. So, in few cases where adult offences involving children have been referred to me as a family court, I have always made this opinion and return them back to the regular court

Use of rules of procedure, proceedings and privacy

With respect to the use of rules of procedure, there were different responses. A Judge said rules of procedure were not regularly used because they were new. They were only introduced in June 2012 and a workshop was organized in July 2013 to sensitize the Judges. The second Judge on the other hand, stated that the rules of procedure now only cover civil

matters. No rules of procedure for criminal matters other than the one or two provisions in Child's Rights Law. The Judge concluded by saying that Judges used their discretion. One Magistrate reported that sections 145 (see above) and 148 of the CRL were being used. Section 148 states in subsection (1) that "in any proceedings in which the Court is hearing an application for an order under this Law, or is considering whether to grant an order, the Court shall order the parent, guardian and the child concerned to attend such or stages of the proceedings as shall be specified in the order". The magistrate opined that the law allowed a child to express himself/herself based on his/her interest. Magistrate from the other Family Court added that rules in Magistrate courts were the ones being used presently. However, the Magistrate noted that rules of procedure for family courts had issues that were being considered presently.

Giving evidence by a child offender is less rigid compared to that of an adult. Child offenders are treated in a friendly manner in the family courts. The offence is treated as civil and not criminal. For instance, one Judge reported that child offenders would not stand in the dock. They would sit quietly with their counsel in the front row of the gallery only talk when they were to do so. Most often reconciliation is encouraged. Below is how a Magistrate described how evidence of child offenders is handled:

Well, first, normally in the child justice system, child offender is not called a child offender, it is treated civil. He does not stand in the dock, he sits with the counsel in the front row of the gallery just sits quietly there, not in the dock and listens to everything only that the other witness has against him. And when it is time for him to testify, everything he has to say is also led by his counsel. I can also say that because child rights law encourages reconciliation, what we also encourage is for parties to speak, is for the defendant to interact with the victim's family to show that what every error that would have been made by the defendant doesn't become an indelible mark on him, in a way that at the end of the day, one achieves harmony between the parties. We once had one like that that the family of the victim came, the mother, and was her only son that the child offender killed. She withdrew the case, prayed for the child offender in court. The child offender too went before her, wept and wept. So that is the whole atmosphere it is not an atmosphere of adversarial adjudication

In addition, a Judge stressed that corroboration of the child's sentence is not mandatory but that voice of the child was important. Evidence Act (Federal Act) would be fully applied but a lot of discretion is used to establish the truth.

Challenges experienced in implementing CRL in the Family Courts

The respondents were further requested to mention the challenges they experienced in implementing CRL in the family courts. One Magistrate reiterated that the challenges were lack of quality personnel, dearth of quality facility and inadequate resources. This view was supported by that of the other Magistrate who added inadequate funding. The Magistrate stressed that funding was very key to the success of CRL. Inadequate infrastructure such as remand homes was also mentioned. The magistrate exclaimed:

There is a lot ooo, funding is most important, you know and if you need to expand, if the child is guilty and we need to exercise some penal sanctions, do we really have enough remand homes? There was one child, for instance, there is one in custodial institution in Oregon, it is too small, to send a child from Lagos to Abeokuta, there is another one in Kaduna,

Social welfare and CRL

Under this section, two aspects of social welfare – treatment of juveniles in the custodial institutions and roles of social workers were studied and their findings are presented here.

Findings

In each of the four custodial institutions, the Principal Social Welfare Officer or Welfare Officer - in - Charge was interviewed. For the categories of children committed into the institutions, the respondents said the following categories were committed

- (i) Children beyond parental control
- (ii) Children in conflict with the law
- (iii) Children in need of care and protection including lost but found on the street.
- (iv) Children in need of shelter i.e. the sexually and physically abused.
- (v) Children brought in by task force, namely task force children/rescue teams rescue on the road e.g. hawkers. This category of children was mainly for the Special Correctional Centre for Girls, Idiaraba, Mushin.

About their feeding patterns, all the respondents stated that the children had three meals daily in all the correctional centres. The respondents claimed that when the children were ill, they would be taken to hospitals for treatment. Oregon custodial institution actually had a sick bay where the children would be given first aid treatment before the arrival of the doctors. Other centres were attached to one hospital or the other. They also claimed that they had some friends of the homes who were doctors that came to assess the children's health and helped to give treatment when the children were sick.

Hygienic environment is very paramount to the health of the inmates therefore the respondents were asked to state the number of children in a room. Their responses revealed that dormitory type of hostels was being operated against rooms. One dormitory contains between 25 and 30 children

About parental or guardians' visits to the institutions, all the respondents confirmed that the children were visited at least once a month.

In case of type of punishment the child offenders received when they violated the institution's rules, the respondents mentioned cleaning of surroundings, picking of refuse, extension of chores, cleaning of toilets, confinement and finally counselling. It is only in one of the institutions i.e. Isheri where the respondents added cutting of grass and caning saying:

They cut grass and we suspend people that clean the toilets, bathroom and those that do kitchen works and we now put them there for certain numbers of days, and if they don't show remorse, then we cane them on their palms like six strokes.

The respondents were asked to provide information on the types of education/training given to the child offenders while in custody. They reported that the children were given both formal and informal education and vocational trainings such as shoe making, tailoring, vulcanizing, Global System for Mobile communications (G.S.M) Telephone repairs, tie and dye, barbing, etc.

With regards to challenges facing the custodial institutions, Oregon respondent said that the greatest challenge was medical. The respondent argued that a facility with over one hundred children should have a resident medical doctor for prompt treatment. Another challenge was funding and suggested that government should get support from the members of the public.

According to Birrel respondent the major challenge was lack of awareness of the services of the correctional institutions. Others were poverty, bad living condition, financial constraint on the part of the parents which forced them to neglect and abandon their children coupled with the cosmopolitan nature of the state, bad addressing system and bad data base.

For Isheri respondent, funding, logistics lack of medical personnel were parts of the challenges. The respondent expressed some fears about security issues as he alleged that too many people came into the custodial institution on daily basis. The respondent said:

There is problem of funding. There is no utility van for hospital and market, no sick bay for sick children and competent medical personnel, no adequate security and influx of people into the home does not conform to the international standard.

Social workers' roles

On the question of their roles or responsibilities of social workers in implementing the CRL, the FGD respondents said that the CRL specified that their job was vital. As supervisors, the welfare of the child was paramount. The main goal was to pursue the security and care of the child in the best interest of that child. They had to ensure that maladjusted children under their custody were well rehabilitated and reformed before they could be discharged to the wider society. Even after the discharge, it was their responsibility to make sure that the children had been reintegrated and doing well in the society. Among their roles are monitoring the progress of the children while they were in custody, taking care of their medical, physical, spiritual and psychological needs. Responsibilities of social workers also include undertaking investigations, initial and core assessments, initiating legal proceedings to apply for a range of orders including admitting children to the care system, developing and driving the child protection and care plan, which covers all the needs of the child including rehabilitation, his/her health, education and after care arrangements, undertaking key worker or lead professional function for discharging the parental responsibilities in partnership with parents depending upon the legal status of the child. One of the respondents described their duties as thus:

The CRL specifies that the supervisor's job is vital. So we as supervisors, we see that any social worker, whether the one that relates with the magistrate in the court or the one in the custodial institutions, is interested in the child's welfare. So in any matter we stick to pursue the security and care of the child. If we want to narrow it down, we want to see how best to help the child when the child is in problem and then to see that the child is living well. And we help them to advance, to see that at least he or she copes well before we can discharge the child to the wider society.

Another respondent explained further by saying:

Even after the discharge, it is our responsibility to make sure that that child has been reintegrated and doing well in the society. Reintegration... that is the work of supervisor and we monitor their progress while they are in our custody. Whatever they need we make sure we attend to it... medical, medication... We attend to them.

The respondents were asked to mention the challenges they experienced in carrying out these responsibilities. One of the challenges mentioned was lack of training and experience. One of the FGD participants illustrated this by saying that inability to elicit information from and identify the problem of a traumatized child was a big challenge:

Well ... one of the challenges is that an abused child usually is stigmatized. So the supervisor and the social workers need to be knowledgeable to identify some of these traits. I'm talking in terms of training, capacity building of an officer because if you are not well grounded in this kind of training, you will see that the child is not just talking. It is not that he is not talking. He is traumatized. He doesn't trust anybody. So he is empty. So, one of the challenges is capacity building of the officers. It is very important.

Another challenge mentioned by the FGD respondents was integration of the discharged children into the larger society. Some parents do not accept their children after discharge from custodial institutions believing that they have not been rehabilitated adequately. As a respondent pointed out:

Apart from the above problem, we equally discover that there are home problems. The parents are always a problem. To accept them back home, in that part, is always a problem. Because they believe that this child has been so bad that he could not be changed. The parents always wonder the magic the workers would use to change the child. You know some of them are there on criminal records. They help in doing it. They are involved in armed robbery and all that. So parents still look at those old traits in them and they find it difficult to accept them. So we usually talk to them making them understand that we have really done our work. Sometimes, we call the court and we make sure that the child is well reintegrated.

Social workers' collaboration with the police

On social workers' collaboration with the police, the FGD respondents reported that they had always cooperated with the police even before the CRL though the collaboration was more structured now than before. When children are rescued from the streets by social workers, the police will be informed to take records of the children and when children are apprehended by the police officers, they will be kept in specialized children police units and social workers will be invited to do the necessary investigations and reports. One of the respondents described their cooperation with the police as thus:

With regards to challenges the social workers experienced in collaborating with the police, the FGD respondents mentioned corruption and public ignorance of the specialized units. They alleged that in cases of child abuse, rape or sexual abuse the police would collect bribe from the offenders and would not prosecute them. In a case of child abuse, one of the respondents reported thus:

Once the police collect money from the man the case will be closed. They will say Ehn we will treat her. 'Oga make you no do wahala now'. He won't do that again. And the offender will just go like that.

The words in Pidgin English are describing the attitudes of police officers. These words imply that the police will trivialize the case because they have been bribed and will assure that the offender will not repeat the offence. The police will persuade social workers not to pursue the case.

Another FGD respondent supported the above respondent by saying:

Most of them believe that it is the girl's fault by going to the man. They will ask: why should she go there? They will be judgemental.

The above statement shows that the victims of rape who are usually young girls are blamed by the police more so when they have been bribed.

Social workers' collaboration with the family courts

It was revealed that there had been cooperation with juvenile courts then and with family courts now. The family courts order for the remand, committal, discharge from the custodial institution or its extension, it is the duty of the social workers to comply with order. While the children are in custodial institutions, the court monitors the progress through social workers' reports to the court. The social workers investigate and report back to the courts regularly.

Whether there were challenges in collaborating with the courts, the FGD respondents revealed that there could be misunderstandings between the social workers and the counsels. For instance, there was a situation when a social worker after investigating into a case of custody of a child found that the father was not fit to take the custody of the child. The social worker presented the report and recommended in favour of the mother of the child and in the best interest of the child. The counsel rejected the report on the ground that the worker was not the right person to apply for the custody. Furthermore, the counsel accused the social worker of being partial and supporting the mother. He argued that it was rather the responsibility of the aggrieved person, mother or father, to apply for custody. The respondents agreed that the law permitted the social worker to investigate and make recommendations. The interest of the child should be paramount. One respondent reported his observation in a family court and based on this he concluded that some counsels did not have adequate knowledge of the family courts. It was reported that the social worker, not satisfied with the ruling, filed an application at the high court challenging the decision of magistrate court. The respondents claimed that the law empowered the worker to do so. On the contrary, one respondent argued that the law should have allowed the aggrieved person to file the application instead of the worker. Another respondent felt that if the assessor was in the court he/she would have defended the social worker and said this:

That would have been the work of the assessor then. The assessor would have mediated into the matter.

Social workers' views on the limitations of the Child's Rights Law of Lagos State

Social workers reported that they were not invited to the formulation of the law and as a result, they claimed there were many flaws. One challenge was that most of the terminologies used in the law were highly technical and that hindered the implementation of the law. Secondly, they alleged that the commissioner appointed to take charge of the implementation was not qualified to do so and therefore they feared that this would jeopardise the implementation of the law. The participants further complained that the law had conflicting provisions in sections 138 and 151. For instance one respondent reported thus:

Yes, CRL has come with a lot of problems which I have experienced in the court. First and foremost, there is a provision in the law that says all matters relating to children are to be done in the family courts but then the same law says in criminal matters the regular court will have to take the matter and I had a matter in one of the regular courts. I was arguing with the magistrate but when the provision was pointed out to me, I had to agree that the matter should be taken by the regular court. An adult was going to be tried. The victim was a child and there is a provision in the law that the regular court could detain that child which I think was publicly done. Yes the magistrate ruled that they could take the evidence in the court and even while the defendant is giving evidence it could exclude journalists and the rest. That was the ruling of the court. Let me read the section 151 of the rights: "No other

court except the family court shall exercise jurisdiction in any matter relating to children as it is specified in this booklet. The provision of section (1)... subsection... shall not affect the jurisdiction of criminal code to try cases involving an adult. In that matter, an adult defiled a child and we are saying it is the family court that has jurisdiction. And the court eventually ruled. The court only put the provision that we must ensure that the child is protected. They could take the evidence of the child in the chambers. And this is a court that does not sit with assessors. He is saying because it was the adult that was being tried and he was relying on this section

Furthermore, the respondents observed that the CRL was resolute particularly in the areas of rights of the children. They observed that the rights given to children by this law were too many and feared that the parents would lose control over their children. One of the respondents remarked.

Another FGD participant noted that age of reasoning was omitted in the CRL unlike in the Children and Young Persons' Law (CYPL). The respondent said:

In the Children and Young Persons' Law, there is something they called age of reasoning. It's missing here. At least, a child that is not up to 10 years during the Children and Young Persons' Law had not attained the age of reasoning. So he is still to be guided. Let me read the section 7 "Every child is entitled to his privacy, family life, room, correspondence, telephone conversation and telegraphic communications". If he decides to do that, if I want to talk and he says daddy the child rights law gives me the right to do certain things. What do I do? I think the draft memo of this law did not take that into consideration. This child still needs to be guided at that age. So a lot of these problems like that are in child law.

Another challenge observed by the FGD participants was lack of trust among the members of the family court as was illustrated above in the section of 'collaboration with the family courts.

The respondents also observed that some laws did not have penalties for the violators. They also pointed accusing fingers at the police officers for collecting bribes from the offenders and refusing to prosecute them particularly in rape and physical abuse cases. In order to overcome this challenge, the social workers devised a means of circumventing the police corrupt practices by encouraging the victims to report directly to them instead of going to the police stations first. This is what one of the respondents said:

The police are not helping matters at all. That is why we now devise a means. We encourage people not to go to police stations. Just come and report to us. We will now go and meet the people and we use the police task force to prosecute the offenders because by the time the matter gets to the regular stations they will mess it up. Once they collect money that is the end. They will say Ehn we will treat her... sebi na him pikin. Oga make you no do wahala now. He won't do that again. And the offender will just go like that. If the matter of physical abuse or even sexual abuse is reported to Alausa police station, it should be advised to go to Alakara or Adeniji whichever is nearer to them. That is where we have some police men who are trained in these areas. They will know what to do rather than any other police station where the matter would be handled anyhow.

Another discussant chided in – *"but again there are some situations where the parents of ditto will collect money from the offender and will not show interest in the matter and they will say police will initiate the settlement thing. Sebi she is my child.*

Recommendations

Based on the findings, the following were recommended

Major recommendations are:

Police and CRL

- More Specialised Children Units should be established in various parts of Lagos in order to serve the populace effectively. They should be adequately equipped with personnel such as lawyers, social workers, cleaners, cook and medical personnel.
- Government should create more awareness and education about the CRL among the police personnel. There should be capacity building for the police. They should be mobilized and adequately equipped with skills and facilities to be able to carry out their duties successfully.
- Diversionary measures should be introduced and encouraged.
- The police force should ensure that CRL is implemented and included in the curriculum of the Police College.

Family courts and CRL

- ★ The issue of trying an adult and a child in a regular court should be revisited. The government should clarify how cases with adult offenders should be handled in a way that should not jeopardize the best interest of the child
- ★ The state government should review the law to make it more flexible for operation by permitting at least one assessor to be present. This composition of the court is said to be raising a constitutional issue since a judge can sit alone according to the Nigerian constitution as noted by a judge in the Lagos High Court.
- ★ The assessors should be given a stipend as transport allowance and to augment their salaries and also to motivate them. If possible, government should deploy some of them to work in the family courts only in order to achieve the objectives of the CRL. Their remuneration should be improved. This section of the CRL should be revised
- ★ Government should ensure that family courts are committed to matters relating to children alone because that was the purpose of their establishment.
- ★ The government should construct new family courts purposely for children's matters in such a way that privacy and confidentiality are strictly maintained and not improvised structures.
- ★ Assessors should be well integrated into the judicial system by making them subscribe to some codes of ethics and training.
- ★ Government should provide some logistics such as cars or vehicles for the assessors to ease out some of their challenges

Social workers and CRL

- The CRL should be reviewed.
- Creation of awareness of the services of the children correctional centres through enlightenment campaigns, seminars and workshops should be organized.
- More professionals e.g. psychologists and medical personnel should be recruited.
- Government should endeavour to establish a sick bay in each of the institutions and employ at least nurses to take care of the sick inmates before the arrival of doctors.
- Capacity building of those social workers already employed should be organized.
- The social workers should be remunerated adequately.

Social workers' collaboration with other child justice administrators

- 🌈 Professional social workers should be recruited and capacity building programmes should be organized for the social workers

- ✚ Seminars and workshops should be organized for the general public about the rehabilitation of children who had been in custody for easy re-integration into the larger society after discharge.
- ✚ Parents of children in correctional institutions should be enlightened about the progress of their children from time to time so that they can easily accept children when discharged
- ✚ More specialized police units should be created and decentralized to other areas in Lagos State
- ✚ The law should be simplified so that children and the general public would comprehend the provisions. Although this had been done by MWAPA but had not been well disseminated.
- ✚ The implementation of the law should be over seen by a qualified commissioner.
- ✚ The CRL should be revised to straighten out the conflicting provisions in sections 138 and 151.
- ✚ The rights given to children by CRL should not be made absolute so that it will not breed indiscipline among the children.
- ✚ Lagos State government should endeavour to construct those centres and units as stipulated in section 236 of the CRL.

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- Child Rights Law of Lagos State in 2007
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- Laws of the Federation of Nigeria and Lagos
- Police Act of Nigeria

SPATIAL VARIATIONS IN WORKFORCE SEX RATIOS IN NIGERIA

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ABSTRACT

This article is premised on the notion that a workforce sex ratio that is significantly skewed in favour of men is an indicator that a state is a major destination for male labour migrants. Nationally representative data from the 2006 census were analysed for the nation's 36 states and the Federal Capital Territory (FCT) Abuja, using the goodness of fit test. The analysis shows that the FCT, Lagos, Kano, Rivers, Borno, Yobe, Gombe and Bayelsa states have significantly higher sex ratios than the national average of 99 males per 100 females. They are, therefore, major destination centres in the country. While data are not available on migratory flows within the country, the paper explored the possible migratory routes and discussed the implications of the findings. It recommends the provision of amenities in the rural areas to address the needs of rural dwellers who more often than not are women.

Keywords: Migrant, Nigeria, destination states, FCT Abuja, Lagos, Kano

INTRODUCTION

The most recent census exercise in Nigeria shows that the workforce (persons within the age bracket of 15 – 64 years) account for 55 percent of the nation's population (National Population Commission, 2009). If the prevailing demographic trend at the time of the exercise has not changed significantly, the implication is that of the nation's current population of about 167 million (United Nations, 2013), about 91 million constitute the workforce. Recent available statistics further show that about 50.3 percent of the population reside in urban areas. At the turn of the century, only about 42 percent of the population lived in urban centres (United Nations, 2013). This is a pointer to the fast rate of urbanization in the country. A significant contributor to urbanization in Nigeria as in other parts of the world is migration from rural to urban centres (Aworemi et al, 2011; Morakinyo et al, 2012; Hove et al, 2013). Many in search of employment opportunities move permanently or semi-permanently to urban centres which are believed to have better employment opportunities than the rural areas. It is unknown, however, if the urban centres have workforce gender distributions typical of the entire nation or migration to urban centres is selective by sex. To achieve this, the article explores variations in the sex ratios of workforces of the thirty-six states of the federation.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Although data are collected by different government units/agencies on international migration in Nigeria, there is no known meaningful collation of such data by any government department or agency (Afolayan & International Organization for Migration [Research Division], 2009). This, notwithstanding, there is evidence that emigration is slightly higher than immigration as the net migration is put at -0.4 per 1000 persons (United Nations, 2013). This low net migration rate shows that international migration may have very little impact on the demographic composition of the population. On the other hand, internal migration is absolutely unregulated and not officially documented. Therefore, there are no official data on internal migration in Nigeria. The implication is that little is known about the characteristics

of those who move and those who do not move, beyond speculations which are often fraught with errors. It is also difficult to scientifically determine the directions of internal migratory flows in the absence of official statistics. In order to minimize the effect of absence of information on internal migration in the country, this study teases out the selectivity of internal migration from age and sex distributions of the populations of the states and the FCT Abuja.

The ideas of Ravenstein (1885) provide a theoretical substratum for this inquiry. His laws of migration include two main items which are of interest to this study. The first is that economic factors are the main cause of migration and the second is the assertion that females are more migratory than males. The explanation behind the former is that the search for 'greener pasture' in form of formal employment or other forms of providing for livelihood is the primary motivating factor for migration. Studies in Nigerian have also shown that primarily, people migrate to urban centres and/or states as a result of unemployment in the rural parts of Nigeria (Aworemi et al, 2011; Gimba and Kumshe, 2012; Mustapha, 2009; Nnadi, 2012); although people also migrate for other reasons such as inadequate provision of infrastructure/amenities in the rural areas (Abass, 2012; Adesiji et al, 2009; Mustapha, 2009; Nnadi et al, 2012; Unegbu, 2012). On the other hand, Ravenstein (1885) argues that women migrate more than men within their countries of birth, often as a result of marriage, while men are more likely to be involved in international migration than women. On the contrary, studies in Nigeria suggest that males are more involved in migration than females (Mustapha, 2009; Ehirim et al, 2012). These studies are in agreement with the idea that economic factors are the most important impetus for migration since men are expected to be 'bread-winners' traditionally, but not with the assertion on women's greater involvement in internal migration.

If the assertion that economic factors are the main cause of migration holds true today and in this part of the world, states within the country with economic opportunities in terms of formal employment and business opportunities will attract people saddled with the responsibility of 'bread-winning' within the family. Recent data suggest that the traditional arrangement which assigns men the responsibility of 'bread winning' is yet to be upturned as female and male labour force participation rates are 47.9 and 63.3 percent respectively (United Nations, 2013). Consequently, states with opportunities, which are often those with high levels of urbanization will have higher proportions of men in the populations than those with lower capacity to attract 'bread-winners'. This study seeks, therefore, to analyse the labour force sex ratios of the populations of the 36 states and the FCT Abuja. Using this technique, the study identifies states with higher male proportions than what is typical of the entire population. By implication, the study identifies states that receive migrant labourers which are typically male. The study provides answers to the following research questions: Are there variations in sex ratios of workforces across the states of Nigeria? What inferences can be drawn from differentials in workforce sex ratios in terms of labour migration selectivity?

DATA AND METHODS

The data employed in the study were sourced from the 2006 census results published by the National Population Commission (2009). Constituting the workforce are persons within the age bracket of 15 to 64 years. The Goodness of fit statistic was employed to test for difference between the observed male workforce proportion of each state and the expected male workforce proportion for the entire country. Where a state's male proportion of the workforce deviates significantly from the national male proportion of the workforce at a Confidence Interval of 99 percent, the sex ratio is considered to suggest that more males have

migrated into or outside the state, depending on whether the proportion is higher or lower than expected. The expected sex ratio is 99 males per 100 females as shown in Table 1. The findings are illustrated with the aid of a map and bar chart.

RESULTS

The study shows that almost all the states have male proportions of the workforce that deviate significantly from what is expected, the only exceptions being Anambra, Osun and Taraba states (See Table 1). In the FCT, there are 117 males per 100 females within the workforce. This represents the highest sex ratio in the country. Next to the FCT is Lagos, with a sex ratio of 112 males per 100 females in the labour force. Other states with high workforce sex ratios are Kano (106 males per 100 females); Gombe (104 males per 100 females); Rivers (103 males per 100 females); Yobe (102 males per 100 females) and Bayelsa (101 males to 100 females). The lowest sex ratios were observed in Ebonyi (88 males per 100 females) and Enugu (89 males per 100 females). Other states with low sex ratios are Zamfara with a sex ratio of 91 males per 100 females, Sokoto and Jigawa, with 92 males per 100 females each, and Kebbi, with 93 males per 100 females each (See Figure 1).

Table 1 about here

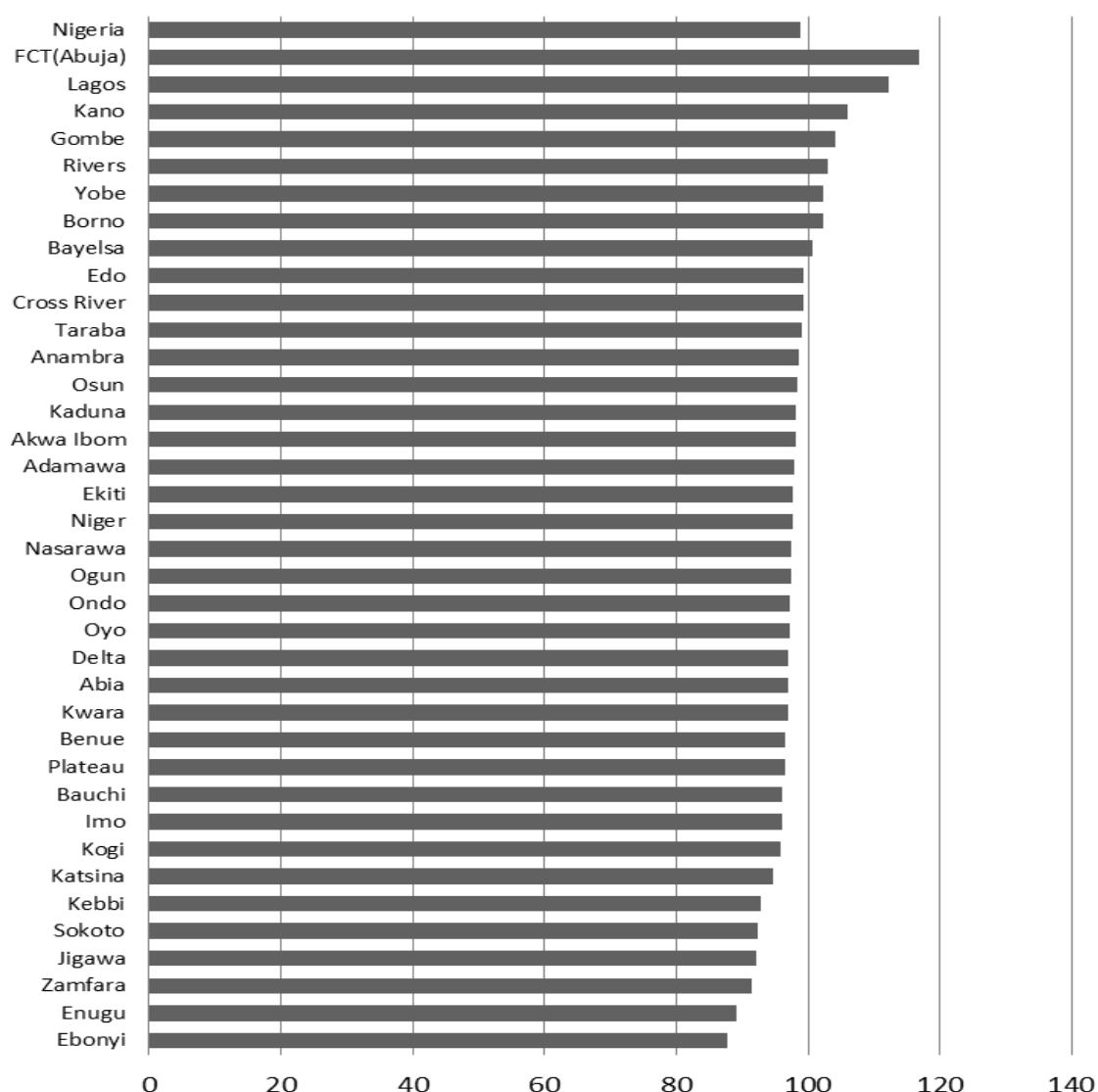


Figure 1: Work force sex ratios of states in Nigeria

The map in Figure 2 shows the spread of states with sex ratios higher than 100 males per 100 females. The North Central zone comprises the FCT, Benue, Kogi, Kwara, Nasarawa, Niger and Plateau states. Only in the FCT was a sex ratio of more than 100 males per 100 females recorded. The highest sex ratio in the country was also recorded in the FCT, it should be noted. In the North-East, three contiguous states, Borno, Gombe and Yobe states had sex ratios higher than 100 males per 100 females. None of the states had a ratio as high as 105 males per females, however. Other states in the zone (that is Adamawa, Bauchi and Taraba) had sex ratios lower than 100 males per 100 females. In the North-West zone, Jigawa, Kaduna, Katsina, Kebbi, Sokoto and Zamfara, all had sex ratios below 100 males per 100 females, leaving Kano as the only state with a sex ratio higher than 100 males per 100 females. In the South-East zone comprising Abia, Anambra, Ebonyi, Enugu and Imo states, none of the states had a sex ratio higher than 100 males per 100 females. The lowest sex ratios of 88 (in Ebonyi) and 89 (in Enugu) males per 100 females were also recorded in this zone. In the South-South zone comprising Akwa-Ibom, Bayelsa, Cross River, Delta, Edo and Rivers states, Bayelsa and Rivers states had sex ratios above 100 males per 100 females. In the South-West zone, comprising Ekiti, Lagos, Ogun, Ondo, Osun and Oyo states, only Lagos state has a sex ratio above 100 males per 100 females.

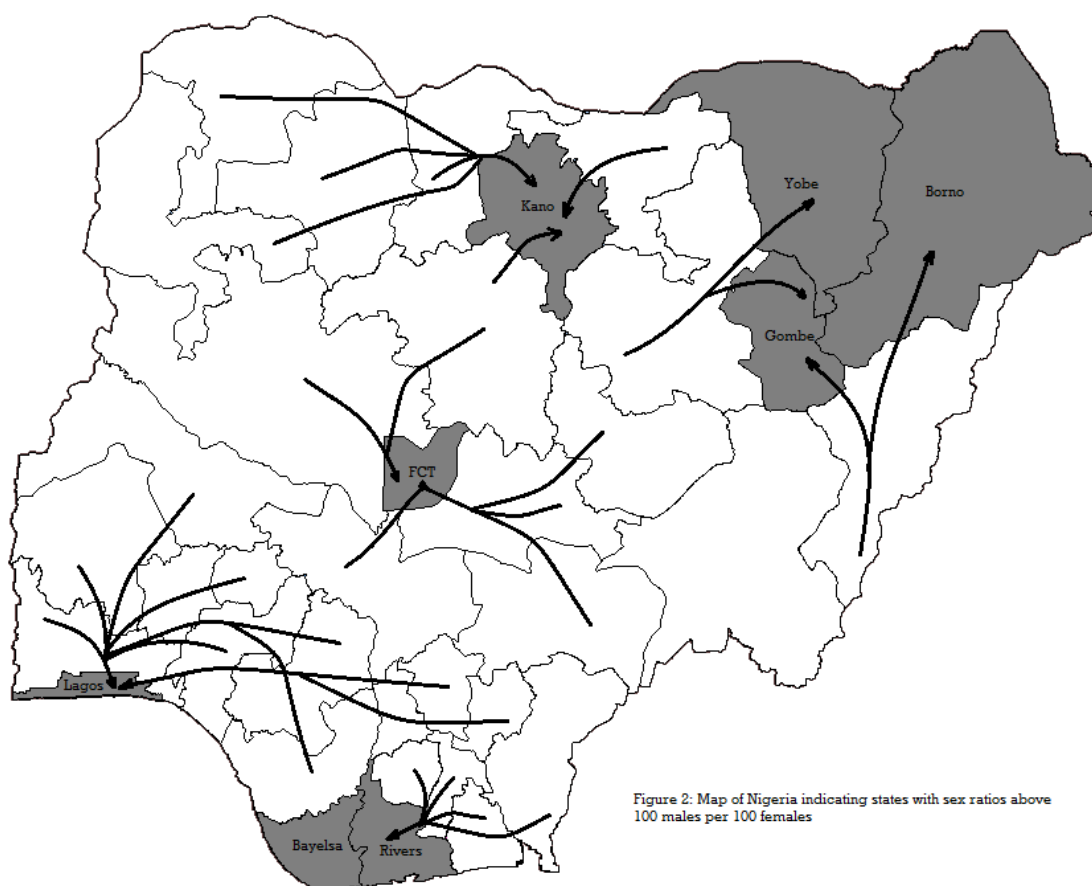


Figure 2: Map of Nigeria indicating states with sex ratios above 100 males per 100 females

DISCUSSION

Within the workforce in Nigeria, there are about 99 men per 100 women. Sex ratio at birth in Nigeria is 106 males per 100 females (United Nations, 2013). The decline in sex ratio from a situation where there are more males at birth to that where there are fewer males than females in the workforce can be explained by either of two things. The first is the variation in the life expectancy of male which is typically lower than the life expectancy of females. Since women have a higher life expectancy than men, they stand a greater chance of reaching the workforce ages than men. Thus, they tend to outnumber men in the 15 – 64 age category. One may question the possibility that the mere difference in male and life expectancies can account for a sex ratio of 99 men per 100 women from 106 males per 100 females at birth, however, and go in search of a different explanation. The second factor that may account for this sex ratio within the age bracket of 15 – 64 years is emigration which may be selective by sex. This is a plausible explanation if more men, than women migrate outside Nigeria as postulated by Ravenstein (1885). It can be argued that the observed workforce sex ratio in the country is partly due to the lower male life expectancy and partly as a result of greater male involvement in emigration.

The analysis further documents spatial variations in sex ratios in Nigeria. On the whole the FCT Abuja, Lagos and Kano recorded very high sex ratios (above 105 males per 100 females). Other states such as Gombe, Rivers, Yobe, Borno and Bayelsa recorded moderately high sex ratios ranging from 101 males per 100 females to 104 males per 100 females. Two major factors can be responsible for variations in sex ratios. The first is variation in life expectancies of men and women across the states of the federation. No study has documented variations in male and female life expectancies across the states in Nigeria. Therefore, one cannot conclude that cases of extremely low/high workforce sex ratios are attributable to variations of state male and female life expectancies from the national statistics on the life expectancies of males and females. In other words, studies are yet to show that in a state like Ebonyi with a sex ratio of 88 males to 100 females, the life expectancy of males is significantly lower than the male life expectancy at the national level. By the same token, no study has established that in Abuja where the sex ratio is 117 males per 100 females, or in Lagos, where the sex ratio is 112 males per females, the male life expectancy is higher than the female life expectancy or than the national average of life expectancies for men in the country. A very plausible explanation for variations in workforce sex ratios across states of the federation, therefore, is out-migration and in-migration. States with very low sex ratios have men who are more likely to live away from home in search of jobs and business opportunities, while those with high sex ratios are the destination states. The movement of migrant males to these states increased the ratio of men to women beyond the national average significantly.

Figure 2 shows the states with high sex ratios, and by implication, the primary destination states of the country. The major destination state in the North-West zone is Kano. This is the only state within that zone with a sex ratio above 100 males per 100 females. In the North East zone, Borno, Yobe and Gombe are major destination states. As expected, the Federal Capital Territory is the major destination centre in the North Central zone. The territory's many government ministries, agencies and formal organizations draw public servants, professionals and other workers in the informal sector from all over the nation. As argued earlier, men are more likely to take up the role of bread winner in the family. To this end, they are more likely to migrate to a place like the FCT in search of formal employment or business opportunities. Many of these men migrate without their wives and children, only to make remittances to them for their upkeep. A study by Afaha (2013) has shown that such remittances contribute to economic growth of the receiving communities. The spatial

variations in involvement in this practice were not explored, however. Men of the South-East zone are the most likely to migrate as suggested by the low sex ratios recorded in almost all the states of the zone. No state in the zone has a sex ratio above 100 males per 100 females as shown in the map. This suggests that male Igbo migrants are more likely to move outside the South-East zone. This corroborates the common knowledge that Igbo people are migratory and are found in all the crannies of the country and indeed the world.

In the South-South zone, the primary destination state is Rivers. This is followed by Bayelsa which is a neighbouring state to Rivers. Rivers state is home to several oil and gas exploring companies in Nigeria. Thus, Engineers who are more likely to be men than women and other professionals are attracted to the state. Bayelsa is also an oil producing state with the capacity to attract workers in the oil and gas sector. In the South-West zone, Lagos state, being the former Federal Capital Territory, a place of concentration of industries and the commercial hub of the nation and the West African region is a major destination centre. Migrants are found from all the states of the federation in the state. For the same reason adduced earlier, men are in the majority among these migrants and this explains why the sex ratio of the state has been significantly affected. On the whole, the states with very high sex ratios are those home to major cosmopolitan cities in the country.

It should be noted that the migratory flows represented in Figure 2 are speculative based on Revenstein's law (1885) that most migrants move only short distances. The data available cannot unearth specific migratory flows. They cannot tell where the majority of migrants from a state like Kwara, Ebonyi, Enugu or Bauchi or Zamfara go. There is the possibility that Igbo migrants move longer distances than migrants from other regions of the country. The possibility that long established migratory routes continue to influence current migratory flows within the country also exist. It is also possible that new migratory routes are emerging and taking over long established ones. All these possibilities show, therefore, that future studies on migration in Nigeria need to address the question on specific migratory flows, with emphasis on the roles of distance, long established migratory routes, and ethnic/regional variations in migratory flows. This will help shed light on the dark areas of major and minor migratory flows across the country.

A major implication of the findings of the study is that more men are moving to the urban centres than women for economic reasons. A study by Akanle et al (2014) confirms this. The traditional family arrangement which assigns men the role of bread winner gives them greater access to cities than women. Unfortunately, the rural areas are often neglected in terms of provision of amenities such as roads, electricity, health care facilities, schools, and employment opportunities (Nnadi et al, 2012; Unegbu, 2012). Consequently, the quality of life of rural dwellers is often lower than the quality of life of people in the cities in terms of access to safe water, education, good roads etc. The city is becoming synonymous with the public sphere and the country side, the private sphere. Men are moving to the cities to increase their chances of accessing resources while women are left in the rural areas where there is limited access to these resources. By implication, the nation is witnessing the feminization of rural life and low quality of life. If the trend persists, attempts to achieve gender parity in access to state resources are bound to be futile. To ameliorate the living conditions of rural dwellers and in effect the conditions of rural women, attention should be given to the provision of amenities in the rural parts of the country.

CONCLUSION

This study has documented significant variations in the workforce sex ratios of states in Nigeria. It has shown that the FCT Abuja and states that are home to the major cities in the

country have relatively higher sex ratios than states with low levels of urbanization. This suggests that there is an association between urbanization and the proportions of men in the workforce of a given population. The FCT Abuja, Lagos and Kano have more men than women within the workforce. This is in agreement with the view that migration from rural areas to urban areas is gender selective, particularly in developing countries where the traditional arrangement that assigns men the role of bread-winner still holds sway (Weeks, 2002). Generally, people within the economically active years of 15 – 64 years tend to migrate than those outside this age group. As suggested by the data explored in this study, men are also more likely to migrate than women, among those in their economically active years. By the same token, the states from which migrants come have greater proportions of women in comparison with men. The study also suggests that Igbo men, more than men from other parts of the country are more likely to live outside their zone, the South-East. Yet, the study shows that there is need for researchers to further explore migratory patterns and selectivity factors through nation-wide surveys. On the alternative, the census exercise may be designed to further interrogate such issues.

LIMITATIONS

Differentials in female and male life expectancies across the states of the federation are capable of invalidating the conclusions reached from the census data employed in this study. Yet no study has documented such significant variations. This paper acknowledges that if there are significant variations in the life expectancies of males and females from state to state, the conclusions of this study may not be totally reliable.

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EXPLORING THE PERCEPTIONS AND EXPERIENCES OF GAY PEOPLE IN NIGERIA: AN INTERPRETATIVE PHENOMENOLOGICAL ANALYSIS

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ABSTRACT

Following the enactment of the 2013 Same Sex Prohibition bill into law, it is now illegal to practice homosexuality in Nigeria. With this development, a variety of scholars have come up with a number of papers in reaction to this law from largely the legal, ethical, cultural or spiritual perspective. Since homosexuality has now become an identity which is practiced by a people who have now become a minority, there has been very little from the psychological perspective especially how these homosexuals perceive or experience their state of sexual orientation in Nigeria. Consequently, this study sought to explore some of the experiences and perception of these people from a psychological perspective using Interpretative Phenomenological Analysis (IPA). The IPA which is a method in the qualitative research methodology was imperative in enabling the participants reveal how they made meaning of their personal experiences as homosexuals. Six participants were selected and interviewed extensively through a purposeful sampling strategy and analysis of transcript revealed the extent of the hope, fears and aspirations of homosexuals in terms of their quality of life. They suggest that living as a homosexual in Nigeria is a very daunting experience and it makes life a little more difficult due to the fear of persecution and prosecution. Further implications and areas of further research suggested.

Keywords: Nigeria, Homosexuality, Perception, Experience, Interpretative Phenomenological Analysis, Qualitative Research Methodology

INTRODUCTION

The prevalence of homosexuality has been met with stiff opposition by proponents of both religious and cultural ideologies here in Nigeria. This resistance has led to the creation of stringent laws with severe punishments for homosexuals in Nigeria. It is reported that culprits risk a 14 year jail term for homosexual acts and 10 years jail term for those who promote it. (Amnesty International, 2010) Also see the Nigerian Same Sex Marriage (prohibition) Act, 2013.

A number of studies have been conducted as it relates to the ethical, legal, religious or cultural implications of homosexual in Nigeria (For example, see Ahmadu, 2001: Obasola, 2013: Obidimma & Obidimma, 2013). However, there is very little on the psychological dimensions of homosexuality, especially the perceptions and experiences of these homosexuals towards the laws that have been put in place. This study aims to fill in that gap. The current study explores the issues related to prejudicial feelings and rejection of some aspects of these homosexual experiences and what it really means to them in the Nigerian context.

There has been an on-going debate as to whether homosexuality is a variant of inherent human enduring trait or as a result of early exposure, curiosity and peer group pressure which is the entire anecdote of the nurture side of the debate within the context of psychobiology. However, that debate is out of the scope of this paper. It will suffice to raise a simple question in this paper. Is being a homosexual a natural phenomenon or a creation of identity from experiences? This therefore gives credence and research basis to explore the phenomenon in Nigeria

PSYCHOLOGICAL BASIS OF STUDY

This study seeks to explore the perceptions and experiences of homosexuals through the use Interpretative Phenomenological Analysis (IPA). The IPA is one which inductively requires the researcher to understand and identify the meaning making processes of each individual experiences. (Smith & Osborn, 2003). IPA is a tool that facilitates a form of “inter-subjectiveness” in how people make meaning about their experiences. The study will be guided by the following key points:

The purpose of this study lies central to Social Identity Theory where different groups or individuals belonging to a social strata, find solace, esteem recognition and warmth from belonging in the society by continuously promoting the ideologies, behaviour and disposition of their groups (Allport, 1954; Tajfel & Turner, 1979). In this study we identify the existence and formation of the homosexuals and the heterosexual groups, which have been formed as a result of sexual preferences as largely a function of identity or search for identity. This is because our behaviour as individuals is often a function of how we perceive ourselves in a given context.

RESEARCH QUESTIONS

The main question this research seeks to answer is specifically directed towards the experiences and circumstances that shape the formation of their sexual preferences and their identity as homosexuals. This question seeks understanding as to the reason why some people chose or rather found themselves as homosexuals and how this as affected them in life. The second area of questioning is directed specifically to their perception of public and general opinion of their sexual preferences. The study seeks to address their opinion as to the criminalization of homosexuality in Nigeria and how this has affected their resolve positively or negatively with regards to their future choices. It also seeks to explore their perception about the media and its stance of sexual preferences.

OVERVIEW OF LITERATURE

Homosexuality involves an apparent same sex orientation that comprises emotional or romantic bindings to a member of the same sex. This orientation has become so accepted as a norm in western societies that people who practice homosexuality have created an identity making them a minority group in the society (Garnets & Kimmel, 1991). They now belong to a set community which they believe should be free to exercise their rights openly without stringent moral and religious confines that may restrict them (Savin-Williams, 1990).

Homosexuality was listed in the Diagnosis and Statistical Manual for Mental Disorders II (DSM II), and was listed under the category of sexual disorder (Fox, 1988). A massive debate ensued before that period as to the necessity and pragmatism of putting it as a mental disorder due to the fact that it did not fulfil the criteria for its classification. Opponents of this idea claimed that as long as it doesn't cause a measure of individual subjective distress or result in an impairment of social and cognitive functioning, it should be removed. Proponents of this position viewed this as an attempt to malign the integrity of the DSM for people not to crave help for their perceived maladaptive sexual tendency. In the end a decision was made on December 15, 1973 as to the removal of homosexuality as form personality disorder from the clinicians' manual.

The major identifying marker of homosexuality is the sexual craving and attraction to a member of the same sex. In nations where homosexuals are a subject of stigmatization and ridicule, the probability of engaging in homosexual activity may be limited even in the presence of internal attractive cravings (Goffman, 2009). According to Adolfsen, Iedema and

Keuzenkamp (2010), the observations of these negative feelings lead to the creation of homonegativity. This is explained in a five factor measurement of negativity towards homosexuals scale. The results of this scale when administered indicated the differences across cultures and this development supports how the preponderance and acceptance of homosexuality is culture or morally bound (Adolfsen, Iedema & Keuzenkamp, 2010).

The role of the media cannot be over emphasized as the media has played an active role in the adjustment of rigid perceptions towards people with same sex orientations. A study by Calzo, Ward and Monique (2009), reports that the media's use of individual stories and previous experiences as a tool to appeal to the readership of the communities to see this individuals not as outcast but part of the society. They do this because the media presents a viable alternative for the promotion of their idea while pledging anonymity (Olson, Cadge & Harrison, 2006)

METHOD

DESIGN OF THE STUDY

The study takes a generally inductive approach in qualitative research methodology that seeks to explore and identify unique individual experiences. It involves a bottom-top process of data enquiry where questions are asked but participants essentially drive the data generating process (Willig, 2001). In this approach, the method of enquiry is emergent as responses to a particular question is most likely to determine the next question to be asked. It should also be noted that on the back drop of these questions. The questions would revolve around the boundaries already set out in the delimitations of the research which is to explore the perceptions and attitudes of homosexuals in Nigeria as regards to the criminalization implications of being homosexual. This interactive process would give the participants a good atmosphere for the expression of their perceptions and experiences because questions asked are aimed at eliciting friendly and self-revealing responses (Madill, Jordan & Shirley, 2000).

THE BASIS OF USING INTERPRETATIVE PHENOMENOLOGICAL ANALYSIS (IPA)

The specific research tool for this qualitative research enquiry is the Interpretative Phenomenological Analysis and as earlier stated in the study, we explore interpretations of subjective experience and meaning making processes of individuals belonging to the category of interest. This is consistent with Husserl's Phenomenology where participants are masters of their subjective experiences and it involves the way these experiences are perceived, interpreted and talked about by the participants (Finlay, 2005). It takes into cognisance the germane process of inter-subjectiveness between participants and the researcher on the subject of interest.

Participants and Procedure

Having met the conditions of using IPA, participants in this research were drawn from various parts of Lagos metropolis. They were all male with ages ranging from 23- 31 years old and they were approached at fairly known place in Lagos where homosexuals hang out. The third author in this research personally approached each of the six participants in this study. The third author explained to them the basis of the research and why it was important for them to participate in the research. Participants were made to understand that participation was voluntary and that they could withdraw at any given time in the process of the research.

The Interview

To ensure that each participant felt at ease, each participant was asked to select what time and venue was most suitable for the interview. Only the third author conducted the interview with the support of the first author. This was because the participants did not want a second person

at the venue of interview. Each interview lasted between 40-60 minutes and were recorded onto a tape recorder and Dictaphone as back up. The interview data was transcribed verbatim and the analysis was done using the IPA guiding principles in transcribing and analysing interview data (Smith, Jarman & Orsborn., 1999).

Data analysis

The second author conducted the analysis. Before the analysis was conducted, the first author ensured that the interview data on the tape recorder was consistent with the transcribed data. This is an approach that ensures reliability in qualitative research data (Yin, 1989).

It involved a three stage analysis of themes derived from the interview transcript of participants. The interview was first analysed form themes that are general on topical interpretations of participants words and responses (See Appendix A). The themes were then taken to the next stage of analysis where they were transformed to reflect and purported concepts from the behavioural sciences so as to enable the researcher narrow down the themes into key areas that fit into the theoretical frame work of study. The final stage involved the meticulous organizations of these transformed psychological concepts to meaningful results so as to enable the researcher develop a good report of the overall study. (Smith & Osborn, 2003). These stages were clearly captured in Appendixes B & C

RESULTS

The first major theme identified was one which explored the area of their early experiences as homosexuals. In this area, the antecedence that leads to them being homosexuals was identified. This theme identified the period of inception and explored the affective and cognitive states of participants in this regard.

The second theme identified was one which peered into their opinion as to how they felt Nigerians perceived homosexuality. It identified feelings of prejudice, marginalization and acceptance of homosexuals. It explored their sensitivity to societal norms and conventions and evaluates this with how welcome they are in the society.

The third theme identified their opinion of the criminalization of homosexuality in Nigeria. It explores their perception about the law and how this law affects them emotionally.

The forth theme identified was based on their perception of self and worth. It explores how their same sex orientation makes them feel and how about themselves and their worth or value.

The fifth theme identifies how their sexual orientation, affects their interaction with homosexuals and other heterosexuals and how this is contingent on their building long lasting relationships

The final theme is one which is based on their admonition and advice to other homosexuals. It is inclusive of advice, encouragement, criticisms and admonitions to all others who share similar sexual orientation.

The themes were analysed and the following information was got based on the analysis form the transcript. See summary of results in Appendix B & C.

DISCUSSION

The results showed that participants believed that being homosexuals was not a choice but a biological predisposition to act that way. We can also see from the analysis that most of the participants were introduced to homosexuality by strangers or friends (Participant 1 and 4) showing a contradiction in their initial opinion that homosexuality is inherent. This shows differences in opinions and perceptions about the origin of homosexuality. It can also be noted that missing a relationship from care givers as shown by participant 1 and 2 was a contributory factor. We can then conclude that a caregiver's presence might have had a great effect in the determination of one's sexual orientation.

Most participants perceived fear, hatred, and ridicule especially the negative perception and prejudice that comes from the Nigerian society. Therefore the most likely conclusion we can make is that most of them live in constant fear and insecurity due to the likely repercussions of reactions Nigerians to them.

When we explored their perceptions about the criminalization, we see that all participants who contributed to this theme feel enraged about the new criminalization. Some feel it is unfair and act of injustice by the government (Participant 3, 4, 1). Some participants believed that is the final nail on the "coffin of their freedom". It is also evident that these participants viewed the law prohibiting homosexuality as double jeopardy because they are already being discriminated as shown in the previous theme and what was most disturbing now is that the nation has gone further by its criminalization.

With regards to how they perceive themselves we can see a mixed reaction amongst participants. Participant 3 for example felt both a sense of shame and somehow accepted his identity. This mixed feeling might be as a result of both the pleasure and gratification of homosexuality mixed with the rejection he gets from the society. We see the same scenario with participant 1, and we can conclude that the presence of other homosexuals makes him feel a sense of worth and belonging despite the shameful feeling that may come with it. Participants 2 and 6 harboured self-hate and resentment because they believed that it wasn't a choice and they can do nothing about it. They feel the pressure to be heterosexuals but feel locked up in their homosexual fantasies making them to detest the feeling.

An intriguing result was discovered when all participants attested to the fact that they are fully ready to relinquish their same sex orientation. This is really surprising because all initially confirmed that it was biologically predisposed. This then brings to the fore the ideas that people prefer to be accepted by the society than their personal idiographic nature. Acceptance in the society it appears means a lot to them. Although the criminalization may not necessarily be a deterrent, they are willing to trade their supposedly 'biologically' driven homosexual tendency on the altar of societal acceptance.

When admonishing other heterosexuals, most of the participants encourage every homosexual to be confident and should be accepting of their identity. Here we sense that these homosexuals have become a close knit minority group that find solace, warmth and belonging in themselves. This is consistent with Tajfel's (1978) concept of social identity. It is evident here too that the homosexual community in Nigeria craves freedom and emancipation from the stringent perceptions of the society. This is obvious as participant 2, 3, 6 encourages homosexuals to be secrets while accepting their identity. Participant 1 encourages rehabilitation and remorse for those who believe that being homosexuals makes them unstable in both mental and physical lives.

CONCLUSION & RECOMMENDATION

This analysis therefore makes us understand that the negative feelings and rejection of homosexuals is causing a stir amongst them. While the rage about criminalization is building up, the pressure to comply is exponentially increasing. In all, these homosexuals want to retain their sexual orientation and be accepted by the society for who they are. Further research may consider the use of other qualitative approaches to understand the depth how people of this sexual orientation feel in the broader context of society. For example, grounded theory approach may be explored to build theory that explains homosexuality as a phenomenon. It is hoped that this paper would stimulate other researchers to explore this area of research and add to the growing body of literature of on homosexuality in Nigeria

ACKNOWLEDGEMENT

We wish to thank all the participants who volunteered to participate in this study for their time despite their very busy schedules. We are very grateful.

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Appendix A

Initial Noting on Transcript

Exploratory Comments	Original Transcript
Bisexuality?	Researcher: Are you homosexual? Participant 1: Yeah I am not really a homosexual, I am BI Researcher: What does it mean to be BI? Participant 1: Bisexual really means to have sexual relations with two different sexes, (pauses) which maybe having sex with the same sex and having sex with the opposite sex at the same time at the same period
Sex with both men and women?	Researcher: Are you homosexual? Participant 2: Yeah I am Researcher: At what age did u identify as homosexual Participant 2: Um am not entirely sure, uh I think probably everyone's born with it
Confirmation of identity	Researcher: Did u learn to be homosexual? Participant2: No I can't say I learnt to be. But I can say that they were factors involved
It is in the genes	Researcher : Did you learn to be homosexual? Participant 3: Of Course not (scoffs) Researcher: Could you share a few of your experiences that you identify as homosexual
Other issues attributable to sexuality	
Homosexuality is not learned but inherited	

Appendix B**Process of Tracking Experiential and Emerging Themes**

Participant	Object	Perceptual & Experiential claims	Emerging themes
Participat-1	Confused feeling	“you understand but that doesn’t mean they should not be sober they should not have that sober redemption or that remorse of wanting to change because it is also good for one to have a repentant heart”	Emotional instability
Particpt-2	Ambivalence	“Sometimes it makes me feel bad to be truthful (rubs his shoulder) sometimes I feel bad that for some reason I think if I was the right person my right partner I wouldn’t feel entirely bad”.	Emotional instability
Participat-3	Rejection	“The fact that people do not accept homosexuals or well accept people of that kind of orientation”	Frustration
Participat-4	Injustice	“Well I think it's injustice, I think it's none of the governments business 'cause the government is supposed to be there for them to take us to take good care of us and make sure nothing goes wrong in the economy and the society”	Restricted freedom
Partipt-5	Injustice	“And as far as I am concerned this thing seems too vindictive to be considered justice or law”	Restricted freedom
Participat-6	Rejection	“At least the hurt and pain I feel is Internalized and people just see me as weird, (pauses to gather his thoughts) but the honest truth is I would gladly die with this as long as people don't see me as wrong”	Frustration

APPENDIX C**Overall Table of Themes**

Superordinate theme:	Participants contributing to this theme.	Subthemes	Participants contributing to this sub-theme.
Early experience being homosexual	All Participants	Homosexuality inherent (Born Homosexual)	1, 2, 3, 4, 5, 6
		Initial discomfort, confusion and conflict	1, 6
		Missing relationship from caregiver	1, 2

Views about homosexuality in Nigeria	All participants except 6	Perceived hatred and fear	1, 2, 3
		Negative support and perception	4
Opinion about criminalization	All participants except 6	Angry and enraged	1, 2, 3
		Feels its injustice and unfair	3, 4, 1
		Angry homosexuals are docile	5
Perception of self	All participants except 4	Shameful and negative feeling	1, 2, 3, 6
		Accept identity	1, 3, 5
Change orientation if given a chance to	All participants except 4	Ready to comply and relinquish	1, 3, 4, 5, 6
Intrinsic homosexual experiences	All participants except 4	Emotional instability Craves heterosexual future Negative perception Internal conflict	1, 3, 6
		Persistent sexual fantasies	5, 2
Relationship with other heterosexuals	All participants	Positive/ Normal social interaction	3, 4, 5
		Restricted freedom/poor social interaction	1, 2
		Lack of trust	6
Admonition to other homosexuals	All participants	Accept identity	1, 2, 3, 4
		Encourages confidence	1, 3, 5
		Encourages secrecy	2, 3, 6
		Encourages remorse and rehabilitation	1

ASSESSMENT OF ENVIRONMENTAL IMPLICATIONS OF FEEDSTOCK REMOVAL FOR CHARCOAL PRODUCTION IN IBARAPA REGION, OYO STATE

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ABSTRACT

Charcoal production activities have been expanding in the major supply regions raising concerns about the sustainability of feedstock sources. With intense focus on the increasing levels of atmospheric carbon dioxide (CO₂) and the potential for global climate change, there is an urgent need to assess the feasibility of managing ecosystems to sequester and store carbon. The study assessed the environmental implications of production in Ibarapa region of Oyo state with emphasis on the major tree species used, the nature of their removals, and carbon loss from feedstock removal. Participatory rural appraisal techniques of Focus Group Discussion and structured interview/questionnaire were adopted. Results indicate that thirteen (13) tree species were majorly used for charcoal production in the area with preference based on quality of produce. Natural forests supplied the highest volume of feedstock for production with 31.78% and its significance was highest in Ibarapa North LGA due to proximity to Igangan Forest Reserve. About 10tCO₂e is removed via feedstock used for every 2.5 tons of charcoal produced while about 139,084.8tCO₂e was removed for the volume of charcoal transported out of the region. The estimated carbon trading value of carbon removed on 2.5tons of charcoal produced (₦8,000) is less than that received on charcoal trade (₦12,500) There is therefore a need for more robust forest conservation incentives which focus on promoting alternative economic activities and efficient farming practices.

Keywords: Charcoal, Feedstock, Carbon loss.

1.0 INTRODUCTION

Ecosystems play vital roles in sustaining a growing human society. However with their current rate of degradation and the emerging threats of climate change, concerns abound as to the sufficiency of existing approaches to integrating environmental issues into economic policy development (Adedayo *et al.*, 2013). Charcoal making typifies the conflict between short-term ecosystem services and long-term supporting services which are required to regenerate the ecosystems. Wood energy systems however possess complexities such as multi-stakeholder involvement, interactions with livelihood and food security, climate change mitigation and environmental impacts. Apart from land degradation, another climate change inducing element is the emission of greenhouse gases during harvest and more during pyrolysis, which results in the formation of products such as methane, carbon monoxide, alkanes, oxygenated compounds, and particulate matter (NTL 2002, UNEP 2005, Palmula & Beaudin 2007). Addressing such complexities is vital to ensuring that woodfuel production is wholly sustainable while contributing to energy security and climate change mitigation (FAO, 2010).

Deforestation and forest degradation contribute to atmospheric greenhouse gas emission through combustion of forest biomass, carbon loss from removals, and decomposition of remaining plant materials and soil carbon. Thus managing forests through agro-forestry, forestry and plantation systems is acknowledged as realistic ways of ensuring climate change mitigation and adaptation. With intense focus on the increasing levels of atmospheric carbon dioxide (CO₂) and the potential for global climate change, there is an urgent need to assess the feasibility of managing ecosystems to sequester and store carbon (Borah *et al.*, 2013).

Some parts of Southwest Nigeria have been identified among the major charcoal producing areas in Nigeria, especially for export including, Oyo town, Iseyin, Igbo-ora, Ogbomosho, and Igangan (Jamala, Abraham, & Asongo, 2013). These lie in the derived savanna

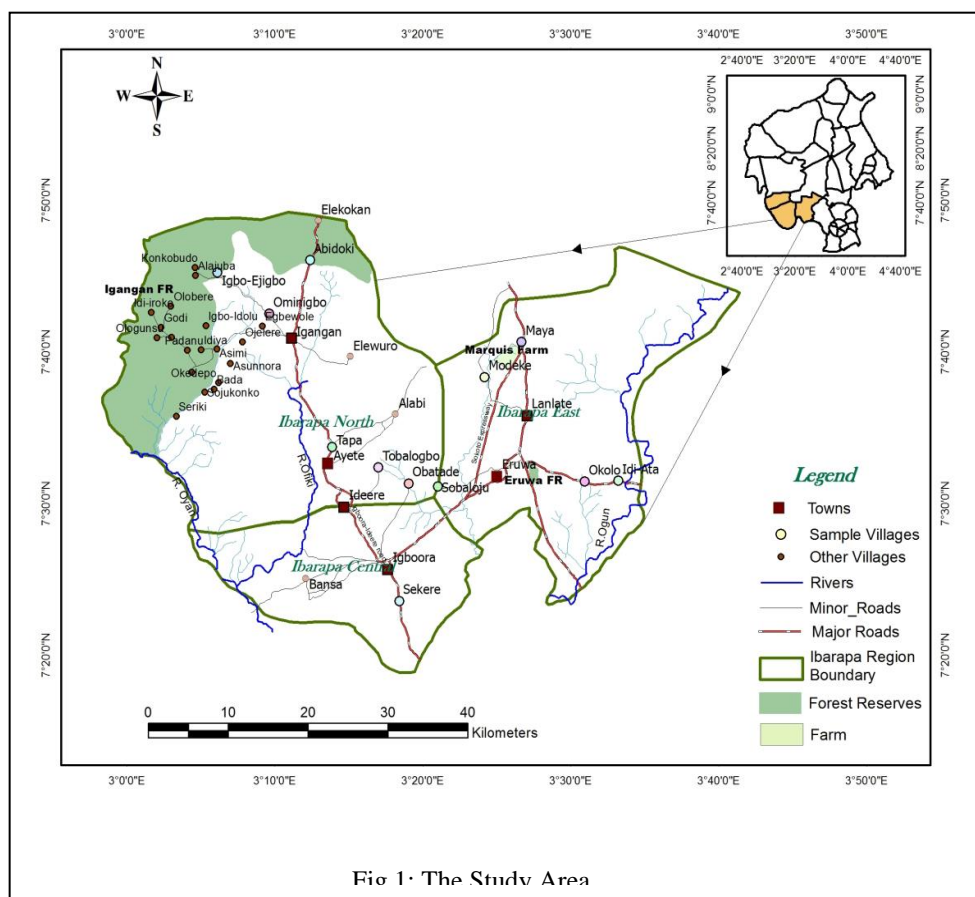
ecological region, which developed and has been expanding southwards from the original rain forests by the interplay of agricultural activities and recently, climate change (Ogundele, Oladapo, & Aweto2012). The implication is the impending loss of ecosystem services provided by the rain forests over time.

Environmental implication as used in this study refers to on the assessment of the major tree species used for charcoal production in Ibarapa region, the nature of their removals, seasonal characteristics of production and estimation of carbon loss from feedstock removal. The end point was to identify relevant adaptation strategies to ensure sustainable use of forest resources in the region.

2.0 THE AREA OF STUDY

Oyo state is located in the south-west region of Nigeria within longitudes 3° and 5°E and latitudes 7° and 9°N covering a land mass total of 27,249 km² (Fig. 1). Due to its latitudinal location, it enjoys an equatorial climate. The mean annual rainfall ranges from 1,117.1 to 1,693.3 mm. The rainfall pattern has a characteristic bimodal distribution with peaks usually in June or July and September and the period of low precipitation in August with four months of dry season (December – March). The annual temperature ranges from an average minimum of 24.6°C to average maximum of 31.5°C. The mean monthly relative humidity reaches a minimum of 52% in February and a maximum of 83% in August. (Erakhrumen, 2008). The topography of the state is of gentle rolling lowland in the south, but rises to a mini plateau of 40m above sea level in the north (Agboola, 1995). The state is well-drained with rivers flowing from the upland in a north-south direction. The major rivers are Ogun, Ofiki, Shasha, Oba and Opeki. Ibarapa region is a part of the high plains of southwestern Nigeria and mean land elevation varies between 100 and 150 metres above mean sea level. The natural vegetation was originally rain forest but it has been transformed into derived savanna as a result of several centuries of farming involving bush burning. Today, key elements of flora are savanna trees such as *Parkia biglobosa*, *Piliostigma reticulata* and *Vitellaria paradoxa*. The main grasses include *Panicum maximum*, *Imperata cylindrica* and *Andropogon tectorum*. (Ogundele *et al*, 2012)

The climate and vegetation of the area favour the cultivation of cash crops such as maize, yam, cassava, millet, rice and plantain primarily but also some tree crops including cocoa, oil palm, cashew as well as a number of other cash crops. These are supported by a number of government farm settlements at Ipapo, Ilora, Sepeteri, Eruwa, Ogbomosho, Iresaadu, Ijaiye, Akufo and Lalupon. The Ibarapa region comprising Ibarapa East, Central and North local government areas was chosen as the sample site. Ibarapa East has an area of 838 km² with its headquarters in the town of Eruwa. Ibarapa Central has an area of 440 km² with Igbo Ora as its headquarters; while Ibarapa North has an area of 1,218 km² and Ayete as its headquarters.



The National Population Commission estimated the population of Ibarapa region at 322,297; comprising 163,673 males and 158,624 females. Ibarapa North was smallest with 101,092, Ibarapa Central was 102,979 while Ibarapa East LGA was 118,226. The residents live in various types of settlements, varying from farmsteads, hamlets, villages, and towns. Primarily, the human settlement hierarchy is determined by income, economic services, settlement size, population, social amenities and functions, within the region. Traditionally, the major economic activity and means of livelihood is farming. The Nigerian Bureau of Statistics reported a poverty rate of 51.8% for the state as at 2010 based on the World Bank poverty index criterion of less than one dollar per day per household (NBS, 2012). Prominent settlements which are becoming famous for the charcoal business either in terms of supply or demand in the state, include Iseyin, Saki, and Okeho, Igbo-Ora, Igbeti, Ighoho, Kisi, Iganna, and Eruwa.

3.0 MATERIALS AND METHODS

Data for the study were collected through a set of multiple sources. A detailed reconnaissance of the LGAs was embarked upon in July 2012 with a view to determine the sampling protocol and procedure. This was supported by a set of topographic maps and field assessment, administrative records, interviews and social survey. Participatory rural appraisal techniques of Focus Group Discussion (FGD) and structured interview/questionnaire were also adopted. Questionnaires were administered to thirty (30) producers and were used to acquire data on feedstock tree species, nature of removal, and other production characteristics. Thirty (30) copies of the questionnaire were administered in the production region to producers who were not part of the Focus Group Discussions (FGD) with respondents selected through the snowball sampling method wherein they were chosen by referral since charcoal production is an informal and largely secondary source of livelihood. Major tree species were identified

and ranked in order of importance based on the perception of the producers. Volume of feedstock supply from sources and the seasonal characteristics of production were also assessed. Except in rare cases where a whole tree population can be harvested to determine its biomass, the tree biomass is generally determined based on forest inventory and allometric equations, which is used to estimate tree carbon content.

The study was restricted in the use of the traditional methods of carbon estimation because of some limitations including:

- a. Charcoal is produced in the region from different tree species, depending on the availability of the species. Production is done with either one or more tree species used in combination in a session.
- b. Different parts of the tree are used up in production depending on the nature of the source of feedstock.
- c. The focus of the study did not include tree species inventory; the end point was simply to establish the average weight of feedstock used for production.

The carbon loss from feedstock harvesting was estimated in two phases:

- i. Estimation of carbon loss on 2.5 tons of charcoal
- ii. Estimation of carbon loss on the total volume of charcoal transported out of the region.

The following definitions and assumptions were adopted for the estimation:

- i.
$$Yield = \frac{Mass\ of\ Charcoal}{Mass\ of\ Feedstock} \times 100 \dots\dots\dots (1) \text{ (Antal \& Gronlin, 2003)}$$
- ii.
$$Mass\ of\ feedstock = \frac{Mass\ of\ Charcoal}{Yield} \times 100 \dots\dots\dots (2) \text{ (FAO 2008),}$$
- iii. Earth kiln yield is 5% to 20 % (FAO, 2008), 30% (Seboka, 2010) and 12.5% Kammen & Lew (2005). The latter was adopted.
- iv. Carbon content = 0.5 x Biomass (3) (Borah *et al*, 2013)
- v. A 2.5 tons 'Half-load' requires wood cut by three (3) full tanks of chain saw irrespective of the tree species.

4.0. RESULTS AND DISCUSSION

4.1. Major tree species used for Charcoal Production:

A total of thirteen (13) natural tree species were identified for charcoal production in the Ibarapa region of study. These are listed according to their level of preference in Table 11. Ayin, Aipe, Odu-oko, Ayan, Idi, Akufo and Asapa are mostly used because they produce heavier and higher quality charcoal grade that burn longer. In the absence of the species, Ogugu and Iya were used next, though they produce lighter charcoal. Though they produce high quality charcoal, Emi, Igba, Iroko, and Gedu are rarely used because they are prohibited by law purposely for sustainability. It was observed that few producers still fell them illegally nonetheless.

Table 1: The tree species being used mostly for charcoal production in the area

Rank	Local Name	Common Name	Species Name	Average Maturity (yrs)	Nature of Planting
1	Ayin	Axlewood	<i>Anogeissus leiocarpa</i>	5	Self-propagating
2	Aipe	Kosso wood	<i>Nauclea diderrichii</i>	9	Self-propagating
3	Odu-oko	Black False Currant	<i>Allophylus africanus</i>	6	Self-propagating
4	Ayan	Iron Wood	<i>Distemonanthus benthamianus</i>	5	Self-propagating
5	Idi	Idi	<i>Terminalia avicennioides</i>	6	Self-propagating
6	Akufo	Iron Tree	<i>Laphira alata</i>		
7	Asapa	Wild syringa	<i>Burkea africana</i>	5	Self-propagating
8	Ogugu	Monkey kola	<i>Cola cordifolia</i>	7	Seed-planting
9	Iya	Balsam tree	<i>Daniellia oliveri</i>	5	Self-propagating
10	Emi	Shea Butter tree	<i>Viteloria paracloxum</i>	7	Seed planting
11	Igba	African Locust Bean tree	<i>Parkia biglobosa</i>	7	Seed planting
12	Iroko	African Teak	<i>Milicia excelsa</i>	8	Self-propagating
13	Gedu	Teak	<i>Tectona grandis</i>	8	Seed planting

Source: Computed from Field Surveys and Questionnaires (2013-2014)

4.2. Sources of Feedstock Supply:

The five (5) sources identified in the region are rated by the producers according to yield. Natural forests are highest across the region with 31.78% and the preference is highest in Ibarapa North LGA with 32.12% due to the proximity to Igangan Forest Reserve. The reserve was found to be encroached upon widely to the extent that the LGA has more new settlements which have sprung up over time. As at the time of the field studies for examples, the communities from Igangan to Igbo-Ayin through Bada which were connected by footpaths as at 1967 and separated from the forest reserve by River Ayinsa had been connected by hurriedly constructed minor roads from different directions into the reserve and with bridges across the tributaries of the river which facilitate the encroachments. The other sources of feedstock include farm clearing, logging wastes and salvage harvesting as shown in Fig. 2 across the LGAs.

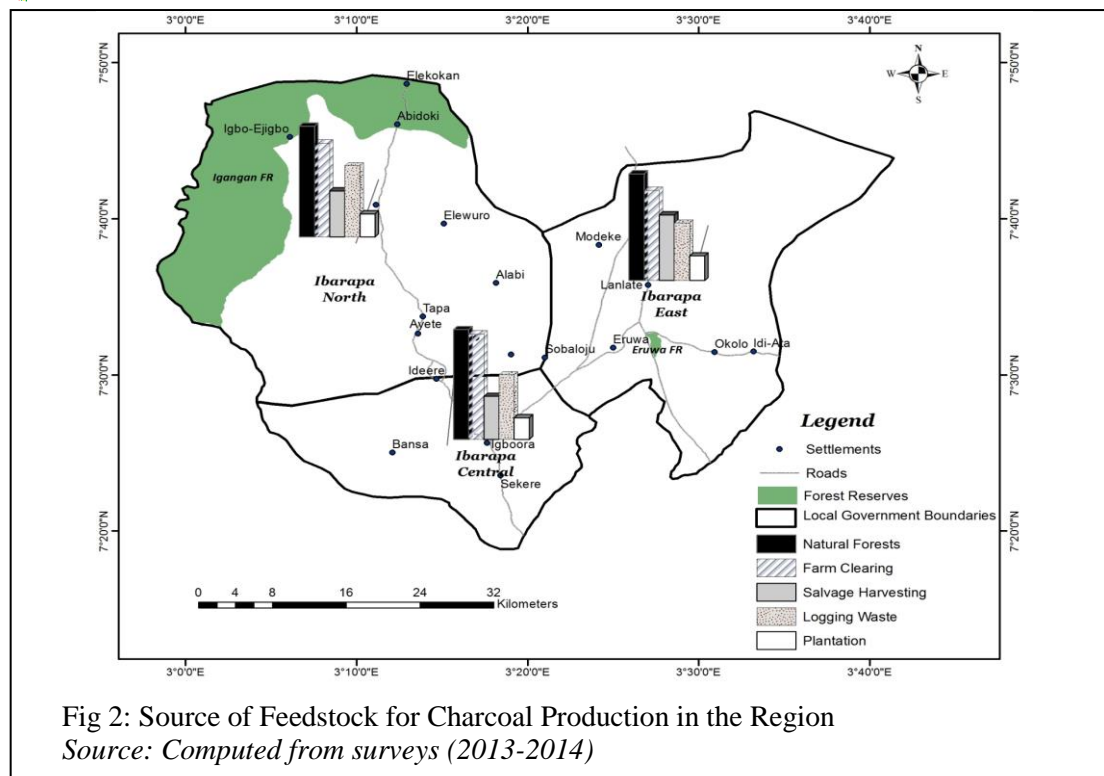


Fig 2: Source of Feedstock for Charcoal Production in the Region
Source: Computed from surveys (2013-2014)

4.3. Seasonality of tree felling for Production:

Charcoal is produced all year round in the region depending on market demand for local use and for export. Ease of production and price in the market were also identified as main factors of production. The study showed that the factors account for variations in the volume of production and supply as well as the prices in the market, significance of actors in the value chain and their incomes both absolutely and proportionally. Mapping of the 2013 production season showed that a higher value of 5,025 bags were transported out daily in the dry season as opposed to the 4,030 bags in the wet season. The selling price of a bag at production site was N600 in the dry season and N800 in the wet season. Some 68% of the producers interviewed also indicated that their production increases during the dry season and climax between April and May. The seasonal factors identified range from access to feedstock, farming seasons, ease of transportation, quality of produce, export market calendar and availability of production materials.

4.4. Carbon Loss from Feedstock Harvesting:

Following equation (2), an Earth kiln yield of 12.5% for 2500kg of charcoal will require 20,000kg of feedstock. The carbon content of such volume of feedstock using equation (3) will amount to 10,000kg which is about 10tons of CO₂equivalent (tCO₂e).

The total volume of charcoal transported out of the region annually was estimated at about 34,771 metric tons through the value chain mapping. Following equation (2), an Earth kiln yield of 12.5% for 34,771,200kg of charcoal will require 278,169,600kg of feedstock. Using equation (3), the carbon content of this feedstock will amount to 139,084,800kg or 139,084.8tCO₂e.

Based on World Bank carbon trading price of \$5 per ton and Dollar/Naira exchange rate of N160 for the year 2014, it implies the value of carbon loss for every 2.5 tons of charcoal produced is \$50 (N8,000). Also, the loss based on the carbon trading price in the world market is N8,000 whereas the accruable income to the local community is N12,500 which

calls for higher incentives if the trees are to be conserved for environmental and other socio-economic reasons.

5.0. CONCLUSION

The current rate of carbon loss to charcoal production in the region calls for immediate action. This in view of further intensification of production activities as it is being promoted as an export commodity that guarantees very high return on investment. This has caught the attention of investors who reside outside the production region and have little concern for its environmental implications. Unfortunately, residents of the production communities are faced with the immediate consequences such climatic variability, loss of wind breaks and watershed, and loss of forest foods and economic trees. In spite of this, charcoal production is still regarded as a viable supplementary income source. It is therefore imperative that the focus of forest conservation measures in the region must seek to promote alternative socio-economic activities and efficient farming practices in the region.

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VULNERABILITY OF PASTORAL LIVELIHOODS TO CLIMATE AND VEGETAL CHANGES IN OGUN-OYO REGION OF SOUTHWEST NIGERIA

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ABSTRACT

Climate and availability of pasture are two critical elements to the sustainability of pastoral livelihoods. It is generally believed that climate change with a concomitant decrease in forage increases grazing distance and the risk of conflicts between the pastoralists and other social actors. This study investigated the trend in rainfall and temperature as well as the response of the vegetation and associated vulnerability of pastoral livelihood vulnerability in the Ogun-Oyo region of southwest Nigeria. The results suggest there has been a progressive increase in rainfall from the decades 1980s to 2000s with evidence of strong recovery around 2002 to 2010. This was also accompanied by a progressive warming from the decades 1980s to the 2000s. There is a chance that the additional water need (for pasture growth and animal watering) created by higher temperatures may not have been met by the increase in rainfall due to high evaporation. At the seasonal scale, the results suggest that the dry season is getting drier and the wet season getting wetter. This strong oscillation signal in rainfall and its concomitant impact on grasses and forage growth suggests that climate change poses significant threat to, and exacerbate the vulnerability of, pastoral livelihoods with possibility of increased conflicts with other social actors. A holistic and integrated approach that addresses all season availability of pasture and water for animals will be required to address the increasing vulnerability of pastoral livelihoods and reduce conflicts in the region.

Keywords: Pastoral livelihoods, Climate, Vegetal changes, Vulnerability, Southwest Nigeria.

1. INTRODUCTION

Africa is perhaps the most vulnerable continent to climate change (Boko et al., 2007). This vulnerability does not exempt agriculture as it is one of the sectors highly vulnerable to impacts of climate change. The vulnerability in the agriculture sector is manifested through occurrence of extremes events (increased drought, flood severity, more intense storms), shifts in the timing and distribution of rainfall, warmer temperatures, and secondary effects such as increased pest and disease pressure. These have effect on food security, land-use change, conflict, and degradation of critical environmental services that underpin food and livelihood security. Many areas of Africa are recognized as having climates that are among the most variable in the world on seasonal and decadal time scales (UNFCCC, 2007) and the Nigerian savanna is one of such. It is part of the West African Sahel where the mesoscale convective systems (MCS) produce over 75% of rainfall (Omotosho and Abiodun, 2007). The land-use system which is dominated by small-holder rainfed agriculture is considerably tied to seasons. Coupling of eco-geographic factors (including terrain and vegetation) influence the local climate and creates unique eco-climatic complexes that differ in locations and seasons (Fasona et al, 2011).

Vulnerability from the climate change perspectives is the degree to which a system is

susceptible to or unable to cope with adverse effects of climate change, including climate variability and extremes (IPCC, 2007, Boko et al 2007). The health and wealth of the Pastoralists cattle herd depends largely on availability of and access to forage pastures and water. Rainfall and temperature are the major climatic factors that directly influence vegetation growth in the tropics. Normalized Difference Vegetation Index (NDVI) is the most acceptable and scientific yardstick to account for vegetation productivity. The close coupling between rainfall and the growth of vegetation has made it possible to utilize NDVI data as proxy for the land surface response to precipitation variability (Anyamba & Tucker 2005, Neigh *et al.* 2008) and vegetation biophysical properties (Stow *et al.* 2004).

Pastoralists face a number of challenges that constrain their livelihoods and stifle their ability to adapt to changes in their external environment. In Nigeria, despite the important role of pastoralism in supporting the local livelihoods and its contribution to national and regional economies, the livelihoods of pastoral families have been unsecured in the face of property right systems, political and economic marginalisation, inappropriate development policies, increasing resource competition and climate change (Fabusoro, 2009). In the southwest Nigeria where a large population of Fulani have migrated into and settled for over six decades, their livelihoods system depends mainly on the conditions of their herds, which, in turn, relies on the availability and quality of rangeland for grazing. The herd must have access to dispersed, ecologically specialized and seasonally varied grazing lands and watering holes to provide for the distinct foraging needs of different livestock species and to afford a margin of safety against the normally erratic pattern of rainfall (Fabusoro and Sodiya, 2011). Of the challenges facing the pastoralists, the impact of climate change on their livelihoods in Nigeria has not been adequately documented.

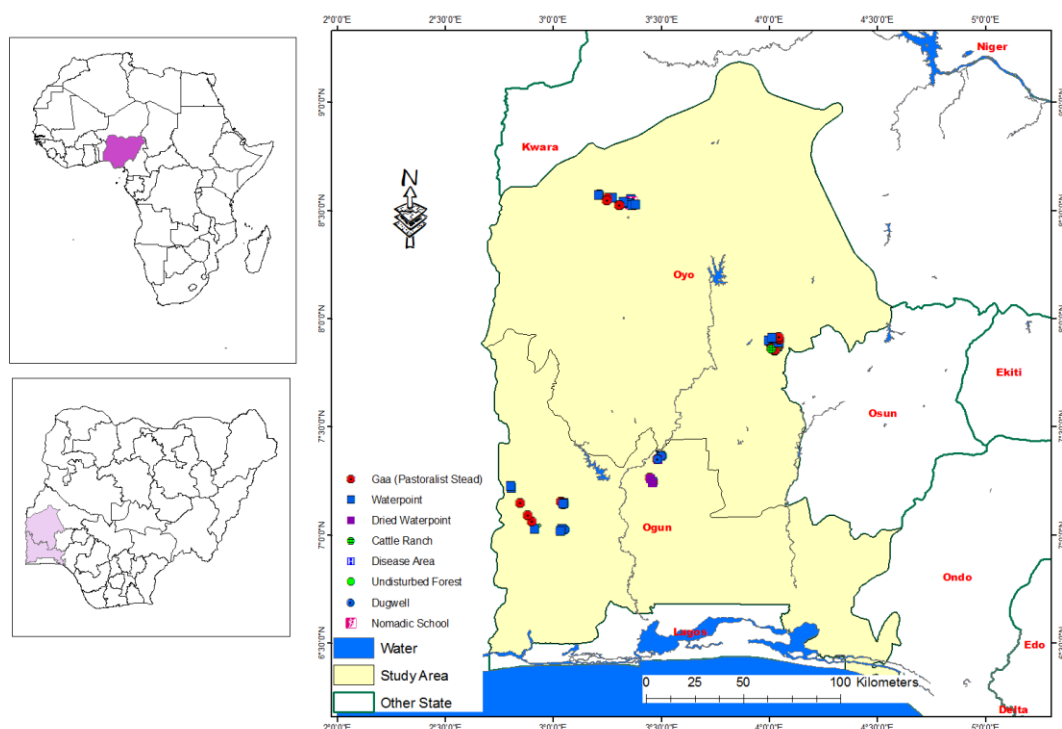
Pastoralists have lived with the challenges of climate change and variability for millennia and they are known to be highly resilient to erratic weather and climatic conditions. We argued, however, that the unprecedented rate and scale of human-induced climate change is aggravating the hazard situation and increasing the vulnerability of pastoral livelihoods in Nigeria. Apart from exposure to climate alterations, frequent conflicts arising from competition for common resources and land tenural system in southern Nigeria has further positioned the Pastoralists as a highly vulnerable people. Their vulnerability to climate change has implications for improved livelihoods and possible end of the transhumance system that is generating communal conflicts between the pastoralists and other actors in the geographic space. In this study, we analyzed the pattern of climate and biophysical changes and examined how these may have compounded the vulnerability of pastoral livelihoods in the Ogun-Oyo region of southwest Nigeria.

2. MATERIALS AND METHODS

2.1 Study Area

The study area is roughly defined by Latitudes 6° 30' and 9°15' North and Longitudes 2°45' and 4°30' East, covering about 42,900km² in Ogun and Oyo States in Southwest Nigeria (Figure 1). The focus pastoralists' communities are Alabata (in Odeda LGA) and Eggua (in Egbado North LGA) in Ogun State, and Irawo (in Atisbo LGA) and Idode (in Oyo East LGA) in Oyo State. Pastoralists traverse a large area in search of pasture and water, the study area is, therefore, described in the context of the larger geographic area (defined here as the Ogun-Oyo region) that provides the actual and potential operating space for the pastoralists.

Fig 1: The Ogun-Oyo region of southwest Nigeria



The vegetation consists of mostly of the derived savanna with close canopy woodland that stretches from the western part of Ogun State to the northern parts of Oyo State. Some mixture of freshwater swamp forest and rainforest vegetation is also found especially in the southwest and southeast of Ogun State. The climate is characterized by a sub-humid equatorial savannah climate with a dry season where minimum precipitation is less than 60mm. Annual rainfall lies between 900mm and 1500mm with a strongly bimodal rainfall pattern. The mean maximum temperature range is between 28°C and 36°C. Rainfall is the most important climatic factor critical to the survival of human and ruminant grazing herds. A period of low rainfall means scarcity of both feeds and water and increased grazing distances. Both the large scale and meso-scale processes are important defining factors of rainfall signals of the region. The large scale processes driven mainly by the sea surface temperature, land-sea thermal contrasts and pressure gradients control inter-annual variability in onset and cessation of the rains and triggers the monsoon season from June to September (Odekunle *et al.* 2005). The mesoscale processes, however, dominate the local climate, accounting for about 75% of rainfall and responsible for much of the unique spatial differentials in eco-climatic assets including availability of good, fertile and well watered agricultural and grazing areas (Omotosho & Abiodun 2007; Fasona *et al.* 2011).

The Ogun-Oyo region is densely-settled and survival for large rural population depends on subsistence small-holder rainfed agriculture (Afiesimama *et al.* 2006, Fasona *et al.* 2007, Odekunle *et al.* 2005). Conflict over natural resources including water, agricultural land and grazing land has become a regular occurrence (Fasona & Omojola 2005; Adisa and Adekunle 2010). The pattern of location of the pastoral communities reinforces the importance of water and pasture land to their wealth and livelihoods. Pastoral communities tend to locate around or near to sources of water and not too far away from woodlands/ or grasslands. The settled pastoralists are semi-nomadic and live in communities called “Gaa” from which they coordinate the movement of their herds. The pure nomadic “Bororos” on the other hand migrate to the study area from the Sudano-Sahelian regions. They are isolated and move in

small groups but with very large herds. Field sources suggest they “invade” the Ogun-Oyo region from late September-October to about March-April.

2.2 Procedure

2.2.1 Data utilized

Table 1 shows the data accessed to derive the physical indices of pastoralists vulnerability to climate and vegetal changes in the Ogun-Oyo region.

Table 1: Characteristics of data used

Data	Resolution	Source	Date	Usage
Monthly Rainfall data		NIMET		Rainfall Variability
Monthly Temperature Data		NIMET		Temperature Variability
Monthly NDVI Composite images NOAA - AVHRR	8km /8bit	NOAA-AVHRR acquired from Clarks Lab	1981 - 1999	NDVI Values Extraction
Monthly NDVI Composite MODIS Images	1km/16bits	Moderate Resolution Imaging Spectrometer (MODIS) acquired from Clark Labs	2000-2009	NDVI Values Extraction

The monthly rainfall and temperature data for nine stations in the southwest Nigeria for 1981 – 2010 was obtained from the archives of the Nigerian Meteorological Agency (NIMET) and three adjacent stations in Benin Republic. Table 2 shows the stations for which data were accessed.

Table 2: Meteorological stations for which data was accessed

SN	Station	Lon	Lat	Years for which data is available	SN	Station	Lon	Lat	Years for which data is available
1	Iseyin	3.58549	7.98167	1982-2010	7	Ibadan	3.89073	7.3763	1980-2005
2	Shaki	3.3747	8.6947	1984-2010	8	Abeokuta	3.30152	7.16694	1981-2006
3	Bida	5.99836	9.05513	1980-2010	9	Akure	5.18377	7.23955	1980-2006
4	Lokoja	6.71486	7.81282	1980-2010	10	Save	2.47	8.03	1980-2000
5	Oshogbo	4.54461	7.76675	1980-2010	11	Kandi	2.62	9.35	1980-2000
6	Ilorin	4.53645	8.51135	1980-2010	12	Bohicon	2.07	7.17	1980-2000

2.2.2 Climate data analysis

The rainfall and temperature data were analyzed for spatial and temporal (annual, seasonal, and decadal) averages and anomalies. The results were converted into spatially explicit data using surface interpolation methods. The Inverse Distance Weighted (IDW) interpolation model was used to create a continuous surface from the analyzed rainfall and temperature data. The IDW uses weighted moving average point with some zone of influence for the calculation of grid values through the area of analysis. This method assumes that the variable being mapped decreases in influence with distance from its sampled location.

2.2.3 NDVI data analysis

The NDVI provides a measure of the amount and vigor of vegetation at the land surface. The magnitude of NDVI is related to the level of photosynthetic activity in the observed vegetation and time series NDVI can provide a proxy for estimating multi-temporal changes in vegetation. The NDVI is generally calculated from two channels of the electromagnetic spectrum: the near-infrared (NIR) and Red band of the visible wavelengths using the function:

$$NDVI = (NIR - Red) / (NIR + Red) \text{ -----(1)}$$

Global Monthly NDVI maximum value composite images for 1981 – 2010 was used. The NDVI data came in two series. The first from the Advanced Very High Resolution Radiometer (AVHRR) obtained from Clark Labs, Worcester, MA, USA has an 8km resolution and covered the period 1981 – 1999. The radiometric resolution is signed 8-bit (range values from -128 to +128), with 1800 and 3600 rows and columns respectively. Its production and distribution was funded by NASA's Mission to Planet Earth Program. The data was re-projected from Goode Interrupted Homolosine Projection to Geographic Projection. The conversion of the image data values (-128 to +128) to the traditional NDVI data range (i.e. -1 to +1) was done using the function:

$$N_n = (N_0 - 128) / 128 \text{ -----(2)}$$

Where

N_n = New NDVI image values

N_0 = Original NDVI image values

The second data was the global monthly NDVI data for the years 2000-2010 from the NASA MODIS CMG monthly NDVI data derived from the MODIS satellite. The data were processed by NASA Goddard from the Terra sensor projected on a 0.05 degree Climate Modeling Grid (CMG). The data format is in binary integer, with a 7200 columns and 3600 rows. The spatial resolution is 1km and signed 16bit radiometric resolution (range values theoretically from -32,768 to +32,768). According to The Center for Earth Observation, Yale University (<http://www.yale.edu/ceo>), the documented data range is with a fill value of -3000. The conversion of the range values to the traditional NDVI data range (i.e. -1 to +1) was done using the function:

$$N_n = N_0 / 10000 \text{ -----(3)}$$

Where

N_n = New NDVI image values

N_0 = Original NDVI image values

Using the image calculator function of Idrisi Taiga® software, the time-series NDVI data were analyzed for annual, seasonal, and decadal averages and anomalies.

3. RESULTS AND DISCUSSION

3.1 Trend and Pattern of rainfall and temperature

The analysis of rainfall data suggests an increase in rainfall over the years. The trend analysis suggests that mean monthly rainfall has been increasing by about 6.5mm/month/decade from 1982 to 2010. The increase in mean monthly rainfall for most of the stations is also consistent from the decades 1980s to 2000s. The pattern of rainfall across seasons did not change

through the decades 1980s to 2000s. The Ogun-Oyo region maintained the bimodal rainfall pattern with peaks in July and September with the “little dry season” in August. While rainfall across seasons in the decade 1980s was generally below the long term seasonal averages, rainfall in the decade 1990s roughly equals the long term seasonal average, and the decades 2000s experienced a seasonal rainfall that is above the long term seasonal average. However, there is a lag in the onset of the rains in the decade 2000s compared to the 1980s and 1990s. The progressive increase in the amount of rainfall from the decades 1980s to 2000s in the Ogun-Oyo region is consistent with results of earlier studies conducted in the Savanna and Sahel region in Nigeria (see Fasona & Omojola, 2005; Anyamba & Tucker 2005, Chima et al., 2011).

However, the pattern of rainfall and temperature in the Ogun-Oyo region appeared to be going in the same general direction with temperature rising at about $0.4^{\circ}\text{C}/\text{month}/\text{decade}$. This rising temperature trend is consistent with the general pattern of global warming (IPCC, 2007) and the rising temperature for Nigeria in particular (FGN, 2003). Fig 2 shows the pattern of temporal rainfall and temperature anomalies from 1982 to 2010. For many of the years up to 2001 both average rainfall and temperature are below normal by between -1σ and -2σ in some cases. But rainfall, in about the years 2002 to 2010, shows strong recovery. This recovery is also accompanied by a very strong warming by as much as 1σ to 2.5σ above normal in some cases. The observed signal, though consistent with other studies carried out in the savanna (see Fasona & Omojola, 2005; Anyamba & Tucker 2005), presents an interesting scenario especially as it affects pastoral livelihoods and the wellbeing of the herds. Theoretically, it can be assumed that pastoral livelihoods should fare better with increased rainfall in the decades 2000s compared to the 1980s and 1990s when rainfall was low, water was scarce and with presumably less pasture. But the strong warming profile that accompanied the rainfall recovery may have negated this assumption. There is a chance that the additional water need (for both pasture growth and animal watering) created by higher temperatures may not have been met by the increase in rainfall.

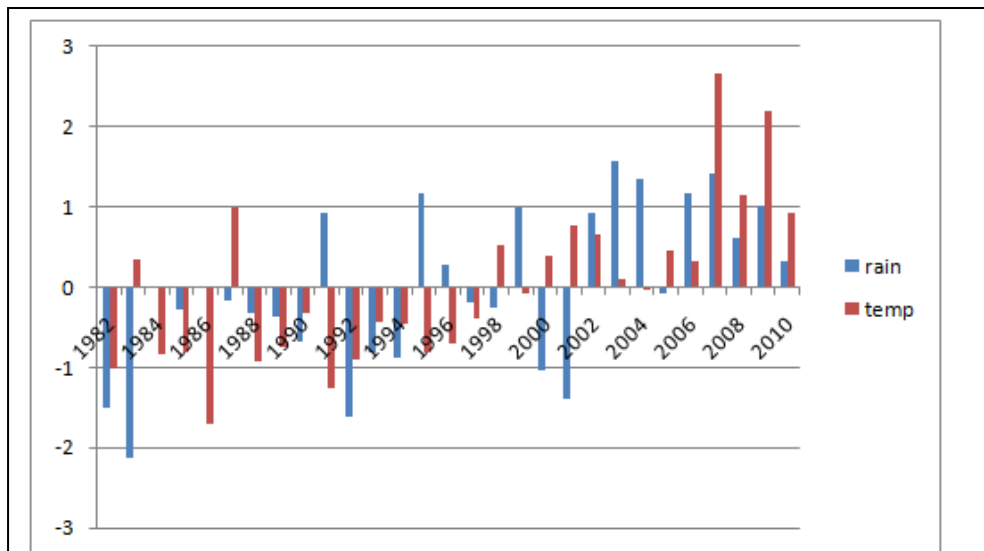


Fig 2: Pattern of temporal rainfall and temperature anomalies from 1982 to 2010

According to field sources, physiologically, both increases in rainfall and temperature are good for the health of the pastoralists' herds. But in terms of availability of pasture and water for herds, rising rainfall that is fairly distributed across the seasons is preferred. Rising

temperature means a significant proportion of the water from rainfall is equally lost to evaporation. Potential evapo-transpiration is generally high in the savanna areas. Thus, increased rainfall accompanied by increased temperature may neither result in cooling nor have substantial positive effect on the growth of forests and woodlands. But it may aid the short-term growth of grasses and shrubs and forages which is good for herds. Hence the vulnerability of the Fulani pastoralists and their herds to the climate will depend significantly on the seasonal fluctuations in rainfall (i.e. how dry is the dry season and how wet is the wet season) which affects the growth of pasture and availability of water for animals.

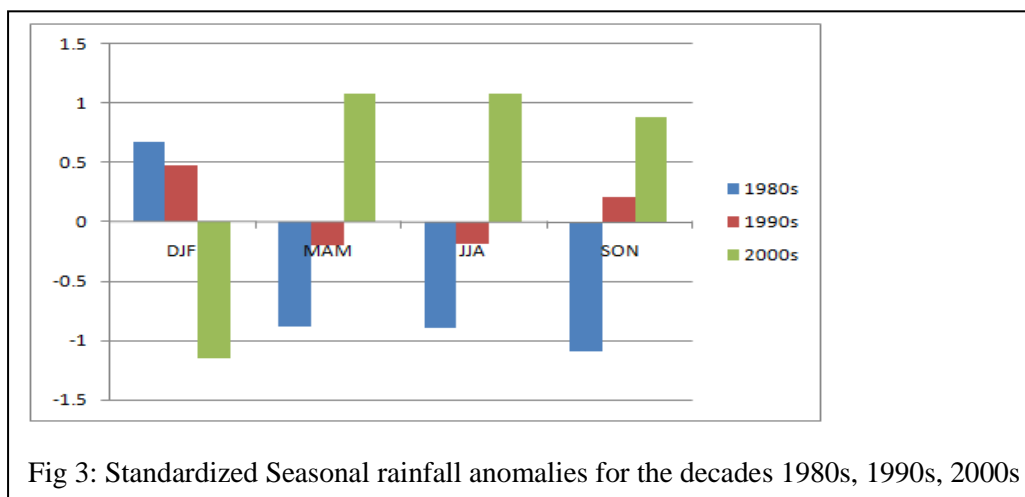


Fig 3: Standardized Seasonal rainfall anomalies for the decades 1980s, 1990s, 2000s

Figure 3 shows the standardized seasonal rainfall anomalies. The pattern suggests that in recent times (in decades 2000s), the dry season represented by DJF (December-January-February) is getting drier and the wet season (March to November) is getting wetter. This is unlike in the decades 1980s and 1990s when there was a general decline in rainfall in the wet season and some increase in dry season. This suggests that the rainfall is not fairly distributed across the seasons.

The implication of this is a possible increase in conflicts occasioned by reduced access to water and grazing lands in the dry season. Field sources have confirmed that the frequency of conflicts in the Ogun-Oyo region in recent times increases dramatically during the dry season compared to the wet season. The suggestion of uneven seasonal distribution in rainfall was also confirmed by the pattern exhibited by the seasonal anomalies of rainfall in the Fulani pastoralist communities -Alabata, Eggua, Idode and Irawo - that were studied. Rainfall anomaly was consistently below normal for Eggua and Irawo in the decades 2000s. All the communities recorded below normal rainfall for DJF in particular which supports the assumption of a dry season that is getting drier.

3.2 NDVI responses across the seasons

In general, higher values of NDVI suggest greater vigor and amounts of vegetation. As opposed to a static one-time landuse/landcover maps, time series monthly NDVI provides a basis for detecting minor and seasonal changes in vegetal cover and land surface processes that may be significant to pastoral livelihoods. Figures A1a-h (see appendix I) shows the average seasonal NDVI anomalies for the Ogun-Oyo region. The years 1981 to 1999 had the greatest changes most of which were negative. The direction of anomalies for DJF and MAM for the decades 1980s and 1990s was significantly negative. These recovered significantly in the years 2000 to 2009. JJA denotes the peak of the rainy season; hence, few years of negative anomaly for JJA in the three decades were recorded. SON denotes the transition to

the dry season. The NDVI signal shows significant negative anomalies for SON in the period 1981 to 1999 and positive anomalies in the period 2000-2009. In essence, it can be inferred that the vegetation was more perturbed in the decades 1980s and 1990s than 2000s. There is a significant vegetal recovery in the decades 2000s that is consistent with rainfall recovery. This is also consistent with vegetal recovery in the decades 2000s reported for the West Africa Sahel region by Lauwaet *et al.* (2009), Stow *et al.* (2004) and Nicholson (2000).

This is good for the pastoralists as it suggests that the range is greener in 2000s than it was in the 1980s and 1990s. However, an increase in greenness does not automatically translate into increased grazing lands. Field checks suggest that a significant percentage of the green area is indeed small-holder rainfed agricultural fields. Again, the increased greening may not have addressed the issue of inter-seasonal variation in availability of forage as well as the possibility of increased agricultural fields emerging as a result of improved rainfall conditions in this small-holder rainfed agricultural dominated environment. Although current landuse and landcover data for estimating actual extent of cultivated farmland was unavailable, Fasona and Omojola (2005) affirms that the land area devoted to the common landcover types in the area - intensive row crop cultivation, forest plantation, floodplain agriculture, and extensive small holder agriculture increased by 13.4%, 58%, 123.1%, and 12.9% respectively between 1976 and 1995. During the same period, areas covered by the dominantly trees/woodlands/shrubs with a subdominant grass component (i.e. the favourite grazing zone for pastoralists) decreased by about 46.2 % during the same period. Field sources also suggest that competition for land between crop cultivation and grazing is one of the most formidable threats to pastoral livelihoods in southwest Nigeria.

4. CONCLUSION

The findings suggest there has been a progressive increase in rainfall from the decades 1980s to 2000s with evidence of strong rainfall recovery from about 2002 to 2010. The seasonal pattern of rainfall did not change through the decades. The pattern of rainfall and temperature is going towards the same general direction. Evidence of progressive warming from the 1980s to the 2000s is also obvious. The very strong warming that accompanied rainfall recovery presents another dimension with regards to pastoral livelihoods and the well being of the herds. There is a chance that the additional water need (for both pasture growth and animal watering) created by higher temperatures may not be met by the increase in rainfall due to evaporation. The findings also suggest that the dry season has been getting drier and the wet season getting wetter in recent times. This means possible increase in conflicts occasioned by constrained access to water and less pasture in the dry season.

However, while the vegetation was more perturbed in the decades 1980s and 1990s, vegetal recovery was recorded in the decades 2000s which is consistent with rainfall recovery in the decade 2000s. This did not automatically translate into increased grazing lands because a significant percentage of the green area are small holder cultivated fields. As expected the spatial distribution of average NDVI values over the seasons was most strongly influenced by precipitation accumulated throughout the rainy season. The strength of relationships between NDVI and precipitation and temperature, though weak, are consistent and significant as expected. The direction (positive for rainfall and negative for temperature) was also consistently captured through the seasons.

In conclusion, the strong seasonal fluctuations in rainfall, with the dry season getting drier and wet season getting wetter, and their concomitant impact on grasses and forage growth suggest that climate change poses significant threat to, and exacerbate the vulnerability of, pastoral livelihoods. However, underlying factors such as land accessibility for grazing which

is being constrained by expansion in small-holder rainfed cultivation may have equally powerful significance on pastoral livelihoods in the Ogun-Oyo region. Thus, a holistic and integrated approach that addresses all season availability of pasture and water for animals will be required to address the increasing vulnerability of pastoral livelihoods and to reduce conflicts with other social and economic actors in the region.

ACKNOWLEDGMENT

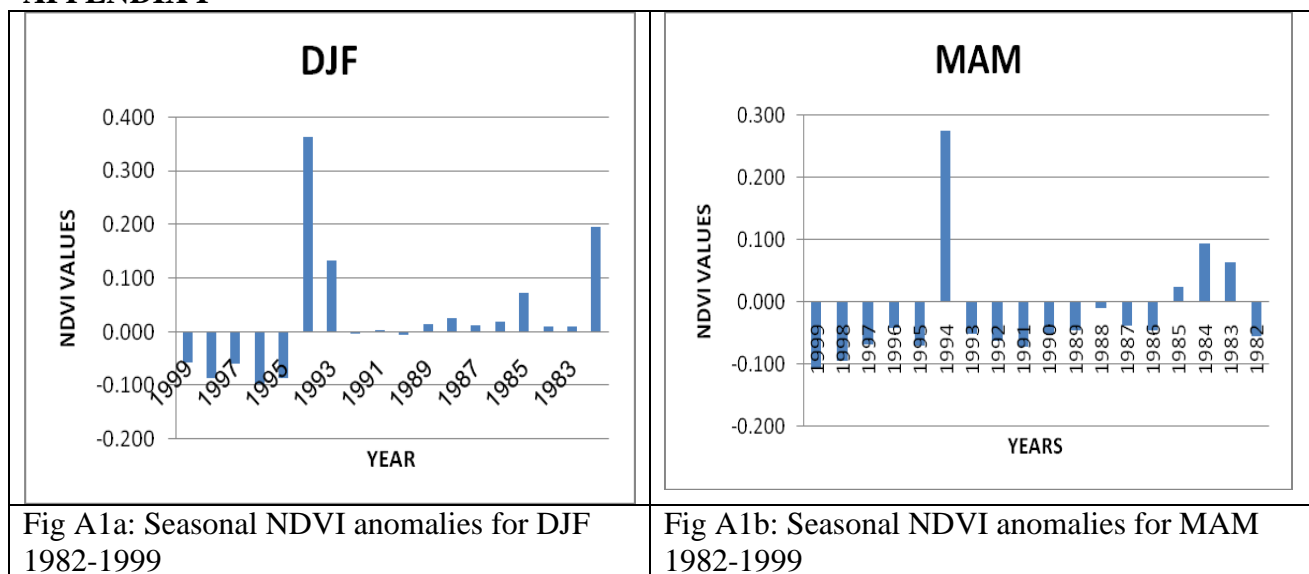
This study is part of the research on *Vulnerability of settled Fulani agro-pastoralists' livelihoods to climate change and emerging innovations for adaptation and land accessibility in southwest Nigeria*. The project was funded by the International START Secretariat through the grant from CDKN, NSF and CCAFS for the GEC Africa Project for 2012-2013. We are grateful to all the partners.

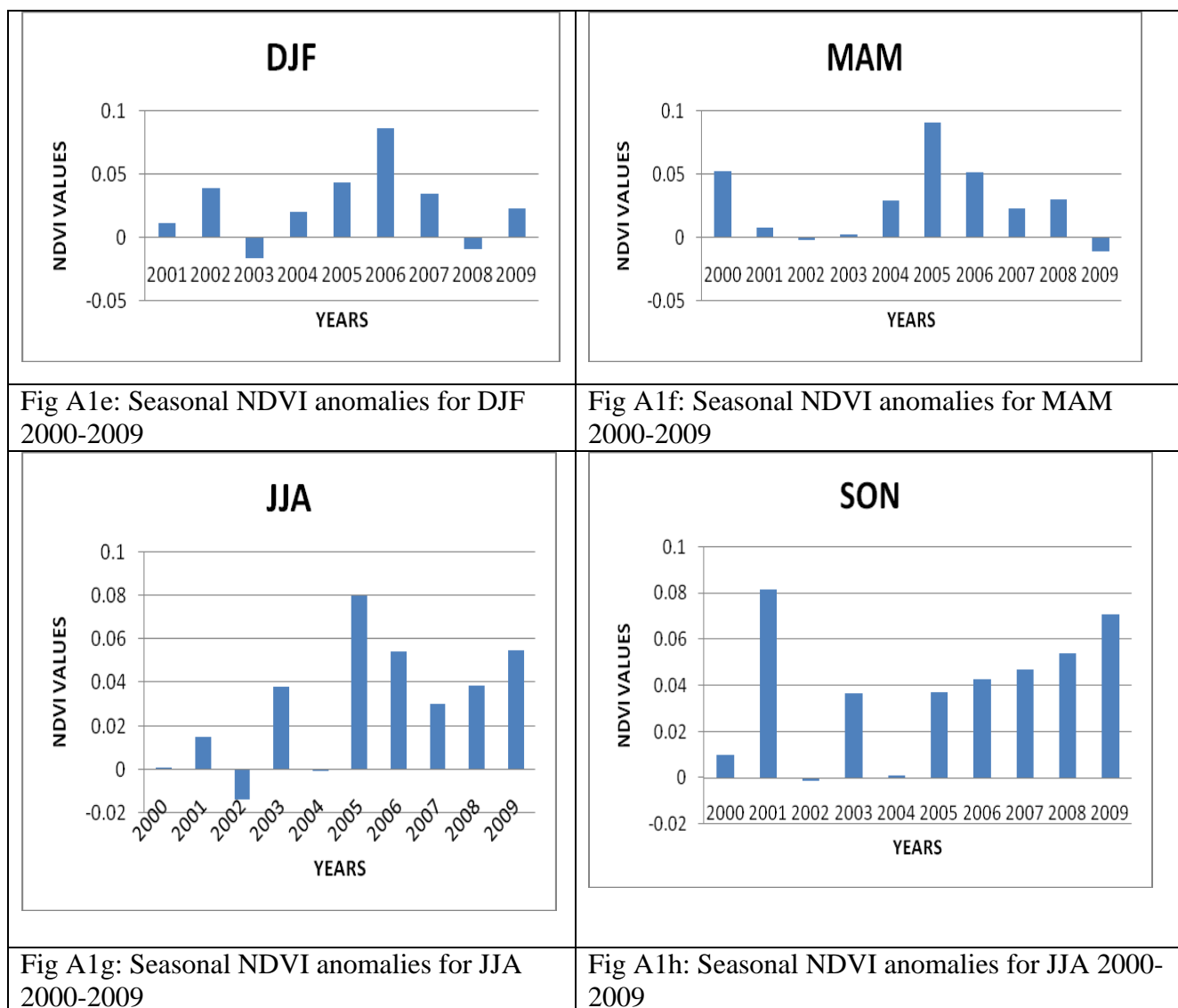
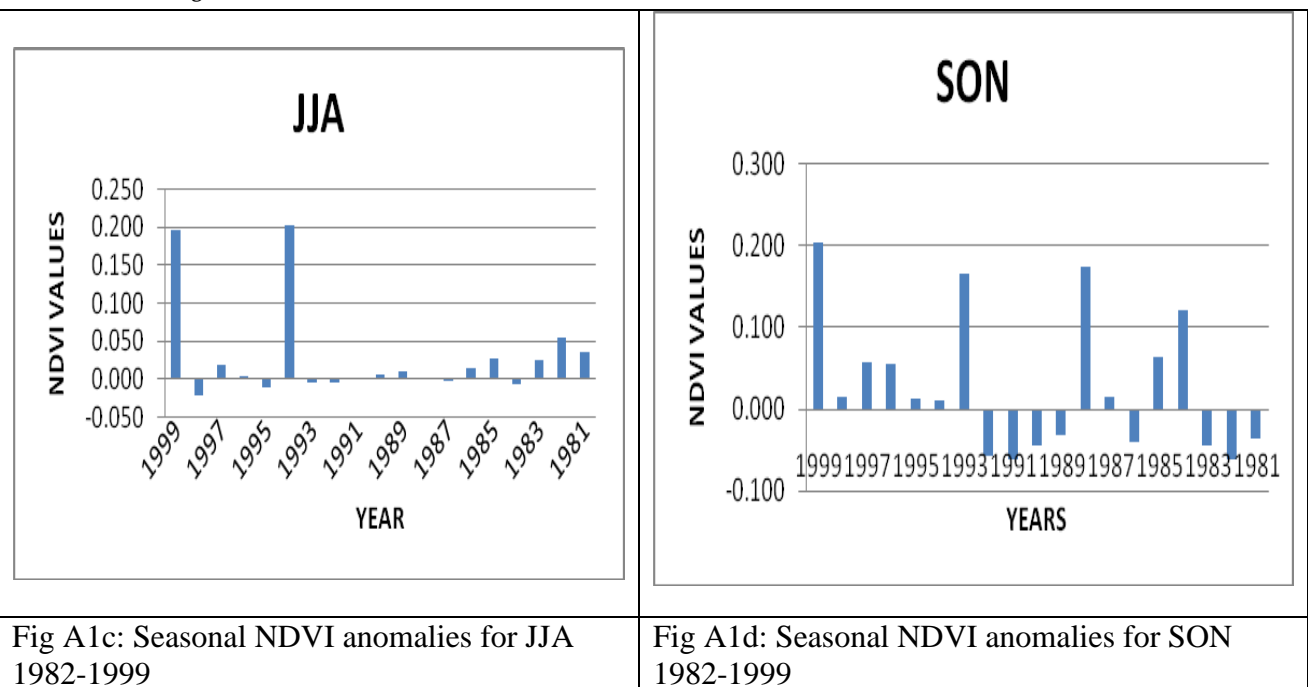
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APPENDIX I





APPRAISAL OF CHARCOAL PRODUCTION DRIVERS IN IBARAPA REGION, OYO STATE, NIGERIA

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ABSTRACT

Decreasing oil supply and the attendant environmental challenges posed by its use have driven the search for more sustainable energy sources. Global concern on charcoal production is the concentration of informal production in small lots leading to massive tree clearing activities, which have implications for climate change. Wood supply systems are however complex and site specific. An adequate understanding of exploitation drivers is the basis for review of the sustainability of local systems. This study was aimed at evaluating the key drivers of charcoal supply from the rural areas of Ibarapa region and demand drivers in urban areas around the region. To appraise this, data were collected through participatory rural appraisal techniques of Focus Group Discussion (FGD) and structured interview/questionnaire. In addition personal and non-participant observations were used to gain visual understanding of production processes in the area. Results of the social survey indicated about 34,771.2 metric tons of the produce, evaluated at about ₦1.3 billion is transported out of the region annually. It also revealed that expanded income is the most significant supply side driver while alternative energy sourcing is the most significant demand side driver. Promotion of other alternative rural income sources and efficient production and utilization technologies coupled with adequate export level monitoring is suggested.

Keywords: Renewable energy, Charcoal, Sustainability, Forest management, Climate change.

1.0 INTRODUCTION

Decreasing oil supply and the attendant environmental challenges posed by its use has driven the global search for more sustainable energy sources. Sustainable energy sources must however be able to provide for economic development, maintain or improve social security and be of minimal harm to the environment. Renewable energy sources like hydro, solar, and woodfuel have been in use for several centuries but at different levels of technology.

Fuelwood (or firewood) includes wood in small pieces derived either from forests, stand-alone trees and other lands, or as wood by-products from the timber industry, which is directly burned. Charcoal on the other hand refers to a solid residue derived from the carbonization, distillation, pyrolysis and torrefaction of wood (trunks and branches of trees) and wood by-products, using continuous or batch systems (pit, brick and metal kilns) (FAO, 2008). There is a growing awareness of the distinctiveness of charcoal as a separate energy source from fuelwood.

Woodfuel (fuelwood and charcoal) is increasingly used as an environmentally sound source of energy (mainly for heat and power generation and as a potential substitute for fossil fuels to reduce greenhouse gas emissions) while still widely used in its traditional form as a household cooking fuel in developing countries especially in the tropics. There are however indications from different energy scenarios that the demand for woodfuels will still remain strong for more years in both developed and developing nations (Kituyi 2002, Troserro 2002). Studies on charcoal production have shown the basic global drivers of the business to include:

- Rapid industrialization and population growth inducing increased demand primarily by urban poor (Ogwumike and Ozughalu, 2001, Kituyi 2002)

- Increased focus on woodfuel as an alternative to fossil fuel in developed countries (FAO, 2010)
- Versatility of wood-based fuels and their high potential for technological innovation. (Sepp, 2010)
- Scarcity and soaring cost of modern fuel (Gbadegesin and Olorunfemi, 2011)
- Relatively low capital and operating costs to facilitate production (Uisso and Balama, 2011)
- Poverty in rural areas occasioned by decline in crop productivity coupled with climate variability (Uisso and Balama, 2011)

The determination of the sustainability or otherwise of woodfuel supply sources is hinged on the understanding of the basic drivers of continued harvest and production of these energy sources. About 70% of the Nigerian population depend on charcoal and other biomass forms and over 80% of rural energy consumption is biomass while about 79,000 tonnes of charcoal was exported from Nigeria in 2007 (Etiosa 2008, Dayo 2008, Shaad & Wilson 2009, NBS, 2011) Nigeria is thus as much a consuming as is a woodfuel exporting nation, which raises questions about the sustainability of the sources of woodfuel.

Charcoal making typifies the conflict between short-term ecosystem services and long-term supporting services which are required to regenerate the ecosystems (Adedayo *et al*, 2013; Yusuf, 2008). Apart from land degradation, another climate change-inducing element is the emission of greenhouse gases during harvest and more during pyrolysis. This results to formation of products such as methane, carbon monoxide, alkenes, oxygenated compounds, and particulate matter (NTL 2002, UNEP 2005, Palmula & Beaudin 2007).

Concerns about the capacity of commercial production to deplete forest resources have been heightened by the concentration of production in small lots, change of production location with tree availability and the low efficiency of traditional kilns which are mostly used in the area. The implication is that rising demand would instigate foray into natural forests in search for feedstock. This and other factors such as expanding agricultural land, uncontrolled logging activities and grazing by transhumance herdsmen will enhance continued depletion of the forest reserves in the country (FME, 2006).

The study focuses on the production of charcoal in Ibarapa region of Oyo state, Nigeria which is one of the major charcoal producing areas in Nigeria. The study is with the aim of gaining insight into the volume of production and the demand and supply drivers in the region and surrounding urban areas.

2.0. THE STUDY AREA

The study was carried out in three (3) local government areas (LGAs) in Oyo state, which make up the Ibarapa region namely, Ibarapa East LGA, Ibarapa Central LGA, and Ibarapa North LGA. The region lies between Latitude 7° 44'N to 7° 48'N and Longitude 3° 1'E to 3° 40'E. They are bounded by Ogun state to the south, and Iwajowa, Kajola, Iseyin and Ido LGAs to the north and east. They share the basic physical characteristics of Oyo state, which is marked by distinct seasonal shift in the wind pattern. Between March and October is the rainy season while the dry season lasts between November and February. The topography of the state is of gentle rolling lowland in the south. It rises to a plateau of 40m above sea level in the north (Agboola, 1995). The state is well drained with rivers flowing from the upland in the north-south direction. The major rivers are Ofiki, Ogun, Shasha, Oba and Opeki. The vegetation pattern of the state is that of rain forest in the south and guinea savannah to the north. Thick forests in the south give way to grassland interspersed with trees in the north. The climate in the state favours the cultivation of crops like maize, yam, and cassava. There

The Snowball sampling method was used to select respondents wherein they were chosen by referral since charcoal production is an informal and largely secondary source of livelihood. The volume of produce transported out of the region was used to represent the volume of production because of the informal nature of the business which restrains record keeping. Data was acquired from the number of tickets sold by 'toll' collectors at the major 'toll gate' in the region. Data for the supply drivers were summarized from reports of the focus group discussions (FGD) held with the charcoal dealers in the region. This included producers and marketers, and their responses were validated with responses received from questionnaires administered to individual producers and marketers who were not part of the FGD. Demand drivers were summarized from structured personal interviews held with producers and questionnaires administered to marketers.

4.0. RESULTS AND DISCUSSION

4.1. The Production Volume:

Production activities in the study area are informal, secretive and lack proper documentation, hence the volume of products transported out of the region were estimated at the Igbo-ora 'toll gate', which is a major nodal point connected to the major roads in the three LGAs and is calculate for the dry and wet seasons of the area (Table 1). Considering the market value of 181 Euros per ton, the annual volume transported out of the region is estimated at about 34,771.2 metric tons, to give a monetary worth of about ₦1,321,653,312.

Table 1: The average daily volume of charcoal transported from the region

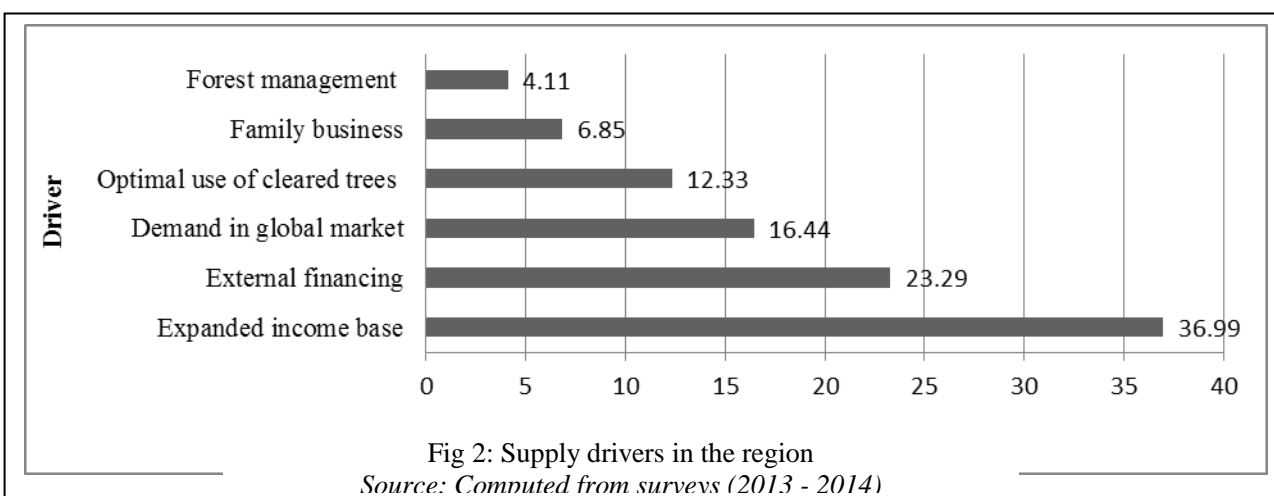
Vehicle	Average number of vehicle per day		Average volume of charcoal (bags)		
	Dry Season (Oct-March)	Wet Season (April-Sept)	Av. Capacity	Dry season	Wet season
Pick-Up	35	30	70	2450	2100
Mini Truck (<i>Landstar</i>)	25	20	90	2250	1800
Container Truck	0.5	0.2	650	325	130
Total				5025	4030

Source: Computed from Field Survey (2014)

4.2. The Drivers of the Production and Consumption

4.2.1. Supply Drivers:

The major drivers of production in the region and their significance are presented in Fig. 2.



Expanded income base: While most of the interviewed dealers primarily farmers, others were artisans and civil servants. About 37% of the stakeholders noted that their foray into charcoal business was to diversify and expand their income base. The business itself has been

getting more popular over time. Part of these were those who after retirement from active service mostly teaching, sought local businesses that could sustain them, hence the decision to adopt charcoal production. Others who migrated to the region from surrounding urban areas like Ibadan, Lagos with no source of livelihood took up charcoal production as their primary source of livelihood. The marketers were mostly females and were either family members of charcoal producers or otherwise who sold charcoal along with other items.

External financing: external financing was noted to drive continuous large scale production in the area with 23.29% rating it as the second most significant supply driver. Analysis of the responses from producers interviewed indicated that about 40% of products are sold to exporters, which is yet the highest distribution route. Large scale producers reside in the major towns and have access to modern communication and banking facilities. This ensures that exporters – mostly in Lagos – can communicate with them on amount of charcoal required to fill up their orders. The smaller scale producers however either sell their products locally, or sell to merchants in surrounding urban areas- Ibadan, Abeokuta and Lagos.

Demand in global market: regular charcoal export demand runs from May to August, which are summer months in Europe. However big time importers in Europe and Kuwait, Israel and some Asian countries give orders all year round with orders taken mostly by the large scale producers.

Optimal use of Cleared trees: there are three main tree-clearing activities in the study area – agriculture, logging and charcoal production. The pre-dominant farming system in the area is bush fallow and land preparation season for cassava and yam which are the major crops cultivated in the region coincides with peak production period of charcoal in the area (March to June). Closely related is the use of “wastes” from logging activities in the area.

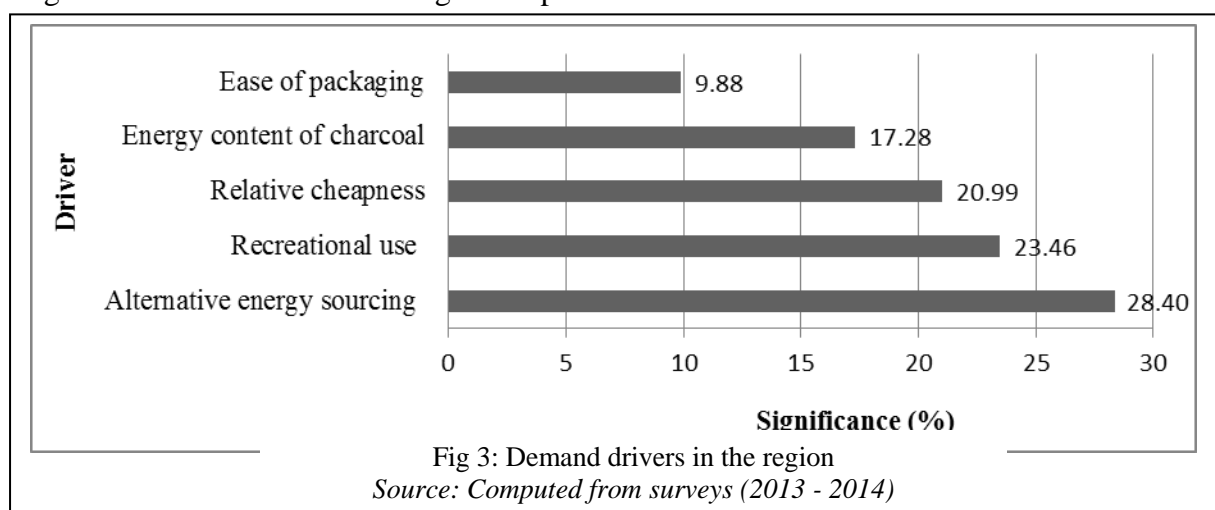
Family business: for few of the producers, charcoal production has been a family business they grew to know hence the continuation of such tradition as long as is feasible. Retail opportunities for mostly female members of the association who are marketers was also agreed to be a supply side driver.

Forest management: producers agreed that continuous production was done as part of efforts to manage the forest resources available to them.

4.2.2. Demand Drivers:

The major drivers of consumption in the region and their significance are presented in Fig. 3.

Alternative energy sourcing: the search for alternative sources of woodfuel was the most paramount demand driver (28.4%) wherein the focus of importing countries turned to countries with excess woody biomass which are also relatively cheaper to import from. Nigeria has become one of the highest exporters of charcoal in Africa.



Recreational use: recreational use during summer months in Europe also drives the charcoal market. Hence orders are placed from September to May for delivery from May to August.

Relative cheapness: The charcoal market inland is dominated by caterers and cottage industries that purchase the product in large quantities because it is relatively cheaper for large scale cooking than modern fuels.

Energy content of charcoal: charcoal has been found to possess higher calorific value than fuelwood averaging 30MJ/kg just behind kerosene which has 43MJ/kg and has also been found charcoal to be most suitable biomass fuel for indoor cooking because of its smokeless burning process and can be used for other household functions like ironing with the charcoal iron.

Ease of Packaging: Closely related was the agreement that charcoal can be stored over a long period of time without the fear of insect infestation or loss of energy content as long as it is kept dry. Its relative ease of transportation and packaging makes it a better fuel choice for its users.

Charcoal is mostly consumed by urban households in several African countries, providing cheap fuel for all income classes (Kambewa et al, 2007; Uisso and Balama, 2011; Agyeman et al, 2012). The availability of modern fuels especially kerosene in most urban centers in Nigeria greatly reduces household consumption of charcoal. However there are signs of continuous increase in charcoal production amidst increased advertisement of the product as one of the most profitable export commodities in Nigeria at the moment.

5.0. RECOMMENDATIONS

It is imperative that proactive steps be taken to ensure the sustainability of forest resources in view of current socio-economic realities. The following recommendations are presented to chart a way forward in achieving this aim:

- i. Aggressive pursuit of improved farming productivity as well as promotion of other sustainable rural income sources.
- ii. Inclusion of climatic variability data in the extension services provided to farmers
- iii. Effective forest monitoring by radically improving working facilities of foresters
- iv. Promotion of community forest management
- v. Formalization of the charcoal production sector by annual re-licensing for producers.
- vi. Research and development of efficient charcoal production systems that fit the local climate and can be easily adopted in view of current economic realities of the producers.

6.0. CONCLUSION

Global distribution of net forest loss in from 1990 to 2011 took place in the tropics while net forest gain took place in the temperate and boreal zones (FAO, 2011). For tropical countries like Nigeria to record outstanding progress in development, they must intensify their focus on the promotion of rural agriculture and protect their forest resources, de-emphasizing short-term financial rewards which have long-term environmental and socio-economic implications.

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PARADIGM SHIFT IN PHYSICAL GEOGRAPHY RESEARCH STRATEGIES FOR NATIONAL TRANSFORMATION

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ABSTRACT

There is no doubt that geography as an academic discipline and an umbrella specialty for the Earth Sciences has encountered tremendous changes. These changes reflected in both theoretical and conceptual foundations particularly with the advancement of information technology, spatial sciences and location-based technologies. Physical geography, the better half of geography that deals with natural processes and their interrelationship with man includes specialities and disciplines such as Hydrology and Water Resources, Climatology, Biogeography, and Geomorphology, amongst several others. These disciplines form a single geographical unit with research focus on the emerging issues that affect the environment and the impact on humanity. As such, a paradigm shift in the scientific approach towards problem solving, having progressed from the descriptive and landform identification or phenomenal nomenclature to application of geospatial information technology to data mining, predictive modeling and dynamic simulation of environmental processes. These emerging approaches and applications have helped in both identification and analysis of environmental challenges or its prediction thereof. This article provides an overview and potential future direction of research in Physical Geography at the Department of Geography, University of Lagos. Various examples of completed and published researches conducted at the department using the emerging geospatial information technology were synthesised. The unit research agenda, direction, and strategies in contributing to the global environmental crises and national challenges and change transformation were presented. This current research approach using geospatial information technology in conducting research that proffers solution to burning national environmental challenges need additional supports and facility enhancements. There is the need for continuous participation by the University of Lagos in the ESRI Virtual Campus GIS.

INTRODUCTION

As change and dynamics are driven by time, so is science. Indeed, the development of science is awash with new ideas and approaches. Sometimes, these were integrated with mainstream research and academia while some were left at the fringes either waiting to be developed and integrated or suspended for further considerations. Physical geography, which is considered as a fissiparous enterprise, the academic openness and avenues for expansion of innovative research directions, makes it virtually inevitable that principles in the pure sciences such as the photon theory and radiation principles can be developed and adapted to form key foundational principles in a subfield like Climatology (Nick Clifford – dictionary of human geography). This development is not a new pattern as physical geography has thus permitted itself in such a way that in some quarters it has been referred to as Earth Science (Orme, 2002).

Changes in science are a reflection of the larger society and the philosophy of man. This assertion led what to what Thomas Kuhn in 1962 developed into the concept of paradigms (Kuhn, 2012; Inkpen, 2005). Paradigm in its simplest term is the empirical stands on which research activities rest. It acts as a pivot for studies that emphasizes the importance of human context for science. Research techniques in physical geography have undergone different epochs of activities, observations and methodological practices, starting from the medieval era where the elementary rudiments of descriptive method of analysis were employed, which is highly biased and subjective to basic field-based technique. The application of each of

these methods over time has limited the potential capability of physical geography in understanding the complexity of problems related to physical environment such as problems of flooding, drought, desertification, deforestation, geo-hazard and climate change. Each of these problems has been a major global issue and national challenge to the quest for development especially in developing nations.

The development of geo-information technology via application satellite remote sensing to already develop aerial photography and the adaptation of information system into GIS, aided the understanding of difference earth-based processes including the earth-atmosphere system. Even the existing aerial photographs were used mostly as base maps for feature-identification mapping of landforms. Faniran and Jeje (1983) stressed that the development of geomorphological mapping through fieldwork is rather cumbersome, time as well as energy and resource consuming, which makes the final production of the map to be subjective and unreliable. Evans (2012) therefore suggested that there is a need to bring together the achievement within the fields of theoretical geomorphology, morphometric analysis and the designation of land systems for development purposes which can be achieved through the application of geo-information techniques.

Just as it is in most scientific scholarship enterprise, the starting point is usually characterised with more of descriptive methodology. Gradually, the integration of analytical techniques and mathematical cum statistical tools will further broaden the ken of the scholarship. This was the case with most departments of geography in Nigeria. Research approach during the early stage of the discipline in Nigeria was characterised by;

1. Laboratory experimentation involving the use of analogue spread sheets, graphs and notes;
2. The use of a single manual calculator to compute and analyse research data;
3. In situ measurements and mensuration through the use of crude chains surveys and tapes that are easily affected by meteorological factors;
4. Recording of in situ climatic parameters are entirely manual rendering the data error-prone and lack of consistency and periodicity of data entry;
5. Geomorphic and landform studies are fundamentally descriptive with mere identification of landforms and related features on from topographic maps and highly limited field surveys; and
6. Biogeographic studies are limited to plant and animal distribution, while ecosystem studies are mere identification and soil studies are fundamentally limited to literature in situ soil sample collection, which is then transferred to different laboratories for outputs.

Geo-informatic research strategy has proven to be efficient and effective in solving the generic of problems associated with these aforementioned field-based techniques in physical geography. Also, in analysis of spatial diffusion and processes using simulation techniques, where it was time-consuming in the case of generating changing patterns over time using field-based method. Johnston (1997) asserts that in each of these, GIS technology has increased the efficiency of research endeavours in physical geography as it was shown in Openshaw's proto-GIS work on the location of nuclear facilities (Openshaw, 1986) and his 'geographical analysis machine' for the evaluation of significant clusters of disease outbreaks (Openshaw *et al.*, 1987).

Apart from its seemingly close related nomenclature, geo-information technology particularly Remote Sensing and GIS has found geography to be the apt domiciling arena for research, development, training and further applications. Indisputably, geography remains the study of differences across the Earth's surface. Geographic research has been centred on: environment – or nature, space (spatial studies,), and location. In other words, geographers are concerned

with the philosophical inquiries that deals with “where”, “how”, “what is where” and “why” of the physical environment on which material life is based, the spatial organizational structures erected and operated by human societies to sustain and promote their material well-being. In view of this, geo-information technology, in addition to improving the efficiency and effectiveness of existing geographic research approaches, opens opportunities for work in previously- uncharted territories such the consideration of the third dimension and above (Johnston, 1997).

ESRI the developer of the world-leading GIS software ArcGIS developed the ESRI Virtual Campus programme specifically for building capacity in geo-information technology in selected higher institution of learning across the world. The virtual campus programme is an online classroom where students are expected to take classes in specific aspects of GIS and Remote Sensing with certificates being awarded sequel to the completion of each module. In 2013, the University of Lagos through the Department of Geography applied for inclusion into the virtual campus programme. The request was granted on merit and the license was granted and become operational in 2014 with a two-year license cessation concordance. Consequently, the university was listed as the only university in Nigeria and unarguably one out of ten in Africa with such license. Since the operation of this programme, students from the undergraduate and postgraduate scholarship divide from various departments such as surveying and geoinformatics, urban and regional planning, geosciences, criminology, environmental management, botany, community health amongst several others have been trained and certified by ESRI. Most of the applications of this tool in geography have aided the comprehension of physical geography as well relation geo-environmental issues.

In this review, we analysed the current research direction and perspectives undertaken by the physical geography section of Department of Geography of the University of Lagos using the geo-information technology. This also includes a review of the current approaches towards physical geographic issues with the designed methodology and the results displayed as maps.

History of Physical Geography

Conventionally, the historical account of paradigm shifts in physical geography can be summed into two developmental phases – pre-contemporary and the contemporary. These two periods were distinctively separated by the prevailing scientific thinking of the time coupled with customary philosophy, extent of technology, voyages and trades. Slaymaker (2012) claimed that the Chinese within the pre-contemporary era had pioneering efforts via hydrographic books and coastal descriptions, gazette of local topographies, map design and geographical encyclopaedias as far back as 5th Century BC. Al-Idrisi led other Islamic scholars such as Ibn Khaldun and Ibn Batutta in providing the geographical nature of towns and territories sequel to his pilgrimage to Mecca. The Greek were uniquely with via advancement topographic descriptions and explanations of the earth while mathematics and astronomy aided their measurement of the earth and planetary. This period marked the actual development of physical geography with the works of Iliad and Odyssey, Strabo and Ptolemy. The European renaissance period expose further descriptions of earth landforms led by the Prince Henry the Navigator (Slaymaker, 2012) on his worldwide voyage. Bernhard Varenus led a clear voice in the claim geography is a science this further espoused by Bacon, Galileo and Descartes.

The actual emergence of physical geography as a discipline was led by the 17th century scientific revolution and intensified by the 18th century with the subject of natural history and natural history. This period was driven by accuracy in stating the actual phenomenon as driven by changes in the physical sciences coupled with moral philosophy. This led to the

emergence of theories such as scared theories of the earth e.g. Burnet and Buffon. Immanuel Kant of University of Konigsberg, Captain Cook, Forsters, Johann Reinhold, and Georg Reinhold made fundamental contributions towards the development of methodologies to the discipline. Alexander von Humboldt particularly had a profound impact on the science of physical geography developing Biogeography, producing the first world map depicting temperature, transect across mountain ranges, and changes in climate and vegetation.

The contemporary phase was led by massive multilateral advancement in understanding the physical earth. Jean Baptiste de Lamarck, Charles Lyell, and Charles Darwin advanced process studies. The Process Studies is a culmination of all attempts explaining the universe and the formation of the earth. Charles Darwin's Origin of Species (1859) took centre stage with natural selection as a determinant intra-generational extension of traits (Pidwirny, 2006). The concepts of uniformitarianism (by James Hutton), cycle of erosion (by W.M. Davis), catastrophism, amongst others were the leading lights in the varieties of changes of paradigms in the ontology and epistemology of physical geography. The era of quantification in which measurements, surveys and geometry subsists had a great impact with development of modern field techniques and methodologies. Paleogeography particularly paleoclimatology, paleobiogeography, and others have taken centre stage of research in physical geography. Systems theory and model development paradigms have had a lasting impact on the discipline. These paradigms have been aided further by the development and emergence of geoinformation/geomatics involving the use of satellite remote sensing technologies and GIS (geographical information system). Consequently, different models of climate scenarios have been developed in other to demystify the differing philosophies about the earth, climate variability and changes, land change and the impact on the earth and its natural processes. Indeed the emergence and development of the field of physical geography is overstocked with changes in philosophy, methodology, scientific and technological revolution and emerging earth change issues.

Research Directions and Perspectives

Our focus as regards under our immediate environment at the department of Geography, University of Lagos particularly with the use of geo-information technology has led to diverse research directions in which key aspects of the environment in Nigeria has been investigated. We have focussed on themes across disciplines such as hydrology, water resources, geomorphology, and landscape ecology amongst others. Issues pertaining to modeling of the land, geo-hazards such as gully erosion, flooding, seas level and impacts on coastal ecosystems, sediment yield, ecosystem services change as impacted by geomorphic change, inundation mapping, as well as land use change impact on land surface temperature have been researched with focus on further research being forged. Our research agenda is to continuously apply geospatial technology in solving geo-hazard-environmental problems at all scales. We hope to significantly contribute to continental data mining, predictive modeling and dynamic simulation of environmental phenomenon and processes in Africa using geospatial information technology. Some of our research outputs using geospatial technology for solving environmental problems in Nigeria are presented in the following subsections.

Changes in flood risk in Lower Niger - Benue Catchments

This study was primed on the impact of flooding inhibiting human activities and natural milieu. Thus, Odunuga, et al (2015) conducted a study to unearth the impact of changes in flood risk of the lower Niger–Benue catchments. Historical flow data was geo-statistically integrated with landuse and landcover changes in the study area. Long term mean peak flow values from Lokoja, Jederbode, Jebba Worobokri and Makurdi were analysed alongside GIS-derived place-based Flood Plain Vulnerability Index (FPVI) (figure 1). The results were depicted statistically to indicate that the 2012 flood event had over 50% inundation extent

within the floodplain of the studied catchments and segments. Cartographically, the results were depicted in form of catchment segment maps depicting the impact of the changes in flood risk. Four levels of governance control of impact and adaptation hierarchy were identified - community level, local authority, state and national concern.

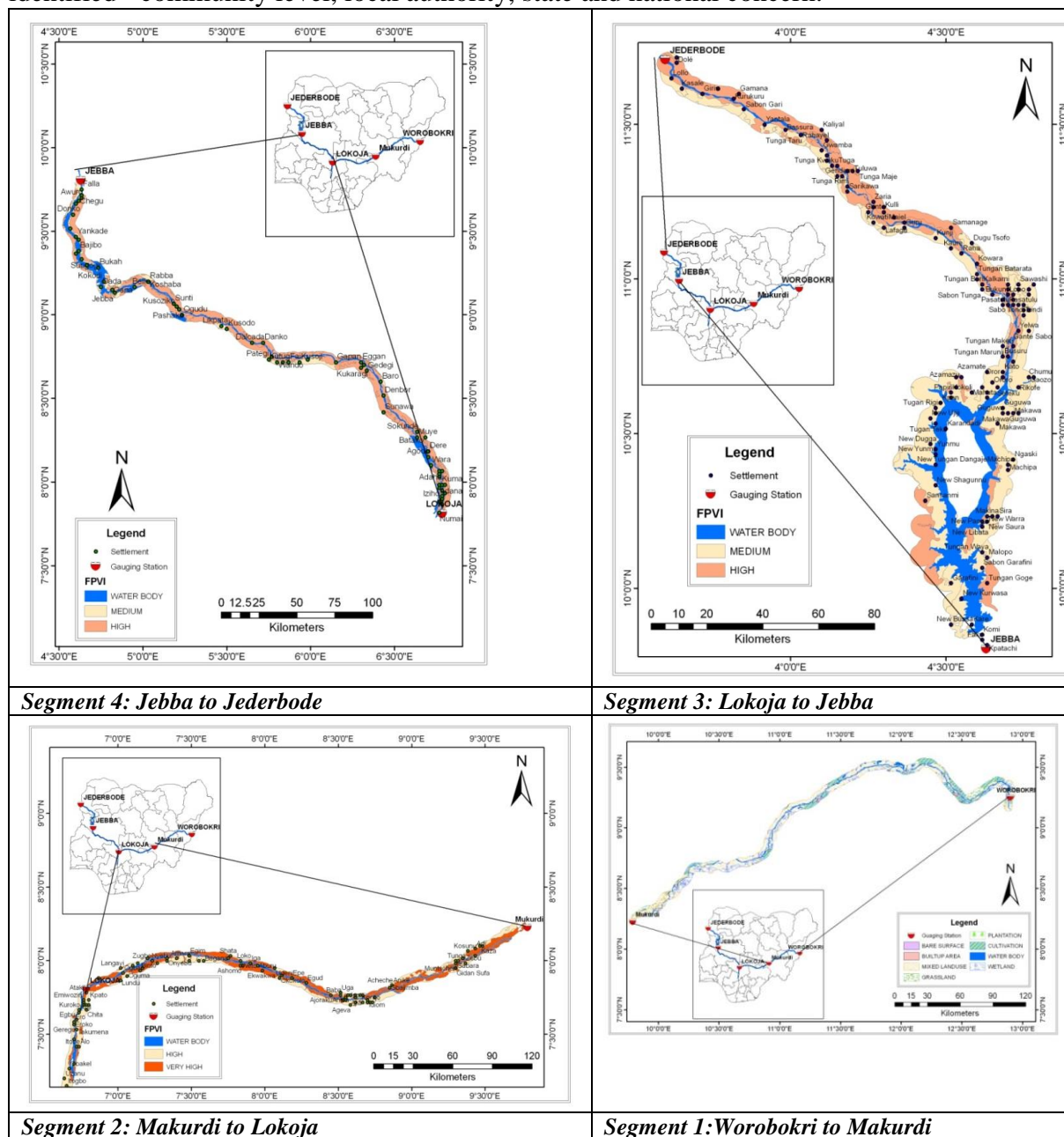


Fig. 1: Flood Plain Vulnerability Index (FPVI) for each of the catchment segments

LANDCOVER CHANGE, LAND SURFACE TEMPERATURE, SURFACE ALBEDO AND TOPOGRAPHY IN THE PLATEAU REGION OF NORTH-CENTRAL NIGERIA

A region is defined by the characterisation of the environmental parameters. Odunuga and Badru (2015) explored the relationship between land use and cover change in the plateau region of north-central Nigeria (Barakinladi, Jos, and Kafachan) as defined by land surface temperature, surface albedo and topography. To establish this relationship, remote sensing and geostatistical techniques were adopted using spatial data that ranged between 1986 and 2014. It was observed that as built-up areas (settlements) and agricultural land enlarged, forest areas decreased. This decline has resulted into increase in land surface temperature.

The study noted that the continuance of the trend might impact adversely on the ecosystem and its associated natural ecological functions. The outcome of the study as depicted in maps is shown in Figure 2.

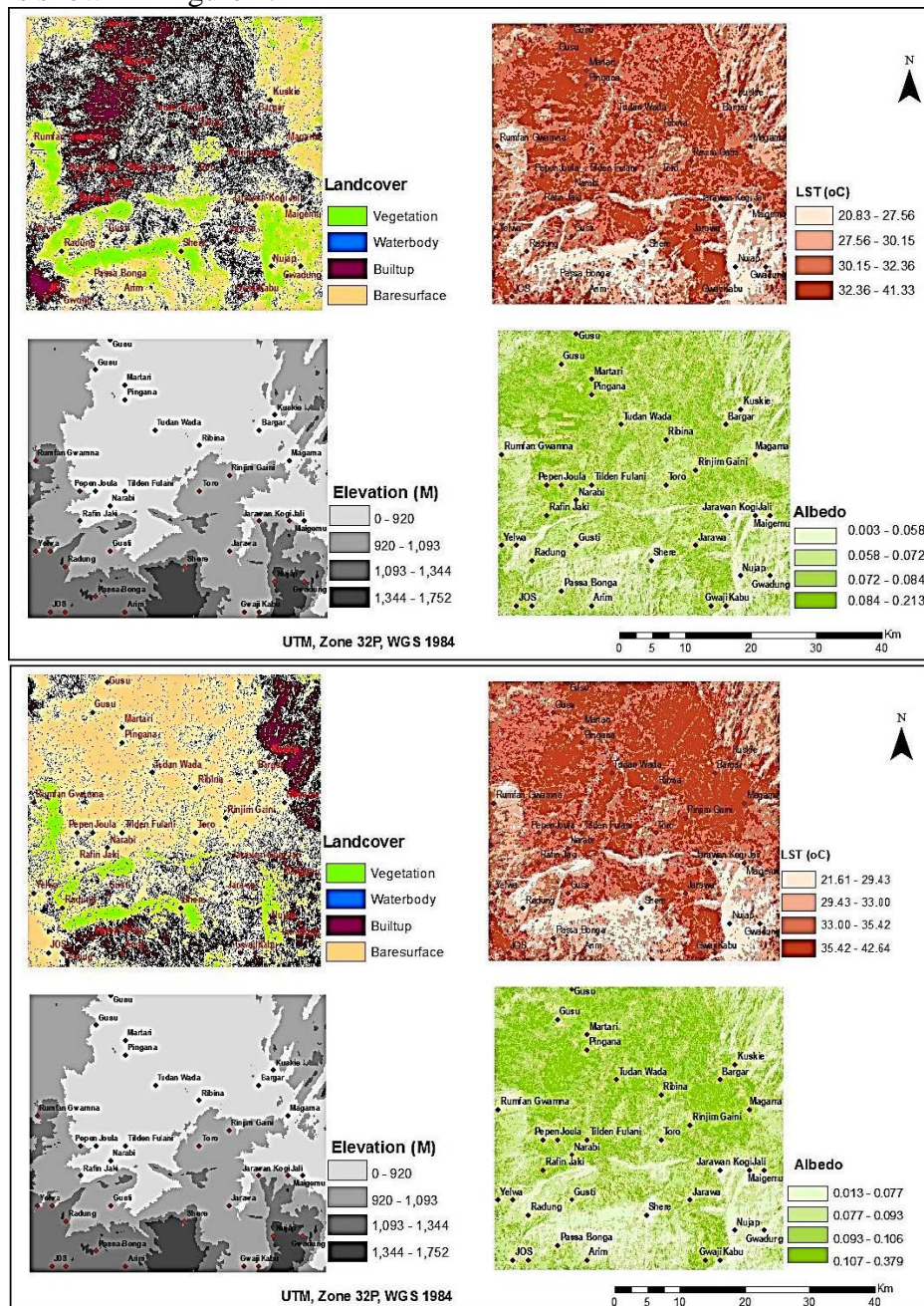


Figure 2: Dynamic topographic relationship between land cover change, elevation, land surface temperature (LST) and surface albedo for Jos 1986 (Upper diagram) and 2014 (Lower diagram)

CLIMATE CHANGE, SEA LEVEL RISE AND COASTAL INUNDATION ALONG PART OF NIGERIA BARRIER LAGOON COAST

Overtime coastal areas have experienced changes owing to ocean surges and other coastal morphological processes driven by global climate change and some local factors. Odunuga, et al (2014) conducted a study against this background in coastline of Lagos. The study employed a GIS-based iterative simulation scenarios based on Intergovernmental Panel on Climate Change–Special Report on Emissions Scenarios (IPCC–SRES) classification and Locally Oriented Economic Development Scenarios (LOEDS). The result showed that the worst-case sea level rise scenario at the IPCC-SRES model is less that 0.13% of the study

area while LOEDS depict 4 metre rise in sea level that will impact the study area. The two mapped scenarios at 3 m and 10 m sea level rise are shown in Figure 3. Integration of coastal protection infrastructures was suggested for any developmental activity in the study area.

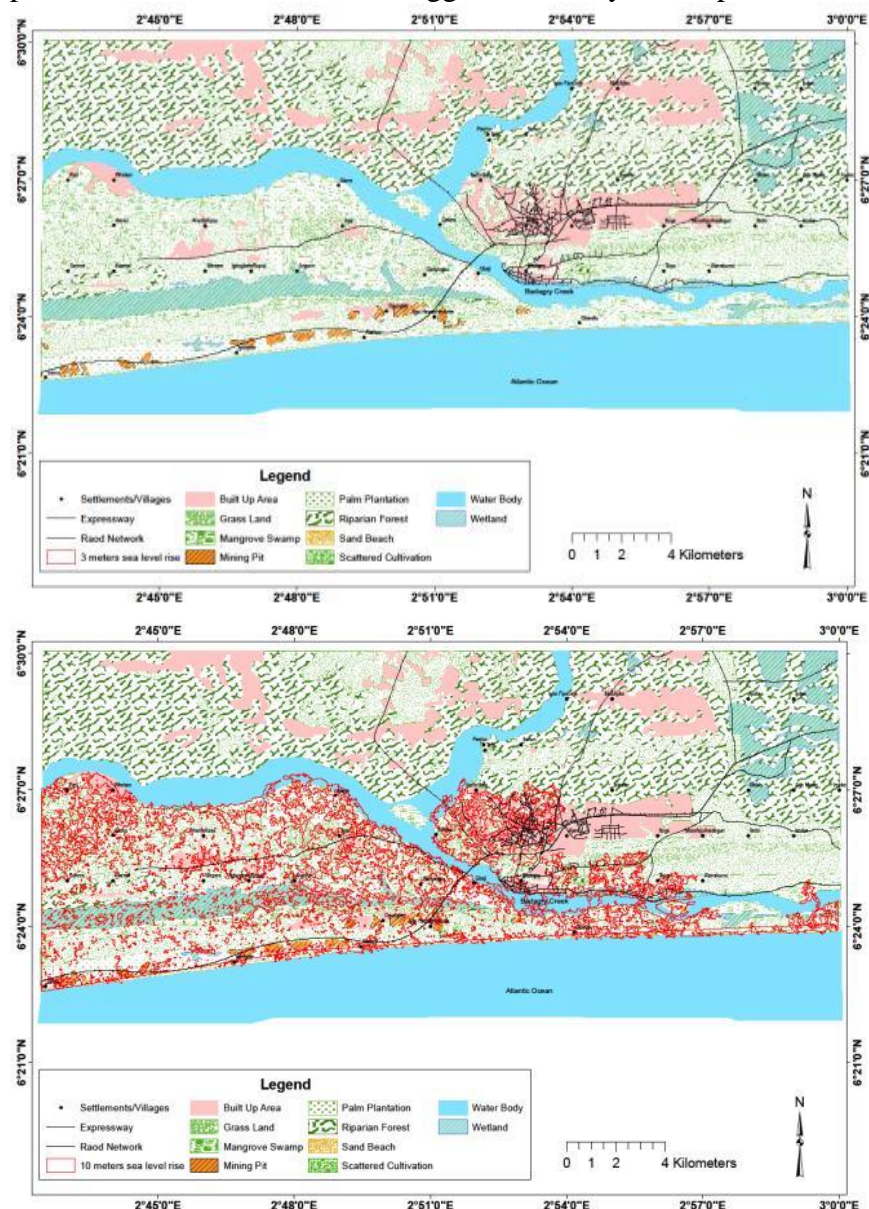


Fig. 3: Coastal Lagos sea level rise scenarios; 3 metre (up) and 10 metres (down)

MULTICRITERIA FLOOD RISK ANALYSIS OF LOWER OGUN RIVER BASIN

Flooding is a global phenomenon with antecedent damages and destructions. Raji, et al (2014) conducted a study in the Department of Geography, University of Lagos to analyse flood risk of the lower Ogun River basin of southwestern Nigeria. Landuse and landcover, rainfall, NDWI, DEM, slope, geology and population density were used as criteria to develop a Geospatial-based multicriteria methodology for flood risk mapping. About 77.6% of the study lies within flood hazard zone while 60.6% lies within the flood risk zone. A green belt indicating safety net for flood zone delineation was suggested. A map depicting the flood hazard and the flood risk is shown in Figure 4.

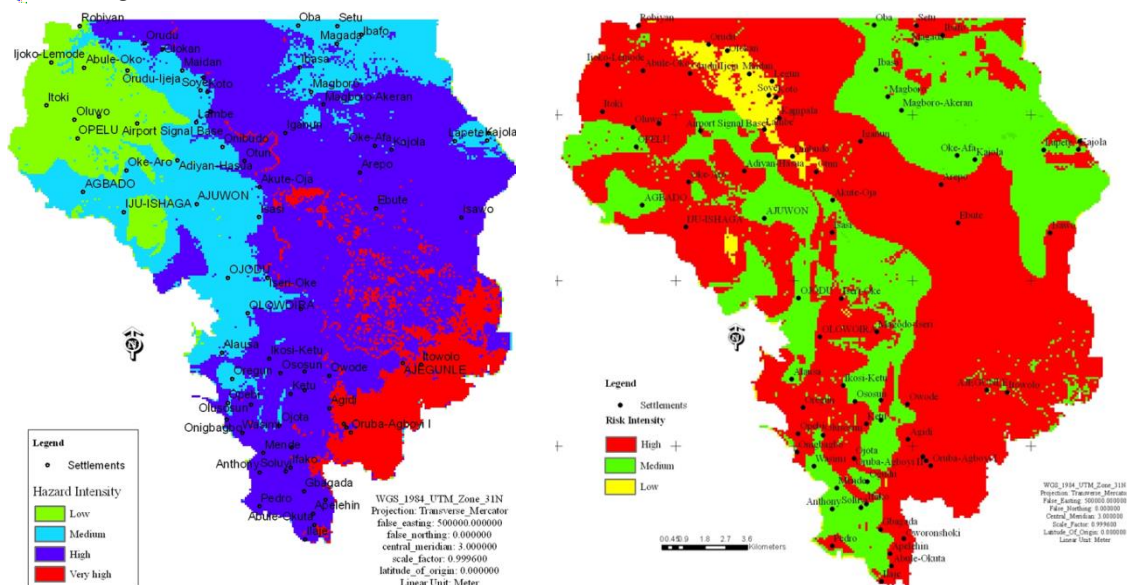


Figure 4: Flood hazard (left) and flood risk (right) of the Lower Ogun Basin

Flood Frequency Analysis and Inundation Mapping of Lower Ogun River Basin

Measurement of flood occurrence and extent of possible inundation is a fundamental step in understanding the possibility of a particular flood event reoccurring. Odunuga and Raji (2014) adopting geospatial technology approach and Gumbel and Log Pearson Type III in the geo-statistics components of Arc GIS computed the flood frequency analysis and mapped the resulting inundation of lower Ogun River. Topographic data of the study area and water level values gauge measurements were used as input data. The study area is projected to be inundated further to 30% from an initial 23%. It was recommended that sustainable planning and developmental pattern of hydrological fluxes should be taken into consideration.

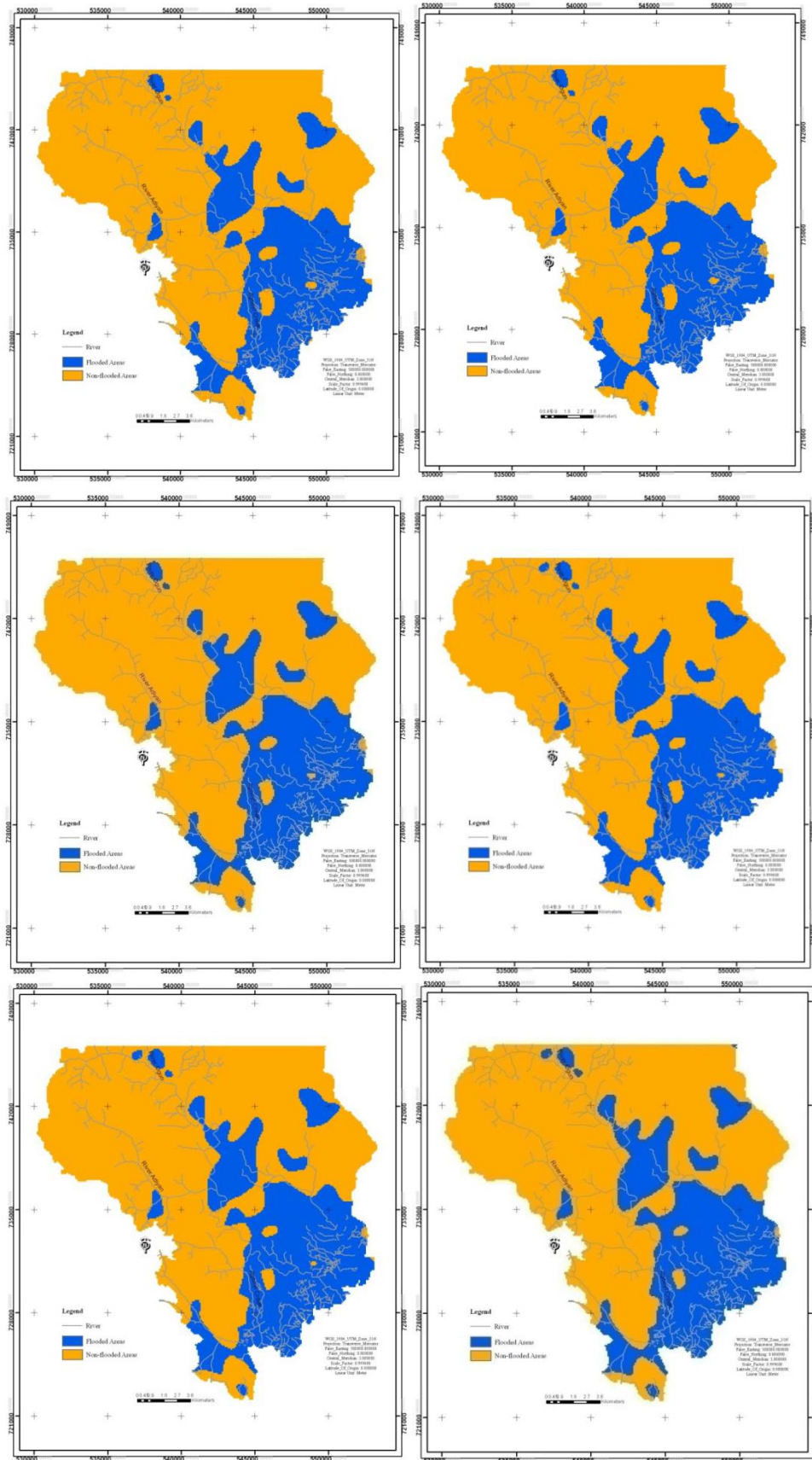


Figure 5: Floods inundation maps for 2, 5, 10, 25, 50 and 100 years return period of the study area

Conclusion

Development and by extension historiography of science, which is a reflection of the larger human society, is replete with dynamism. Paradigm shift is inevitable in such an environment where thoroughbred development-based orientation drives the improvement in operations and direction. In the same vein, a discipline such as physical geography is driven by the extent of paradigm shifts the discipline has encountered. In this review, we have deliberated on physical geography and the changes the discipline has experienced over years. We have also connoted the importance of the modern geographic tools of geo-information technology in the enhancement of research in the discipline of physical geography. We have also hinted on how the Department of Geography of the University of Lagos have advanced the geo-information through the ESRI Virtual Campus programme. Students of the departments and geo-allied courses have now joined their various colleagues across the globe to be trained in utilising the modern tools of geospatial technology to resolving space-defined problems.

Haven cited a few examples of the recent researches and studies within the department of Geography, University of Lagos as contributed by the ESRI Virtual Campus, it is only beneficial if the university can extend this training for the forthcoming students. With the extension of this programme, data from the automatic weather station can be utilised based on a GIS-based model to study possible climatic variability and its impact in the University of Lagos and by extension the city of Lagos. It will help to further deepen the already-existing cordial association between the university and ESRI, which might include staff training and exchange programmes. In the long run, it will also encourage students' interest and further research within the physical geography. Hence, the continuance of the ESRI-Unilag will create the needed environment and the requisite boost that will elicit research for national development and change transformation.

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DYNAMIC INTERACTIONS AMONG INFRASTRUCTURE DEVELOPMENT, UNEMPLOYMENT RATE AND POVERTY LEVEL IN NIGERIA (1980-2013)

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ABSTRACT

The study investigates the dynamic interaction among Infrastructure Development Unemployment and Poverty Level in Nigeria. The study examined the interactive effects among Infrastructure Development Unemployment and Poverty Level; and investigated the nature and direction of causality among Infrastructure Development Unemployment and Poverty Level in Nigeria. This was with the view to providing empirical evidence on the linkages among Infrastructure Development Unemployment and Poverty Level. Secondary data were used in this study. Data on government capital expenditure as measure of government capital expenditure, unemployment rate and Real consumption expenditure per capita used in proxy poverty level were sourced from statistical Bulletin published by Central Bank of Nigeria (CBN) and the National Bureau of Statistic (NBS) Abuja. Vector autoregressive Model was conducted in determining the interaction effects among the three variables and Pair-Wise granger causality Test was conducted in determining the direction of causality among variables. The empirical result showed that an attempt to reduce poverty brings about a reduction in unemployment rate in the country. Moreover, government expenditure on capital projects reduces the level of unemployment over time in Nigeria. More also, an attempt to reduce unemployment brings about reduction on poverty level while, poverty increases at an initial stage of increase in capital expenditure but reduces poverty level over time. The study also indicated that as unemployment rate increases the economic policies engaged by the government increases the capital expenditure of the government. There exists no causal relationship among the variables in Nigeria as revealed by the study.

Keywords: Unemployment rate, Poverty rate, Real consumption expenditure per capita, Road transport infrastructure and VAR.

1. Introduction

Adequate supply of infrastructure services has long been viewed as a key ingredient for economic development, both in the academic literature (starting with the work of Aschauer, 1989) as well as in the policy debate (e.g., World Bank, 1994). Over the last two decades, academic research has devoted considerable effort to theoretical and empirical analyses of the contribution of infrastructure development to growth and productivity. More recently, increasing attention has been paid also to the impact of infrastructure on poverty and inequality (Estache et al. 2002a; World Bank, 2003, 2006).

Despite the witnessed of significant increase in economic growth over some years in Nigeria, there have been none significant improvement in the people access to good infrastructure. According to United Nations Environment Programme (2012) many African countries Nigeria inclusive, faces weak, inadequate and decayed infrastructure Although, Infrastructure is not the end result of economic activity; rather it is the framework that makes economic activity possible. Every developed nation in the world plus those still classified as “developing” are working to improve the fundamental tools of modern economic activity. This is simply because infrastructure is a means to an end given its importance in determining the progress of economic activities that can bring about job creation and reduction in poverty.

Over years, studies have been devoted to assessing the effects of infrastructure on growth, productivity in Nigeria (see Tella et.al 2007, Onakoya et al., 2012 and Akanbi et al., 2013, while the empirical study of the effect of infrastructure development on employment and poverty reduction seems to scarce, except for the work of Ogun 2010 who considered the effect

of infrastructure on poverty. Moreover the work of Ogun 2010 fails to establish the linkage of infrastructure development which may not directly leads to economic growth and poverty reduction without the employment creation channel. More also, is the effect of decayed infrastructure which have set many industries and organisation either fold-up or packed out of the country for not be able to break even talk more of making profit, e.g. Dunlop, Afri-cola, Elephant cement among many others. Therefore, it will be empirical to investigate if this scenario has an impact on unemployment and poverty level in Nigeria.

Although, studies (see Aschauer (1989c); Canning (1999); and Canning and Bennethan (2000); Vickerman (2001); Banister and Berechman (2001); Xu et.al (2007); Liu et.al. (2005); Zhang et.al. (2007) Jha and Singh (2001)) established that, there is a positive impact of public and infrastructure capital on economic growth. However the interaction effect among infrastructure development, employment creation and poverty reduction remains an empirical issue that seems to be scarce in the literature. Therefore this study, intends to fill this gaps by looking at the dynamic relationship among infrastructure development, employment rate and poverty level in Nigeria. Based on this, the following research questions are raised:

- (a) What are the interactive effect among infrastructure development, unemployment rate and poverty level in Nigeria?
- (b) Is there any causal relationship among infrastructure development, unemployment rate and poverty level in Nigeria?

Therefore, in attending to these questions, the following objective will be achieved.

- (i) examine the interactive effect among infrastructure development, unemployment rate and poverty level in Nigeria,
- (ii) Investigate the causal relationship among infrastructure development, unemployment rate and poverty level in Nigeria

2. Literature Review

The starting point was Aschauer's (1989) finding that the stock of public infrastructure capital is a significant determinant of aggregate TFP in the USA. However, his estimate (based on time-series data) of the marginal product of infrastructure capital—as much as 100% per year—was implausibly high. The massive ensuing literature on the output impact of infrastructure has employed a variety of data, empirical methods and infrastructure measures. The most popular approaches include the estimation of an aggregate production function (or its dual, the cost function) and empirical growth regressions. Infrastructure is variously measured in terms of physical stocks, spending flows or capital stocks constructed accumulating the latter, (see Straub, 2007 and Ayogu, 2007) for more literature review.

Lately, Jiwattanakupaisarn, et al. (2009) analyzed the relationship between U.S. highway supply and employment using time-series cross-sectional data on roadway lane miles and private sector employment for the 48 contiguous states over the period of 1984–1997. The analysis found that employment growth is temporally influenced by annual growth in major highways within the same state and all other states, but the existence and direction of these effects depend on highway type and time lags. Jiwattanakupaisarn, Noland and Graham (2010) have similar results

Sadananda (2006) explore whether expansion of railroad transportation facility acts as a means to supplement domestic investment for achieving a higher level of economic growth in India or not, by constructing a railroad transportation index (a proxy for railroad transportation facility) by using Principal Component Analysis (PCA), a special case of factor analysis. The findings suggest that if India wants to achieve 8 percent economic growth target as mentioned in

the Tenth Five Year Plan (2002-2007), it should take some special measures and deepen the ongoing reform process to encourage private investment in infrastructure, especially in construction of railways and roads

Jha and Singh (2001) attempts to quantify the technical efficiency (productive efficiency) of twenty-three major Indian State Transport Undertakings (STUs) mainly providing rural and inter-city passenger transport services for the year 2000-01. They estimate the stochastic frontier production function by using the maximum likelihood method and find that there is huge disparity in technical efficiency across STUs ranging from 56.15 percent for Madhya Pradesh State Road Transport Undertaking to 98.99 percent for Tamilnadu State Transportation Corporation Ltd. (Kumbakonam Division II). Average of technical efficiency scores of sample STUs was found to be 84.22 percent. However, the scope of the above study is limited to road transportation of two states in India, i.e. Madhya Pradesh and

Tamilnadu. Karne and Venkatesh (2005) examine whether splitting of Maharashtra State Road Transport Corporation (MSRTC) into smaller regions would actually help in its financial recovery and improve financial profitability by means of enhanced input productivity. They have measured technical efficiency through Malmquist DEA technique and found that increasing returns to scale prevailing in all the six regions of MSRTC and MSRTC as an organization not adopting cost minimization techniques. Here also, the scope of the study is limited to Maharashtra State Road Transportation.

In a more empirical study by Ogun (2010), the impact of infrastructural development on poverty reduction in Nigeria is addressed. Specifically, the relative effects of physical and social infrastructure on living standards or poverty indicators are examined, with a view to providing empirical evidence for the implications of increased urban infrastructure for the urban poor. The paper employs secondary data for the period of 1970:1 to 2005:4 while the Structural Vector Autoregressive (SVAR) technique is adopted for its analysis. The study unequivocally finds that infrastructural development leads to poverty reduction.

Olorunfemi. (2008) examines the direction and the strength of the relationship between infrastructural services and manufacturing output in Nigeria using time series data from 1981 to 2005. The study examines the unit root problem and cointegrating properties of the data. The unit root problem was tested for by using Augmented Dickey-Fuller (ADF) and Phillip Perron tests. To determine which of the shocks, are the primary causes of variability in the endogenous variables, the study used Vector Autoregressive (VAR) model. Also Granger causality test was carried out. Results showed that the present transport and electricity service in Nigeria did not cause growth to occur in the manufacturing sector. It was also revealed in the study that telecommunication and education had contributed to the growth in the manufacturing sector.

Onakoya, Salisu and Oseni (2012) investigate the impact of infrastructure on economic growth in Nigeria. A multivariate model of simultaneous equations is deployed (1970 to 2010). The paper utilizes three-stage least squares technique to capture the transmission channels through which infrastructure promotes growth. The research covers 40 years. Their finding shows that infrastructural investment has a significant impact on output of the economy directly through its industrial output and indirectly through the output of other sectors such as manufacturing, oil and other services. However, this study also fails to inform us of the reason for selecting its proxy for infrastructure and also the condition for selecting the sectors used in making conclusion on economic growth.

Interestingly, and more implicit is the work by Tella, Amaghionyeidiwe, and Adesoye, (2007), that investigated the simultaneous relationship between telecommunication and the

economic growth in Nigeria for the periods 1993 to 2004 using three Stage least square. They find that, capital, labor, number of telephone; sum of main lines and cellular teledensity positively impact economic growth in Nigeria. Interestingly, none of the studies have consider transport infrastructure on economic either as physical or as an investment in it.

In a more recent study, Akanbi, Bamidele and Afolabi (2013), there is an examination of the impact of transportation infrastructure improvement on economic growth in Nigeria for the period of 1981 to 2011, using the Ordinary Least Square Regression (OLS) technique, and generalized Cobb- Douglas production, and extending the neoclassical growth model to include transport infrastructure stock (i.e. output of transport sector) alongside capital stock (i.e. investment on transport infrastructure) as the input and gross domestic product. They realise that transport output and investment made on transport infrastructure in Nigeria has significant positive contribution to growth. However this study is highly faulty for estimating a component of variables on the same variable i.e. using proxy transport infrastructure improvement as output of transport. This study may have suffered the problem of endogeniety that is not accounted for in the study.

2.2 Theoretical Framework

This study modifies the framework of Jiwattanakulpaisarn (2008 and 2010) by expanding the framework mechanism of how provision of transport infrastructure could potentially affect long-term employment and poverty level within the framework of labour market theory.

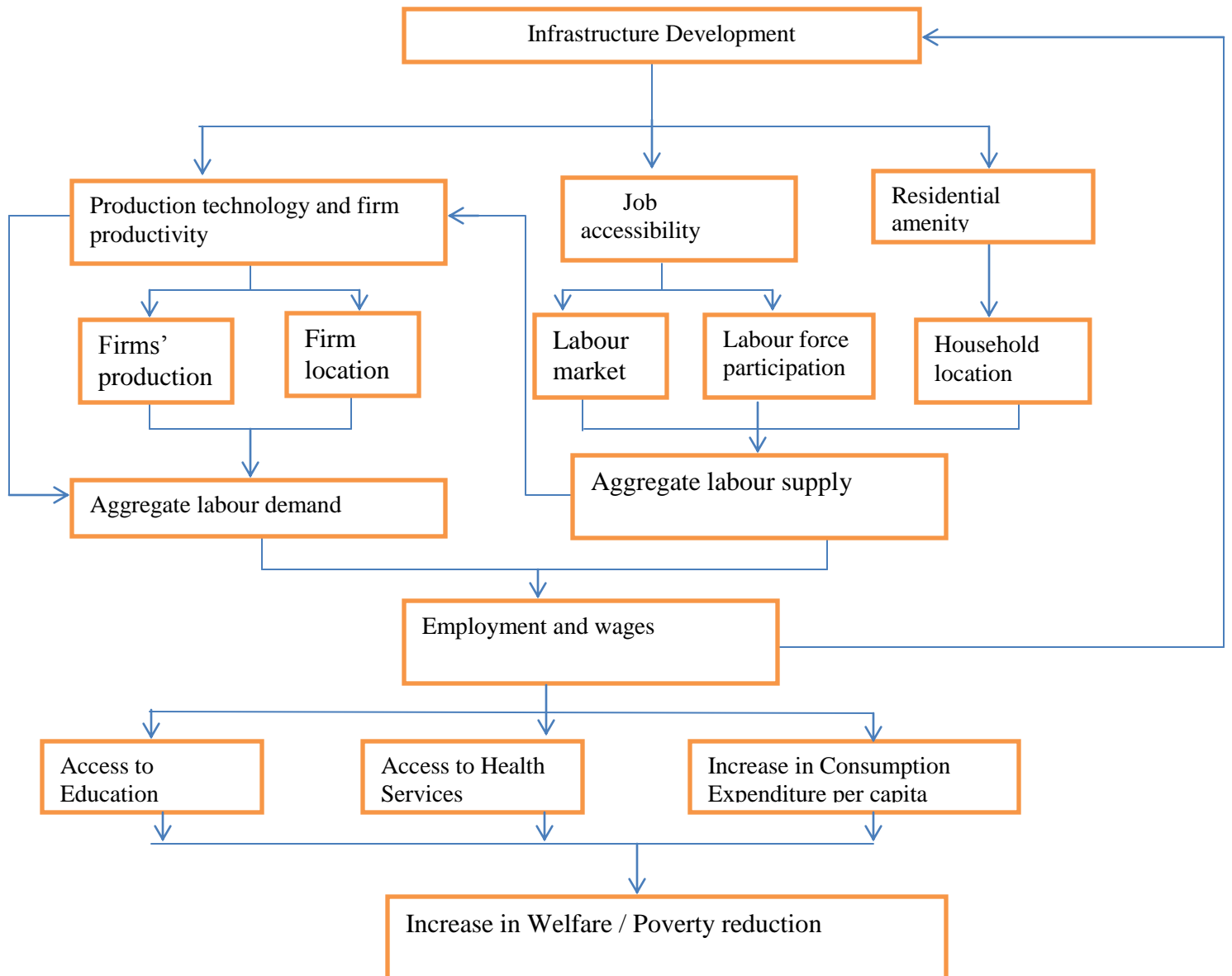


Figure1. Linkages infrastructure Development, Unemployment and Poverty Level

3.1 Methodology

A way to summarize the dynamics interactions among macroeconomic data is to make use of vector autoregression. A VAR is an n equation, n variable model in which each variable is in turn explained by its own lagged values, plus (current) and past values of the remaining $n-1$ variables

3.2 Model Specification

A VAR can be thought of as the reduced form of a dynamic economic system involving a vector of variables z_t .

$$Az_t = b_1 z_{t-1} + b_2 z_{t-2} + \dots + b_p z_{t-p} + u_t$$

where

b_1, b_2, \dots, b_p are the coefficient of government capital spending, unemployment rate and poverty level. Therefore, z_t can be expressed as thus

$$m_t = b_1 m_{t-1} + b_2 p_{t-1} + b_3 gc_{t-1} + e_{1t} \quad 1$$

$$p_t = b_4 p_{t-1} + b_5 m_{t-1} + b_6 gc_{t-1} + e_{2t}$$

$$2 gc_t = b_7 gc_{t-1} + b_8 m_{t-1} + b_9 p_{t-1} + e_{3t} \quad 3$$

Therefore, equation 1 to 3 will be estimated in obtaining the relationship that exists among government spending, financial development and economic growth. Econometric techniques of data analysis will be employed in this study. First objective will be achieved by estimating equation (1) to (3) by analyzing the impulse response of the VAR model while the causality among the variables will be examined using Pair-Wise Granger Causality Test.

4. Empirical Results

Table 4.1: ADF Statistics for Testing Unit Roots in the Variables

Variables	Series	At Levels	At First differences
Capital Expenditure	cax	-2.55	-7.33
Unemployment rate	ump	-1.44	-3.90
Poverty rate	pov	-2.69	-4.18
Critical Value	5%	-2.95	-2.95

E

vidence from the results shown in the table 4.1, confirmed that all the variables capital expenditure, unemployment rate and poverty rate, were not stationary at level. However they became stationary after first difference under the augmented dickey fuller test with intercept only. The study relied on the augmented dickey fuller test with intercept only, since the series are integrated of order one i.e. I (1). Consequently, the presence of significant co-integration relationship among the variables could be determined.

The result of cointegration test confirmed the absence of integrating among the variables, showing that the variables do not converge in the long-run. The study then proceed with the VAR model in estimating the interactions among the variables

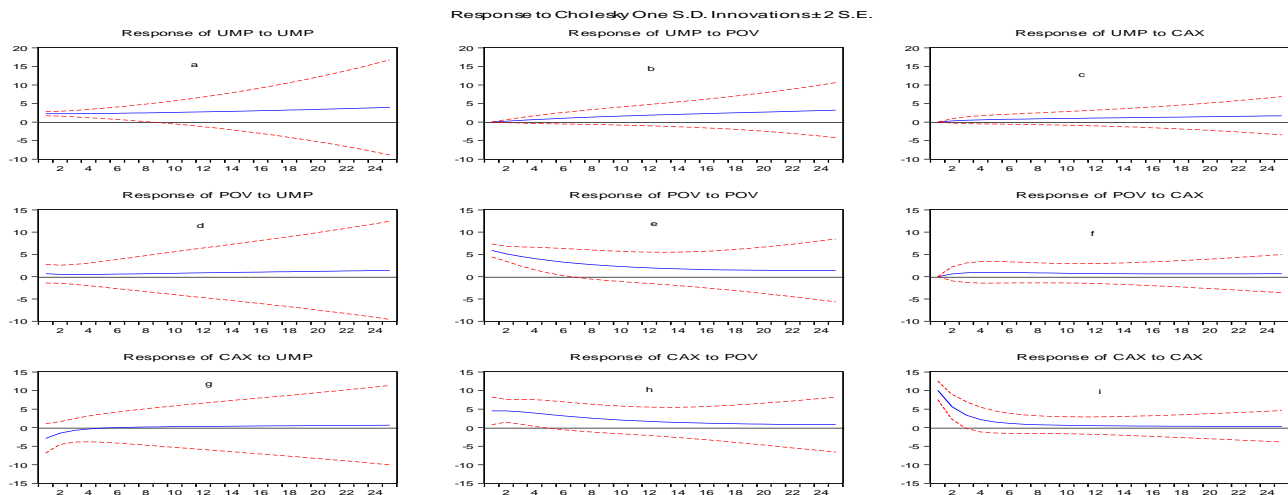


Fig 2: Impulse Response Functions of capital expenditure, unemployment and poverty

Figure 2 shows the impulse responses generated from the VAR models estimated in this study. The IRF measures the response of variables capital expenditure, unemployment rate and poverty rate to an unanticipated shock measured as innovation in the model. In Figure 2, one standard deviation in the model is calculated in percentage. For each of the variables, the horizontal axis of the IRF shows the number of periods that have passed after the impulse has been given, while the vertical axis measures responses of the variables.

Starting with the impact of unemployment rate, a shock to unemployment rate produced a positive response throughout the time horizon of 25 periods. The estimate started from a high value of 2.25 in the first period and increase gradually to 2.3, 2.58, 2.96, 3.41 and 3.9 in the fifth, tenth, fifteenth, twentieth and twenty fifth periods respectively. Since Figure 2(a, e and i) are not important for the analysis of the interactive effects among capital expenditure, unemployment rate and poverty level, we focus our attention on Figure 2(b, c, d, f, g and h).

Figure 2(b) shows that, an innovation to poverty reduction produced a neutral response by unemployment at the initial stage but becomes positive of about 0.8 per cent at the fifth period. This positive response increases gradually to 1.6, 2.2, 2.6 and 3.1 per cent in the tenth, fifteenth, twentieth and twenty fifth periods respectively. This implies that poverty reduction impacted positively on unemployment level. From the result of the VAR impulse response function in Figure 2(c), it can be observed that, a shock on capital expenditure produce a neutral response at the initial stage but becomes positive effect in the over the periods by unemployment. For instance, a positive effect of 0.6 per cent was observed at the fifth period and increased continuously to 1.6 per cent at the last period. This implies that, when an increase in capital expenditure per capital occurs, it does not have any impact on unemployment at first but over time begins to impact positively on it over time.

From the result of the VAR impulse response function in Figure 2(d), it can be observed that, a shock on unemployment rate produce a positive response by poverty throughout the period of consideration. For instance, a positive response of about 0.7 per cent was observed at the first period and reduces to 0.5 per cent at fifth period, but increases gradually thereafter. By implication, as unemployment rate increases the rate of poverty also increases. An interesting observation from Figure 2(f) is the neutral response produced by poverty rate to an innovation on capital expenditure at the initial stage, which becomes positive thereafter. That is, no effect was observed by poverty level at the first period, but a positive effect of about 1 per but which later

reduces in rate over time. This implies that an increase in capital expenditure did not immediately impact on poverty but as time goes on it reduces poverty level.

Figure 2(g) shows that, an innovation in reducing unemployment produced a negative response of about 2.88 at the initial stage, which is at the first period which reduces to 0.12 per cent in the fifth period by capital expenditure, however, the response becomes positive over time. More also, in Figure 2(h), a positive response of about 4.5 was produced capital expenditure as a result of an innovation in poverty reduction but this response reduces gradually over the periods respectively.

Table 4.4: Causal Relationship among Capital Expenditure Unemployment and Poverty

Null Hypothesis:	Obs	F-Statistic	Prob.
LOG(UMP) does not Granger Cause LOG(CAX)	32	0.73423	0.3985
LOG(CAX) does not Granger Cause LOG(UMP)		0.93321	0.3420
LOG(POV) does not Granger Cause LOG(CAX)	32	3.59111	0.0681
LOG(CAX) does not Granger Cause LOG(POV)		0.51425	0.4790
LOG(POV) does not Granger Cause LOG(UMP)	32	2.57424	0.1195
LOG(UMP) does not Granger Cause LOG(POV)		0.37105	0.5472

The result in Table 4.4 shows that, there is no existence of causality among government capital expenditure, Unemployment and poverty level at 5 per cent level of significance in Nigeria.

4.2 Discussion of Results

This study has empirically investigated the existence or otherwise of the infrastructure development, economic growth, unemployment and poverty level nexus in the Nigerian economy. Relating to this issue are the questions of whether infrastructure development leads to job creation and poverty reduction or vice-versa in the Nigerian economy. Also, to know how important is the infrastructure development in the light of pursuing the welfare of the people through an increase in employment opportunity, if reduction in unemployment has been able to contribute to poverty reduction and infrastructure development in Nigeria?

The result of the IRF indicates that the positive effect of infrastructure development through capital expenditure on unemployment rate implies that an attempt by the government to increase capital expenditure by developing the country's infrastructure implies the means of reducing unemployment which later brings about reduction in the poverty level. This is in line with the theory since, infrastructures remains a big cost in the production process and any attempt to reduce this cost could lead to reduction in general price of commodities which led to increase in per capital expenditure of the people that can translate to welfare improvement of the people. Moreover, this study is agreement with the work of Ogun (2010) and Olorunfemi (2008).

5. Conclusion and Recommendations

The empirical evidence indicated that an attempt to reduce poverty brings about a reduction in unemployment rate in the country. Moreover, government expenditure on capital

projects reduces the level of unemployment over time in Nigeria. More also, an attempt to reduce unemployment brings about reduction on poverty level while, poverty increases at an initial stage of increase in capital expenditure but reduces poverty level over time. The study also indicated that as unemployment rate increases the economic policies engaged by the government increases the capital expenditure of the government.

Based on the findings of the study, the following policy recommendations are made; For the Nigerian government to achieve a reasonable low level of unemployment and poverty reduction, government should plan for more capital projects in the country. More also, it is recommended that, government should put relevant measures to enhance policy coordination among various arms of government, most especially fiscal policy should be made to reduce unemployment which could bring about poverty reduction in Nigeria.

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DOES ENVIRONMENTAL QUALITY MATTERS IN GROWTH CONSIDERATION IN NIGERIA?

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ABSTRACT

This study focused on the role foreign direct investment plays in the relationship between quality environment and economic growth in Nigeria from 1970 to 2013. The ordinary least squares technique was employed and the key variables include carbon emission, human capital, per capita income, FDI, trade openness, interest rate, inflation rate and the interaction term between environment and FDI. The result showed that all the variables are stationary at first difference and that long run relationship exists among them. It is observed that FDI ratio and environment negatively impact GDP over the period, but the interaction between FDI and environment positively impact economic growth. It is suggested that the actual effect of emission on economic growth in the presence of FDI is 67.4% and thus recommended that efforts should made by policy makers to strike a balance between the quantity of emissions and the amount of economic growth that is suitable for the country since the decision to maintain green growth by developing countries is not an easy one to make.

Keywords: Environment; Economic Growth; Foreign Direct Investment; Nigeria.

INTRODUCTION

A pollution haven occurs when dirty industries from developed nations relocate to developing nations in order to avoid strict environmental standards or developed nations imports of dirty industries expand replacing domestic production (Blomquist and Cave, 2008). The 1990s was a decade in which environmental standards were tightened throughout the developed world. This rise in environmental stringency has led to a discussion about the pollution haven hypothesis (PHH). The PHH proposes that environmental stringency differences between developed and developing countries, encourages developing countries to specialize and gain a comparative advantage in the production of “dirty” goods. If the PHH holds, developed nations should observe a rise in imports of “dirty” goods from developing nations, during a period of increased environmental stringency (Blomquist and Cave, 2008).

A critical issue which has emerged as a result of recent trends in globalization is the trade-environment competitiveness issue (Letchumanan and Kodama, 2000). According to classical economic thought, it is believed that free trade will open the flood gates for the migration of highly polluting industries to those countries with weak environmental laws as it is the case with the less developed countries. Therefore, there are already moves to incorporate restrictive trade practices in negotiations at various multilateral trade, investment and environmental initiatives. However, many scholars admit that this will further damage global environmental welfare, apart from polarizing trade and investment patterns. Restrictive trade practices may also hinder the flow of foreign direct investment (FDI) being increasingly relied upon by many developing

countries for the acquisition and upgrading of their technology, thereby adversely affecting national technology development initiatives.

The quest to ensure technology transfer, from developed to developing countries, and also earn foreign exchange necessitates developing countries to open-up trading activities with other countries of the world. Transfer of inappropriate technology through foreign direct investment or trade openness can adversely affect environmental quality. This means that foreign direct investment may have some form of contribution to carbon emission (Copeland and Taylor, 1994; 2004). It has been affirmed that foreign direct investment inflows fuelled carbon emission per capita in Nigeria (Saibu, 2012; Ayadi, 2014; Eregha and Nwokoma, 2014). Free trade can induce carbon emission through the consumption of environmental goods, can increase volume of world trade and each country's output, which in-turn deteriorate the environment. Also, through composition effect, developing countries can attract pollution-intensive industries, and developed countries are likely to avoid such industries to attract foreign direct investment (Copeland and Taylor, 2004). As a country becomes wealthy and as income rises, both air pollution and land pollution tend to increase monotonically (Cole et al. 1997; Stern, 2003; Omojolaibi, 2010; Isola and Mesagan, 2014).

The current paper contributes to the above branches of literature by empirically analyzing the relationship between economic growth and the environment as well as determining the effect of foreign direct investment in this relationship. This paper contributes to literature by recognizing the interaction existing between FDI inflows and carbon emission on economic growth which previous studies (Panayotou, 1993; Copeland and Taylor, 1994; He, 2006; Omojolaibi, 2010; Saibu, 2012; Ayadi, 2014; Chung, 2014; Eregha and Nwokoma, 2014) failed to capture. In taking cognizance of the interaction between carbon emission and foreign direct investment, the study will also calculate the actual effect of carbon emission given the level of foreign direct investment. It should be worthy to note that without factoring the interaction among these variables in the model, it will be difficult to estimate the full impact each of the variables, especially that of environmental quality. This will be the major contribution of this paper to existing literature. The relationship between growth, environment and FDI stems from two perspectives: pollution haven hypothesis and the EKC (Blanco et al., 2013). The analysis is carried out using carbon dioxide emission from manufacturing industries and construction which form a large chunk of FDI inflow into Nigeria.

2. LITERATURE REVIEW

2.1 Brief Theoretical Review

There strands of theoretical studies that have been able to foreign direct investment to the level of environmental quality among countries of the world. It is believed that the entry of foreign direct investment into a country has some implications for the environment. Some of these theoretical studies include: the pollution haven hypothesis, race to the top theory, and race to the bottom theory (Gray, 2002; Temurshoev, 2006; Grecker, 2007). The "Pollution Haven" hypothesis suggests that foreign investors will seek to locate their industries in other countries where operations will be cheaper in terms of cost and also in terms of weak environmental regulatory requirements. The pollution haven is of the opinion that high environmentally unfriendly industries in the North will relocate to the South to take advantage of weak

environmental regulations, thereby leading to “polluter haven” in these developing countries (Chichinisky, 1994; Gray, 2002; Eskeland and Harrison, 2003; Cole, 2004; Greaker, 2007; Eregha and Nwokoma, 2014). It thus implies that human life and health care status of people in countries with lax environmental regulations will suffer greatly even as their economy witnesses improve growth in investment. Another closely related theory to the pollution haven in focusing on the role of foreign direct investment on the environment is the “Race to Bottom” theory. Race to the bottom theory suggests that government deliberately on their own steps down environmental standards in an attempt to attract foreign investment (Baumol and Oates, 1988; Gray, 2002; Greaker, 2007). It is believed that governments do this to promote growth at the early stage of their development and when the country becomes wealthy and financially stable, they can now step up their environmental standards and control emissions better. This is in synch with the proposition of the Environmental Kuznets Curve (EKC) that an inverted U-shape relation exists between environmental degradation and economic growth (Dasgupta et. al, 2002; Stern, 2003), with pollution or other forms of degradation and emission rising in the early stages of economic development and falling in the later stages as per capita income rises. The other contrary theoretical argument against Pollution Haven and Race to the Bottom is the “Race to the Top” theory which states that governments do not have to lower their environmental standards to attract foreign direct investment. As postulated under the Porter Hypothesis, stronger environmental regulations can promote competition in the market place to foster high innovation and efficiency thereby attracting investors, both local and foreign. This is also known as the “Pollution Halo” theory (Gray, 2002; Copeland and Taylor, 2003).

2.2 Empirical Review

There are extensive empirical studies on the environment, such as Crocker (1966), Baumol (1971), Eskeland and Harrison (2003) and Taylor (2004). Others like Panayotou (1993), Arrow *et al* (1995), Stern *et al* (1996) and Alstine and Neumayer (2009) focused on the relationship between economic growth and environmental degradation. In a study conducted by Panayotou (1993), it was suggested that a U-shaped relationship exists between environmental degradation and economic growth or per-capita income. This is what has been termed in literature as environmental Kuznets curve (EKC). He (2006), Chung (2014), Eregha and Nwokoma (2014) and Neequaye and Oladi (2015) focused on foreign direct investment and the environment.

He (2006) looked at environmental impact of foreign direct investment in Chinese provinces. It constructed a simultaneous model to study the FDI–emission nexus by exploring both the dynamic recursive FDI entry decision and the linkage from FDI entry to final emission results under the intermediation of the scale, composition and technique effects. The study observed that foreign direct investment inflow has a positive effect on sulphur emission in China.

Tang and Al-mulali (2013) employed fully modified OLS to investigate the validity of pollution haven hypothesis in the Gulf Cooperation Council (GCC) countries and found that foreign direct investment inflows have a long run negative relationship with carbon emission. Some related studies conducted on developed, emerging, and the Central and East European countries like Cole and Elliott (2005) used the panel fixed and random models to estimate the effect of FDI on pollution in Mexico and Brazil. The study observed that foreign direct investment has a significant positive impact on the pollution level in these countries.

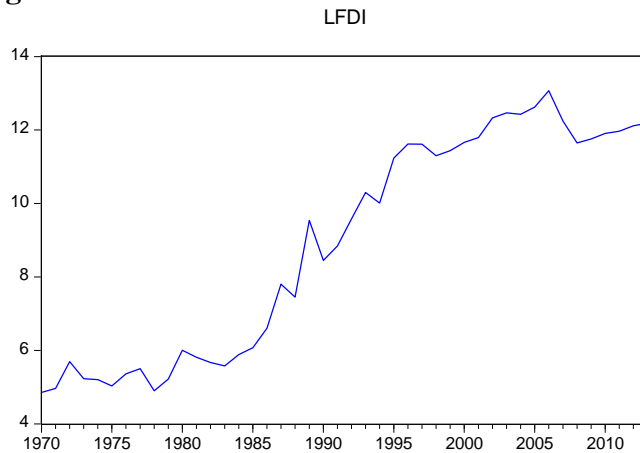
Chung (2014) enquired into how environmental regulation shapes the pattern of foreign direct investment in South Korea through an assessment of the pollution haven hypothesis. Due to the conflicting results observed in the case studies of most advanced economies, due to the deterrent effect of clean technology adoptions on industry migration and the need to minimize the effect of clean technology, the study examined the pattern of South Korean foreign direct investment over 2000 to 2007 which is the period that Korean firms relied on old production technologies despite facing rapidly strengthened environmental standards. The study found strong evidence that polluting industries tend to invest more in countries with relaxed environmental regulations.

Eregba and Nwokoma (2014) researched into the relationship between foreign direct investment and the environment in the West African Monetary Zone using the fully modified and dynamic OLS approach. It is reported in the study that high polluting industries in the developed countries relocate to developing countries to take full advantage of weak environmental laws, thereby leading to the emergence of “polluter haven” and life quality in these countries. It therefore calls for WAMZ countries to encourage Multinationals to pay adequate attention to the use of efficient technology to enhance output which translate to environmental improvement low cost per unit.

Neequaye and Oladi (2015) studied effects of the inflows of foreign direct investment and the disbursements of environmental aid on environmental degradation. The study which employed a panel analysis for some selected developing countries suggested the existence of an environmental Kuznets curve for carbon dioxide as well as total green house gas emissions from both the energy and industrial sectors but also observed that there was no evidence of the EKC for nitrous oxide and total green house gas emissions from the waste sector.

2.3 Stylized Facts

Figure 1a



Figure

1b

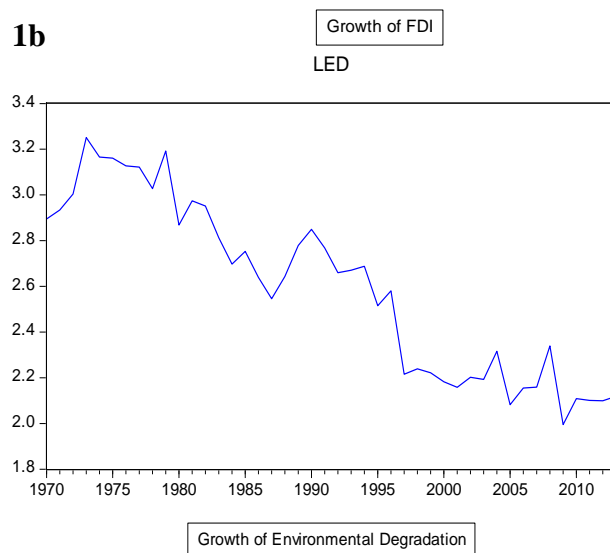


Figure 1a and 1b above show the growth in the inflow of foreign direct investment and emissions into Nigeria between 1970 and 2013 and this suggests that FDI inflows has been on the rise since the 1970s till date with only intermittent decline at some points . Between 1970 and 1978, the growth in FDI was fairly stable vis-à-vis an increase in emission during the same period. This can be attributed to the need to reconstruct the economy after the civil war which made the administration of Gen. Yakubu Gowon to seek some foreign assistance. Most of the inflow then came in the form of foreign oil companies activities who took advantage of the need of the country to explore Nigeria's crude oil without much attention to the taming of gas flaring. This trend however nosedived a bit between 1978 and 1980 and also took off again in the 1980s during the austerity period caused by the glut in the international crude oil market. Since the 1980s till 2005, FDI inflow has been on the rise but emission has been found to be on the decline. This is not unconnected with the country's effort at controlling gas flaring.

Figure 2

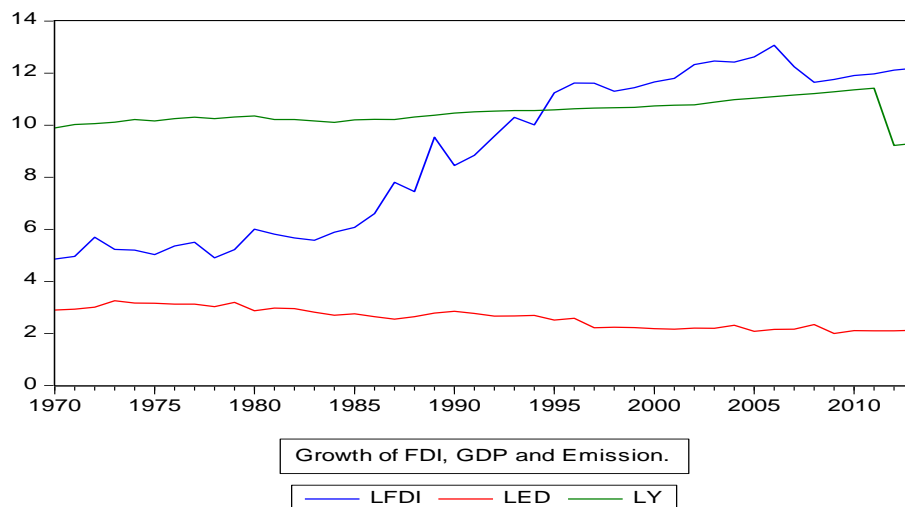


Figure 2 above confirmed the earlier result from figure 1 which shows that FDI inflows has continued to rise unabated with the exception a little fall in 2006. From 2006 till date, FDI inflow has been growing steadily. This has positively influenced economic growth which has maintained a fairly stable growth since 1970 up to date and as the case with the FDI, the fall spillover to real GDP which also experienced a fall in 2010 suggesting that a positive relationship exists between FDI and economic growth. However, when deflated with GDP (FDI/GDP), the result suggest otherwise. Also, emission is found to initially grew in the early 1970s but has maintained its fairly declining growth rate between 1980 up to date due to the government's effort at controlling emission. The result also confirmed the existence of the environmental Kuznets curve in Nigeria which states that at the initial level of economic growth, emission increases, gets to a threshold point and decline afterwards due to the employment of better technology of production.

3. Empirical Model and Methodology

Following Omran and Bolbol (2003), we specify growth equation as:

$$PCI = \alpha + b_1F + b_2H + b_3Z + \mu \quad (1)$$

Where PCI is Per-capita Income, F is a vector of variables generally recognized to explain growth like human capital (proxy with life expectancy, HC), capital formation (CF) and foreign direct investment (FDI). H is a vector of variables that are under study and presumably could affect growth like environmental degradation (proxy with carbon emission from manufacturing industries and construction). Z is a vector of controlled variables like inflation rate (INF), trade openness (TO), and interest rate (INT).

Using a Cobb-Douglas production, one can specify:

$$Y = A(FS.ED)L^\alpha K^\beta \quad (2)$$

Where Y is output, A is total factor productivity, FS is stock of FDI, ED is environmental degradation variables, L is labour, K is capital, α and β are share of labour and capital respectively. Taking the log differential of (2) we have

$$Y = A'(FS.dED + ED.dFS) / A + \alpha L + \beta K \quad (3)$$

Where Y represents the growth rate of output and A' is the derivative of A with respect to the interaction between stock of FDI and ED (i.e. $FDI.ED$). Keeping in mind that $dED=FDI$ and that $A'Y/A = \lambda$ is the marginal product of total factor productivity due to changes in the interaction term, equation (3) becomes

$$Y = \lambda.FS.dED/Y + \lambda.ED.FDI/Y + \alpha L + \beta K \quad (4)$$

The term $ED.FDI/Y$ in equation (4) captures the interaction between the environmental degradation variable and the FDI ratio. Also, equation (4) can be transformed from a growth accounting equation to a growth equation in estimable functional form. This can be done if K is proxied by the investment ratio (CF/GDP), $\lambda.FS.dED/Y$ is designated as the constant term, and PCI is plausibly substituted for the growth in Y/L . Taking human capital (HC), ED , and the FDI and capital investment ratios as the elements in the vector F that usually determines growth, equation (4) becomes:

$$PCI = a + b_{11}HC + b_{12}FDI/GDP + b_{13}CF/GDP + b_{14}ED + b_2ED.FDI/GDP + b_3C + \mu \quad (5)$$

All variables are as explained above while μ is the stochastic error term. The study employed carbon emission to capture the environment.

Data for the study is extracted from the World Development Indicator (2014) and the Nigerian Bureau of Statistics (2014) and analyzed by the ordinary least squares (OLS) technique.

4. Analysis

Table 1: ADF Unit Root Test Results

Variable	Intercept	Order of Integration
<i>LGDP</i>	-6.689773*(0) [-2.933158]	1
<i>LHC</i>	-8.650404*(0) [-2.933158]	1
<i>LFDIGDP</i>	-3.338078*(6) [-2.945842]	1
<i>LCFGDP</i>	-6.589675*(0) [-2.933158]	1
<i>LED</i>	-9.514998*(0) [-2.933158]	1
<i>LEDFD</i>	-7.770649*(4) [-2.941145]	1
<i>LTO</i>	-8.298008*(0) [-2.933158]	1
<i>INFR</i>	-7.062198*(1) [-2.935001]	1
<i>INTR</i>	-9.252410*(0) [-2.933158]	1

*Note: * significant at 5%; Mackinnon critical values and are shown in parenthesis. The lagged numbers shown in brackets are selected using the minimum Schwarz Information criteria.*

Source: Author's Computation, 2015.

The unit root test result above shows that the real GDP, human capital, FDI, capital formation, environment, the interaction variable, trade openness, inflation rate and interest rate are all stationary at first difference for linear trend test models. This indicates that those incorporated series in the dynamic regression model have no unit-root at first difference with the implication that the series (in their first difference) are mean reverting and convergences towards their long-run equilibrium.

Table 2: Restricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.714015	175.7721	159.5297	0.0048
At most 1	0.632966	123.1958	125.6154	0.0696
At most 2	0.494248	81.09915	95.75366	0.3290
At most 3	0.388513	52.46737	69.81889	0.5287
At most 4	0.287770	31.80918	47.85613	0.6227
At most 5	0.202152	17.55631	29.79707	0.5989
At most 6	0.131560	8.071125	15.49471	0.4578
At most 7	0.049828	2.146718	3.841466	0.1429

Table 3: Restricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.714015	52.57626	52.36261	0.0475
At most 1	0.632966	42.09663	46.23142	0.1300
At most 2	0.494248	28.63179	40.07757	0.5171
At most 3	0.388513	20.65819	33.87687	0.7096
At most 4	0.287770	14.25287	27.58434	0.8048
At most 5	0.202152	9.485184	21.13162	0.7915
At most 6	0.131560	5.924408	14.26460	0.6229
At most 7	0.049828	2.146718	3.841466	0.1429

Both trace statistic and Maximum-eigenvalue statistic indicates that there is 1 co-integrating equation at 5% significance level. Hence, a long-run equilibrium relationship exists between the variables and that there exist one co-integrating vector. Since this is the case, we can now proceed to estimate the long run model using the OLS.

Table 4: Long Run Estimates

Dependent Variable: Real GDP					
Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	6.186 (1.76)***	6.370 (1.61)	9.521 (2.42)**	9.529 (2.39)**	7.112 (1.62)
LHC	1.588 (2.04)**	1.546 (1.75)***	0.491 (0.53)	0.490 (0.52)	1.230 (1.11)
FDI/GDP	0.013 (0.45)	-0.000 (-0.01)	-0.001 (-0.00)	-0.018 (-0.13)	-0.060 (-0.42)
CF/GDP	-2.341 (-4.15)*	-2.316 (-3.74)*	-1.774 (-2.86)*	-1.730 (-2.70)**	-1.691 (-2.66)**
LED	-0.665 (-3.15)*	-0.674 (-2.94)*	-0.761 (-3.49)*	-0.755 (-3.40)*	-0.780 (-3.53)*
ED/FD x GDP		0.010 (0.10)	-0.010 (0.938)	0.010 (2.47)*	0.009 (0.36)
LTO			0.313 (2.47)**	0.321 (2.47)**	0.327 (2.53)**
INFR				-0.01 (0.36)	-0.001 (-0.001)
INTR					-0.187 (-1.24)
R ² (%)	80	80	83	83	84
Prob(F-statistic)	0.000	0.000	0.000	0.000	0.000
D.W.	1.52	1.52	1.53	1.53	1.54

***Significant at 1% level; **Significant at 5% level; ***Significant at 10% level. Figures between parentheses are the 't' statistics.** Table 4 above shows the result of the long run estimates of the relationship between economic growth, environmental quality and foreign direct investment employing real GDP, human capital (measured with life expectancy), gross capital formation (investment-income growth), percentage of foreign direct investment to GDP (FDI/GDP), and the natural logarithm of environmental degradation (LED) proxied with carbon emission from manufacturing and construction activities. The interaction between environment and FDI is ED.FD/GDP, while others like trade openness, inflation rate and interest rate are employed as control variables in the model.

From the first model, the result clearly showed that human capital is positive and significant in explaining changes in economic growth. This is in consonance with endogenous growth theory which posits that human capital is a key driver of economic growth. The result is similar across the five models implying that for the Nigerian economy to set any growth target, efforts must be geared towards improving human capital through adequate investment in income earning and health enhancing projects. The FDI ratio is found to be insignificant and negative from model 1 to model 5 in explaining changes in economic growth. It is only in the first model that FDI ratio positively impact economic growth, but on the average across the models, it is negative. This is similar to Omran and Bolbol (2003) result, thus proving that FDI ratio on its own does not have an exogeneous effect on growth. Capital formation (CF), which proxy investment in the study,

was found to be significant but negatively impact growth in the study, implying that growth in Nigeria has not been driven by investment efforts as the oil and gas industry contributed a large portion of the country's GDP while the manufacturing sector coupled with low saving rate has hampered growth efforts of the country. Carbon emission (ED) is negative and significant across the five models and on the average, a 1% increase in emission while holding other variables constant will cause economic growth to fall by almost 70%. This is as expected owing to the fact that carbon emission has a significant negative impact on the environment contributing adversely to the people's health and also causing the government to devote huge resources that should have been earmarked for growth and development to taking care of the sick.

Model 2 adds the interaction term between carbon emission and FDI ratio (ED.FDI/GDP) and it is positive on the average, implying that the interaction between environment and FDI ratio will positively impact growth in Nigeria. To determine the actual impact of environmental degradation on income, we will derive the threshold level beyond which environmental quality interacted with FDI to affect real GDP positively. We obtained this from the second model by differentiating real GDP with respect to ED and setting the resulting derivative equal to zero:

$$-0.674 + 0.010LED = 0 \quad (6)$$

Solving equation (6), one can calculate LED to be equal to $LED = 67.4\%$. It therefore implies that carbon emission of about 67.4% is the desired threshold level. This is this study's main contribution to knowledge. This implies that suppose Nigeria does not possess foreign direct investment with its consequent degradation of the environment, the country will not be exposed to amount of environmental degradation it currently witnesses. In the same vein, the 67.4% is the actual effect of carbon emission on the economy given the inflow of foreign direct investment into the Nigerian economy. Models 3 to 5 include the standard control variables: the natural logarithm of trade openness (LTO), which is the sum of the country's total trade as a ratio of the GDP, inflation rate (INFR) and interest rate (INTR). Trade openness is found to be positive and significant in the study and on the average, a 1% increase in trade openness while keeping other explanatory variables constant boost the GDP by 32%. This is also expected as Nigeria is an import dependent country vis-à-vis its export of crude oil in commercial quantities. Inflation and interest rates were found to be negative and insignificant in models 4 and 5. This is not unexpected as economic theory posits that inflation will negatively impact economic growth as it erodes purchasing power. Also, a higher domestic interest rate is expected to scare possible investors in physical capital away with its antecedent negative impact on overall investment, aggregate consumption and consequently, economic growth. Both are also found not to be significant in this study as monetary policy does not play key role in this current research.

5. Conclusion

Emerging literature on foreign direct investment stipulates FDI's positive impact on economic growth depends on the prevailing local conditions in an economy as well as its absorptive capacity (Omran and Bolbol, 2003). This study carried out on the Nigerian economy has been able to confirm this assertion owing to the fact that FDI could not on its own positively impact Nigeria's economic growth sequel to the fact that it negatively and insignificantly impact income earning potential of Nigeria over the period of study. It is only when interacted with the environment (ED) that FDI positively impact Nigeria's economic growth. These empirical

results imply that Nigeria should not just concentrate efforts on attracting FDI into its fold as it might not achieve the desired goal of boosting the local economy in any significant positive way.

Moreover, the country should look for ways to control its carbon emission and promote a green growth. This will necessarily enhance the welfare of the citizenry, reduce government's expenditure on health, and act as a spur on economic growth. This is in consonance with the saying that "health is wealth". However, if a safe environment is not guaranteed, the country's lax environmental policies may continue to attract pollution emitting resources from different regions of the world, the expected positive gains associated with FDI inflow will be a mirage and the welfare of the populace as suggested in Copeland and Taylor (1995), Cole et al (1997), Cole and Elliot (2005), Omojolaibi (2010), Saibu (2012) and Isola and Mesagan (2014) will continue to deteriorate drastically. A major lesson learnt in this study is that a developing country that wants to grow has a hard decision to make i.e. it has to decide whether to continue to permit economic growth vis-à-vis increases in the level of emission or it wants to ensure a clean and quality environment while restricting economic growth to a particular level that will not be harmful to the environment. However, striking a balance is what policy makers should work on and this is beyond the scope of this study.

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AN ASSESSMENT OF GOVERNMENT PROJECT AT ALLEVIATING POVERTY WITHIN A COASTAL URBAN-POOR COMMUNITY: CASE STUDY OF ILAJE.

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ABSTRACT

Given the trends in urbanization and slum dwelling, improving the standard of living of slum dwellers is important for a nation's development. Efforts have been made by government and other organisations (United Nations) to checkmate the poor conditions of slum dwellers; by so doing providing slum communities with crucial infrastructure to aid development. Ilaje (Shomolu LGA of Lagos state) is one of the few slums that benefited from United Nations (UN) intervention. This report seeks to verify the economic importance of the intervention within this community. It present detailed situation of the UN's intervention and then evaluates the economic impact of such intervention by carrying out a field survey to determine the level of impact it has on the community. The field survey, other method adopted was able to identify some short comings of the project provided. However, this report brought in light the short comings of the intervention, and provides suggestion for improvement.

Keywords: Accessibility, Cold-room, Fish-smokers, Interventions, Slums

INTRODUCTION

Coastal cities are by far the most developed of Africa's urban areas, and by implication have a high concentration of residential, industrial, commercial, educational and military facilities. (UN-Habitat, 2008) One such coastal city is Lagos, the foremost manufacturing and port city in West Africa. Lagos is the hub of business and economic development in Nigeria, housing around 65 per cent of the country's industrial establishments, more than 65 per cent of all commercial activities. However, indications point to urban development as being a large creator of risk for much of the urban population, most especially the urban poor who live in more hazardous physical and human environments along the coast. Rising sea levels consequent to climate change pose real threats to coastal populations along low-lying coastal sites because of the increased likelihood of flood events.

Lagos has been predicted to be one of the urban centres that will disappear from the face of the earth through sea level rise if appropriate measures are not taken to control the rise (Chukwuocha et al, 2013). It is true that the capital cities of Nigeria and Cote d'Ivoire were later moved away from the coast line to Abuja and Yamoussoukro respectively, the former seats of government and the present business capitals, Lagos, and Abidjan also sit on the coast line. These massive urban settlements are expanding fast. Demand for more land for construction of facilities coupled with citizen poverty across the region is leading to more degrading environmental practices (Chukwuocha et al, 2013).

Almost 1 billion people, 32% of the world's urban population, live in slums, the majority of them in the developing world. Moreover, the locus of global poverty is moving to the cities, a process now recognized as the "urbanization of poverty", without concerted to remedy the situation, action on the part of municipal authorities, national government, civil worldwide is

projected to rise over the next 30 years to about 20billion. In the UN millennium declaration, world leaders pledged to tackle this immense challenge, setting the specific goal of achieving significant improvement in the lives of at least 100 million slum dwellers by providing them with shelter, but also the broader problem of urban poverty, especially unemployment, low income and lack of access to basic urban service still stares them in the face.

As the world's cities absorb tremendous increase in growth of human population, housing and public services in these areas have not kept pace, particularly in less developed countries where overall population growth is more pronounced and urban crowding is most severe. The resulting challenge of the rise in informal urban settlements is becoming a central concern for governments and for those interested in poverty alleviation (Davis, 2004; Neuwirth, 2005; Mitlin and Satterthwaite, 2004). The formation of slums and squatter settlements is not inevitable; this is evident in the varying proportions of the population living in such types of settlements in cities in the developing world (Giok and Kai, 2008).



Fig 1: Map showing the World Bank cold room in Ilaje region, Lagos.

Statement of problem

Slums have posed a huge problem for development because they are by definition areas in which the inhabitants lack fundamental resources and capabilities such as adequate sanitation, improved water supply, durable housing or adequate living space, good road network and other infrastructures. United Nation (2010) stated that many governments have tried to find solutions to the problem, and one of the proposed solutions is slum upgrading. In the process of upgrading, most times, government/ institutions do not engage the communities (slum) in their plans to improve the community. There by making the beneficiaries unaware of the major importance of the project. This sometimes brings set back to the plan/ project.

Aside from Governments intervention to upgrade slums, World Bank also attempted to upgrade slums in Nigeria. Among the slums was Ilaje community which benefited through the construction of a cold room/smoker facility. The facility provided was aimed at, increasing employment opportunities through the investment in the project. However, the usage and workability of the project (cold room/smoker) since its completion in 2012, has been hampered by unavailability of electricity as a result of high billing from PHCN (Power Holding Company of Nigeria)/IKEDC (Ikeja Electricity Distribution Company). An accumulated PHCN bill of about 600,000 Naira for three years was too exorbitant for the beneficiaries who could only afford 40,000 Naira. This has made the quality and life span of the completed project a worrisome thought to the beneficiaries.

Despite the efforts made by the federal government to shift focus from the primary area of oil as major revenue earner to such fields as agriculture (fish trawling business), it is apparent that the business of fish trawling, and shrimps in particular appears to be facing monumental challenges currently (Crusoe, 2012). This can be seen as a critical issue facing the Ilaje community, as the harvesting of fish poses a major problem due to technical constrain (mechanised trawlers), making most of the workers (fishermen) to change their profession to sand mining; This has made the intervention of the UN/government to alleviate the poverty in the region by establishing a mini cold-room and fish smokers to be ineffective. It is therefore very necessary to evaluate the economic impact of the project on the beneficiaries in Ilaje community.

Another challenge with the community is the issue of accessibility. The concept of accessibility is central to the discourse on the issue of government intervention/project with relation to communities. Often government establishes various degrees of project to communities with the aim of alleviating or eradicating social ills without actually intermittently reviewing the workability of the project within the community. In general, urban poverty manifests itself through the spatial segregation of the poorest areas characterized by inadequate public services and deficient infrastructure, where the provision of mass transportation is inappropriate in terms of accessing the route way. These limitations constrain income and employment opportunities for the urban poor because of lack of mobility and access (Aysha Faiz, 2011). Majority of the roads leading to Ilaje are inaccessible or partially – accessible such as Dendeke street (reconstructed), Alhaji Alimi street (reconstructed but now dilapidated), Sanyaolu popularly known as Oresegun was reconstructed half way; terminating by Abeokuta street junction. Others like Oyenaiya street, Araromi street, Amodu street etc are inaccessible because of their poor state.

Aim and Objectives

The study aim is to assess the level of interaction economically between the UN/Government intervention and the realities on ground as to the community standard of living.

The study Objectives are to

- Examine the level of awareness of people to the project
- Determine the usage of the cold room and smokers by the Ilaje community
- Evaluate the economic impact of the project to the community
- Evaluate the accessibility of the Ilaje area to/from other parts of the region

Literature Review

In Nigeria, the proportion of the population living in urban centres in the 1930s, and 10% in 1950, by 1970, 1980 and 1990, 20%, 27% and 35% lived in the cities respectively, over 40% of Nigerians now live in urban centres of varying sizes (Olotua and Bobadoye, 2009; Okupe, 2002). The explosive rates of growth have not only progressively complicated and exacerbated inter-related problems of human settlements and environment, but have also greatly accelerated poverty (Oladunjoye, 2005). Nigeria as a developing country appear to be facing a more rapid rate of urbanization, mainly as a result of rural-urban migration, Lagos is among the world fastest growing cities in the world with a population of 10,788,000 in the year 2010 (UN-Population Division, 2011), they are of the opinion that the projection will continue with steady growth till 2025.

Government intervention in slum upgrade

Slums have posed a huge problem for development because they are by definition areas in which the inhabitants lack fundamental resources and capabilities such as adequate sanitation, improved water supply, durable housing or adequate living space and good road network. United Nation (2010) stated that many governments have tried to find solutions to the problem, and one of the proposed solutions is slum upgrading. Slum upgrading is essentially a strategy in which the infrastructure of a slum is improved, such as giving adequate water supply and sewage to the community. Additionally, because of the tenuous legal status of slum inhabitants, often strategies include the legalization of the right to the land on which slums are built.

Aside from Governments intervention to upgrade slums, other organizations have made attempt to upgrade slums in Nigeria. Premium times (July 11, 2015) stated that nine slums in Lagos benefited from the US\$200 million credit facility provided by World Bank. The facility provided was aimed at, increasing sustainable access to basic urban services through investments in critical infrastructure. Among the slum was Ilaje community which benefited by the construction of a primary health care and cold room/smoker facility. The project, which began in July 2006, terminated in September 2013.

However, the quality and life span of some of the completed projects have continued to worry the beneficiaries.

Fishing and Preservation

The federal government has been trying to shift focus from the primary area of oil as major revenue earner to such fields as agriculture which has a lot of allied sub-sectors, and its value chains. Despite its criticality in the federal government's efforts to create jobs, enhance local capacity utilisation as well as increase revenue yield over time, the business of fish trawling, and shrimps in particular appears to be facing monumental challenges currently. Crusoe (2012)

The challenges are such that observers are saying the federal government needs to urgently and decisively come into the picture to support the sector as a way of providing the much needed boost to the economy. Osagie (2012) is of the opinion that the government should create storage facilities and processing centres to ensure that yields from the farm and the sea are adequately processed and preserved, rather than the current practice where much of the harvest are wasted.

His view tallies with the advice on the government to pay sufficient attention to the business of fish trawling, considering that it is also strategic to the economy.

What these mean is that if effectively supported, fish trawling could actually provide the much needed support service to the country's quest for industrialization, more so at this time that experts are calling for integrated development of the economy, rather than over-dependence on oil revenue, the business of fish trawling actually requires government's attention.

Methodology

Data acquisition was based on the primary and secondary data. The primary data source adopted is questionnaires, field survey, traffic count and interviews on the operators/residents. The secondary data source is existing maps.

Data Presentation (see appendix for table 1 to 5)

Data Analysis

Data Analysis is sectionalized based on the objectives of the study. For objective one, question number three on the questionnaire was used to actually examine the awareness of the people to the project. For objective two, question four was used in determining the usage of the cold room by the community. People leaving closer to Ebute will enjoy the facility so long as they are fisher men or fish sellers. Meanwhile question five is used to critically analyse Objective three. For objective four analyses, traffic counts were carried out to determine accessibility of the region.

Result

Examine the level of awareness of the people to the project.

From the table 6 (see appendix), it shows that a large part (61%) of the respondents within the area is aware that a Cold room/Fish smoker is located in the region.

To determine the level of usage of the cold room/smoker by the Ilaje community

Looking at the respondents' chat in table 2, there is very low patronage to the facility and this is attributable to the partial-accessibility to the project, so also the non-functionality of the project to even 50%. The reason being that for a cold room of such standard, the capacity can take 20tonnes of fish; though the volume of fish pre expected before the establishment stood at 10 – 15 tonnes. The in activity/ non functionality of the project made most of the fishermen to change occupation to sand mining thereby posing a fish shortage threat to future functioning of the cold room. Plate 1 shows a woman sitting beside the cold room picking beans instead of packing fish into the cold room.



Plate 1: A woman sitting beside the cold room picking beans as a result of idleness

Evaluating the economic impact of the project to the community

From the table 7 (see appendix), a large number of residents within and around Ilaje region disagree to the fact that the World Bank project has positive impact on their life. This is as a result of the non functionality of the cold room since installation as well as the outrageous billing system from both the then PHCN (Power Holding Company of Nigeria) and IKEDC (Ikeja Electricity Distribution Company) to the facility. Although according to the leader who supervises the project ‘Baba-L’oja’ a lot of efforts has been made to resolve the overbilling through the local council; all to no avail.

Most of the fisher men get very little amount of fish which they can smoke and sell, while others that cannot survive with such, source for other means of lively hood outside the community. This also can be seen from the numerous shops locked up (within the cold room complex) as a result of low patronage.

Evaluate the accessibility of the Ilaje area to/from other parts of the region

An accessibility study was carried out through the use of traffic counts to determine the level of connection the region has with other part of Bariga. Six screen lines were identified has the major connection points. Traffic movement “in” and “out” was counted

From table 9 in the appendix, it shows that commuters prefer the use of motorcycle into Ilaje region and Odunsi Street records the highest number of motorcycle passage into Ilaje. In general, commuters’ movement are more restricted to areas like odunsi, Bariga and Ilaje.

From table 10 (see appendix), it shows that most commuters moving out of Ilaje region depends mostly on the use of motorcycle. Sanyaolu (oresegun) records more motorcycle usage because buyers that go into Ilaje market makes use of bikes to convey their goods out of the market.

Looking at table 11 in the appendix, it is observed that motorcycle is highly used in all the six screen lines. Commuters move into Ilaje region more using bike and Bariga records the highest movement of commuters moving into Ilaje region in the afternoon.

In table 12 (see appendix), it Shows that commuters during afternoon period rely mostly on motorcycle and keke to move out of Ilaje region. Here, Bariga records the highest number of commuters moving out of the region.

Generally, the conditions of the roads within the region are bad, making it difficult for motorist to ply. This has resulted into the use of motorcycle as a major form of transportation within the region. Apparently, the conditions of the route ways has made selling and buying of fish within Ilaje region abortive, leaving the project (cold room /smoker) almost deserted.

From plate 3 (see appendix), is an evidence to prove the dilapidated state of the roads within the region concurrently with the housing conditions of the residence of the region.

From plate 3 and 4, the best connection from other region to Ilaje is from ST. Finbarrs road through Odunsi/Sanyaolu to Ayoola Lawal then to Alh. Alimi street which leads to the project. But the situation of these streets as the picture depicts makes accessibility impossible.

Aside from inaccessibility, the sited project is poorly connected. From map1 above, a graphical representation of the areas network is further buttress in a connectivity matrix to show how it is connected. (see fig 2 in the appendix)

(V) Represents Vertices or Nodes

(E) Represents Edges or Route

Represents Sub – graphs or Independent and unconnected parts

(G)

(X)

Represents the sited Ilaje project (Cold room/ smokers)

The topological graph, which simply indicates the existence of the route without reference to their true length or direction, has nine vertices (V_1, \dots, V_9) and eight edges (E_1, \dots, E_8). This graph is set down in matrix form. The numeral “1” identifies nodes or vertices which have direct connections and “0” those which do not. If every node had a direct connection with every other, there would be a matrix with “1” in every cell except in the major diagonal. The more the numeral value “1” than “0” in the matrix, it shows that interconnection exist within the network. From the above Matrix, the numeral “1” is less than “0”. This shows that interconnection which exists within the network is poor. The connectivity index is measured with this formular: the gamma index

$$C = \frac{E}{\frac{1}{2}(V^2 - V)}$$

to the above network, we have the following

$$C = \frac{\text{Applying this } 8}{\frac{1}{2}(81 - 9)}$$

$$C = 0.222$$

The values of gamma index are on a range 0 to 1.0, with 0 representing no connection and 1.0 representing the maximum connection. That is direct connections between all nodes. From the analysis above, it shows the connection within the network is low.

Therefore, Ilaje community is poorly connected in relation to the sited United Nations project (cold room/ smokers)

Findings

Apparently, the level of awareness of the residents of Ilaje community to the project (cold room/ smokers) is high as 70% of the respondents gave a positive indication of their awareness. This hasn't made them interact with the project because a very low patronage is recorded as regards the visit/use of the project.

This is attributed to some factors such as:

- The functionality of the project due to power supply (Shortage). A year after the completion of the project, an accumulated bill of #600,000 was issued to the beneficiaries of the project. This problem of power supply shortage has left the cold room unused for 2years. Plate 2 shows the picture of the unused cold room, where its environs now serves as a dumping ground for sand mining.
- The absence of mechanised trawlers that would boost up the harvesting of fish (at least 10 – 15 tonnes is needed to make the cold room function).
- The in accessibility/partial accessibility nature of the roads leading into the community, has made movement very difficult, leaving commuters moving in and out, to depend mainly on motor cycle. This is seen from the result of the traffic count, depicting the dominance of motor cycle over other mode of transport within the community.
- Most fishermen within the Ilaje community have left fish harvesting for sand mining, due to low returns gotten from the fish business. If nothing is done to the situation, fishing business within the Ilaje community will be a forgotten issue while the project will be left to decay/ rot away.

Suggestions

Its pertinent that, in an urban – poor community such as Ilaje should use the available cold room/ smokers to harness/improve the living standard of the community through employment opportunities. For this to actually materialise, there should be a standby power generation plant

and a prioritised electricity supply linkage. By this, the project will be functional to at least 70%. The sand mining business can also be harness by the government in other to serve as another form of employment opportunity within the community though not the interest of this study. It is of utmost importance that mechanised trawlers are provided to enable fish harvesting be done on large scale bases.

The rehabilitation of the various dilapidated road should be done so as to ease traffic flow into the community as other investors could get opportunity to improve the community.

For easy connection to the project, it is highly necessary that the Government links a bridge from the third mainland to the sited project and also from Akoka (Unilag) through the Lagoon front. This will help to improve connectivity and diffusion of ideas into the region.

This will indeed improve the standard of living within the community as well as help to serve as a source of revenue for the Government.

Conclusion

Despite the effort of the Government/UN to alleviate poverty within the Ilaje region of Bariga, the community is living in poverty. This is as a result of the misconception on the need of the people within this community.

Before such a project is made, proper feasibility study should have been undertaken to actually determine the major need of the people. Such a project is good, but the amount of fish coming into the area through the water way; the number of buyers and infrastructure (road and electricity) should have been of utmost priority.

Government should ensure that these infrastructures are provided and serviceable in order to make maximum utilization of the project. And this will make the project fully operational and beneficial to the targeted populace. And thence issue of poverty alleviation in an urban poor community will drastically reduce.

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Appendix

Table 1: distribution of respondents based on income and area of residence

Income	Frequency	Percentage
less than 18,000	29	26.9
18,000 - 28,000	37	34.3
29,000 - 38,000	24	22.2
above 38,000	18	16.7
Total	108	100.0
Area of Residence		
within ilaja	61	56.5
around ilaja	33	30.6
non residents	14	13.0
Total	108	100.0

Source: field analysis, 2015

Table 2: hourly Traffic count, “IN”

Screenline/ time	6 - 7a m	7 - 8a m	8- 9a m	9- 10a m	10- 11a m	11- 12p m	12- 1p m	1- 2p m	2- 3p m	3- 4p m	4- 5p m	5- 6p m	6- 7p m	total
Arobadade	0	3	40	65	40	20	31	16	52	59	61	122	121	630
Ayoola	0	0	113	217	109	144	114	74	180	96	68	163	84	1362
Odunsi	144	590	962	1213	1098	1120	568	663	355	346	354	390	425	8228
Sanyaolu	0	0	243	224	284	204	202	56	125	50	130	330	75	1923
Bariga	129	974	525	799	842	688	750	610	875	854	858	1053	1123	10,080
ALH Alimi	0	118	119	119	144	124	113	76	86	130	100	109	70	1308
Ilaje	183	250	290	252	278	223	287	233	281	257	345	327	197	3403

Source: Field work, 2015

The table above shows the Traffic count conducted on the seven screen lines showing the time frame.

Table 3: hourly Traffic count: From 6am – 7pm. “OUT”

Screenline/ time	6 - 7a m	7 - 8a m	8- 9a m	9- 10a m	10- 11a m	11- 12p m	12- 1p m	1- 2p m	2- 3p m	3- 4p m	4- 5p m	5- 6p m	6- 7p m	total
Arobadade	0	16	74	73	37	30	25	21	62	59	61	122	121	701
Ayoola	0	0	54	178	107	127	117	57	138	96	68	163	84	1189
Odunsi	0	327	684	480	377	432	169	177	129	346	354	390	425	4290
Sanyaolu	0	967	522	200	100	207	330	300	131	50	130	330	75	3342
Bariga	700	701	682	596	396	397	493	595	699	854	858	1053	1123	9147
ALH Alimi		114	99	104	87	66	91	49	102	130	100	109	70	1121
Ilaje	225	188	145	174	260	155	230	279	227	257	345	327	197	3009

Source: Field work

The table above shows the Traffic count conducted on the seven screen lines showing the time frame.

Tables 4 to 7 shows the same traffic count with the location/screen line and vehicular type

Table 4: Traffic count, IN

type/location	Arobadade	Ayoola	Odunsi	Sanyaolu	Bariga	Alh Alimi	ilaje
Cars	68	76	836	105	2679	76	468
Buses	39	39	730	45	1608	50	351
Motorcycles	446	1175	4008	1747	2023	1116	2409
Bicycle	15	7	0	0	0	9	0
Keke	34	27	1647	129	2280	20	106
HDV	2	42	146	37	136	37	73

Source: Field work, 2015

Table 5: Traffic count, OUT

type/location	Arobadade	Ayoola	Odunsi	sanyaolu	Bariga	Alh Alimi	Ilaje
Cars	99	61	600	218	2613	61	580
Buses	43	33	297	62	1541	42	295
Motorcycles	471	1068	2386	2947	2826	923	2024
Bicycle	18	7	0	0	0	9	0
Keke	38	23	630	174	1038	34	75
HDV	22	42	33	47	184	36	89

Source: Field work

Table 6: Awareness level of Residences within the region

	q3		Total
	Yes	No	
within Ilaje	46	15	61
Residents around Ilaje	14	19	33
non residents	10	4	14
Total	70	38	108

Table 7; Level of usage by the community

	q4		Total
	Yes	No	
within ilaja	10	51	61
Residents around ilaja	5	28	33
non residents	1	13	14
Total	16	92	108

Source: field analysis, 2015

Table 8: Economic impact of the project

	q5			Total
	strongly agreed	Agree	disagree	
within Ilaje	3	14	44	61
Resident: around Ilaje	4	9	20	33
non residents	1	0	13	14
Total	8	23	77	108

Source: field analysis, 2015

Table 9: **The result of the morning count “in”**

Type/location	Arobadade	Ayoola	Odunsi	Sanyaolu	Bariga	Alh Alimi	Ilaje
Cars	22	47	572	59	1384	48	227
Buses	9	21	649	17	992	27	212
Motorcycles	157	665	3078	1037	485	710	1443
Bicycle	3	0	0	0	0	0	0
Keke	15	15	1635	69	2132	12	70
HDV	9	27	131	31	91	16	44

Source: field work

Table 10: **shows the result of the morning count “out”**

Type/location	Arobadade	Ayoola	Odunsi	Sanyaolu	Bariga	Alh Alimi	Ilaje
Cars	53	32	336	172	1318	33	343
Buses	13	15	216	62	925	19	156
motorcycles	182	558	1456	2237	1288	517	1058
Bicycle	6	0	0	0	0	0	0
Keke	19	11	470	114	890	26	39
HDV	3	27	18	41	139	15	60

Source: field work

Table 11: **The result of the afternoon count “in”**

Type/location	Arobadade	Ayoola	Odunsi	Sanyaolu	Bariga	Alh Alimi	Ilaje
Cars	46	29	264	46	1295	28	237
Buses	30	18	81	28	616	23	139
Motorcycles	289	510	930	710	1538	406	966
Bicycle	12	7	0	0	0	9	0
Keke	19	12	160	60	148	8	36
HDV	19	15	15	6	45	21	29

Source: field work

Table 12: **result of the afternoon count “out”**

type/location	Arobadade	Ayoola	Odunsi	sanyaolu	Bariga	Alh Alimi	Ilaje
Cars	39	23	134	52	1043	39	214
Buses	39	30	131	37	346	31	110

Motorcycles	242	431	353	663	1383	462	679
Bicycle	11	4	0	3	0	10	0
Keke	21	14	192	56	192	8	51
HDV	9	17	22	21	3	29	31

Source: field work

Table 13: Connectivity Matrix

	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1		1	0	1	0	0	0	0	0
V2	1		1	0	1	0	0	0	0
V3	0	1		0	0	1	0	0	0
V4	1	0	0		0	0	0	0	0
V5	0	1	0	0		0	0	0	0
V6	0	0	1	0	0		1	0	0
V7	0	0	0	0	0	0		1	0
V8	0	0	0	0	0	0	1		1
V9	0	0	0	1	0	0	0	1	



Plate 2: A section of the UN project



plate 3: Dilapidated Ilaje road



Plate 4: In-accessible state of Ayoola Lawal Street.

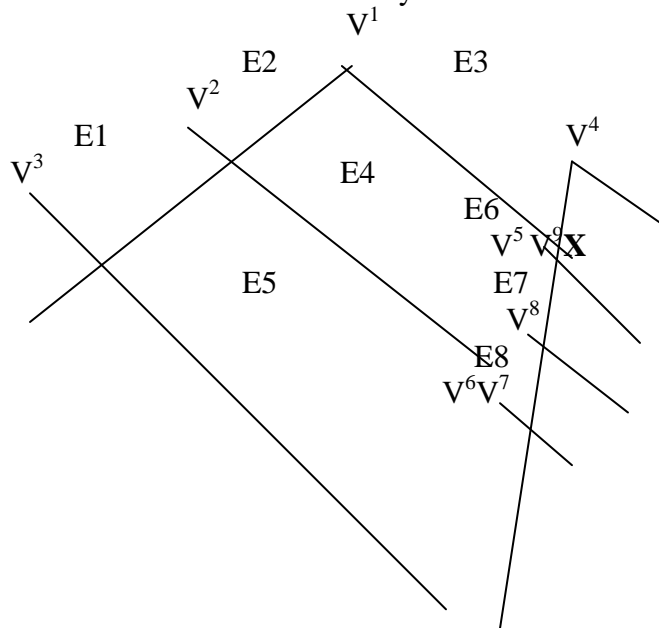


Figure1: Represents the network of Ilaje region.

A STUDY OF THE USE OF NON-MOTORIZED TRANSPORT IN UNIVERSITY OF LAGOS, NIGERIA.

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ABSTRACT

This study is tailored towards assessing the enhancement of Non-Motorized Transportation within the University of Lagos environment. From the survey carried out, it is observed that there is much motorized form of movement and this has resulted to heavy traffic congestion especially during the peak hours which has led to loss of man hour. A total of over 1000 questionnaires were administered to respondents and more than 60% agree to use bike if the infrastructures are put in place. Having assessed the rate of bicycle usage which is seen to be very low and peoples' perception to riding bicycle within the campus environment, it is therefore necessary to educate people on the need to use bicycle for short movements. This study proposes NMT as an alternative to using cabs especially for those who want to keep fit.

Keywords: NMT, Motorization, Bicycle, Rack, Screen line, Traffic Count,

INTRODUCTION

Across the globe, the usage of motor vehicle has increased tremendously. In 1950, there were about 53 million cars on the world's roads; only four decades later, the global automobile fleet became over 430 million, more than an eightfold increase (Walsh, 1992). While the growth rate has slowed in the industrialized countries, population growth and an increase in urbanization and industrialization have accelerated the use of motor vehicles elsewhere.

Along with access and mobility benefits, transport has brought about some major disadvantages. Transport is associated with a wide range of pollution problems, including local smog, regional acid rain and global warming potential due to gaseous emissions. Transport activities are also responsible for accidents, visual intrusion, noise, urban congestion, and other social and economical problems. It is now clear that transport imposes large-scale impacts on the environment and society, consequently raising concern of both the public and governments (Martin, 1992).

However before the advent of motorized transport, movement was done by walking, use of domestic animals, cart etc which has no negative impact on the environment as the motorized transport. Any movement from one place to another that does not use mechanical power (e.g. walking and cycling) is referred to as NON-MOTORIZED TRANSPORTATION (NMT). In recent time the need for sustainable means of transport became a thing of paramount importance so as to reduce greenhouse gases which harm our environment as they contribute to climate change. Researches carried out on the impact of motorized transport on the environment has shown that emission from motorized means of transport contribute among other anthropogenic and natural causes, directly, indirectly and cumulatively to environmental problems. Among these researchers, Rodrigue (2013) stated that motorized means of transportation emits sulphur dioxide (SO₂) and nitrogen oxides (NO_x) into the atmosphere that results to acidic compounds that when mixed in cloud water creates acid rain, such has impact on buildings and also leads to low agricultural yield.

Walking and cycling became necessary for sustainable means of transport, because it's a great way to reduce greenhouse gases which harm our environment as they contribute to climate change. Secondly, they are accessible forms of exercise for improving cardio-vascular fitness, reducing the risk of heart disease and controlling obesity. According to the world Health organization, a total of 30 minutes brisk walking and cycling on most days of the week, even if carried out in 10-15 minute episodes, is effective in providing these health benefits. Thus, whether short or long distance, energy required is provided directly by the traveler making it quite economical, costing much less than auto or public transit, both in direct user costs and public infrastructural costs.

Walking accounts for two thirds of total trips in large African cities such as Kinshasa and Dar es Salaam. In Karachi, walking and cycling account for 60 percent of total trips, and for 40 percent of work-related trips. In Madras, one third of the vehicles entering the central business district are bicycles, as are 25 percent of the vehicles passing a cordon- line 10 miles from the center. In Kenya, more than 90 percent of rural trips are on foot, 4 percent by bicycle, 2 percent by para-transit and only 0.5 percent by bus. In most Chinese cities 50-90 percent of vehicular passenger movements are by bicycle, with most of the remainder by bus. NMT has been adapted as a cost-effective solution for such diverse purposes as trash disposal, ambulance services, agriculture produce transport and wholesale delivery (Paul et al, 1994)

NMT is connected to the availability and perception of safety elements; accessibility of infrastructure; quality of built environment; connectivity and reliability. Health profits of walking and cycling are extensive and should not be neglected. In a recent Lancet Article (James Woodcock, 2009) health effects on alternate transport scenarios were evaluated in London and Delhi. It was found that for Delhi, the lower-carbon-emission motor vehicles and the increase walking and cycling resulted in a greater health gain from reduced air pollution, than for London (a city with extensive & well connected network of public transportation).

The NMT is often seen as the beginning and end of every trip. According to Piet, 2001 Walking and biking remain attractive transport modes for a number of reasons:

- they provide door to door transport
- biking and walking infrastructure usually have a very high spatial penetration
- biking and walking do not lead to waiting times compared with waiting at public transport stops
- walking and biking have a favorable environmental performance
- they are cheap transport modes
- biking and walking are essential elements in multimodal transport chains.

Paul Guitink, 1994 sees the importance NMT in two facets of Flexibility and affordability.

Flexibility: NMT provides a flexible form of transport where it is needed most-in activities that are essential to the basic quality of life. People living in poverty face a wide variety of everyday problems related to mobility, such as access to employment, social services and activities, educational opportunities, and household chores. NMT is a multi-purpose tool that can be used for the door-to-door transport of persons and goods with improved travel time and route options.

Affordability: Transport has to be affordable to users. While buses may be affordable at the beginning of the month, fares often become prohibitive with dwindling cash over the following weeks, and people are left with no choice but walking. Affordability of NMT is a function of purchase price in relation to income. Operational costs rarely are a constraint. However, high retail prices frequently suppress the potential demand for NMT, such as bicycles, carts and spare parts.

Despite the benefit of NMT as an eco friendly system, conventional transportation evaluation practices usually seem to prioritize automobile-oriented planning to NMT. This is because the benefits of NMT are difficult to quantify by network planners. It may be difficult to determine the number of non-motorized trips in an area because they are often under-recorded in travel surveys and traffic counts. Some travel surveys exclude non-motorized trips altogether and when included, walking and cycling trips are often undercounted because they include many short, non-work and recreational trips, and trips by children, all of which tend to be overlooked.

According to (TDM Encyclopedia, 2013) the automatic traffic counters do not record non-motorized travel and manual counts usually focus on major streets, ignoring side streets and paths that may be popular walking and cycling routes. Most trips involve non-motorized links that are often ignored in traffic counts. Trips classified as “auto” or “transit” is usually “walk-auto-walk,” or “walk-transit-walk” trips, yet the walking component is often not counted, even if it takes place on a roadway.

This has been the challenge of many developing countries to embracing NMT. Paul Guitink et al (1994) stated that Africa has the problem of incorporating NMT because of the missing link in the transport chain. They were of the opinion that the transport plans within Africa do not accommodate NMT. Non-motorized travel is often overlooked and undervalued. Many conventional travel surveys indicate that only a few percent of total travel is by non-motorized modes, which implies that it is unimportant, and improving non-motorized conditions can do little to solve transport problems. But such surveys tend to undercount non-motorized travel because they ignore short trips, non-work travel, and travel by children, recreational travel, and non-motorized links. Actual non-motorized travel is usually three to six times greater than these surveys as indicate by (Brog, Erl and James 2003; Litman 2003 and 2010; Rietvelt 2000). For example, U.S. Census commute data indicates that only 2.8% of commuters walk and only about 0.5% bicycle, since only trips entirely by these modes are counted (bike-bus and drive-walk trips are not included). The *National Survey of Bicyclist and Pedestrian Attitudes and Behavior* (Gallup 2008) indicates that about half of walking and cycling trips are purely recreational and about half are for transport, and only about 5% are for commuting, so for each non-motorized commute trip there are probably about nine other utilitarian non-motorized trips, and about ten recreational trips.

Conventional transport planning assumes that society is better off if somebody spends 5 minutes driving for an errand than 10 minutes walking or cycling, since it applies an equal or greater cost value to non-motorized trips than motorized trips (TDM Encyclopedia, 2013). The point being made is that vehicle operating costs (vehicle ownership costs, and external impacts such as congestion and parking costs are ignored), and no value is assigned to the health and enjoyment benefits of non-motorized travel. Such assumptions tend to skew countless planning decisions toward motorized travel at the expense of non-motorized travel. For example, it justifies expanding roadways to increase vehicle traffic capacity and speeds, requiring generous amounts of parking at destinations, and locating public facilities along busy suburban roadways, in order to facilitate automobile transportation although each of these tends to reduce walking accessibility. On the other hand, it is good to follow the global trend where the complete street concept is being adopted by many nations. Complete Street means that roadways are designed to accommodate all modes, including walking and cycling (America Bikes 2004, TDM

Encyclopedia, 2013). It involves policies to insure that walking and cycling travel needs are taken into account in all appropriate roadway projects.

Statement of problem

Individuals without private vehicles make use of the campus cabs to move from one place to another within the university environment. These cabs are most times insufficient during the peak periods of the day, resulting in long queue at the cab terminal leading to lateness to places of assignment (classes, offices, etc.) and eventual man-hour loss in productivity. At the moment, only few residents of the university use bicycles as a form of exercise. Only few students use bicycles as a mode of transport to commute between their homes/hostels and lectures halls. It is rather disheartening to note that University of Lagos which is one of the first generation universities and one of the largest in size is yet to adopt cycling as a conspicuous mode of transport which is a popular mode in other universities in the developed world. Often during the peak period, high vehicular traffic is experienced; creating congestion on the university's road network as most commuters prefer to move out of the campus in vehicles rather than walking or cycling.

It is rather very pathetic that many people still believe in showing-off with the type of vehicle they drive and at the same time feel that those who use bicycle are poor. To some others, it is the absence of the right of way of the cyclist that makes them not to be interested.

In order to understand the attachment of people to vehicles in their daily movements, traffic counts (in and out) of campus are very necessary. This exercise will give us a clear view to the level of motorization in the university environment.

Within the university road network, as congestion builds up during the peak periods, pedestrians and cyclists who would have preferred to walk or bike are faced with mobility challenges as the network does not permit the usage of cycling and ideal walkway for pedestrians. This in general has led to the over dependence on cabs and personal vehicles within the campus.

Aim and Objectives

The study aim is to assess the usage of Non-motorized transport within the University campus

The study objectives are to:

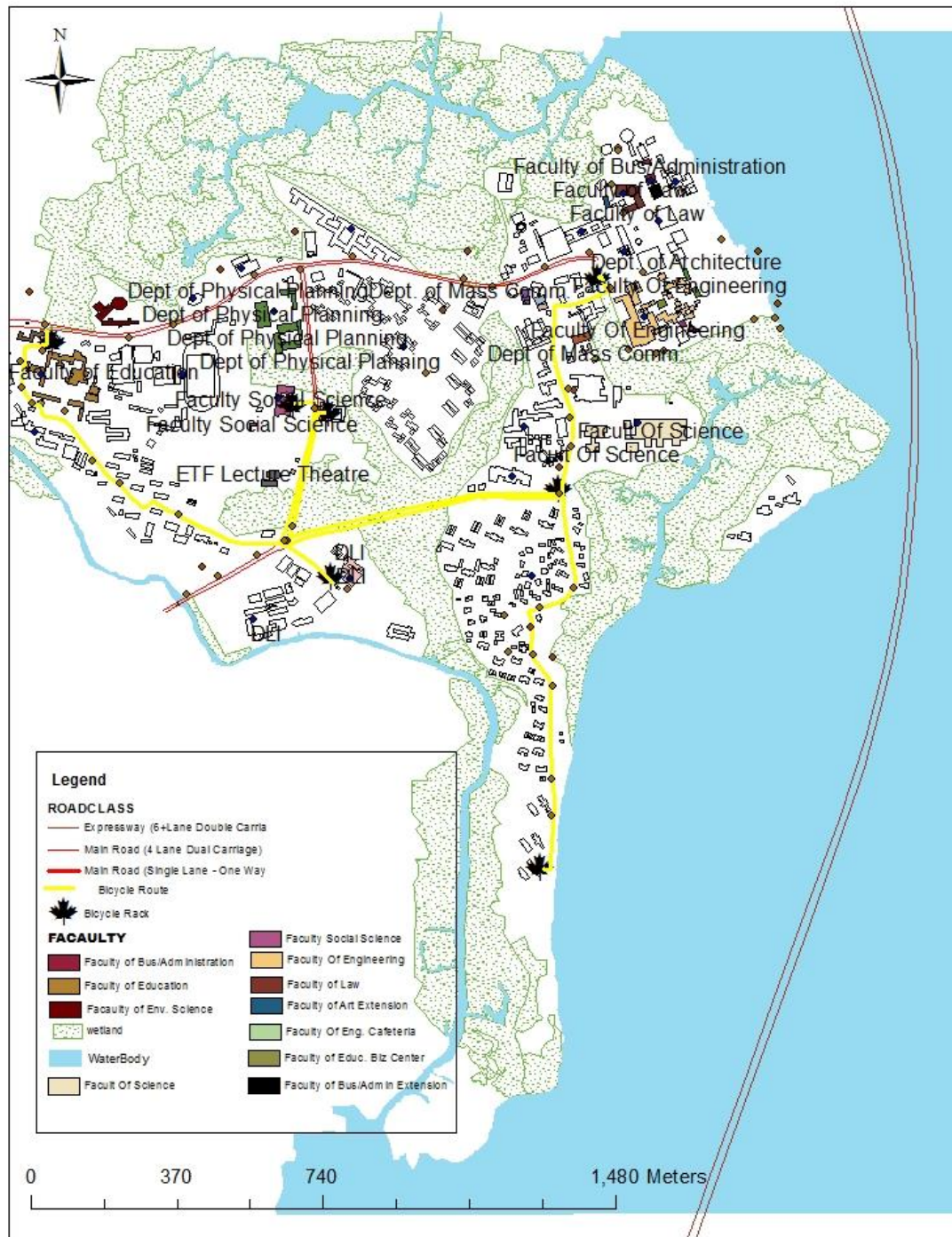
1. Evaluate the current use of bicycles within the university environment
2. Assess people's perception to walking and cycling
3. Examine the rate of motorization within the environment
4. Determine the availability of cycling/pedestrian infrastructures within the road network

Study area

The University of Lagos, popularly known as UNILAG, is a Federal Government University located at Akoka, Yaba Lagos State, in the Southern part of Nigeria. UNILAG is one of 27 federal universities which are over seen and accredited by the National Universities Commission. The University of Lagos founded in 1962 is on an 802 acres (32.5km²) of land which is largely surrounded by the scenic view of the Lagos lagoon and the 3rd Mainland Bridge, North Eastern part of Yaba, Lagos State. The geographic coordinates are 6°31'0"N and 3°23'10"E respectively. The University of Lagos consist mostly of undergraduate, postgraduate and distant learning students undertaking either a full time or part time degree program. UNILAG also comprises a

nursery, primary and secondary schools namely: the University of Lagos Women Society, University of Lagos Staff School and the University of Lagos International School within the main campus in Akoka. The staffs of the university comprise the academic and non-academic staffs some of which reside within the school premises. The students comprise of highest population groups hailing from different tribes all over Nigeria, from a modest intake of 131 students in 1962, enrolment in the university has now grown to over 39,000 students a year.

MAP SHOWING UNIVERSITY OF LAGOS



Map 1: A proposed Bicycle tracks within the University of Lagos

Methodology

Data acquisition was based on the primary and secondary data. The primary data source adopted was questionnaires, field survey and traffic count. The secondary data sources were from existing maps, journals and some books.

- Traffic Count Survey procedure:
- Identification of Screen Lines (Main Gate and Back Gate for vehicles and DLI round about for bicycle)
- SL 1: Main Gate
- SL 2: Back Gate
- SL 3: DLI Round About
- Positioning the field assistants at the screen lines
- A 14-hour count was carried out. This was conducted by using two shifts. The 1st shift made up of 16 field assistants covered between 6am to 2pm at the main gate while the 2nd shift was also manned by 16 field assistants between 2pm to 8pm. For the back gate, 8 field assistants were used to capture in and out traffic for the first shift and another 8 for the afternoon shift.
- With a manifest designed to capture different streams of vehicles, the field assistants were able to capture the flow on hourly basis.

Data Presentation

Table1 (refer to appendix): shows the distribution of respondents that filled the questionnaire, based on the number of times they come into the campus.

Table 2 (refer to appendix): shows the traffic count survey conducted for three days.

Data Analysis (Result/Discussions)

Evaluate the current use of bicycles within the university environment.

Table 2 shows a breakdown of the traffic count carried out in three days within the university environment. The average bicycle volume for the days shows 38 bicycles came in through the main gate and 34 left through the main gate. The back gate witnessed an average of 28 as in bound while 35 are for outbound.

Assessing people's perception to walking and cycling

According to their views, the reason for not walking/ cycling is based on lack of adequate facilities for pedestrian/cyclist and the distance between origin and destination.

Table 3(appendix 1) shows that a large number (80%) of the respondents comes into school five times a week and while in school they use campus cabs because there is no designated lane for cycling. In other words, they are afraid of being knocked down by motorists.

Examining the level of motorization within the environment

The level of motorization is very high. From the Table 4(appendix 2) which gives the breakdown of the 3- day traffic count, it can be observed that the average daily flow of cars into university of Lagos (through Main Gate) is 4882 while 5125 moves out from it. On the other hand, the second Gate's average daily flow into Campus is 3567 and the out flow is 3010. Table 4 (Appendix 2) also shows that a larger percentage of movement within school environment use motorized means, while a lesser percentage use bicycle.

Determining the availability of cycling/ pedestrian infrastructure

Cyclists on campus share the same corridor with motorists and this is risky. At the moment, there are few areas that have continuous pedestrian walk-ways. On the Othman Dan Fodio Boulevards, the walk –way from the main gate on the left side terminates at the entrance of new hall and this continues after new hall to faculty of Arts.

The result from the Table 5(Appendix 3) shows that providing adequate facilities/infrastructures for pedestrians and cyclists will encourage more commuters to switch over to non motorized transport. Thence, the need for proper infrastructures to facilitate walking and cycling within the university environment

We are of the view that the cyclist right- of- way can start from Faculty of Education through Ransome Kuti to DLI round about. It continues to Faculty of Social Sciences through Commercial road and moves to Health centre through Access Road. The last two legs are the Alvan Ikoku/Eni Njoku Road and the Tafawa Balewa Road to High-Rise and DSc bicycle racks.

Findings

The study has been able to establish that:

- Over 80% of people who work or study on campus actually comes five times a week.
- People shy away from walking/cycling due to the fear of being knocked down by moving vehicles.
- It is observed that from the main gate to senate building; the Dan fodio Boulevard road is narrow and cannot accommodate cycling.
- The best option is to go through Faculty of Education to Ramsome Kuti
- The Faculty of Social Sciences is connected through commercial road
- The bicycle right- of –way continues to Health centre through Access road
- High-Rise is linked through Alvan Ikoku/ Eni Njoku
- The rack adjacent to the DSC's office is connected through Tafawa Balewa road

Recommendations

Despite the availability of a bicycle rack within the campus (dilapidated and in front of DSA'S office), it is necessary that four more are constructed. These should be in the following areas- at education faculty, High-Rise, Faculty of Social Sciences and DLI. Therefore the route for cycling should be constructed from education faculty leading to DLI then terminating at the DSA'S office and High-Rise.

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APPENDIX

Table 1: No of Times Respondents came into campus in a week

Nos. of times in school	Frequency	Percentage
Once	27	2.69
Twice	47	4.69
Thrice	112	11.39
Four times	135	13.47
Five times	679	67.76
Total	1002	100

Source: Field work, 2015

Table 2: Traffic count

	Day	CARS		BUSES	HEAVY DUTY VEHICLE	MOTOCYCL E	BICYCLE		Pedestrians
Inbound gate1	Day1	3938	4882	407	17	24	17	38	7224
	Day2	6133		847	33	118	42		8824
	Day3	4476		769	30	67	47		7136
Outbound gate 1	Day1	3433	5125	540	23	75	36	34	5917
	Day2	7062		1148	27	140	30		11453
	Day3	4890		976	31	147	38		10844
Inbound gate2	Day1	4241	3567	503	23	96	30	28	4520
	Day2	3157		219	37	80	30		4438
	Day3	2305		193	48	123	26		10872
Outbound gate 2	Day1	3795	3010	555	14	109	28	35	8633
	Day2	2929		208	42	116	54		3749
	Day3	2307		159	39	119	23		3969

Source: Field work, 2015

		why do you go with the campus cab?						Total
		Lack of adequate facilities for pedestrians	High rate of pedestrian accident	Show of wealth	Distance between origin and destination	Others	14.00	
How many times do you come to school weekly?	Once	4	6	4	9	4	0	27
	Twice	1	1	9	33	2	0	46
	Thrice	15	9	21	65	4	0	114
	Four times	31	15	15	67	9	0	137
	Five times	153	82	77	299	55	1	667
	51.00	0	2	0	0	0	0	2
Total		204	115	126	473	74	1	993

Table 5: provision of infrastructures for NMT

		If the facilities for pedestrians and bikers are made available and conducive, do you think it will attract more people to walking and biking?					Total
		Strongly agree	Agree	Neutral	Disagree	Strongly disagreed	
How many times do you come to school weekly?	Once	14	8	3	2	0	27
	Twice	12	15	14	4	2	47
	Thrice	33	41	24	10	4	112
	Four times	28	67	33	7	0	135
	Five times	119	299	139	104	18	679
	51.00	0	0	0	2	0	2
Total		206	430	213	129	24	1002

AN EVALUATION OF VEHICULAR TRAFFIC ACCIDENTS IN THE UNIVERSITY OF LAGOS

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Abstract

The study focuses on the impact of drivers' behaviors that leads to accident in the University of Lagos, Akoka. It looks at the trend in accident based on rate the of occurrences as well as the relationship that exist between accidents and traffic flow within the campus. The study discovered that accident rate within the campus over the space of 8 years was **3.8%** which grew to **51%** between 2013 and 2014. The study also found out that the outcome of accidents based on human factors (human behavior, depression etc) stand at **79%** among other factors. Major points of accident frequency were identified in which **new hall and its environs** (filling station, roundabout, new hall shopping complex) have the highest record of accident occurrence. This study therefore recommends that drivers within Unilag should be given proper orientation on road usage especially the rules guiding the right-of-way.

Key words: Accidents, Behavior, Roundabout, Traffic, Congestion.

INTRODUCTION

One way in which human behavior has changed over time, is the extent to which people travel from one place to another. The large amount of fast movement of people and vehicles has created serious risk of crash injuries and damages arising from transport behaviors (Ogwude 2012). W.H.O, reported that road transport records the highest related number of crashes/accidents. This invariably has made road traffic accident a thing of concern for many nations.

Road traffic accident (RTA) occurs when a road vehicle collides with another vehicle, pedestrian, animal or geographical or architectural obstacle, resulting to injury, property damage and death. The rate of Road Traffic Accidents varies from one country to another based on their level of technological advancement. However, unlike developed or high-income countries, many developing countries have made very little progress towards addressing RTA.

The increasing rate of road traffic accident however, has been attributed to population explosion and increasing use of motor vehicles. Furthermore, Ezenwa (2012) stated that the causes of road traffic accidents are multi-factorial. Factors such as the driver, vehicle and roadway give rise to RTA. In developing countries, the causes of road traffic accidents are identified as poor road network, inadequate traffic infrastructure as well as negative behaviour of road users. Studies carried out in the past have shown that the negative behaviour of road users contribute majorly to road traffic accidents.

According to Lum et al (1995), driver factor solely contribute to about 57 percent of road traffic accident and 93 percent when combined with other factors. Hajar et al (2000) were of the opinion that a high proportion of RTAs (Road traffic accidents) can be apportioned to unsafe human acts. Drunken drivers of motor vehicles make the clearest example. In Lagos, 90 percent of road traffic accidents could be attributed to recklessness on the part of drivers, ignorance of Highway Code and over-speeding etc (Atubi 2010).

More so, road traffic accident can occur in small circuit where the medium and means for road vehicular movement is available. An example of such is the University of Lagos which serves as a place of work and an institution of learning. Work-related road traffic accident, injury and damage are beginning to get the attention of people since it has physical, social,

emotional and economic implications. Costs incurred from work-related road traffic accident are damaged infrastructures, company vehicles and incurred medical cost. Past researchers have identified factors responsible for work-related road traffic accident. Such factors include driver's perception of the value given to safety in the organization, driver's daily workload, and attitudes to safety of other road users within the organization as well as individuals driving practices (Newnams, Sheppard, Griffin et al, 2014).

A safe work environment depends on individuals anticipating threats to safety, showing concern for the safety of others and contributing to safety improvements in the organization. Analysis of various causative factors of road accident has indicated that the riskier the attitude and behaviour, the more likelihood of an accident occurring.

The Statement of Problem

Safety on wheels anywhere, is a function of a good driving behaviour. Unsafe and reckless driving prompted by smooth and wide road pavement sometimes lead to injury or death. However, as narrow as the university road network is, some drivers still drive recklessly, impatiently, without putting into consideration other road users within the same route way. This has led to accidents of various forms and magnitude within the campus.

Apparently motorized transportation is the only form of movement within the campus aside from walking. This invariably has led to the increase in vehicular movement (more campus shuttles and buses as well as a large number of private cars based on the past and present traffic count conducted) within the campus resulting to congestion during peak periods. As stated above, the road network still remains the same over the years but more vehicles ply major route ways within the campus road system and as such drivers are left with no option than to compete with other road users to beat off lateness and other forms of delay in the context of getting to their destination in record time.

The behaviour and attitude exhibited by drivers, while trying to boycott delay turns out to be risky as they try to overtake at bends, drive – on Zebra- crossing while pedestrians are crossing, make improper turns and sometimes do not obey “right of way”. This negative behaviour displayed by drivers has been the major concern as their attitudes lead to collision of vehicles, crashing into sidewalks, median-kerbs and other road furniture. Pedestrians at times are not spared as some impatient drivers discriminately blast their horns to scare them away from the walkways. However, congestion and risky attitude displayed by drivers within campus seem to be common in some certain areas such as entrance into the Faculty of Education from the gate, the roundabout at new hall, campus bus terminal at computer centre and the terminal of campus shuttle in front of Moremi hall of residence. These areas have one time been noted for damaged side- kerbs, bend poles etc in which immediate actions were taken to correct the damages.

Road traffic related accident has physical, social, emotional and economic implications as it reduces the aesthetic value of the environment, cause obstruction to movement, emotional break down when live is lost and economic impact in terms of cost incurred based on vehicles and road facility damaged. Driver's negative behaviour within the campus has economic impact most times on the university, especially when culprits dodge the responsibility of repairing such damages leaving the university with the burden of repairs.

Aim and Objectives

The study aim is determined at understanding the driver's behaviour and the related impact to road accident within the university of Lagos environment.

The study Objectives are to

- determine trend in accident reported in unilag from 2004 till date
- evaluate the relationship between traffic volume and accident rate between 2013 to date

- examine the percentage contributed by human factors as against mechanical and environmental factors
- identify the foci point of accident within the University of Lagos
- evaluate the cost effect of accidents on the university property from 2004 till date

Study Area

The University of Lagos is a Federal Government University with a main campus located in Akoka, Lagos, Nigeria. The University of Lagos founded in 1960 is made up of two campuses, the main campus at Akoka, Yaba and the College of Medicine in Idi-Araba, Surulele both in the Mainland of Lagos (see Figure 1). The main campus is largely surrounded by the scenic view of the Lagos Lagoon and is located on 802 acres (3.25km²) of land in Akoka, North Eastern part of Yaba.

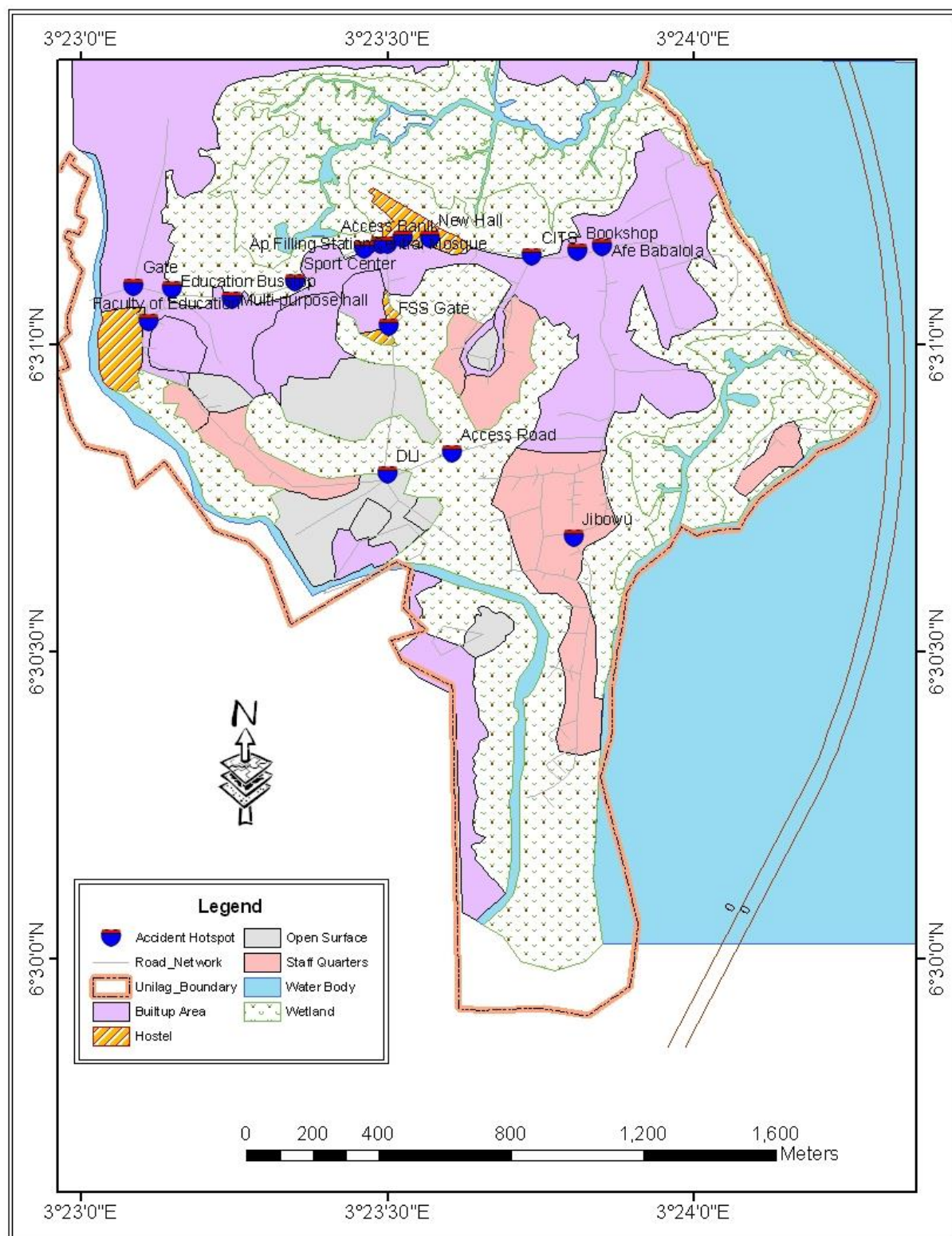


Figure 1: Black Spots on the major roads in University of Lagos

Literature Review

Relatively few works have been done on the traffic management of the University of Lagos. This part reviews various scholarly works done.

Adeniji Kunle (1993) made emphasis on urban transport problem as it can be related to drivers' behaviour and accident risk in the University of Lagos' transport subsidy and welfare

economics. Ibidapo-Obe. (1999), wrote on private sector participation in transportation. Drivers' behaviour can be influenced as a result of continuous check on dominated private ownership of cabs and buses and even private ownership of cars. There is the need private sector initiative in the education of drivers, erection of signage (road signs) road markings, etc. but his emphasis was on investment problems on the part of government.

Lawal (1998), on road transportation in ECOWAS sub-region, mentioned the improvement in road network and other transportation infrastructure. This would influence drivers' behaviour positively, thus, improving in road network and other transportation infrastructure like bridges, park etc. This would among others prolong the optimum life span of the vehicles, reduce road accidents and enhance smooth and underplayed trips.

Oni S. I. (2008) wrote on 'impacting driver's behaviour behind the wheel'. The paper examined issues relating to safety as the most important factor considered in heavy freight transport. Although he did not particularly mention the University of Lagos, his comment on the driver's competency (satisfaction that the driver derives while doing his work in a way that is safe in terms of relevant experience is relevant to this study.

Drivers' impairment includes tiredness (fatigue), illness, alcohol, inability to understand traffic signs and drug use (legal or illegal). Speed excluding safe conditions such as speed for which the road was designed, the road conditions, the weather (fog, rain, ice and snow etc.) and speed of surrounding motorist. Approximately 50% of the population is either killed or disabled temporarily or permanently in their lifetime due to traffic accidents (Oni, 2007).

The article by Hingstons et al (1996) was insightful; evidence shows the driver as a sole contributing factor in 94% of crashes in the study. Behavioral changes offered by far the largest opportunity of harm reduction. The poor state of road and the road environment negatively aided human factor, such as drivers fatigue, over speeding, drunkenness which often times are responsible for most fatal crashes recorded especially at night (Odeleye 2007).

Materials and Methodology

Data acquisition

Data used were both primary and secondary data.. The primary data was the traffic count conducted, while the secondary data was the accident report obtained from the security unit of Unilag and the existing map of unilag. An interpolation was done to the fill up the missing years of accident which couldn't be obtained from the security unit of unilag. SPSS package was used.

The traffic counts of 2013 and 2014 were carried out for 3 days and average obtained for each year. The screen lines were Main Gate and Second Gate. Both out-going and in-coming vehicular traffics were captured at both screen lines for 14hours each day. 40 field assistants were trained for the count for two days and they operate two shifts during the period. The first shift started by 6am to 2pm and the second started from 2pm to 8pm.

Data Analysis

Data Analysis is sectionalized based on the objectives of the study. For objective one, the data collected on accident report from the security unit of UNILAG was used to determine the trend of accident within the campus. For objective two, the traffic count conducted in 2013 and 2014 is compared with the accident report of 2013 and 2014. Objective three was analyzed using SPSS to determine the percentage of the different factors. For objective four, SPSS package was used to identify major focus point of accident occurrence, while objective five was based on the assumption of cost incurred.

Results

Objective 1: Trend in accident report from 2004 to 2005

Looking at table 1 in the appendix, the data collected from the traffic section, security unit of UNILAG. This (*) indicates missing value for the years which were not available due not inappropriate record keeping. It goes further to show that from the year 2008 to 2011 the data is not available. The annual accident rate was calculated so as to interpolation the other years.

Accident rate % (P) = $\{(f/s)^{(1/y)}\} - 1$

where F: value base year

S: value of the 1st year

Y: number of year interval

The base year is 2007 with a value of “10” and the 1st year is 2004 with a value of “9”

The year interval is 2007 – 2004 = 3

$$P = \{(10/9)^{(1/3)}\} - 1$$

$$P = \{(1.111)^{(0.333)}\} - 1$$

$$P = \{1.0356\} - 1$$

$$P = 0.0356 \times 100$$

$$P = 3.6\%$$

It therefore shows that accident rate between the years 2004 to 2011 in unilag was at **3.6%**
The missing year was interpolated by using $1.356 \times$ the base year which gives the result of the following year. This is done for the other missing years.

- For 2008, $10 \times 1.0356 = 10.356$
2008 estimated value is $10.356 = 10.4$
- For 2009, the value of 2008, $10.4 \times 1.0356 = 10.77$
2009 estimated value is 11
- For 2010, $11 \times 1.0356 = 11.39$
2010 estimated value is 11.4
- For 2011, $11.4 \times 1.0356 = 11.81$

The estimated value for 2011 is 12

The trend of accident rate from 2004 to 2015 is captured in Table 2 in the appendix and figure 1. It indicates that there has been a drastic rise in accident rate from 2013 to 2015

Accident rate between 2013 and 2014 is calculated thus: using percentage increase formula

$$\frac{\text{value of year 2014} - \text{value of 2013}}{\text{value of 2013}} \times 100 = \frac{68 - 45}{45} \times 100 = 51$$

The rate of accident growth between 2013 and 2014 is **51%**

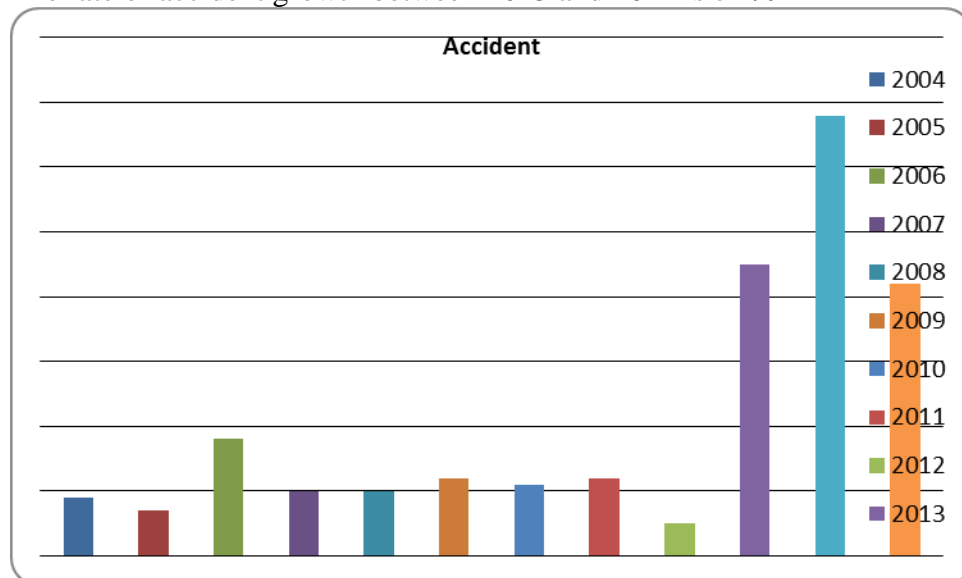


Figure 2: The trend of accident rate in Unilag from 2004 to 2015

Source: Excel Sheet, using the accident values versus the years

Objective 2: Relationship between Traffic Volume and Accident Rate between 2013 And 2014

From table 3 in the appendix, it shows that there is an increase in the volume of traffic within the campus

Table 4: Shows both the result of traffic counts for 2013 and 2014 respectively with the accident report for each year

Year	Accident report	Traffic Volume
2013	45	8571
2014	68	9409
Rate of increase	51%	10%

Source: Adapted from the traffic count and the accident report, 2015

The analysis shows that, as traffic volume increased, so also accident rate increased. The rates of increases are 51% for accident report and 10% for traffic volume. *Therefore there exists a relationship between the traffic volume and accident occurrence within the campus.*

Objective 3: Percentage contributed by human factors as against mechanical and environmental factors

Table 5 in the appendix Shows that human factor contributes more to the accident incidence within the campus. Human factor has the highest percentage of 79 while mechanical is 20 and environmental is 1. (See appendix).

Objective 4: Focus Point of Accident within the Campus

There are some areas within the campus which experience more accident occurrences than others. The Table 6 (see appendix) shows that the Main Gate, Chapel/SUG/Sport centre, new hall roundabout/ filling station and its environs and DLI/ FSS are the major points of accidents occurrences. NEW HALL ROUNDABOUT is the point that has the HIGHEST accident incident (see appendix). Figure 1 above shows the distribution of the accident occurrences along the major corridor which is Othman Dan Fodio Boulevard.

The figure 4 in the appendix shows that new hall roundabout is an access point that leads to major land use within the university. This reason makes the location to be prone to accident occurrence.

Objective 5: Cost Effect of Accidents on the University Property

The table 7 (see appendix) it shows the impact of accident over the years on the campus. Property damages involve the sidewalks, median and side kerbs, street light poles etc. Property damage occurred 33 times within the space of 8 years. If an estimation of ₦ 100,000 is used to repair property damaged, then the university over the years has incurred ₦ 3,300, 000 within the space of 8 years. This is a crude estimate since the bursary unit could not furnish us with the actual value.

Findings

At the end of the study, the following findings emerged

- (i) Traffic flow within the campus is on the increase as motorized transport is the only form of movement within the campus aside from walking.
- (ii) The rate of accident occurrence has increased over the years, though gradually, but rose drastically in 2013.
- (iii) Human factor is the highest cause of accident within the university premises.
- (iv) There exist major points of accident reoccurrence.
- (v) Accident within the premises has cost effect on the university as property damage is the next in line after car damage. Most times this property damages are born by the institution.

Recommendations

The recommendations are as stated below:

- (a) Traffic light and traffic signs should be placed at least 80m advance of major junctions and at least 1.5m from the carriageway edge. This would help to regulate and mitigate accidents especially at the turning by the AP filling station and Intercontinental Bank.

- (b) Advisory signs should be provided that shows information in quick and understandable format. Where literacy may be a problem to the drivers' understanding, pictorial information should be used in preference to text within the University of Lagos.
- (c) Non- motorized means of transportation should be adopted into the system, to ease traffic flow.
- (d) Laws and penalties should be put in place to regulate drivers behavior within the school premises
- (e) There is need for a workable and a sustainable department of transportation or department of traffic management on the campuses where accurate data on traffic movement and obstruction can be kept.

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Appendix

MAP SHOWING UNIVERSITY OF LAGOS

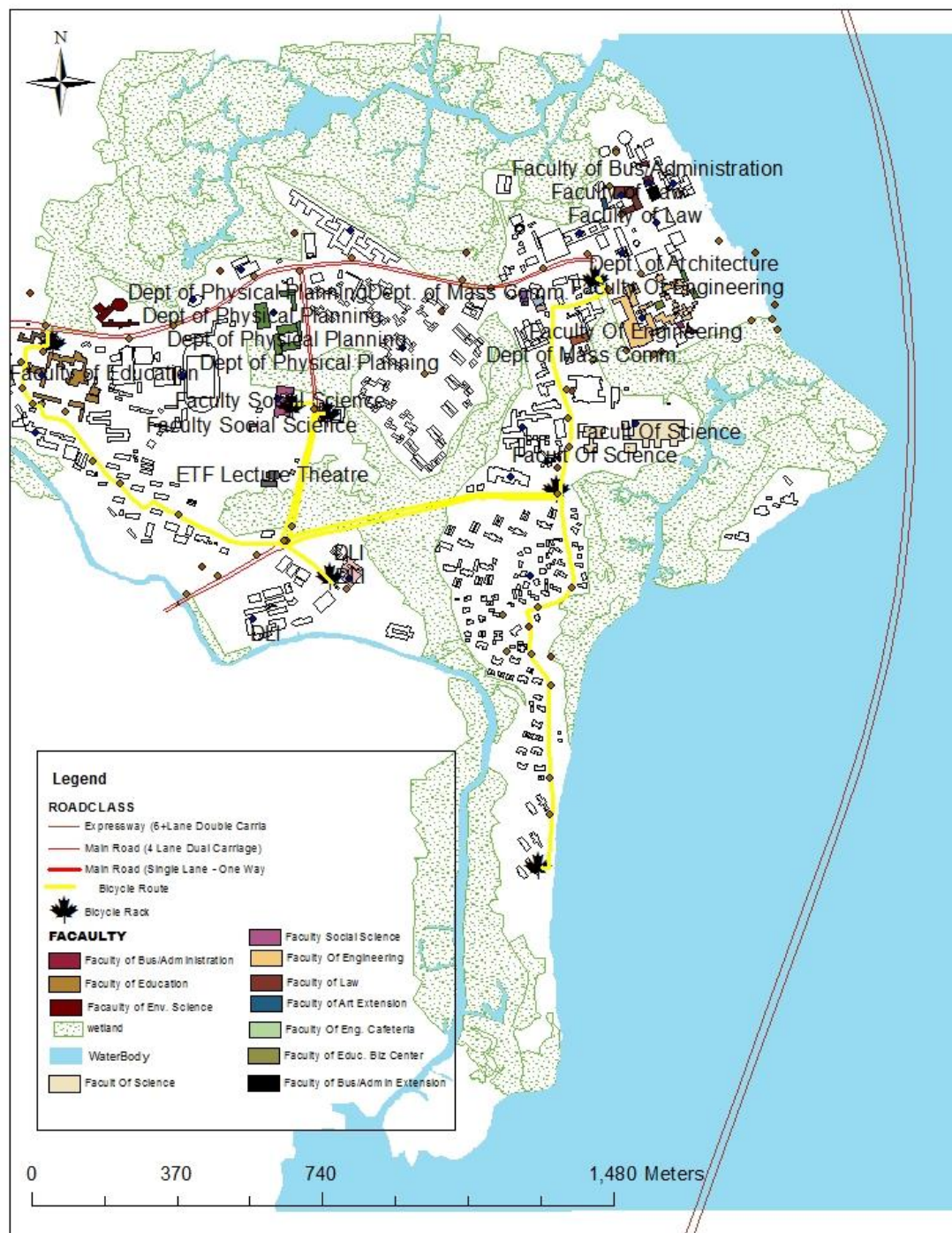


Figure 3: a route map of Unilag

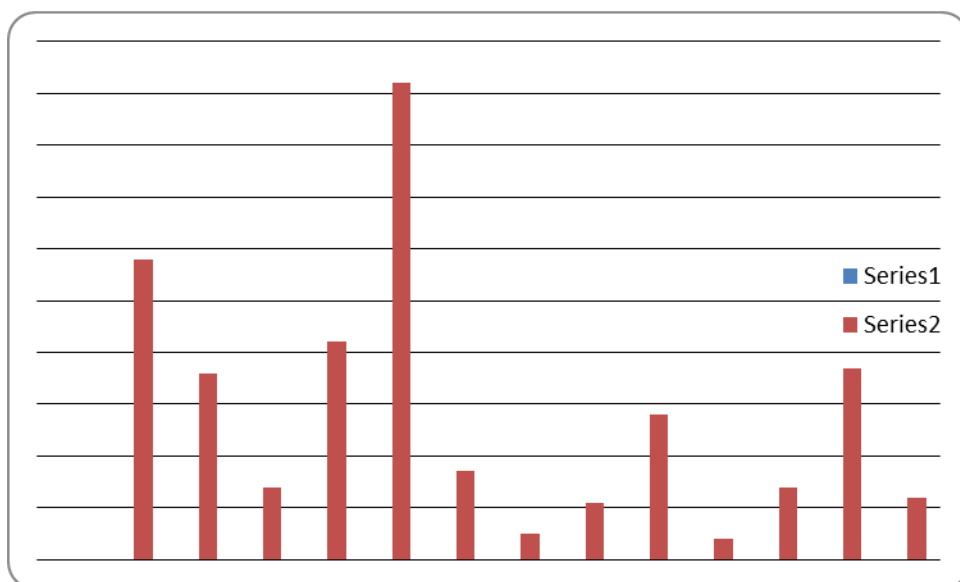


Figure 4: The focus points of accident occurrences

Table 1: shows yearly summary of accidents within UNILAG.

accident report yearly	
Year	Accident
2004	9
2005	7
2006	18
2007	10
2008	*
2009	*
2010	*
2011	*
2012	5
2013	45
2014	68
2015	42

Source: Security unit of UNILAG, 2015

Table 2: shows the addition of the missing years gotten from the interpolation (2008 - 2011)

Accident report yearly	
Year	Accident
2004	9
2005	7
2006	18
2007	10
2008	10
2009	11
2010	12
2011	12
2012	5
2013	45
2014	68
2015	42

Source: Data analysis, 2015**Table 3:** The traffic count conducted in the 2013 and 2014.

2013				2014		
	Main gate	2nd gate	Total	Main gate	2nd gate	Total
Cars	4980	2448	7428	4881	3198	8079
Buses	866	2	868	665	303	968
HDV	36	8	44	25	36	61
motocycle	88	67	155	68	103	171
Bicycle	42	34	76	102	28	130
Total	6012	2559	8571	5741	3668	9409

Source: Field Work, 2015**Table 5: the outcome of the accidents over the years**

UNILAG ACCIDENT REPORT: OUTCOMES				
MONTH/YEAR	MECHANICAL FACTOR	HUMAN FACTOR	ENVIRONMENTAL FACTOR	TOTAL
SEPT to DEC 2004	3	6	0	9
JAN to DEC 2005	1	6	0	7
JAN to DEC 2006	1	17	0	18
JAN to DEC 2007	3	7	0	10
AUG to Dec 2012	2	3	0	5
JAN to DEC 2013	12	33	1	46
JAN to DEC 2014	13	60	1	74
JAN to AUG 2015	7	36	0	43
TOTAL	42	168	2	212
PERCENTAGE	20%	79%	1%	

Source: Adopted From the Accident Report, Unilag

Table 6: shows the locations of accident occurrence with unilag

Locations of accident occurrence for each year									
Focus point/Year	2004	2005	2006	2007	2012	2013	2014	2015	Total
Maingate	1		2	1		8	13	6	31
Education and environs	2	2	2		1	5	4	5	21
ENV.Sci/WEMA bank/ multi purpose		1	2	1		3	1	1	9
Chapel/SUG/Sport centre	1		1		1	8	6	5	22
Newhallroundabout/fillingstation	2	1	5	2	2	9	17	13	51
Unilag Pharmacy/computer centre		1	1	3	1	3		2	11
Fire station	2			1			1		4
Mass com roundabout/ Moremi taxi park		1					5		6
Main auditorium/Senate/art block car park			1	1		2	8	3	15
Faculty of Law/ bussadmin							1	1	2
Health centre/science		1	1				5	1	8
DLI/FSS			1			4	9	5	19
2nd Gate	1		1			1	3	1	7

Source: Adopted from the accident report, Security unit, UNILAG

Table 7: shows the impact of accident within the campus

Accident report: DAMAGES				
Year/accident type	CAR	Property	human	NON
2004	6	3		
2005	6	1		
2006	18	0		
2007	6	4		
2012	3	2		
2013	35	7	1	
2014	58	13	2	
2015	38	3	1	
TOTAL	170	33	4	

Source: Adopted from the accident report, security unit, UNILAG

UNILAG ACCIDENT DATA FOR YEAR 2012

S/N O	DATE	TIME	NATURE/TYPE OF ACCIDENT	LOCATION OF ACCIDENT	POSSIBLE CAUSE	IMPACT OF ACCIDENT	VEHICLE NO
1	28/08/12	17:40	LONE ACCIDENT	NEW HALL	MECHANICAL	CAR DAMAGE	123PIC
2	16/09/12	19:57	LONE ACCIDENT	SPORTS CENTER	HUMAN BEING	PROPERTY DAMAGE	EX499SLR
3	30/09/12	11:00	LONE ACCIDENT	RANSOME KUTI WAY	MECHANICAL	PROPERTY DAMAGE	MFM23
4	20/10/12	08:10	MINOR ACCIDENT	EDUCATION ROAD	HUMAN BEING	CAR DAMAGE	DR78LSR
5	13/12/12	18:30	MINOR ACCIDENT	YEM-YEM	HUMAN BEING	CAR DAMAGE	GJ94EKY

UNILAG ACCIDENT DATA FOR YEAR 2013

S/NO	DATE	TIME	NATURE/TYPE OF ACCIDENT	LOCATION OF ACCIDENT	POSSIBLE CAUSE	IMPACT OF ACCIDENT	VEHICLE NO
1	26/11/13	21:50	MINOR ACCIDENT	FSS SHOPPING COMPLEX	HUMAN BEING	CAR DAMAGED	LND681AG
2	15/5/13	20:45	MINOR ACCIDENT	SPORT CENTRE	HUMAN BEING	HUMAN INJURY	BDG904AW
3	19/11/13	07:35	MINOR ACCIDENT	FSS ROAD	HUMAN BEING	CAR DAMAGE	AGL07BS
4	15/11/13	16:15	MINOR ACCIDENT	UNILAG GATE	DEPRESSION	CAR DAMAGE	EPE939BX
5	11/10/13	17:21	MINOR ACCIDENT	UNILAG GATE	HUMAN BEING	PROPERTY DAMGE	EKY196BK
6	28/08/13	16:45	LONE ACCIDENT	SPORT CENTRE	MECHANICAL	CAR DAMAGE	MUS267XB
7	07/08/13	10:50	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	DX474GGE
8	22/09/13	21:30	MINOR ACCIDENT	JIBOWU	HUMAN BEING	CAR DAMAGE	50M11FG
9	17/09/13	19:10	MINOR ACCIDENT	ACCESS BANK GATE	HUMAN BEING	PROPERTY/HUMAN DAMAGE	LND351BT
10	03/10/13	14:00	LONE ACCIDENT	CITS	MECHANICAL	PROPERTY DAMAGE	BDG86AP
11	22/09/13	14:45	MINOR ACCIDENT	ISI ROAD	HUMAN BEING	CAR DAMAGE	BDG873AV
12	23/10/13	11:30	MINOR ACCIDENT	SPORT CENTRE	HUMAN BEING	CAR DAMAGE	
13	04/10/13	17:35	MINOR ACCIDENT	NIALS	HUMAN BEING	CAR DAMEGE	APP647AE
14	26/10/13	14:13	MINOR ACCIDENT	PG SCHOOL	HUMAN BEING	CAR DAMAGE	KRD985BK
15	27/5/13	08:11	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	SMK419AJ
16	08/06/13	11:50	MINOR ACCIDENT	BOOKSHOP	HUMAN BEING	CAR DAMAGE	DD963SMK
17	29/05/13	08:24	MINOR ACCIDENT	ENVIRONMENTAL FACULTY	HUMAN BEING	CAR DAMAGE	SMK598BE
18	21/05/13	08:37	MINOR ACCIDENT	ENVIRONMENTAL FACULTY	HUMAN BEING	CAR DAMAGE	E2154ABC
19	12/07/13	12:30	MINOR ACCIDENT	EDUCATION FACULTY	HUMAN BEING	CAR DAMAGE	EKY839BB
20	07/07/13	15:17	MINOR ACCIDENT	EXIST GATE	HUMAN BEING	CA8R DAMAGE	
21	06/07/13	NT:IA CC	LONE ACCIDENT	SANDWISH CENTRE	MECHANICAL	HUMAN DAMAGE	QIWGP15R
22	08/07/13	18:15	LONE ACCIDENT	GATE ENTRANCE	HUMAN BEING	CAR DAMAGE	XZ923KRD
23	18/07/13	18:10	MINOR ACCIDENT	SCHOOL GATE	HUMAN BEING	CAR DAMAGE	AGL708SA
24	22/07/13	15:30	MINOR ACCIDENT	SPORTS CENTER	HUMAN BEING	CAR DAMAGE	CL100LSR
25	24/07/13	18:30	LONE ACCIDENT	NEW HALL	HUMAN BEING	PROPERTY DAMAGE	KR778AAA
26	29/07/13	15:30	MINOR ACCIDENT	SENATE BUILDING	MECHANICAL	CAR DAMAGE	EKY822AC
27	26/07/13	13:45	LONE ACCIDENT	CAMGUS GATE	MECHANICAL	PROPERTY DAMAGE	KJA783AW
28	09/06/13	08:59	EMERGENCY ACCIDENT	CAMPUS GATE	NATURAL	CAR DAMAGE	PN66KJA
29	19/03/13	11:33	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	
30	17/06/13	12:49	LONE ACCIDENT	NEW HALL	MECHANICAL	HUMAN INJURY	XB251XTP
31	24/06/13	10:11	LONE ACCIDENT	SPORTS CENTER	HUMAN BEING	CAR DAMAGE	JB594EK1Y
32	26/06/13	17:27	LONE ACCIDENT	SPORT CENTER	HUMAN BEING	CAR DAMAGE	TS27AAA
33	03/05/13	09:34	LONE ACCIDENT	NEW HALL	HUMAN BEING	ANIMAL DAMAGE	JJ9882BE
34	13/05/13	16:13	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	JJ785EE
35	27/12/13	19:00	MINOR ACCIDENT	C.I.T.S	HUMAN BEING	CAR DAMAGE	

36	10/02/13	15:00	LONE ACCIDENT	CAMPUS GATE	MECHANICAL	CAR DAMAGE	AKY823BB
37	14/02/13	11:45	MINOR ACCIDENT	CAMPUS GATE	HUMAN BEING	CAR DAMAGE	LXR40AR
38	06/04/13	11:13	LONE ACCIDENT	NEW HALL	MECHANICAL	CAR DAMAGE	ES05APP
39	07/09/13	15:00	MINOR ACCIDENT	ROUNDBABOUTS	HUMAN BEING	CAR DAMAGE	APP586AX
40	20/05/13	12:22	MINOR ACCIDENT	CAMPUS GATE	HUMAN BEING	CAR DAMAGE	FY708EKY
41	11/05/13	15:00	LONE ACCIDENT	ENVIRONMENTAL SCIENCES FACULTY	MECHANICAL	CAR DAMAGE	CA661AKD
42	05/01/13	18:14	MINOR ACCIDENT	NEW HALL	MECHANICAL	CAR DAMAGE	BJ542CSR
43	05/01/13	12:15	LONE ACCIDENT	SPORTS CENTER	MECHANICAL	PROPERTY DAMAGE	BDA622AC
44	31/12/13	13:10	LONE ACCIDENT	CAMPUS GATE	HUMAN BEING	CAR DAMAGE	FST759EPT
45	11/12/13	14:44	MINOR ACCIDENT	AP FILING STATION	HUMAN BEING	CAR DAMAGE	LSD639CC
46	27/12/13	11:00	MINOR ACCIDENT	FSS DEPARTMENT	HUMAN BEING	PROPERTY DAMAGE	AGL432BV

UNILAG ACCIDENT DATA FOR YEAR 2014

S/NO	DATE	TIME	NATURE/TYPE OF ACCIDENT	LOCATION OF ACCIDENT	POSSIBLE CAUSE	IMPACT OF ACCIDENT	VEHICLE NO
1	25/02/14	07:50	MINOR ACCIDENT	UNILAG GATE	HUMAN BEING	CAR DAMAGE	LND143CL
2	24/02/14	16:00	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	AAA620AL
3	20/03/14	10:23	MINOR ACCIDENT	SCHOOL GATE	HUMAN BEING	CAR DAMAGE	KRD881BQ
4	18/02/14	13:44	MINOR ACCIDENT	SHOPPING COMPLEX	HUMAN BEING	CAR DAMAGE	BD911XC
5	08/10/14	13:20	LONE ACCIDENT	DLI	HUMAN BEING	PROPERTY DAMAGE	LSR629BF
6	18/03/14	14:00	LONE ACCIDENT	CAR PARK	MECHANICAL	PROPERTY DAMAGE	AGL503AQ
7	08/04/14	16:40	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	APP495AS
8	19/07/14	15:30	LONE ACCIDENT	MULTIPURPOSE HALL	MECHANICAL	PROPERTY DAMAGE	AAA456CY
9	11/04/14	13:26	MINOR ACCIDENT	DLI CAR PARK	MECHANICAL	CAR DAMAGE	KFD565CJ
10	31/03/14	14:36	LONE ACCIDENT	SOCIAL SCIENCE FACULTY	MECHANICAL	PROPERTY DAMAGE	
11	02/04/14	07:24	MINOR ACCIDENT	UNILAG GATE	HUMAN BEING	CAR DAMAGE	FG87M50
12	09/04/14	18:30	LONE ACCIDENT	EDUCATION FACULTY	HUMAN BEING	CAR DAMAGE	SMK55BF
13	03/04/14	14:07	MINOR ACCIDENT	UNILAG JUNCTION	HUMAN BEING	CAR DAMAGE	FG222M50
14	24/06/14	08:47	LONE ACCIDENT	WOMEN SOCIETY	HUMAN BEING	PROPERTY DAMAGE	KSF137AC
15	09/06/14	14:22	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	KSF154XF
16	09/05/14	17:49	MINOR ACCIDENT	UNILAG MAIN GATE	HUMAN BEING	CAR DAMAGE	AKD987XJ
17	06/06/14	16:15	MINOR ACCIDENT	ACCESS ROAD	HUMAN BEING	CAR DAMAGE	FST126BF
18	01/06/14	15:52	MINOR ACCIDENT	FACULTY OF LAW	HUMAN BEING	CAR DAMAGE	EPE81CW
19	27/05/14	14:18	LONE ACCIDENT	GIBOWU	HUMAN BEING	CAR DAMAGE	UNILAG50M16 FG
20	20/05/14	17:20	LONE ACCIDENT	UNILAG SHOPS	MECHANICAL	PROPERTY DAMAGE	AGL660XC
21	05/06/14	17:40	MINOR ACCIDENT	FACULTY OF ART	HUMAN BEING	CAR DAMAGE	BDG332BS
22	28/04/14	08:13	LONE ACCIDENT	UNILAG BACK GATE	HUMAN BEING	PROPERTY DAMAGE	AGI697XX
23	20/05/14	16:09	MINOR	FSS	HUMAN BEING	CAR DAMAGE	50M144FG

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			ACCIDENT				
24	28/05/14	13:47	LONE ACCIDENT	AMINA HOSTEL	MECHANICAL	PROPERTY DAMAGE	JP984EKI
25	07/05/14	10:45	MINOR ACCIDENT	DLI	HUMAN BEING	CAR DAMAGE	AT212SGM
26	14/05/14	16:32	MINOR ACCIDENT	ART BLOCK	HUMAN BEING	CAR DAMAGE	LND132AS
27	26/03/14	09:00	MINOR ACCIDENT	UNILAG MAIN GATE	MECHANICAL	CAR DAMAGE	JJJ668CO
28	28/04/14	17:46	MINOR ACCIDENT	EDUCATION FACULTY	MECHANICAL	CAR DAMAGE	EKY32BE
29	05/02/14	08:35	LONE ACCIDENT	UBA CAR PARK	HUMAN BEING	HUMAN INJURY	APP240AE
30	10/02/14	18:50	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	KTU327BT
31	03/02/14	15:11	MINOR ACCIDENT	UBA CAR PARK	HUMAN BEING	CAR DAMAGE	CB869FST
32	29/01/14	06:30	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	FG12M50
33	22/01/14	18:29	MINOR ACCIDENT	UNILAG BACK GATE	HUMAN BEING	CAR DAMAGE	BDG129AT
34	20/10/14	12:30	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	LSD788AY
35	23/10/14	16:22	MINOR ACCIDENT	UNILAG BACK GATE	HUMAN BEING	CAR DAMAGE	FD529KRD
36	24/10/14	16:06	MINOR ACCIDENT	UBA CAR PARK	HUMAN BEING	CAR DAMAGE	FST801BP
37	30/10/14	16:55	MINOR ACCIDENT	MOWE	HUMAN BEING	CAR DAMAGE	50M82FG
38	14/11/14	09:40	MINOR ACCIDENT	MAIN GATE	HUMAN BEING	CAR DAMAGE	FX798LSR
39	26/11/14	12:50	MINOR ACCIDENT	MAIN GATE	HUMAN BEING	CAR DAMAGE	BZ470GGE
40	24/11/14	14:23	MINOR ACCIDENT	MOREMI HALL	HUMAN BEING	CAR DAMAGE	C880KTUEX80
41	17/11/14	13:45	MINOR ACCIDENT	ART BLOCK	HUMAN BEING	CAR DAMAGE	APP518CV
42	07/11/14	14:30	MINOR ACCIDENT	CHAPEL OF CHRIST	HUMAN BEING	CAR DAMAGE	RRD672BW
43	07/11/14	14:50	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	
44	17/11/14	10:23	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	EKY823BB
45	30/11/14	07:45	MINOR ACCIDENT	UNILAG GATE	HUMAN BEING	CAR DAMAGE	EPE389CM
46	05/12/14	16:30	MINOR ACCIDENT	NEW HALL	MECHANICAL	CAR DAMAGE	
47	16/02/14	15:30	MINOR ACCIDENT	DLI CAR PARK	HUMAN BEING	CAR DAMAGE	EKY714DH
48	05/07/14	13:45	MINOR ACCIDENT	FSS GATE	MECHANICAL	CAR DAMAGE	KRD997BT
49	11/07/14	14:10	LONE ACCIDENT	MASS COM DEPT	HUMAN BEING	PROPERTY DAMAGE	BDG208BC
50	10/07/14	16:27	MINOR ACCIDENT	SPORT CENTRE	HUMAN BEING	CAR DAMAGE	APP821XB
51	08/07/14	20:31	MINOR ACCIDENT	UNILAG MAIN GATE	HUMAN BEING	CAR DAMAGE	XZ452FST
52	06/07/14	20:25	LONE ACCIDENT	ACCESS ROAD	HUMAN BEING	HUMAN INJURY	LND259
53	25/06/14	23:25	LONE ACCIDENT	ART BLOCK PARK	HUMAN BEING	PROPERTY DAMAGE	SMK869BK
54	29/10/14	12:43	MINOR ACCIDENT	AFE BABALOLA HALL	HUMAN BEING	CAR DAMAGE	FST290BV
55	30/04/14	16:44	MINOR ACCIDENT	SPORT CENTRE	HUMAN BEING	CAR DAMAGE	SMK996BG
56	24/10/14	13:55	MINOR ACCIDENT	SPORT CENTRE	HUMAN BEING	CAR DAMAGE	KSH473CE
57	11/01/14	13:30	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	AK446SMK
58	17/01/14	14:20	MINOR ACCIDENT	WOMEN SOCIETY HALL	HUMAN BEING	CAR DAMAGE	JJJ864AW
59	22/04/14	14:45	MINOR	BARIGA	HUMAN BEING	CAR DAMAGE	50M93FG

			ACCIDENT	ROAD			
60	12/12/14	12:17	MINOR ACCIDENT	UNILAG MAIN GATE	HUMAN BEING	CAR DAMAGE	AKD721CU
61	26/12/14	11:05	LONE ACCIDENT	FIRE SERVICE STATION	HUMAN BEING	PROPERTY DAMAGE	JJ79SH
62	10/01/14	17:02	MINOR ACCIDENT	HEALTH CENTRE ROAD	HUMAN BEING	CAR DAMAGE	CW621MUS
63	13/01/14	12:32	MINOR ACCIDENT	OZOLUA ROAD	HUMAN BEING	CAR DAMAGE	EPE361BE
64	08/01/14	16:03	LONE ACCIDENT	ULWS	MECHANICAL	CAR DAMAGE	LSR165AP
65	17/01/14	15:56	MINOR ACCIDENT	SPORT CENTRE	HUMAN BEING	CAR DAMAGE	AAA227CA
66	16/10/14	10:55	MINOR ACCIDENT	MOREMI HALL	HUMAN BEING	CAR DAMAGE	SMK493BZ
67	17/07/14	15:55	MINOR ACCIDENT	UNILAG MAIN GATE	HUMAN BEING	CAR DAMAGE	LSD238BR
68	08/12/14	06:23	LONE ACCIDENT	EDUCATION BUS STOP	HUMAN BEING	PROPERTY DAMAGE	RJA307CG
69	06/12/14	15:50	LONE ACCIDENT	UNILAG MAIN GATE	MECHANICAL	CAR DAMAGE	ES448ABJ
70	04/12/14	09:50	LONE ACCIDENT	SPORT CENTRE	HUMAN BEING	CAR DAMAGE	FST476AP
71	30/11/14	16:41	LONE ACCIDENT	NEW HALL	MECHANICAL	PROPERTY DAMAGE	EPE267BW
72	17/04/14	17:30	LONE ACCIDENT	ART BLOCK	HUMAN BEING	CAR DAMAGE	LSR758CL
73	23/04/14	17:47	MINOR ACCIDENT	DLI ROAD	HUMAN BEING	CAR DAMAGE	

UNILAG ACCIDENT DATA FOR YEAR 2015

S/NO	DATE	TIME	NATURE/TYPE OF ACCIDENT	LOCATION OF ACCIDENT	POSSIBLE CAUSE	IMPACT OF ACCIDENT	VEHICLE NO
1	08/06/15	14:59	MINOR ACCIDENT	SPORT COMPLEX	HUMAN BEING	CAR DAMAGE	KRD536ACJ
2	02/06/15	15:02	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	MUS254CM
3	25/05/15	09:05	LONE ACCIDENT	SPORT CENTRE	HUMAN BEING	NON	FST199BR
4	28/05/15	11:15	MINOR ACCIDENT	PETROL STATION	HUMAN BEING	CAR DAMAGE	LND674DE
5	22/05/15	13:00	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	FG51M50
6	25/04/15	12:40	LOAN ACCIDENT	NEW HALL	MECHANICAL	CAR DAMAGE	AGL757DK
7	27/04/15	09:15	MINOR ACCIDENT	EDUCATION	HUMAN BEING	CAR DAMAGE	JJ101BV
8	25/04/15	15:00	MINOR ACCIDENT	SPORT CENTRE	HUMAN BEING	CAR DAMAGE	EKY470XP
9	24/04/15	09:00	MINOR ACCIDENT	BACK GATE	HUMAN BEING	CAR DAMAGE	LSD388AW
10	17/05/15	15:30	MINOR ACCIDENT	EDUCATION	HUMAN BEING	CAR DAMAGE	MUS419DK
11	07/05/15	18:40	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	FST698BP
12	08/05/15	07:13	LONE ACCIDENT	SPORT CENTRE	MECHANICAL	CAR DAMAGE	APP155XN
13	20/04/15	21:17	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	
14	16/04/15	14:40	MINOR ACCIDENT	SENATE BUILDING	HUMAN BEING	CAR DAMAGE	LND883CQ
15	08/04/15	06:27	MINOR ACCIDENT	LAGBUS STOP	HUMAN BEING	CAR DAMAGE	XU870AAA
16	27/03/15	15:04	MINOR ACCIDENT	AMINA HALL	HUMAN BEING	CAR DAMAGE	JL11AAA
17	26/03/15	08:35	MINOR ACCIDENT	FILING STATION	HUMAN BEING	CAR DAMAGE	APP588BM
18	19/06/15	08:20	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	BDG873AV

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19	13/03/15	12:00	MINOR ACCIDENT	SPORTS CENTER	HUMAN BEING	CAR DAMAGE	
20	02/03/15	11:30	MINOR ACCIDENT	CAMPUS GATE	HUMAN BEING	PROPERTY DAMAGE	BDG802DH
21	10/01/15	17:30	MINOR ACCIDENT	CAMPUS GATE	HUMAN BEING	CAR DAMAGE	JB37AAA
22	13/01/15	13:10	MINOR ACCIDENT	CAMPUS GATE	HUMAN BEING	CAR DAMAGE	LND376AM
23	23/02/15	11:00	MINOR ACCIDENT	CAMPUS GATE	HUMAN BEING	CAR DAMAGE	FST714XK
24		22:05	MINOR ACCIDENT	ACCESS ROAD	HUMAN BEING	CAR DAMAGE	
25	22/01/15	13:40	MINOR ACCIDENT	EDUCATION FACULTY	HUMAN BEING	CAR DAMAGE	BD266
26	23/01/15	18:35	MINOR ACCIDENT	CAMPUS GATE	HUMAN BEING	CAR DAMAGE	AKD852BE
27	26/01/15	17:10	MINOR ACCIDENT	SENATE BUILDING	HUMAN BEING	CAR DAMAGE	LXR424X0
28	23/01/15	16:55	MINOR ACCIDENT	EDUCATION BUSSTOP	HUMAN BEING	CAR DAMAGE	JJJ467BU
29	28/01/15	15:58	MINOR ACCIDENT	SOCIAL SCIENCES CAR PARK	HUMAN BEING	CAR DAMAGE	FST47CL
30	14/03/15	10:05	MINOR ACCIDENT	HEALTH CENTER	HUMAN BEING	CAR DAMAGE	AGL113BM
31	16/02/15	13:50	MINOR ACCIDENT	EDUCATION FACULTY	HUMAN BEING	CAR DAMAGE	FKJ316CK
32	25/06/15	13:54	MINOR ACCIDENT	MAIN GATE	HUMAN BEING	CAR DAMAGE	APP264CJ
33	25/06/15	24:19	LONE ACCIDENT	SOCIAL FACULTY SCIENCES	MECHANICAL	PROPERTY DAMAGE	AGL115BV
34	28/06/15	15:13	MINOR ACCIDENT	MULTIPURPO SE HALL	HUMAN BEING	CAR DAMAGE	GGE161DN
35	12/03/15	16:56	LONE ACCIDENT	SENATE HOUSE	MECHANICAL	CAR DAMAGE	CM252FST
36	10/03/15	09:22	MINOR ACCIDENT	C.I.T.S	HUMAN BEING	CAR DAMAGE	50M135FG
37	01/01/15	10:15	MINOR ACCIDENT	MARINE SCIENCE DEPARTMEN T	HUMAN BEING	CAR DAMAGE	BDG13AE
38	09/03/15	14:20	LONE ACCIDENT	OZUMA ROAD	MECHANICAL	PROPERTY DAMAGE	LND808BU
39	04/07/15	11:56	MINOR ACCIDENT	YEM-YEM	MECHANICAL	CAR DAMAGE	BDG367XB
40	01/08/15	15:30	MINOR ACCIDENT	FORTE FILING STATION	HUMAN BEING	CAR DAMAGE	LMT1AD15A
41	05/07/15	07:14	LONE ACCIDENT	DLI LOCATION	MECHANICAL	HUMAN INJURY	EKY747CR
42	08/08/15	07:50	MINOR ACCIDENT	NEW HALL	HUMAN BEING	CAR DAMAGE	SMK384CJ
43	06/08/15	08:30	MINOR ACCIDENT	ALPHA BASE	HUMAN BEING	CAR DAMAGE	FG185M50

IS THERE ANY LINK BETWEEN DEMOCRACY AND ECONOMIC DEVELOPMENT IN NIGERIA?

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ABSTRACT

With estimated population of over 150 million and been the world sixth largest producer of oil with greater economic potentials in all sectors, the larger population of the Nigeria is still poor as a result of bad governance and corruption among other economic challenges. The current democratic dispensation that started in 1999 suggested there would be instant outright economic development. But, Nigeria is still lagging behind among the committee of democratic nations, in terms of development. Therefore, the nature of relationship between democracy and economic development in Nigeria like any other developing countries became an important issue in this debate. Hence, this study investigated the causal relationship between democracy and economic development from 1999 till date, using some key economic indicators including Revenue Generation, Unemployment Rate, Poverty Rate, Effective Healthcare, Gross Domestic Products (GDP) and Foreign Exchange Rate. The study argued that, though Nigeria has experienced sixteen years of uninterrupted democratic rule, available evidence revealed that, there is no clear direct link between democracy and economic development in Nigerian, as a result of this, the last sixteen years of democratic dispensation in the country might not have significantly improve development. Therefore, though the study recommends strict compliance to the principles of democracy, good governance can make meaningful addition in the long run. But, to promote good governance, sound anti-corruption policies must be put in place, while the legislative, judiciary and executive arms of government must be functional and alive to their responsibilities.

Keywords: Democracy, Economic Development, Democratic Dispensation, Good Governance and Anti-Corruption Policies.

1. INTRODUCTION

Democracy can simply be described as a political process that is expected to bring about the involvement of citizens in economic growth, development and evolution of a society. Thus, if it is fairly practiced, it is expected to bring about a reduction in poverty, socio-economic empowerment and other quantitative and qualitative indices of development of man and his society. At the global stage, for the past few decades, democracy has been an acceptable basis of relationship among nations. Because, it is widely acceptable as a better system of governing the people, due to its recognized ideals and ethics. In addition, democracy is fast spreading as a result of its ability to provide basic requirements for good governance and development (Ardo, 2000).

This development must have given an end to the struggle for supremacy as to which system of government is best due to emergence of liberal democracy as the genuine human government. With Nigeria as a case study; the wave of consistent democratic change that started in 1999, is largely the product of internal and external pressures exerted on the country. Such pressures were predicated on the realization that, democracy stimulates economic development (Jamo, 2010). It is on this basis that the world celebrated the return of Nigeria to democratic rule after several years of military intervention. So, the country celebrated its sixteen years of consistent democratic rule, which has witnessed transfer of

political power from one civilian government to another within the same political party and to another political party for the first time ever in the history of the Nigerian politics since independence.

In these new democratic years everyone expected that the return of Nigeria to democratic rule will bring about economic growth and development. But, inspite of many social and economic policies that have been implemented by successive administrations, Nigeria is still lagging behind in social, economic and political developments. Subsequently, abject poverty, acute youth unemployment, high crime rate, heightened insurgency and poor health prospects among others have been the most common features of Nigeria's political economy. This has made many stakeholders to continue to ask questions on whether meaningful economic growth is still achievable even under this present democratic dispensation.

Therefore, one important question to be addressed is whether there is any link between democracy and economic development in Nigeria since the return of the country to electoral democracy in 1999 so as to make a significant impact on the economic and social well-being of the people. The paper looked at the nexus between democracy and economic development; and provides explanations on why democracy has not engendered good governance in Nigeria using the common indicators in the literature, including poverty rate, unemployment, revenue and expenditure, healthcare, Gross Domestic Products (GDP) and good governance among others.

The paper is divided into four sections; the second contains the definitions of the key concepts in this article, followed by the literature review on the nexus between democracy and development. The third section is the research findings, followed by conclusion and recommendations.

2. Conceptual Framework

2.1 Democracy

Democracy as a system of rule has become excessively popular in contemporary political analysis across the world. Indeed in recent times, there is probably no concept that has been so subjected to varying definitions, interpretations and contradictory explanations as the concept of democracy. This may not be surprising given the fact that democracy has become more widely celebrated in the recent time. Various stakeholders in politics and global economy have always insisted that the form of politics or rule they support is the one that is democratic in character. The thrust of this assertion is that any claim to democracy by any economy must essentially embrace popular participation, competitive choice, the enjoyment of civil and political liberties by the citizenry in real terms, and the accountability of the leadership.

What is democracy? Many definitions have been offered for the concept of democracy; including Dahl (1982), he defined democracy as a system of elected representative government operated under the rule of law, where the most significant groups in the population participate in the political process and have access to effective representation in the practice of making governmental decisions, that is, of allocation of scarce resources. Ukase (2010) sees democracy as a political system characterized by regular and free elections in which politicians organized into political parties compete for power by right of the virtue of all adults to vote and the guarantee of a range of political and civil rights.

According to Majekodunmi (2012), democracy is a vital instrument that propels political proficiency, economic development and social stability of any nation state. Lawal and Olukayode (2012) explains that democracy offers participatory opportunity for the citizenry

in the choice and selection through periodic elections of credible representatives. This confers in estimable avenue for self-satisfaction and self-fulfillment. This is so, because the electorates who participate in the electoral process that eventually leads to the enthronement of a government and the political leadership can therefore lay claim to the government as theirs rather than being an imposition. Ajayi and Ojo (2014) asserts that democracy is an abstract and illusive form of government because the assumptions on which it rests are almost always difficult of fulfillment, but they concludes that there is no doubt that democracy has brought untold succour and political goods to humanity particularly to those nations that embrace it.

The opinions of these scholars are relevant to the issues of development at hand because, the important factor in democracy is the people, it is to make life easier and more secured that people form themselves into communities, and government in the orderly conduct of community affairs.

Democracy as a descriptive term is synonymous with majority rule. This means government by the people, exercised either directly or through elected representatives. In this system of government the common people are considered as the primary source of political power, and there exist the principles of social equality and respect for the individuals within a community. Democracy embodies the ideal that decisions affecting people's systems and social structures are taken with the active participation of all the members. A state can be said to be democratic if its government is chosen by, and is accountable to the people.

2.2 Development

Development is a difficult concept to define, because it has been one of the most ambiguous terms in social sciences discourse and it has continued to generate debate among various scholars. In general terms, however, development has been viewed from political, economic and social dimensions. Rodney (1972) sees beyond the individual or people's perception of development and conceived development whether economic, political or social to imply both increase in output and changes in the technical and institutional arrangement by which it is produced. That is, development is a multi-dimensional concept and in spite of the various conceptions, development is basically about the process of changes which lies around the spheres of societal life. So, development is a conscious acceleration of economic, political, social, educational and technological growth through effective, consistent, progressive and enduring policies of the government.

According to Todaro (1989), he conceptualizes development as a multidimensional process involving major changes in social structures, popular attitudes, and national institutions, as well as the acceleration of economic growth, the reduction of inequality and the eradication of absolute poverty. Sen (1990) offered a dominating thought on the concept of development. For him, development connotes capacity expansion. As capacity expansion, development requires adequate empowerment of the economy and the society such that they can adequately shoulder their responsibilities. It requires an enhanced state capacity as well as institutional and governmental stability. It is only within such framework that individual members of the society can find fulfillment in terms of the basic necessities of life. As freedom, development demands great latitude of autonomy for the political community and its constituent parts; as well as for the individual members of such communities.

Sen (2008) defined development as collective activities by any human society directed at reducing the totality of perceived obstacles to a higher standard of living; thus maximizing the quality of lives of its citizens. Development can also be seen as gradual advance or growth through progressive changes. It is a gradual differentiation of an ecological community; the term is also used to describe the process of economic and social

transformation within countries. Rodney (2009), development is encompassed within the idea of the ability of a society to be able to tap its natural resources in order to cater for the material and social needs of the generality of the people. This implies continuous process of positive change in the quality of life of an individual or a society, reduction of poverty, unemployment and inequality.

3 Literature Review

In studying democracy and development, the common debated issue in recent years is whether link exists between democracy and development. Considerable number of scholars like, Campos 1994; Pel, 1999; Przeworski 2004; Jamo 2010; and Ajayi and Ojo (2014) maintain the view that, there is causal link between democracy and development, while others including Sirowy and Inkeles (1991) Przeworski and Limongi (1993) and Bardhan (2002) maintained the opposite view. Pel (1999) compared Human Right Development Index (HRDI), Per Capita Income, and Gross Domestic Product (GDP) as indicators for measuring development among countries. Although these studies have exposed some issues relevant to development in various countries and gave plausible results, however there is little evidence of current study with focus on unemployment rate, government revenue, government expenditure, poverty rate, GDP growth, foreign exchange rate and healthcare performance in Nigeria, which is a relatively developing nation. This study will attempt to fill this gap.

Chan (2009) in her study on democracy and development in Japan and some Asian newly industrialized countries, examined whether developing countries need to adopt democracy or western model to achieve economic success. The study argues that, economic and social freedoms are necessary, but not western style institution or culture. This study is of the view that, liberal democracy is not a prerequisite to development, what is important for development is social and economic rights rather than the western ideology. To her, development can be achieved irrespective of the type of regime, so far social and economic freedoms are available. This is also consistent with the studies of Sirowy and Inkeles (1991); Bardhan (2002); Przeworski and Limongi (1993) that maintained that there is negative relationship between democracy and development.

On the contrary, Barrow as cited in Pel (1999) suggests that, the relationship between democracy and growth is likely to be slowest in the most politically repressed societies. But improvement in political rights and civil liberties in such societies tend to produce higher growth. The study also supported the notion that, the positive linkage that exists between democracy and development depends on the level of political and civil rights available, therefore the study maintained that, the higher the level of political and civil rights the higher the development, vice-versa. In furtherance to this, Pel (1999) explained that, the question of whether democracy promotes development rests on the central idea that, political institutions critical to economic development are more likely to exist and function effectively under democratic rule.

These institutions include the rule of law which protects property rights, individual liberty which poster creativity and entrepreneurship, the freedom of expression which ensures the production and unimpeded flow of information, and institutional checks and balances that prevent massive theft of public wealth often observed in democracies. Bardhan (2002) in similar view opined that, there is no significance relationship between democracy and development when he reported that, this submission revealed that, there is problem of

linkages between democratic regimes and provision of social welfare services to the people; in essence democracy does not always reflect the wishes of the voters, and does not always bring development.

Przeworski and Limongi (1993) observed that, democratic government may be less capable of managing development. The reasoning here according to them is that, development involved changes and that change may affect some voters negatively, while at the same time benefit others. To this extent, the study concluded that, because of this reality, governments seeking reelection could be more inclined to avoid making tough economic choices out of fear of losing support of some groups. This would either slow down development or hinder it. This dilemma may not be faced by an authoritarian regime. From this view, there is little evidence of correlation between democracy and development. Przeworski (2004) in another study refined his earlier findings and examined the mutual relationship between political regimes and economic development. His analysis of political regimes shows that while the path to democracy are varied, once established for whatever reasons, democracy survive in developed countries. Contrary to long existing arguments, political regimes do not affect the rate of investment and of the growth of total income. But since population grow faster under dictatorships, per capita incomes increase more rapidly under democracies. The study concluded that, there is correlation between democracy and development.

However, one can convincingly assert that the long existing findings that democracy is prerequisite to development may no longer be popular because some recent findings have emerged and contradicted the position of this perception, for illustration, countries like Japan, China and other Asian countries have recorded some level of development, yet, they are less politically open states. This has come to revalidate the argument that democracy is not prerequisite to development. Therefore, the above theoretical and empirical findings have not totally resolved the problem of relationships among these variables, especially for a country like Nigeria. Therefore, this study will pay more emphasis on Nigeria.

3.1 Democracy-Development Nexus in Nigeria: Some Stylized Facts

Unemployment rate is among the key indicators for measuring development of an economy. A country is said to be developing if the rate of unemployment is declining. Also, if the rate of employment is increasing, the rate of purchasing power, security and saving will increase and all these will lead to enhancement of economic activities and vice versa. But unfortunately, the rate of unemployment in Nigeria continues to increase since the return of the country to democratic rule, it increased to 24.20 percent in the first quarter of 2015 from 23.90 percent in the fourth quarter of 2011. It averaged 15.97 percent from 2006 until 2015, reaching an all-time high of 24.20 percent in the first quarter of 2015 and a record low of 5.30 percent in the fourth quarter of 2006 (National Bureau of Statistics, 2015).

The above rate of unemployment in the country is increasing with increasing revenue since the return of democratic rule, for instance, in 2004 the Federal Inland Revenue generated N1, 194.80 trillion. However, the contribution of non-oil revenue increased in 2005 with N1, 741.80 trillion out of total of N5, 619.30. The figure for non-oil revenue appreciated to N2, 20 trillion in 2009 and N2, 84 trillion in 2010. The figure reached N4.63 trillion in 2011. Again, at the close end of 2012 the Federal Inland Revenue Services collected N5, 007trillion. From 2000-2009, oil revenue generated N34.2 (82%) trillion into the federation account, while non-oil revenue generated N7.3 (17.64%) trillion. Not only that, the price of oil contributed to about 80% of the Nigeria's GDP rose from \$13 per barrel to \$125 (Ebinbowei, 2012). This shows that Nigeria has generated huge revenue during the present democratic dispensation. Despite this increased revenue, the country is suffering from poor

income distribution, in adequate infrastructures and relative poverty. These problems can be linked to bad governance and poor performance of national institutions (Ogbonna, and Ebinbowei, 2012).

This revenue increase led to the increase in government budget, the budget continued to increase year after year, for instance, in 1999 the federal government budget was N524 billion and appreciated to N705 billion in 2000. In 2001 and 2002 the federal government budgeted N894 and N1.064 trillion respectively; the figure reached N1.446 and N1.189 trillion in 2003 and 2004 respectively. The figure increased to N1.8 trillion and N1.9 trillion in 2005 and 2006 respectively. The figure reached N2.3trillion and N2.45trillion in 2007 and 2008. While in 2013, 2014 and 2015 the Nigeria budget were N4.987 trillion, N4.69 trillion and N 4.42trillion respectively. But further breakdown indicates that, the bulk of the Nigeria's budgets are spent on recurrent expenditure.

Despite the importance of health to the development of a nation. National health indicators in Nigeria are possibly among the lowest in the world for almost all measurable indices (WHO, 2012; Jamo, 2013). Life expectancy in Nigeria as at 2012 was 48 years compared to 73 years in China and 83 years in Japan, while maternal mortality rate was 1,100 deaths per 100,000 in contrast to 45 and 6 deaths per 100,000 in China and Japan respectively (WHO, 2012). The rate of neo-natal mortality rate in the North western Nigeria (the case study) as at 2008 was 55 per 1000, while infant mortality rate was 114 per 1000, whereas under five mortality rate was 269 per 1000. (Olaniyan and Lawanson, 2010; WHO, 2012, Jamo, 2013).

Nigerians have very high expectations that, the return of the country to democratic rule will free people from low development and the vicious circle of poverty, through the flow of dividend of democracy. However, conversely the case, the country's GDP growth performance continued to be far below the pre - democratic era, for instance, in 1985 the percentage of the country's GDP growth was 9.5 percent and appreciated to 13.0 percent in 1990, dropped to 2.2% in 1995; while the percentage increased to 5.4% and 6.10% in 2000 and 2005 respectively and dropped again to 5.0% in 2010. Although, there has been an improvement over the last few years (2011 – 2014), but not beyond 8 %.

Nigeria continued to maintain its backward position despite increased revenue in the last few years, for instance Nigeria is not among the best 10 African countries with suitable business environment, using economic indices such as GDP, growth GDP per capita, technology, corruption and public debt in the assessment (Ibrahim, 2013). Nigeria is the fourth world largest democracy with a population of over 130 million and world sixth largest oil supplier and blessed with economic potentials (Jamo, 2013 and Ibrahim, 2013) but majority of its population are poor.

Transparency and the rate of corruption in Nigeria Transparency is one of the prerequisite for development, where it is lacking development hardly achieved. Corruption is among the indices for measuring development of a particular state. Nigeria continued to maintain its leading position since the return of the country to democratic rule in 1999. The country in 2001 to 2004 ranked as the second most corrupt country in the world. In 2005, 2006 and 2007 the country was ranked 6th, 21st, 32nd most corrupt country in the world, while in 2008 and 2009 the country ranked as 59th and 50th and finally pushed to 44th position in 2010 (Transparency international corruption perception index 2001-2010). Though there are quite improvements over the years however the Nigeria is still among the most corrupt country in the world.

The return of Nigeria to democratic rule in 1999 opened up another transition to insecurity in the country, for instance Nigeria is rated 10th most in secured out of 53 countries in Africa in 2001, 2002 and 2003. The rate of insecurity increased in 2004 which pushed the country to 8th most unsecured country in Africa. In 2005 and 2006 the country was ranked 10th and 9th respectively; then pushed the country in 2007 to 9th most unsecured country in Africa. In 2008 and 2010 the country was ranked 17th respectively (Ibrahim, 2001-2010). This indicates that the rate of insecurity situation in the country is not appreciable despite the increasing budget on security in recent years.

The value of the Nigerian currency (Naira) continue to depreciate over the years since the return of the country to democratic rule, for instance the value of naira in 1994 as compared to one US dollar was N22.00, the value depreciated to 76.00 and 96.10 in 1998 and 1999 respectively. In 2000 and 2001 the value of naira per one US dollar was N101.70 and N111.70 respectively.

Again, the value dropped to N118 and N129 in 2002 and 2003 respectively and finally to N158 in 2013, but it been largely exchanged for over N200 in 2015. This indicates that, the value of the naira in the last sixteen years suffered great depreciation.

The incidences of poverty in 1999 fall to 42.7% and increased again to 65.6% in 2000' this trend continued till 2003. In 2004 the incidence of poverty in the country decreased to 54.4% and maintained this position till 2006 and jumped to 54.5% in 2007 and increased again to 63.6% in 2008 (MDGs Mid - point report 2008). Again, the 2010 report of the Federal Bureau of Statistics revealed that, 112.5 million Nigerians out of 163 million populations live in poverty. However, the report further revealed that, apart from the relative poverty which puts the country's poverty rate at 99.248 million or 60.9 per cent, the dollar per day measure, which put the poverty at 61.2 per cent; and subjective poverty measure which put the poverty level at 93.9 per cent (NBS, 2010).

4 Recommendations and Conclusion

Democratic system of government is among the most popular system of governance accepted globally, because of the expectation that it facilitates development due to the possession of instruments that support development. But, the reality on ground in Nigeria using some important indicators explained better that, democracy in the short run did not improve development, this rather contradicts any argument that there is causal relationship between democracy and development in the short run. This study on the other hand coincides with other previous findings that, though democracy is important for development, it may not be a prerequisite for development. Then, even though the study recommends strict compliance to the principles of democracy, good governance can make meaningful addition in the long run. But, to promote good governance, sound anti-corruption policies must be put in place, while the legislature, judicial and executive arms of government must be functional and alive to their responsibilities. However, the current political dispensation in the country has promised a lot in this regard.

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AN ECONOMIC ANALYSIS OF THE CONSEQUENCES OF FALLING CRUDE OIL PRICES ON THE NIGERIAN ECONOMY

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ABSTRACT:

The current slump in the crude oil prices which started in the second quarter of 2014 has been sending its waves across the globe with its attending consequences on the economies of the exporting countries that heavily depend on crude oil revenue as their major source of earnings. Nigerian economy is caught up in the web because crude oil is the mainstay of the economy of which major economic indicators have been negatively affected. Therefore, it is imperative to examine the causes of the falling of crude oil prices in the international such as availability of substitute to energy, oversupply of the crude oil, etc and the negative effects on the Nigerian economy like reduction of revenue to the government, inflation and so on, in order to chart a new course, as well as to put mechanism in place to cushion the negative impacts such as diversification of the Nigerian economy, massive investment in the domestic refineries and among others.

Keywords: Diversification, Mainstay, Crude oil, Consequence, Corruption, Transparency

INTRODUCTION

The world has become a global village and the principle of interdependence among the nations of the world, have a vital role to play in the political and socio-economic performance of the respective countries. This was evidence during the global financial crisis and the recent development of falling crude oil prices in the international market. The actions and inactions of one country will definitely affect some countries directly or indirectly and this could be positive or negative on major economic indicators in the affected countries as a result of globalisation and interdependence.

The plummet in the crude oil prices in the world market has been on the front burner across the global, with its devastating effects on the exporting economies that rely heavily on the crude oil as their main source of foreign earnings; such as Nigeria, Russia, Venezuela, etc. Conversely, the importing countries like China, Japan, India, etc are at advantage with this development. With this oil shock (negative oil shock) some economies would be better off, that is, the importing countries while some countries would be worse off, that is, the exporting countries. One of the objectives of this paper is to examine the causes of the falling in the crude oil prices in the world market since Nigeria earns over 90 percent of its foreign earnings from the product and the 6th largest producer in the OPEC. It also aims to evaluate the consequences of the falling in prices in the crude oil as Nigerian economy is heavily dependent on oil (mono economy). The specific objectives of this study are to evaluate the economic consequence of the falling crude oil prices on the Nigerian exchange rate and the price of exported crude oil product.

This paper is structured into five sections; section one and two are about introduction and brief history of global oil shocks respectively, while section three takes a look at the causes of falling crude oil prices in the international market and section four examines the consequences of the falling crude oil prices on the Nigerian economy. The section five of the study is the conclusion and recommendations.

1. THE BRIEF HISTORY OF GLOBAL OIL SHOCKS

Oil shocks are not a new phenomenon; it has been a dominant feature in the oil market during the last two decades (Baumeister and Peerman, 2009). The history of the oil price dates to the 19th century, approximately from 1861 but events from the 20th century tell two major stories. First the rise of the seven sisters and the emergence of the National oil companies leading to the founding of the Organisation of Petroleum Exporting Countries (OPEC) in 1960. Between 1920s and 1960s, the international companies were able to keep oil price notably below \$40 per barrel until the 1970s when OPEC started its ploy to influence oil prices. The cartel's first attempt to exert this control was in 1973 when an embargo was placed on then Netherland and the United States for supporting the state of Isreal in the Yom Kippur war oil price rose by 400% within a year in nominal terms. The Iranian revolution followed and between 1978 and 1982, oil price doubled from \$46.13 to \$93.41. A rise in non-OPEC oil production and a decrease in global oil demand between 1983 and 1986 sent oil price crashing down to \$14.92. Despite a few shocks to the market between 1988 and 1997, oil price averaged around \$17 to \$18 per barrel before it crashed again in 1998 to \$12.72 due to the Asian financial crisis. Post 2000 event saw the invasion of Iraq, 9/11 attacks on the US and the devastating economic downturn in 2008 have their respective effects on oil price. There was a steady increase before 2008 (besides a minor dip in 2007) towards the \$150 mark before the recession sent it crashing back down to below \$50. It recovered afterwards, with the effect of the Arab spring in 2010 which kept the prices above \$100 before this recent slump (Mondiu, J and victor, .A, 2015).

2. THE CAUSES OF FALLING CRUDE OIL PRICES IN THE INTERNATIONAL MARKET

The major determinants of price of the crude oil are the market forces of demand and supply, this price fall could be analysed partly base on the following conditions: the availability of the substitute products (competitive goods) and excess supply of such product. Analysing the former, availability of substitute goods will make demand fall for such product and increase the demand for the competitive goods in the event that all other factors are held constant, while the later resulted from over production that is there is excess of supply over demand. These (the combination of two factors; availability of the substitute products and the excess supply) would compel the price of such product to decrease and as such the consumers of the product would be better off. This scenario is applicable to the crude oil in the international market. There is availability of substitutes; bio fuels and green energies as an alternative to crude oil, and the shale oil production by United States of America; USA has become the world's largest oil producer and the sudden resumption of oil production by Iraq, Sudan and Libya (excess supply). With these the price of crude would have to dwindle and the importing countries (consumers); china, India, Brazil Japan, etc are at advantage while the exporting countries like Nigeria, Russia, Venezuela, Saudi Arabia, etc are at disadvantage. Below are the some of the factors that are responsible for the fall in crude oil prices:

3.1 Availability of substitutes: There have been calls and campaigns concerning the depletion of ozone layer and the need to maintain environmental sustainability around the global by reducing carbon emission and the increased use of renewable energy. Most economies of the world are devising the means to reduce or eradicate green house effects, in this wise the need for renewable energy usage is imperative. These renewable energies like green energies (solar energy, wind energy, biomass, anaerobic digestion, hydro, combined heat and power (CHP), etc) and bio fuels such as bio ethanol, biodiesel, etc are alternative sources of energy to crude oil. The Organisation for Economic Cooperation and Development (OECD) and the Chinese economy have recorded substantial growth in the generation of renewable energy, as well as the decision by Japan to restart some of its nuclear reactors. The

implication of this is that demand for crude oil will shrink and invariably the price will follow suit.

3.2 Sudden resumption of production of crude oil: The unexpected resumption of production of the oil by Iraq, Sudan and Libya; these are conflict stricken countries, with this development hence over production is inevitable. The consequence is excess of supply over demand and the price will be compelled to plummet.

3.3 Weak economic activity: The current sluggish economic growth in Europe has been responsible for its low oil demand. Giving that economic growth has a positive correlation with the demand for energy, the lingering economic recession in Europe has reduced their demand for oil to a great extent causing global, in part, to outstrip demand with the resultant effect of a drop in the price of oil (Mondiu and Victor, 2015). In the same vein, China as one of the largest economies in the world has also experienced slow economic growth; with this their level of demand for energy will decline.

3.4 Maintaining market share: According to Economist Journal (2014) Saudis and their gulf allies have not decided to sacrifice their own market share to restore the price. They are not already to cut back their supply quota of crude oil in the world market and the issue of price war also lingered.

3.5 Technological advancement: According to Ikenna (2015), new technologies like horizontal drilling and hydraulic fracturing “fracking” has provided alternatives for heavy oil purchasers like USA to be less dependent on imported oil. The shale oil production (unconventional exploration) has made USA the largest oil producer in the world and increasing use of energy saving devices also account for the slump in the prices of crude oil.

3. THE CONSEQUENCES OF FALLING CRUDE OIL PRICES ON NIGRIAN ECONOMY

Prior to the discovery of the crude oil in Nigeria, agriculture was the mainstay of Nigerian economy which accounted for about 54 percent of the Gross Domestic Product (GDP) and employed about 65 percent of the labour force. This took a new dimension when the oil was discovered in Oloibiri; Niger Delta 1956 in commercial quantity, the real sector like agriculture, solid minerals, manufacturing, etc have been relegated to the background as something for the poor and the weak. Adedipe(2004), when Nigeria gained political independence in October, 1960, agriculture production was the mainstay of the economy contributing about 70 percent of the GDP also employing about 70 percent of the working population and responsible for about 90 percent of foreign government revenue. This oil discovery brought about Dutch Disease Syndrome (DDS) that is other sectors are being abandoned or sacrificed on the altar of the oil and gas sector. The economy of Nigeria gradually became dependent on crude oil as productivity declined in other sectors (Englama *et al.*, 2010). United States of America (USA) no longer purchase crude oil from Nigeria ,its largest consumer; over 40 percent of crude oil revenue came from USA while the USA has increased its purchase from countries like Canada and Saudi Arabia...(Ikenna, 2015).

The slide in the crude oil price in the world market have ravaging effects on the most countries around the globe, particularly the exporting countries who depend heavily on the revenue from the sale of the crude oil and Nigeria is not an exception. According to Oluwatomisin et al (2014), oil as the mainstay of the Nigerian economy accounts for over 95 percent of its foreign earnings and about 83 percent of its budgeted allocation to these changes in oil prices in the world market has implications for the Nigerian economy. Since the discovery of oil in commercial quantity, Nigeria has been largely a mono-product economy. The value of Nigeria’s total export revenue in 2010 stood at US\$70,579 million, while income from petroleum exports of the total export revenue was US\$61,804 million representing about 87.6 percent. The absolute dependence of oil export revenue has accentuated the level of Nigeria economy vulnerability to sudden oil price movements. As a

result of the dominant role played by the oil sector in the nation's economy, economic performance has been linked to oil prices in the past three decades (Aigbedion and Iyayi, 2007). According to Mayowa.T (2015), Africa's largest economy has been heavily hit by the drastic fall in the prices since the second quarter of 2014.

METHODOLOGY

The main type of data used in this study is secondary; sourced from Central Bank of Nigeria website. The data sourced were on crude oil export, price of crude oil; which spanned from January, 2014 through December, 2014 and foreign exchange rate (US dollar to Naira) from January 2014 to 2015Q1. The research method used in the paper is mainly qualitative in nature; graphs are used to show the trend of the variables, i.e. crude oil export, price of crude oil export and foreign exchange rate.

Figure 1: Crude Oil Export (Million per barrel) and Crude Oil Price (US\$) for the period January, 2014 – December, 2014.

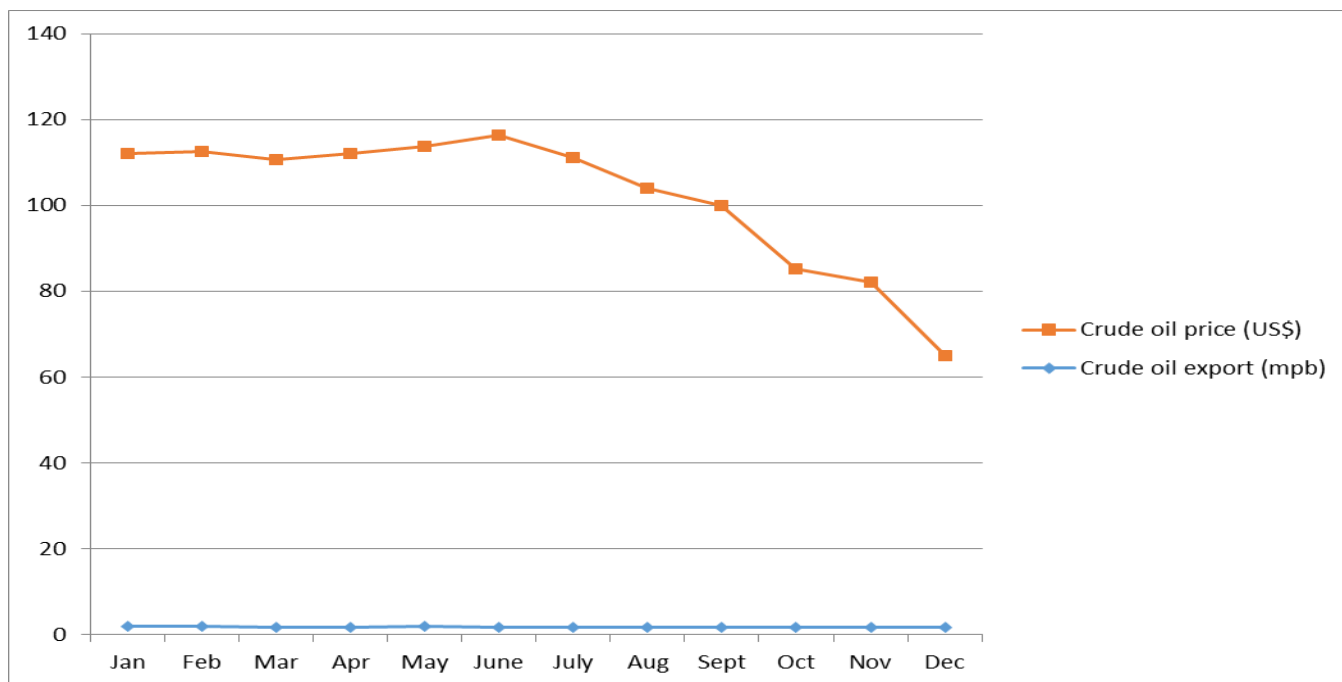
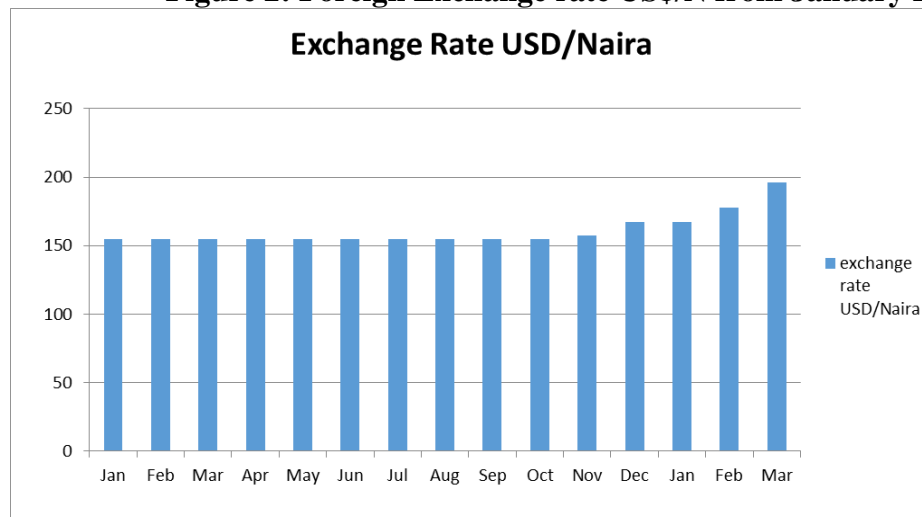


Figure 2: Foreign Exchange rate US\$/N from January 2014 to March 2015



ANALYSIS

Figure 1 takes into account crude oil export (mpb) and crude oil price (US\$); the quantity of crude oil export remained relatively stable throughout 2014 which did not fall beyond 1.6mpb and depicted linear graph parallel to the x-axis. However, the price of the crude oil within the period under review was relatively stable in the first quarter of 2014 but in the second quarter there was a slight increase and reached the peak at the end of the quarter. The third quarter experienced a decline in the price of the product and it became very obvious and drastic in the last quarter of 2014. From the figure above, the export of the crude oil remained relatively

stable while there was a sharp decline in the price of the product, particularly the fourth quarter of 2014.

Figure 2 depicts the foreign exchange rate that is US dollars against Nigerian naira. From the chart, from January 2014 through December, 2014 the exchange rate US\$/N remained relatively constant about N154 to \$1 but in December 2014 there was an increase and it was apparent in the first quarter of 2015, which was about N195 to \$1. From the graph, the upward slope signifies that the US dollars keeps appreciating (i.e. the currency is getting stronger and expensive) while the Nigerian naira keeps depreciating (i.e. the currency is getting weaker in terms of its value and cheaper).

The three variables in both figure 1 and 2; crude oil export, crude oil price and exchange rate, while the quantity of the crude oil exported remained relatively constant while the crude oil price and foreign exchange rate varied in an opposite direction. This is in agreement with the findings of Krugman (1993), exchange rate appreciates in response to rising oil prices and depreciates with response to falling oil prices in oil exporting countries while the opposite is expected to be the case in oil importing countries, though the exchange rate did not respond to the fall in crude oil prices immediately, but change was obvious in the last quarter 2014 and first quarter in 2015 as depicted in the charts.

Since the Nigerian economy is over dependent on the crude oil revenue, the following are some of the consequences of the dwindling of crude oil prices:

4.1 The devaluation of the Nigerian currency: The Central Bank of Nigeria has devalued the naira against the dollar in a bid to protect the naira from losing its value. According to Lolade (2015), the oil crisis has undoubtedly stripped the naira of its worth and the Apex Bank Governor Godwin Emefiele announced the N13 devaluation at the Monetary Policy Meeting (MPC) in Abuja, admitted the falling oil prices was making it hard to defend the value of the naira. It is quite obvious that the value of the naira has depreciated and by implication the prices of goods and services will soar, particularly the imported ones.

4.2 It will result in an unfavourable Balance of Trade (BOT): When the visible exports are less than visible imports; the fall in the crude oil prices (major source of foreign earnings) will affect the balance of payments position of Nigeria which will be deficit because virtually everything we consume in Nigeria is being imported.

4.3 Inflation: According to Nandi, .K and Falodun, .A (2003) Inflation is an economic situation in which the prices are rising rapidly and continuously, causing a corresponding fall in the value of money. The Nigerian economy largely depends on petroleum and whatever happens in that sector has a multiplier effect on the whole economy, with the issue of the fall in the crude oil prices in the world market, the prices of goods and services in the domestic market have gone up because the economy is import dependent. From all indication dollar is more expensive now and whopping sum of money is spent on food importation annually and the importers would have to spend more on importation, the burden would be passed to the final consumers in form of higher prices.

4.4 Depletion of the external reserves: The oil crisis has taken a negative effect on nation's foreign reserves. According to Lolade (2015), the reserves which stood at \$34,510,112,726 on January 14 2015 plunged to \$34,466,330,267 as at January 19, 2015; about 0.13 percent decline in the value as at January 2015.

4.5 Reduction of funds for Governments: The shares that will be going to the three tiers of government (federal, states and local governments) as their monthly allocations will be reduced. The Excess Crude Account is meant to be a fall back options but since oil prices have plummeted below the bench mark, there may be little or nothing in the account. As one of the massive effects of the price slide it has emerged that the Excess Crude Account (ECA) which stood at \$4.1 billion in November 2014 had been depleted to \$3.1 billion (about 25 percent decrease), according to the minister of state for finance, Alhaji Basir Yuguda (Lolade, 2015). The implications of these are better imagined in relation to the huge financial

obligations of the government at all levels such as developmental projects, payment of salaries, etc there will be hue and cry by the leaders and the led. Already there is a delay in the payment of the public servants and the civil servants salaries to a large extent; this is attributable to the slide in the price of crude oil. The Federal government may also find it difficult to save in the Sovereign Wealth Funds and 2015 budget is based on \$65 as against 2014 which was \$78; about 16.67 percent decrease in the 2015 budget.

4.6 Impact on the Nigerian capital market: Capital market is a medium where the lenders and borrowers of the long – term loans are brought into a close contact and where securities such as shares, bonds and debentures are being traded. In the view of Street Journal (2014), the recent decline in crude oil price has impacted negatively on the capital market activities and has become source of worry to stakeholders, because foreign investors always pull out of the market because the Nigerian economy depends majorly on crude oil earnings. According to Economy Watch (2014), the Nigeria Stock Exchange All Share Index and Market Capitalization dropped by 4.11 percent to close at 33,926.18 and N11.24 trillion respectively for the week ended Friday 21 November 2014. The actions of the investors in the capital market were to avoid the anticipated devaluation in the naira which eventually happened and they now scramble to respond to twin monetary and fiscal crises in the face of the price slide. In the opinions of Adeleke G.A, et al (2012), one of the issues with oil price shock is that it leads to capital flight which is the response of the investors to fear likely unsustainable budget deficits will bring inflation and higher future taxes

4.7 Downsize of the labour force and project postponement in the oil and gas sector: This trend of the oil price slide may affect the work force (that is some people's jobs are under threat) in the oil sector in the long run if it continues. If the costs of exploring of the crude oil do not commiserate with the revenue generated, in order for the oil companies to stay afloat they are left with no option than to reduce the size of the labour which would aggravate the unemployment rate in Nigeria. Similarly, according to Lolade (2015) it would affect the investment decision of the International Oil Companies (IOC) planning to embark on huge offshore projects in the country. The resources for these projects could be diverted to other prospective ventures or the projects could be put on hold which would have adverse effects on growth and development in Nigeria. The government is the largest employer of labour in the country with the reduction in government expenditure as result of falling oil prices, would have adverse effect on creating new job opportunities for the teeming population. According to Adeleke G.A (2012), the volatility and uncertainty that now plague oil earnings have resulted in unpredictable investment climate in the country because nobody knows when the next shock will take place.

4.8 Effect on exchange rate and investment: According to Krugman (1993), exchange rate appreciates in response to rising oil prices and depreciates with response to falling oil prices in oil exporting countries while the opposite is expected to be the case in oil importing countries. The Nigerian currency plunged in response to the global oil price shock (negative oil shock) because we are exporting country, as at May, 2015 \$1 exchanged for about N196. In the same vein, according to Englama et al (2010), volatility in exchange rate makes foreign makes foreign trade and investment difficult. With slide in the global oil price, it would serve as a disincentive to international trade that is export and imports of goods and services as well as investment in the country. In the same vein, oil price volatility has been found to have had a more direct effect on the exchange rate of the naira than probably any other economic variables, this is because crude oil export earnings accounts for a large chunk of Nigeria's foreign exchange (about 90 percent) and thus ultimately determines the amount of foreign reserves.

4.9 Debt servicing: The debt servicing will probably be on the increase, particularly the external debts because the revenue accrued to the government would shrink; the estimated revenue would be less than the expected expenditure that is deficit budget. In financing this

deficit more funds would be needed and this may only be possible by borrowing from International Financial Organisations such as World Bank, International Monetary Funds, etc

4. CONCLUSION AND RECOMMENDATIONS:

To mitigate the negative impacts on the Nigerian economy due to slide in crude oil prices the followings need to be taken into account:

5.1 Diversification of the Nigerian economy: There have been calls from different quarters on the need to diversify the economy in a bid to broaden the revenue base of the nation and for national security. It will be wise to provide antidote for Nigerian economy ailment of Dutch Disease Syndrome (DDS); mono economy that has been the bane of development and growth for some decades. There is urgent need for paradigm shift because it has been a recurring decimal in Nigeria economy, initially it was agricultural sector as the main source but when oil was discovered, the sector was abandoned for oil and gas sector. Those at the helm of affairs, corridor of powers, stakeholders, policy makers, etc should take bold and decisive steps as matter of national interest to overhaul and revamp the Nigerian economy in order to save it from imminent collapse. Massive investment in the real sector such as agriculture, manufacturing, construction, etc should be embarked upon by all levels of government and private sector mostly agricultural sector as it has the potential to catapult the Nigerian economy to an enviable height and economic force to reckon with in the 21st century.

5.2 Huge investment in the local refineries: Nigeria is both exporting (crude oil) and importing oil (refined products), the domestic refineries are not working optimally and such the local consumption needs cannot be met, hence the need for importing oil. Massive investment by the public and private sectors will make Nigeria exporting country of both crude oil and refined petroleum products which will serve as an added advantage in income generation for the economy.

5.3 Financial prudent: The three tiers and the three arms of government should avoid white elephant projects and scale down their levels of expenditure in term of efficiency and transparency in management of nation's revenue.

5.4 The political will: The government should show the political will and establish strong institutions to combat the hydra headed monster called "corruption," as well as creating a conducive environment for the private sector or investments to thrive.

In conclusion, the study finds out that the slump in the crude oil prices will have adverse effect on the Nigerian economy, as the economy is run and built around the oil sector in the number of ways such as dwindling in the governments revenue, depreciation of currency, depletion of the external reserves, etc. In view of this Nigeria must follow the line to broaden revenue base of the nation in order to provide remedy to the over reliance on oil sector at the expense of the others and also there is need for Nigerian economy to engage in varieties of strategies and programmes in order to achieve sustainable growth and development.

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GLOBAL CLIMATE CHANGE: RESPONSES AND CHALLENGES

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ABSTRACT

No doubt that the issue of Global climate change has been one of the greatest environmental problems whose effects cannot be denied in diverse countries and the world at large. The avert effect from this issue has led to several local, regional and international conferences which have culminated in several protocols, and international legal frameworks formulated (Ranging from The Rio Earth Summit, Kyoto Protocol, and Copenhagen Conference among others) to tackle this issue. Yet Global climate change remains a global concern and a major threat to human security. The study examines the responses to Global Climate Change and the factors limiting the effectiveness and efficiency of the response. This paper adopted the descriptive historical approach and relied solely on secondary sources for data collection. This paper found among others that there are gaps between policy formulation and policy implementation, the major debacle to the effectiveness of the policies is the proliferation of Multilateral Environment Agreement (MEA), overlapping interest between market and nature and lack of gender sensitivity of the responses. Based on the findings, we recommend the need for the feminization of climate change response and more effort towards implementation.

Keywords: Climate change, Global, Health

1. INTRODUCTION

Climate change is a topical issue around the globe today. This is because of the devastating impact it has on humanity and particularly on the health of those that lives within a given territory (WHO 2008). Buttressing further, a statistics of about 800, 000 people die from causes related to urban air pollution, 1.8 million from diarrhea mainly ensuing from lack of access to clean water supply and sanitation, and from poor hygiene, 3.5 million from malnutrition and approximately 60 000 in natural disasters (WHO, 2008). While the Fourth Assessment Report of the United Nations Inter-governmental Panel on Climate Change (IPCC) (2007) emphasized that climate change currently contributes to the global burden of disease and premature death (Health and Environment Alliance, 2007). Similarly, WHO Press briefing on 2008 World Health Day asserts that annually Climate change threatens the health of global community and since health is wealth, global climate change threatens global economy. Empirically, Omoruyi and Kunle (2011) study revealed that there is a significant relationship between climate change and mortality rate in Nigeria.

Put differently, Climate change magnifies existing inequalities and that the debilitating impact of climate change is more severe on women than on men (UNDP Development Report, 2005). While the Royal College of Obstetricians and Gynecologists in its statement of support for The United Nations Population Fund (UNFPA) (2009) *State of the World Population* report, assert that:

“Poor women in poor countries are vulnerable to the effects of climate change. Climate change has the potential to disrupt progress towards achieving the Millennium Development Goals. It threatens to exacerbate current inequalities through hardships such as water scarcity, changes in food availability, migration, internal displacement, civil strife, and health crises”.

Similarly, Climate change and its potentially devastating short-term and long-term consequences have received heightened attention at global, national, and regional levels during this decade. Climate change is described as the biggest global health threat of the 21st century (Preet *et al*, 2010). More so, Climate Change does affect in a direct and indirect way human health. Although, the indirect effects are not easily seen and understood (Spohr, 2004). Science shows that climate change affect human health across the world. From diminished air quality and degradation of food and water supplies to increasing levels of allergens and catastrophic weather events (Natural Resources Defence Council, 2011). The consequences of Climate change also include temperature related morbidity and mortality, extreme weather events, air pollution, water and food contamination, vector borne and zoonotic diseases, and health effects of exposure to ultraviolet light (WHO, 2003).

It is however, fundamental to note that climate change is not a neutral process; first of all, women are generally more vulnerable to the effects of climate change, because they represent the majority of the world's poor and because they are dependent on natural resources that are threatened (Women's Environment and Development Organization, 2007). Climate change currently contributes to the global burden of disease and is projected to increase threats to human health (Preet *et al*, 2010). There is increasing evidence that global climate change and climate variability will affect the quality and availability of water supplies (Natural Resources Defence Council 2011). Also, current scientific research shows that climate change will have major effects on precipitation and ultimately on the water supply (WECF, 2012).

It is based on this that this paper examines climate change vis a vis identifying the responses and challenges of ameliorating the impact of climate change.

2. LITERATURE REVIEW

2.1 The Concept of Climate Change

Climate change simply refers to any change in climate over time, whether due to natural variability or as a result of human activity. This usage differs from that of the United Nations Framework Convention on Climate Change (UNFCCC), which defines climate change as human activity which directly or indirectly alters the composition of the global atmosphere (Intergovernmental Panel on Climate Change, 2001). Global climate change raises therefore from the issue of the relationship between the general use of resources by human populations and the limits set to resource utilization (Luterbacher, 1996).

It is significant to note that climate change is different from climate variability. Climate variability refers to variations in the prevailing state of the climate on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system, or to variations in natural or anthropogenic (human-driven) forces. However, Global climate change indicates a change in either the mean state of the climate or in its variability, persisting for several decades or longer. (Climate Change Information Resources- New York Metro Region 2005:1). Climate change and its potentially devastating short-term and long-term consequences have received heightened attention at global, national, and regional levels during this decade. Climate change is described as the 'biggest global health threat of the 21st century' (Preet *et al*, 2010).

2.2 Causes of Global Climate Change

The following are some of the identified causes of climate change:

Population: It has been observed that increasing population places a great demand on the environment. More population will need new houses which means more trees will be cut down to build houses, and provide furniture for class room, more water (for food, industry and household use), carbon (for food and fuel), nitrogen (for fertiliser) and land (for crops, pastures and cities) (Irish Times 2011). Population growth is generating an extraordinary range of negative effects from climate change and resources exhaustion to the destruction of species and habitat and the poisoning of the biosphere (Nicholson-Lord 2007:

245). Population growth has led to increasing demands for energy and land resources. Through the burning of fossil fuels to produce energy for industrial use, transportation, and domestic power, and through land-use change for agriculture and forest products, humans have been altering the Earth's energy balance. (CCIR, NYC 2005: 2). Put differently, over the past century meeting human needs for food, fresh water, fuel and other resources has had major negative effects on the world ecosystems; those effects are likely to grow worse over the next half of the century and will pose serious obstacle to the reduction of global hunger, poverty and disease (Easton 2007: XXVI).

Furthermore, Paul Ehrlich noted in his work *The Population Bomb* the ecological threats of a rapidly growing population and Garret Hardin's influential essay "*The Tragedy of the Commons*" describe, the consequences of using self-interest alone to guide the exploitation of publicly owned resources such as air and water. In 1972, a group of people popularly called the Club of Rome published *the Limit of growth: An analysis of population, resources use and pollution trends* which predicted difficult times within the century. The study was redone as *beyond the limits to Growth: confronting global collapse, envisioning sustainable future* which came to a similar conclusion that increasing population is affecting climate change (Easton 2007: XX). In the 1960s and 1970s, this was expressed as the "spaceship Earth" metaphor, which stated that we have limited supplies of energy, resources, and room and that we must limit population growth and industrial activity, conserve and recycle in order to avoid crucial shortages (Easton, 2007:20-21).

FOSSIL FUEL: Another major factor contributing to Global climate change is the burning of fossil fuel. Fossil fuel also known as Black carbon is generated from industrial pollution, traffic, outdoor fires, and the burning of coal and biomass fuels. Black carbon is formed by incomplete combustion especially of coal, diesel fuels, bio fuels and outdoor biomass burning.

The particles from this activity absorb sunlight, both heating the air and reducing the amount of sunlight reaching the ground (CCIR, NYC 2005: 2). In addition, in 2005, burning fossil fuels sent about 27 billion tonnes of carbon dioxide into the atmosphere. Fossil fuels are burned to create energy, which is used for many things such as heating homes, construction, transporting and cooking food, travelling (for example, by car, plane, bus and train) treating water to make it portable, heating it and piping it into homes manufacturing, using and transporting products, from clothes to fridges, from plastic bags to batteries (IPCC 2010)

Transport is projected to create the fastest proportional growth in greenhouse gas emissions of any sector (WHO 2002). In Nigeria, statistics reveal that 55% of the total national petroleum products consumption takes place in Lagos State particularly in the transport sector (Akinbami, 2009). And specifically in Nigeria where gas has been flared for over five decades the vulnerability to climate change is high. According to Iyayi, (2004) Gas flaring contributes to climate change, which has serious implications for both Nigeria and the rest of the world. Nigeria is one of the highest emitters of greenhouse gases in Africa and among the highest CO₂ emitters in the world (Orimoogunje et al., 2010).

DESERTIFICATION: The combustion of fossil fuels is not the only anthropogenic source of carbon dioxide. Deforestation is also cutting down forests faster than they are replaced. Deforestation is a major contributor to climate change. It causes 5.9 billion tonnes of CO₂ per year to be released into the air. This accounts for 20 per cent of the world's carbon emissions – more than the entire global transport sector produces. (Jekayinfa and Yusuf, 2012)

Deforestation makes such a huge contribution to carbon emissions because trees absorb CO₂ as they grow. The more trees that are cut down, the fewer there will be left to absorb CO₂, leading to it building up in the atmosphere. When ecosystems are altered and vegetation is either burned or removed, the carbon stored in them is released to the atmosphere as carbon

dioxide. The principal reasons for deforestation are agriculture and urban growth, and harvesting timber for fuel, construction, and paper. (CCIR, NYC 2005:2)

A recent research which focuses on the growing trend of desertification Nigeria shows that 11 states were seriously affected by desert encroachment. These state include Adamawa, Kebbi, Kano, Katsina, Jigawa, Bauchi, Borno, Yobe, Zamfara, Gombe and Sokoto states. The research also noted that between 50 per cent and 75 per cent of Bauchi, Borno, Yobe and Gombe states and Thirty-five per cent of Adamawa, Jigawa, Kano, Kebbi, Sokoto, Zamfara and Katsina states are prone to desertification, while 10 per cent to 15 per cent of the neighbouring states are also desert-prone' (Abocholnan, 2012).

3. REPONSES TO GLOBAL CLIMATE CHANGE

Below are some of the responses geared towards ameliorating the effects of global climate change:

INDIVIDUAL RESPONSES TO GLOBAL CLIMATE CHANGE: Aside multilateral responses from intergovernmental organization through the United Nations and regional framework or unilateral action from state, individuals have also responded to climate change. Individuals, presidents, vice president, celebrity, ordinary individuals and even corporate organizations have become environmental icon or champion of what has been called the face of green i.e. spoken persons for green. A prominent environmental activist is former vice president of USA, Al gore. Remarkably, for several decades now, April 22 marks the anniversary of what many consider the birth of the modern environmental movement in 1970 and April 22 of every of month of the year has been celebrated globally as earth day. This is often marked with activities such as tree planting, advocacy and speeches.

Also, green clubs have become a feature in higher institutions, secondary and primary schools. Corporate organizations have adopted green cause as major social responsibility and companies have produced eco-friendly products to show solidarity towards the green. There has been a lot of fanfare with global environmental issue with the Eco-certification programme. Eco-certification programme are programs in which firms volunteer to meet environmental-performance standards in exchange for the right to display an eco-label or logo on their products or advertising materials (Klaas and Matthew, 2011).

UNILATERAL RESPONSES TO CLIMATE CHANGE: This refers to independent action taken by individual states to combat the debilitating impact of Global climate change. Through the various international environmental agreements countries have been encouraged to have a national adaptation programme as part of the effort to combat the consequences of Global Climate change. Almost every country has a national environmental programme and national agency to back the enforcement of international environmental law. Nigeria is a signatory to numerous multilateral environmental agreements such as Kyoto, has also unilaterally formulated national environmental policies and law to combat Global Climate change.

Nigeria created a Special Climate Change Unit (SCCU) within the Federal Ministry of Environment with the Secretariat in Abuja, Nigeria. The Unit was created to implement the Convention and the protocol. There is also a Presidential Implementation Committee on the Clean Development Mechanism (CDM) in the Presidency. Similarly, the Department of Meteorology in the Ministry of Civil Aviation was upgraded to a full-fledged Nigerian Meteorological Agency (NIMET) in 2003 to enhance climate data and climate monitoring systems (Ologunorisa, 1996). There is also the Federal Ministry of Environment with a department of Climate change whose main objective is research on climate change. The ministry's activities also include collaboration with Inter-governmental organization and other interest partner in climate change.

Moreso, state and provinces within many state and federal have environmental laws and government agencies to back the law. For instance Lagos State has an environmental policy. Lagos has been regarded as the most proactive states in Nigeria in terms of climate change response activities. Lagos is a member of the C40 Large Cities Climate Summit, an organization dedicated to helping some of the world's largest cities to tackle the challenge of climate change (Building Nigerian Response to Climate Change, 2012)

Regional Responses to Climate Change: Aside multilateral responses at the level of the United Nations in collaboration with its member state, there has also been collaboration at the regional level. Almost every region of the world has a multilateral environmental agreement. From America, Asian, Europe to Africa and the Middle East, there have been responses to the consequences of Global climate change. For instance, although the European Union is a signatory to many international environmental agreements, negotiated under the auspices of the UN, yet at regional level there is an EU Environment Commission also known as EU Environment (European Commission DG Environment News, 2012).

Similarly, the African Union (AU) has also responded to Global Climate change. The AU's response to climate change like its EU counterpart follows from its commitment to the international environmental regime (Jo-Ansie van wyk, 2010:13). Responses from Africa include Declarations and initiatives, such as Declaration on Climate Change and Development in Africa adopted by Heads of State during the African Union Summit (Addis Ababa 2007), Action Plan of the Environment Initiative of NEPAD (June 2003), Tunis Declaration and Action Plan adopted at the International Conference on International Solidarity for the Protection of Africa and the Mediterranean Region from Climate Change, Joint Declaration of the Abidjan Convention and Nairobi Convention, Decision 2 on Climate change adopted at the African Ministerial Conference on the Environment, (Johannesburg, 10–12 June 2008) and Algiers Declaration on climate changes in Africa, adopted by the African Conference of Ministers in charge of environment on climate change (Algiers, 20 November 2008) are few among many responses(A Africa-EU Declaration Monograph)

Similarly, there has been inter-regional effort to Global Climate Change. In 2012 an agreement was reached by three Regional Economic Communities (REC) in Eastern and Southern Africa to conduct a five-year climate change adaptation and mitigation program. It was the first climate change agreement between these RECs and this to a great extent reflects the region's commitment to the United Nations Framework Convention on Climate Change (South Africa Development Community News 2012).

MULTI-LATERAL RESPONSES TO CLIMATE CHANGE: The term Multilateral Environmental Agreement (MEA) refer to any of a number of legally binding international instruments through which national Governments commit to achieving specific environmental goals. These agreements may take different forms, such as convention, treaty, agreement, charter, final act, pact, accord, covenant, protocol or constitution (United Nation Environmental Programme, 2010:4). One report noted that UNEP identified over 280 agreements which are focused on environmental protection as of December 2009 (UNEP & INTOSAI-WGEA, 2010). Similarly, Mitchell 2003, ecolex.org, A.Najam, M.Papa and N. Taiyab, 2006, Markus Knigge, Johannes Herweg and David Huberman, 2005, Peter Roch and Perrez (2005) cited in Norichika (2007:68) further asserts that:

In the IEA database, 405 agreements and 152 protocols have been identified, modified by 236 amendments bringing the total to 794 MEAs that came into existence between 1875 and 2005;The Ecolex project sponsored by UNEP, FAO and IUCN recognizes in total 519 environmental treaties. Other research identifies more than 500 MEAs registered with the UN, including 61 on atmosphere, 155 on biodiversity, 179 on chemicals, hazardous substances and waste, 46 land conventions, and 197 on water issues.

However, since the 1960's when environmental issues have occupied the forefront of international discourse there have been efforts to address it through the United Nations which is the apex intergovernmental organization with widespread influence and highest membership of sovereign states in the international system. The United Nations established United Nations Environmental Programme known as UNEP. UNEP was established as the first attempt of UN to address environmental concerns. UNEP was one of the outcomes of the 1972, Stockholm Conference. The first United Nations Conference on the Human Environment held in 1972, Stockholm, Sweden was attended by 113 delegates. This conference was significant for two reasons. First, the conference raised awareness on the global environment. Secondly, the Stockholm conference secured a permanent place for the environment on the world's agenda and led to the establishment of the United Nations Environment Programme (Meakin, 1992).

According to Bodansky and Sandra 2010, the international response to Global Climate change has in many ways developed along an evolutionary pathway (Bodansky and Sandra 2010:13). Since the 1972 conference, there have been significant international environmental agreements and landmark attempts to address environmental concern. For instance in 1983 the United Nations General Assembly set up a world commission on Environment and Development (the Brundtland Commission). Others significant effort include: 1985 Vienna Convention for the Protection of the Ozone Layer, 1985 Helsinki Agreement, 1987 Brundtland Report, 1988 Montreal Protocol on Substances that Deplete the Ozone Layer, 1988 Toronto Conference on the Changing Atmosphere, 1989 Toronto Economic Summit, Hague Declaration, Noordwijk Declaration, Paris Summit, Langkawi Declaration, 1989 Basel Convention on the control of Transboundary Movement of Hazardous Waste, 1990 Establishment of the International Institute for Sustainable Development in Winnipeg, Manitoba. 1992 United Nations Conference on Environment and Development (UNCED): Convention on Climate Change, Convention on Biological Diversity, Agenda 21, Rio Declaration, Forestry Agreement, Ocean Conference, among several others.

Specifically, multilateral responses to Global climate-change often take place under the UN Framework Convention on Climate Change (UNFCCC), an international treaty created at the Earth Summit in Rio de Janeiro, Brazil, in 1992 and a total of 192 Parties have ratified the UNFCCC (Duruji and Ovasogie, 2012:5-6). The UNFCCC has been followed by the meetings of the Conference of Parties (COP) and there have been sixteen meetings. The sixteenth meeting was held in Bangkok Thailand. Thus, multilateral responses have been characterized by agreements, protocols, meetings, conferences among others.

NON-GOVERNMENTAL ORGANIZATIONS (NGO) RESPONSES TO GLOBAL CLIMATE CHANGE: NGO have championed various causes from women rights to child rights. In environment advocacy NGO has played significant roles in the development and enforcement of international environmental treaties. Since the end of the Second World War, NGO has come to play significant role in international affairs. The role has ranged from Agenda Setting, Lobbyist, Conscience keeper, Partner, provision of expertise in environmental governance (Farhana, 2001:151-161).

Over the years, NGO has become visible in global environmental scene. This is evident in disruption and sometimes violent protest at international meetings like Seattle. Thus, Non-Governmental Organizations (NGOs) play an increasingly prominent role in international environmental institutions, participating in many activities such as negotiation, monitoring, and implementation roles that were traditionally reserved to states (Kal, 1997: 720). It is important to note that 1970 marks the rise of environmental NGO such as Greenpeace International; Friends of the Earth established both in 1971. The establishment of International Union for the Protection of Nature known as IUNC, in 1948 with membership from government and NGO's was the launching pad for the active participation of international environmental NGO in Global politics (Farhana, 2001: 50). The contribution of

IUN and its constituent members to the development of Convention such as Convention on international trade in engendered specie of flora and fauna (CITES) the 1971 Ramsar convention on wetland cannot be underestimated.

Also, NGO has gained widespread influence and membership among all countries. The World Wide Fund for nature has around 5 million supporters across the globe with an average income of SFr 470million. Greenpeace International has more than 2.5 million member in 158 countries with annual budget in the region of 30million and Friends of the Earth has 1 million in 58 countries (Farhana, 2001: 151)

MARKET ORIENTED RESPONSES TO GLOBAL CLIMATE CHANGE: Another significant response to Global climate is the Market-Based Mechanisms for reducing greenhouse gases, these include: Tradable Permits (Allowances), Tradable Permits (Credits) and Carbon/CO₂ Emissions Tax. These approaches have been proposed, promoted and adopted by some developed countries. Similarly, the international frameworks that regulate the emission of GHGs, together with the emerging voluntary markets for carbon offsets, have created a suite of carbon instruments (Yusuf, 2010:6). The market base approaches aims to make reduction of greenhouse gas profitable by giving same incentives to countries and companies that reduce emission and threat of punishment to those that violate same. This is a carrot and stick approach. Significant advantages of a market-oriented approach include, first; it provides a greater incentive to develop new ways to reduce pollution than prescriptive regulatory approaches. Secondly, Polluters not only have an incentive to find the least cost way of adhering to a standard, they also have an incentive to continually reduce emissions beyond what is needed to comply with the standard. Thirdly, for every unit of emissions they reduce under a market-oriented policy, they have a lower tax burden (National Center for Environmental Economics, 2013)

OTHER RESPONSES TO GLOBAL CLIMATE CHANGE: Alternative energy source has also been proposed as a solution to Global Climate Change. This is aim at reducing dependence on fossil fuel thereby decreasing atmospheric composition of carbon which is the chief culprit of climate change. Alternative energy sources that have been proposed, popularized and adopted in some country by individual, companies and group include: Solar, Wind energy , Geothermal energy, Biofuel and Ethanol, Nuclear binding energy and Hydrogen. Significantly, carbon capture and storage (CCS) also has been proposed as a means of reducing atmospheric composition of carbon. CCS involve the process of separating out the carbon dioxide (CO₂) emitted by power stations (or industrial processes), and transporting it to a place for indefinite storage.

4. CHALLENGES TO GLOBAL CLIMATE CHANGE MITIGATION

While numerous efforts has been made at mitigating and adapting to the debilitating impact of climate change from multilateral response by inter-governmental institution like the United Nation to responses through regional organization, to unilateral response from nation-states to nongovernmental organization and individual, global climate change remains a global threat with devastating impact on humanity. However, numerous factors have been identified as hindering the effectiveness and efficiency of all climate change responses.

First, major challenge is the proliferation of MEA. It has been noted that Nigeria is the graveyard of international legal framework. When applied in a general context, it appears that protocols are dead long before they are ratified. Najam et al., 2006; Knigge et al., 2005; and Roch and Perrez, 2005 assert that there are more than 500 MEAs registered with the UN most of which are regional in scope or nested within a hierarchical structure of agreements. The implication of this proliferation culminates initially in little authority to coordinate activities, secondly, it leads to treaty congestion as well as institutional and policy incoherence, confusion and duplication of work, thirdly, redundancy leads to inefficiency.

Norichika (2007:75) further notes that:

The proliferation of MEAs increases administrative and institutional costs for member states, because it leads to an increased number of meetings, international negotiations and reporting. A survey conducted “revealed” that “the three Rio conventions (climate change, biodiversity and desertification) have up to 230 meeting days annually. It also points out that adding the figures for seven other major global environmental agreements raises the number to almost 400 days. The increasing administrative and travel costs are especially burdensome for developing countries, reducing their participation.

Another fundamental challenge limiting the effectiveness and efficiency of MEA is the interwoven nature between economic development and Global Climate change. This is reflected in the fierce, disparaging campaign against climate science by powerful vested interests and ideologues, apparently aimed at creating an atmosphere of ignorance and confusion (Sachs, 2010). The economic challenge of controlling atmospheric concentration of carbon is exacerbated by the complexity of, the science and notion of uncertainty. This is in spite of the agreements by numerous scientists under the auspice of IPCC of the certainty of climate change. Emphasizing the interwoven nature between nature and market and how politics and market have violated the ethics of science, notable Professor of Environment, Jeffrey Sachs surmises that

The Wall Street Journal, America's leading business newspaper, has run an aggressive editorial campaign against climate science for decades. Major oil companies and other big corporate interests also are playing this game, and have financed disreputable public-relations campaigns against climate science. Their general approach is to exaggerate the uncertainties of climate science and to leave the impression that climate scientists are engaged in some kind of conspiracy to frighten the public. It is an absurd charge, but absurd charges can curry public support if presented in a slick, well-funded format (Sachs, 2010)

Aside the proliferation of MEAs and the intertwined linkage between economic and nature. Another challenge is low level of awareness on Climate Change. According to the UNDP report 2010, the level of awareness about climate change is low. In a study of Indigenous people's perception on climate change and adaptation strategies in Jema'a local government area of Kaduna State, Nigeria by Ishaya, and Abaje (2008) reported that in terms of awareness, 13% of the respondents agreed that there is a high level of awareness on climate change in the study area, 33% of the respondents said they don't know and finally the majority 54% of the respondents declined saying that the awareness on climate change is very weak in the study area and Nigeria as whole (Ishaya, and Abaje, 2008:141).

Fundamentally and superseding other factors limiting the effectiveness and efficiency of responses to climate change is the lack of gender perspective. While several methods and responses have been attempted. It is pertinent to note that all of this represents a male dominated approach to address an issue that they are less vulnerable. While numerous efforts have been made, the problem is not with the prescription but with the diagnosis. For decades, the causes of climate change have been wrong diagnosis. Accusing finger has been pointed to increasing atmospheric composition of carbon while neglecting the fundamental challenge of the unequal relations between men and women. Global Climate Change has not been diagnosed as rooted in a gender gap between those affected by greenhouse and those that address the problem (men).

Essentially, nature is often referred to as a woman that is Mother Nature and metaphorically she has been raped, molested and exploitation by men. Men have run the world economy. Global economy is structured in a way that reveals patriarchal dominance. This is reflected in the number of women who sits on the board of corporation and number of women that are CEO of Major Corporations. Global economy has been dominated by male CEOs for several decades and as such, most of the anthropological activities that caused climate change are caused by men while women are at the receiving end of the consequences. Simply stated,

Patriarchal dominance of Global Society is the cause of Climate Change and women bear the most part of the burden of climate change.

Drawing from the above Climate Change can be seen as the reaction of Mother Nature against long years of indiscriminate use of nature without consideration. Therefore, Climate Change is nature crying out on behalf of women. Nature is seen as a woman because nature is pregnant with great treasures and inexhaustible wealth. Since nature is addressed as a woman, we cannot address nature issues without addressing women issues. Women issues are central to addressing nature and specifically the Global Climate change

5. RECOMMENDATIONS AND CONCLUSION

Numerous recommendations have been given in previous studies. Most of these studies emphasized the need to include women in the negotiation process. This means ensuring gender balance in the negotiation process, inserting gender clause into existing framework and taking gender consideration into the mitigation and adaptation processes. It is important to note that while all these recommendation have helped in adaption and mitigation, they are merely palliative measures. The fundamental problems have not been solved. Therefore, the following recommendations will not only enhance adaptation and mitigation efforts but it will give a new direction to discourse on Global Climate Change.

First, there is need to see Global Climate Change as a gender issue rather than a scientific issue. In spite of numerous efforts at mitigation and adaption, atmospheric concentration of carbon seemed to have increased in recent times compared to when the problem was first identified. This we can infer means that the fundamental causes which are patriarchal dominance of nature and society have not been focused on.

Moreso, women issues are central to addressing nature and specifically the global Climate change. Mitigating and adapting to the debilitating impact of climate change will require definite commitment to gender rights. Similarly, discussion on climate change must go beyond generalities to specifics which address the issues of reproductive rights of women as it relates to population. The increasing degradation of the environment and the alarming rate at which the earth's resources are continuously depleted by untrammelled exploration call for the need to re-invent the wheel of global economy. It is evident from research that western developed countries did not get their wealth from mining land resources but the mind resources. Knowledge has become the key resource and the only scarce one. Knowledge is the key resource in society and knowledge workers are the hegemonic group in the workforce. It is important to empower women to become knowledge workers so as to fit into the knowledge industry.

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Climate Change and National Transformation in Nigeria

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ABSTRACT

Climate change will intensify the already adverse conditions of rainfed crop production in Africa. Considering the socio-economic and political contexts of climate change in sub-Saharan Africa, a central argument is that adaptations to climate change need to be resilient, that is, to have the ability to deal with stresses and disturbances as a result of change, while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to learn and adapt to change. Vision 20: 2020 sets out Nigeria's ambition to become one of the World's 20 largest economies by 2020. Climate change not only poses challenges to reaching this goal but also creates opportunities. The 2012 floods in Nigeria were an abrupt reminder of the vulnerability of communities and infrastructure to natural disasters. What the future has in store for is more erratic weather, and with it, the risk of more frequent and more severe extreme events. This paper provides an overview of the likely impacts of climate change on sectors that are strategic for the growth of Nigeria's economy, such as agriculture, livestock, and water resource management. It alerts us that increases in temperature, coupled with changes in precipitation patterns and hydrological regimes, can only exacerbate existing vulnerabilities. The paper also highlights the fact that there are promising opportunities to build resilience into the fabric of Nigeria's economy. Nigeria can start exploring those opportunities by focusing efforts where they matter the most: for example, in agriculture, which contributes about 40 percent of GDP, and employs more than half of the workforce. The transformation agenda provides a strategic platform to raise the sector's productivity, attract private sector investment, and reduce excessive dependence on food imports.

Keyword: Climate Change and National Transformation in Nigeria

1. INTRODUCTION

It is now widely understood and accepted that climate change poses significant serious threats to sustained economic growth, agricultural development, poverty reduction, food security, and political stability globally (IPCC, 2014). Sub Saharan Africa is marked as the most food insecure region in the world (UNDP 2014). WFP (2012) notes risk of hunger will increase by 10-20% by 2050, 24 million malnourished children with 10 million located in Sub Saharan Africa among other climate related variables will affect Africa. These threats are compounded by repeated food price spikes that have created a growing food crisis in many parts of the world, high fossil fuel and fertilizer prices, increase in environmental degradation and competition for food and water (The Montpellier Panel, 2012). Nowhere are these challenges more marked than in Africa where two-thirds of all available land is classified as deserts or dry lands. The Intergovernmental Panel on Climate Change (IPCC) classifies Africa as the most vulnerable continent to climate change and climate variability. The International Food Policy Research Institute (IFPRI) estimates that by 2050 the combined effect of increasing temperatures, declining rainfall, floods and droughts, could result in average rice, wheat, and maize yields declining by up to 14%, 22%, and 5%, respectively. Food availability in Sub-Saharan Africa from this estimate, will average 500 calories less per person, a 21% decline (IFPRI, 2009).

Agriculture in Africa is especially vulnerable to climate variability and change because of high dependence on seasonal rainfall. In Nigeria, Africa's most populous country and second largest economy, more than 70% of the economically active population and their dependents - over 100 million people - rely on agriculture for their livelihoods. Agriculture still accounts

for nearly 40 percent of the country's GDP. Country specific observations from studies conducted in recent decades show that various parts of the country have experienced impacts ranging from accentuated droughts, severe floods, increased occurrence and intensity of storm surges with concomitant flooding and coastline erosion, including progressive salinization of fresh water aquifers and unpredictable variability in the availability of fisheries resources (Adefolalu, 1986; Ibe, 1990; Ibe and Ojo, 1994; Oladipo, 1993; NFNC, 2003; Adegoke et al., 2010). Projections of future climate suggest that global warming may further aggravate these environmental problems in the coming decades (Abiodun et al., 2012; 2013; Cervigni et al., 2013b).

The impact of current environmental and anticipated climate-related changes on the national economy will be colossally negative if adequate response plans and mitigation strategies are not urgently put in place. The recently completed National Climate Change Adaptation Strategy and Action Plan for Climate Change in Nigeria – NASPA-CCN (BNRCC, 2011), indicate that climate change is already having significant impacts in Nigeria, and these impacts are expected to increase in the future. Recent estimates suggest that in the absence of adaptation, climate change could result in losses of between 2% and 11% of Nigeria's GDP by 2020. These loss estimates could rise to between 6% and 30% by the year 2050, and is equivalent to between N15 trillion (US\$100 billion) and N69 trillion (US\$460 billion) (BNRCC, 2011). These large projected costs are the result of a wide range of climate change impacts affecting all sectors in Nigeria with agriculture being the most vulnerable.

2. The problem

Climate change is threatening food production systems and therefore the livelihoods and food security of millions of people who depend on agriculture in Nigeria. More than 70% of the economically active population and their dependents - almost 100 million people - rely on agriculture for their livelihoods and Agriculture still contributes nearly 40 percent of the Country's GDP (FGN, 2012). Agriculture is the sector most vulnerable to climate change due to its high dependence on climate and weather and because people involved in agriculture tend to be the rural poor. The National Policy for Climate Change (FGN, 2012) provides *inter alia* the strengthening of integrated agricultural intervention plan to reduce the sector's vulnerability to climate change and enhance its productivity for food security for food security and poverty reduction. Vulnerability is susceptibility to harm or damage potential. Resilience, on the other hand, implies the ability of a system to cope or absorb stress or impacts and to "bounce back" or recover. National Adaptation Programs of Action (NAPAs), often prepared with the financial support of the United Nations Framework Convention on Climate Change (UNFCCC), could be key mechanisms for mainstreaming climate change into development planning. Plans for the implementation of Nigeria's NAPA (NASPA-CCN) are only now being formulated and progress has been slow, even tentative. As a result, a well-coordinated National Program of Actions from which credible sectoral policies and actions could be fashioned is lacking. NASPA-CCN articulates key adaptation recommendations and action points necessary to minimize risks; improve local and national adaptive capacity and resilience; leverage new opportunities; and facilitate collaboration with the global community, all with a view to reducing Nigeria's vulnerability to the negative impacts of climate change

3. Climate change impacts on agriculture in Nigeria

Model based integrated assessment methods are often used to assess the impact of climate change on agricultural productivity. Crop-Climate models integrate biophysical, agronomic and socioeconomic variables/data while Livestock-Climate models involve linking climate data to livestock production parameters such as livestock specie, land area, and stocking rates

(McKeon et al., 2008). Currently, there is growing interest and investment in the development of sophisticated climate-crop models often driven by the need for more evidence-based decision making processes as climate change model outputs are increasingly used to recommend adaptation strategies for policy options and interventions across the entire agricultural sector (Whitfield, 2013).

The study by Hassan et al., 2013, predicts a 5-25% loss of yield in areas planted with sorghum in the northern Sahelian zone, which is already prone to extreme climate variability. This is likely the result of the expected temperature increase making it too hot for sorghum cultivation in these areas. The expected impact of climate change on food production is not all negative. For example, millet production and yield are predicted to increase in all scenarios, although the area planted with the crop will remain unchanged. Similarly the production of cassava and other root crops as well as sweet potatoes and yams is projected to increase in all scenarios (Hassan et al., 2013). The results of the World Bank study (Cervigni et al., 2013a) are similar in some regards but with important distinctions. The key findings are that by 2050, the probability of lower yields in all cereals in all the agro-ecological zones is very high, except for Millet and maize, where projections for parts of the country are uncertain. Rice is particularly vulnerable in the northern parts of the country where yield declines of 20-30 percent are predicted (Figure 1). Notably, the results for root crops, cassava and yams, show high variability with some models. These results suggests yield decline in both 2020 and 2050, while other models show significant increases in cassava yield for both periods (Cervigni et al., 2013a).

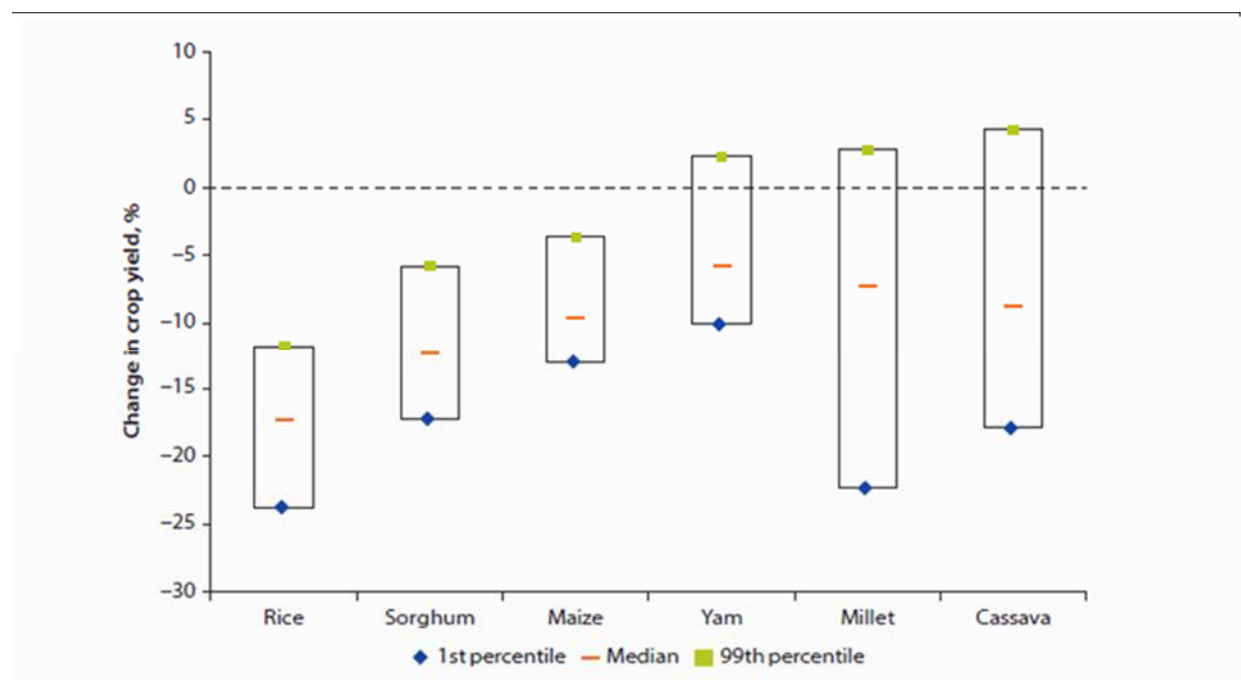


Fig. 1: Projected changes in crop yields over Nigeria by 2050

Source: Cervigni et al. 2013a; based on authors' aggregated data per agroecological zone and weighted against crop yields of base year.

4. Why agricultural resilience?

The National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN) (BNRCC, 2011) proposes key adaptation recommendations and action points necessary to minimize risks; improve local and national adaptive capacity and resilience; leverage new opportunities; and facilitate collaboration with the global community, all with a view to reducing Nigeria's vulnerability to the negative impacts of climate change. Specific recommendations germane to the agricultural sector are highlighted in Box 1.

Box 1: NASPA-CCN Recommendations on Building National Adaptive Capacity & Resilience in the Agricultural Sector

1. Review national agricultural and related policies and programs: The Federal Government should review all national agricultural and related policies and programs to determine modifications required in view of expected climate change. This would include policies and programs in the following areas:

- Nigerian Agricultural Policy.
- Policies and programs relating to agricultural research, livestock, fisheries, seeds, crops, markets, and food security.
- Other policies and programs relating to water harvesting, erosion and flood control, soil conservation practices, drought and desertification, and related matters.

2. Federal leadership role: The Federal Government should play a leadership and catalytic role by encouraging and supporting new program initiatives in the following areas:

Agricultural Extension Services for Resilience in Agriculture: Support a State-led extension program addressing climate change adaptation (State and Local Governments Recommendation #1 below). Key areas of Federal Government support could include programs focused on Training of Trainers in priority adaptation areas, and involvement/engagement of the National Youth Service.

Community-based Climate Change Adaptation Support Program: Collaborate with State Governments and civil society organizations to establish a country-wide community-based climate change adaptation support program. Climate Change and Agriculture Research Program: Working through the Agricultural Research Council of Nigeria, stimulate and support a new national research initiative addressing climate change impacts and adaptation in the agricultural sector in Nigeria.

Promotion of Micro-insurance and Micro-credit: Stimulate and support CSO and private sector involvement in the provision of insurance and access to finance for small scale farmers vulnerable to climate change, to enable them to adapt their farming practices.

Promotion of poverty reduction through integration of adaptation with mitigation: Providing incentives to encourage enhanced income generation through intercropping with biofuel crops, especially in the low carbon density tracts of the country (income can be enhanced directly and through participation in carbon markets).

3. Early warning systems: The Federal Government should review current policies and programs for early warning, and based on this should develop and roll out a program to improve availability and farmer access to short and long range weather forecasts.

4. Irrigation and water supply: In view of projected rainfall changes, particularly in the northern ecozones, the Federal Government should increase efforts to identify environmentally sound and sustainable opportunities to improve and extend irrigation for crops and water supply for livestock.

5. Green Growth Technology Solutions: The Federal Government should identify productive avenues for interventions and investment to promote innovation in low-carbon based technologies for green growth, including opportunities for transfer of appropriate technology from international sources.

6. Gender: Climate change risk and vulnerability factors are exacerbated by the gender differentiated needs and roles of the society. The Federal Ministry of Agriculture and Rural Development (FMARD) should encourage community participation and active roles by women in all livelihood development initiatives across its areas of mandate.

7. International funding: The Federal Government of Nigeria should work to facilitate access to international climate change adaptation funding to support various climate-smart agricultural development initiatives at the national, state and local government levels.

Source: BNRCC, 2011

The above recommendations are supported by other studies, including two recent country specific studies by the World Bank - Toward Climate Resilient Development in Nigeria and Low Carbon Development: Opportunities for Nigeria (Cervigni et al., 2013a,b; Ibe 2011). These studies identified several key components of new and innovative adaptation measures to climate change in the agriculture sector, such as:

- Changes in agricultural practices to improve soil fertility and enhance carbon sequestration.
- Changes in agricultural water management for more efficient water use
- Improving spatial targeting of investments.
- Agricultural diversification toward enhanced climate resilience.
- Reducing greenhouse gas (GHG) emissions from agriculture and increasing the value of sustainable farming practices through the valuation of carbon and other forms of agricultural ecosystem services such as water purification and biodiversity.
- Agricultural science and technology development, agricultural advisory services, and information systems.
- Risk management and crop/livestock insurance.

5. Building agricultural resilience

The National Policy on Climate Change (FGN, 2012) that was recently adopted by the Federal

Executive Council, provides inter alia for an integrated agricultural intervention plan to reduce the sector's vulnerability to climate change, and strengthen agricultural resilience so as to achieve the dual goals of food security and poverty reduction. Vulnerability is susceptibility to harm or damage. Resilience, on the other hand, implies the ability of a system to cope, absorb stresses or shocks, and "bounce back" or recover. A stress is defined as a regular, sometimes continuous, relatively small, and predictable disturbance (e.g., the effect of growing soil salinity or indebtedness). A shock, by contrast, is an irregular, infrequent, relatively large, and unpredictable disturbance, such as is caused by a rare drought, flood, or a new pest (Conway, 2012). The distinction is important because they are different phenomena (even though they sometimes grade into one another), have different effects on agricultural production and require different response and adaptations. In a recent report, The Montpellier Panel identified seven steps that need to be taken to build resilience (Montpellier Panel, 2012). These include the **anticipation** of the likelihood and location of a stress or shock via a **survey** (or agro-climatic monitoring in the case of the extreme weather event). The next steps – **prevention** and **tolerance**, **recovery** and **restoration** – involve defining objectives, identifying the various options and appraising them in terms of their outcomes and the relevant costs and benefits. Situations do arise when damage is unavoidable and the only response is to **restore** the basis for growth. Lastly, building resilience is about **learning** from past experience.

6. National Context: The agricultural transformation agenda of the Federal Government of Nigeria

The agricultural sector in Nigeria has been undergoing phenomenal change under the Agricultural Transformational Agenda (ATA) of former Dr. Goodluck Ebele Jonathan. The ATA is underpinned by a vision to unlock the full potential of agriculture in Nigeria by making Nigeria an agriculturally industrialized economy in scale and magnitude of the agricultural market revolutions of Brazil, China and India over the past two decades (*Excerpt from speech delivered by Dr. Akinwumi Adesina, former Honourable Minister of Agriculture and Rural Development, at the Inaugural Meeting of the Nigeria Agribusiness Group, March 2013*). In pursuit of this vision, the Federal Ministry of Agriculture and Rural Development

(FMARD) has set clear and ambitious goals that include adding 20 million metric tons of food to the national supply by 2015 and 3.5 million new jobs in the agricultural sector.

Given the pivotal role of Agriculture in national development and its potential as a veritable vehicle for the transformation of the economy and people's lives, it is incumbent on the FMARD to take the lead in establishing a framework for integrating climate change into agricultural planning. These important ongoing FMARD development initiatives need to be reinforced to reduce vulnerability to climate change, including promoting agricultural markets, minimizing or eliminating distortions in agricultural policies that will exacerbate climate change impacts, enhancing social protection and microfinance, preparing for disasters and, critically, mainstreaming climate change in agricultural policies and practice. The Ministry's evolving Agri-Tech Strategy should recognize that climate change will have an impact on the sustainable intensification of agriculture and meeting national food security challenges and must embrace the development and application of emerging technologies and improved skills.

Assuming conventional approaches to oil and gas production, electricity generation and use, transportation, and agriculture, the World Bank estimates that achievement of the Vision 20:20 goals might add up to 11.6 billion tons of CO₂ to the atmosphere over the period 2010-35—five times the estimated historical emissions between 1900 and 2005. In contrast, the World Bank submits that a low carbon path to achieving those development objectives for 2020 and beyond, would result in 32 percent lower carbon emissions and net economic benefits to Nigeria, estimated at about 2 percent of GDP. These national benefits include a more productive and climate resilient agriculture. The World Bank Report argues that the time to make that transition is now because “once locked into the country's economic fabric, higher carbon technologies are costly and impractical to reverse.”(World Bank, 2013a).

The World Bank suggests that the Federal Government of Nigeria, in partnership with the states as appropriate, might consider a number of actions that could help remove the barriers to low-carbon development in the Agriculture Sector. These include bringing up to 1 million hectares under triple-win, sustainable land management (SLM) practices by 2029; include in the Agricultural Transformation Agenda (ATA) support for climate-smart agriculture demonstration projects; launch a dedicated research and extension program on climate smart agriculture (CSA); and define procedure and screening tools for integrating climate considerations into project evaluation. To support the national ATA program and strengthen national capacity to respond effectively to the challenges of climate change, the FMARD, under the leadership of the former Honourable Minister of Agriculture and Rural Development, Dr. Akinwumi Adesina (CON), launched an initiative to develop a National Agricultural Resilience Framework (NARF) on climate-smart agriculture. The framework will include a robust implementation plan that incorporates innovative agricultural production strategies and risk management mechanisms to promote resilience in the agriculture sector. The then Honourable Minister invited leading experts on climate impacts, agricultural systems, and global food security from within and outside Nigeria to constitute the Advisory Committee on Agricultural Resilience in Nigeria (ACARN). The committee was inaugurated by the Honourable Minister on September 17, 2013 at the World Bank Country Office in Abuja, Nigeria. Its mandate was to develop the National Agricultural Resilience Framework (NARF) and advise the Honourable Minister on the policies required to successfully implement a national climate and smart agricultural programme. The goal of the programme is to strengthen the capacity of small and large-scale agricultural producers to increase productivity, grow wealth and thrive in the face of growing challenges from multiple social and environmental stressors, including changing climate. This national agricultural resilience

initiative, I believe, is the first attempt at developing a sector specific climate adaptation and risk mitigation programme in Nigeria.

7. The National Agricultural Resilience Framework (NARF)

The natural world, with its biodiversity, landscapes and ecosystems, is in a perpetual state of change. However, the increasing pace of climate change will place unprecedented pressures on access to, and use of our natural resources. It is important therefore, that, in pursuit of the intensification of agricultural production for economic growth and national food security, every effort must be made to build into agricultural reforms, the imperative for preservation of the natural world. It will be necessary to develop integrated approaches to land management e.g., sustainable land management (SLM) practices such as agro-forestry and conservation agriculture that can significantly increase yields while delivering better environmental outcomes. These technologies would also enhance farmers' resilience to climate variability and change. The National Agricultural Resilience Framework (NARF) is based on principles of adaptive management and participatory engagement as the central tenets of the overall implementation strategy. Adaptive management acknowledges uncertainty as a context of decision-making and builds flexibility into policy and decision-making to manage risk, it allows for new knowledge input. The NARF Report articulates policy options, opportunities and required interventions for achieving the strategic objectives highlighted in Box 2.

Box 2: NARF Strategic Objectives

Strengthening the overall policy/institutional framework for improved resilience and adaptation to climate variability and change in the agricultural sector, including planning and implementation, systems for resource mobilization, and effective project monitoring and evaluation.

Evaluation and introduction of risk transfer and risk management strategies (e.g., improved seasonal and real time weather forecasts, insurance based risk mitigation options etc.) into the agricultural sector and widespread deployment of same through communication technologies, including mobile phones.

Improving productivity through training community and grass root farmers on land and water management strategies (e.g., irrigation farming, water harvesting, soil fertility enhancement and erosion control etc.) improved farming practices and using policy instruments such as economic incentives, regulations and communication.

Reinforcing existing social safety nets through support systems that reduce vulnerability and improve livelihood conditions for the vulnerable, especially women and children.

Improving farming systems research capacity within the National Agricultural Research System (NARS) to enable and support the implementation of climate friendly agriculture in Nigeria.

Revamping extension services, including building new capacity for evidence-based assessment and management of climate risk for resilience in the agriculture sector.

8. Reducing climate risk and building resilience in Nigeria's agricultural sector

Considering the various challenges (climatic as well as non-climatic), differential impacts, and the uncertainties in both climate projections and socioeconomic driving factors, it is advisable that Nigeria focus on increasing the resilience of agricultural production to climate change. Related measures will include building buffers and buffer capacities that enable adaptation, improving self organization, and the capacity for learning (Ifejika Speranza, 2010). Ecological buffer capacity relates to growing crops that are tolerant to the prevailing climatic conditions, adopting better agronomic practices that increase soil moisture holding capacity (e.g., conservation tillage), and soil erosion protection measures, such as terraces and bunds. Enhancing farmers' socio-economic buffer capacities would entail increasing their livelihood assets in ways that provide them with necessary human, financial, social, physical and natural capitals by improving their access to markets, information and new technology. Improving self-organisation refers to how well farmers are organized by themselves to be able to address the problems they encounter with little external help. The capacity for learning refers to a farmer's management approach and openness for learning. As farmers are constantly adjusting their activities and learning from other farmers and their environment, indigenous knowledge reflects this adaptive learning; the question, then, is: how are farmers enabled to learn from their experiences? Government thus needs to understand and strengthen indigenous knowledge systems. Such a resilience approach needs to be region-specific, and adapted to socio-ecological characteristics.

The following four core measures are crucial for successful adaptation (Box 3): awareness; enabling policy and working conditions; understanding past and future climatic trends; and integrating local knowledge (Ifejika Speranza, 2010). Understanding the current and future climate trends, and enabling information on the likely duration and dynamics of such changes will allow for better tailoring of adaptation measures and for ensuring flexibility in adaptation measures. Farmers are continually adapting their production to variable social-ecological conditions, and they have valuable local knowledge that can provide useful insights to professionals. Considering the diverse agro-ecological zones, documenting and strengthening indigenous knowledge can provide wealth of adaptation knowledge.

Box 3: Effective Adaptation Strategies

Two factors that shape the type of adaptation response are the existing capacity of the affected communities, and the level of information about climate change impacts. Hence for cases where capacity is low, as in most of sub-Saharan Africa, the major focus of adaptation would be to address the underlying sources of vulnerability, rather than addressing adaptation per se. With higher certainty about climate change, the major focus would be on addressing the impacts. Adaptation thus involves:

1. Reducing vulnerability, by addressing the drivers of vulnerability to climate change. Such activities generally aim to reduce poverty and other problems associated with a lack of capabilities, for example through improving livelihoods. Although such activities do not address specific climate change impacts, they do help buffer actors from climate trends and shocks and therefore build resilience. This means that resilience is at the core of adaptation actions.
2. Building adaptive capacity, thereby increasing the ability to adapt to changes (e. g. communicating climate change information, building awareness of potential impacts, investing in livelihood capitals), and
3. Implementing adaptation decisions – transforming the capacity into action. This focuses on reducing the cumulative impacts of climate change, ensuring that no externalities occur from adaptation actions (i.e. adaptation by one actor does not adversely affect other actors), avoiding anticipated adverse impacts of climate change and ensuring that the distributional impacts of adaptations are minimized.

Source: Ifejika Speranza, 2010

A robust adaptation implementation framework must be based on information available from vulnerability and impacts assessment that seek to determine the extent to which different communities, ecosystems and natural resources are likely to be affected by climate change. The adaptation options will combine scientific research with laboratory scale or pilot scale projects that will lead to field scale projects to demonstrate the framework and capacity to reduce the intensity of identified impacts. The target should be to mainstream climate change adaptation into all existing and new sectoral policies in the key sectors of land, water, air, energy, biodiversity, fishery resources and coastal resources. The broad objectives are to reduce our vulnerability, build our resilience and build our capacity to adapt to climate change.

The preferred approach is for the selection of adaptation measures which are in harmony with natural ecosystems that provide key goods and services to the land and people. Adaptation to climate change must focus on the maintenance and enhancement of the ability of natural ecosystems to continue to perform these functions. It should also address the needs, choices, and priorities of farmers. Thus, an ecosystem approach to climate adaptation can contribute to reducing climate change impacts, diminishing the vulnerability of people and infrastructures and increasing their resilience and adaptive capacity. Finally, appropriate policies and legislation must be adopted to promote the development and maintenance of healthy and diverse ecosystems as basis for adaptation to climate change.

9. Climate resilience in a low carbon economy

By impacting negatively on agricultural productivity and eroding the natural resource base for enhancing agricultural practice, climate change has the potential to worsen the supply side of the food security and poverty reduction ambitions of the country. In the face of difficulty to predict inter and intra-seasonal variability, it is imperative for Nigeria to invest in building agricultural resilience to counter the vulnerabilities imposed by the changing climate. This will require improvements that take ongoing development policies such as promoting agricultural markets, minimizing or eliminating distortions in agricultural policies that will exacerbate climate change impacts, enhancing social protection and microfinance, preparing for disasters, etc., above and beyond their current capacity. One such policy is the adoption of a low carbon to carbon neutral economy as a mantra for national development (Ibe, 2011b; Cervigni et al., 2013b).

Indeed, investments in low carbon fuels and renewable energy are the pillars of the Vision 20:2020, which articulates the long-term intent to launch Nigeria onto a path of sustained social and economic progress to improve the living standards of all Nigerians and place the country among the Top 20 economies in the world by 2020. Assuming conventional approaches to oil and gas production, electricity generation and use, transportation, and agriculture are maintained, the World Bank estimates that achievement of the Vision 20:2020 goals might add up to 11.6 billion tons of CO₂ to the atmosphere over the period 2010-35 - five times the estimated historical emissions between 1900 and 2005. In contrast, the World Bank predict that a low carbon path to achieving those development objectives for 2020 and beyond, would result in 32% lower carbon emissions and net economic benefits to Nigeria, estimated at about 2% of GDP. These national benefits include a more productive and climate resilient agriculture. The World Bank Report argues that the time to make that transition is now because “once locked into the country’s economic fabric, higher carbon technologies are costly and impractical to reverse” (Cervigni et al., 2013b). Nigeria can, and should ‘leapfrog’ the carbon-intensive phase of development and move directly to cleaner, more advanced transport, energy, agriculture and land-use solutions.

The World Bank suggests that the Federal Government of Nigeria, in partnership with the states as appropriate, might consider a number of actions that could help remove the barriers to low-carbon development in the Agriculture Sector. These include bringing up to 1 million hectares under triple win (higher yields, higher climate resilience, reduced carbon emissions), sustainable land management (SLM) practices by 2029; include in the Agricultural Transformation Agenda (ATA) support for climate-smart agriculture demonstration projects; launch a dedicated research and extension program on climate smart agriculture (CSA); and define procedure and screening tools for integrating climate considerations into project evaluation.

10. Conclusion

From an environmental point of view, the year 2012 was one of the most challenging for Nigeria in recent history due to the unprecedented flood that ravaged several states of the country. According to statistics released by the U. S. Federal Emergency Management Authority (FEMA), over 2.3 million people were displaced, 363 persons lost their lives and total value of losses across all sectors of the national economy was estimated at US\$16.9 billion. The 2012 flood exposed Nigeria's vulnerability to extreme climate events and underscores the need for deliberate planning to enhance adaptive capacity and resilience across all sectors of the Nigerian economy, including agriculture. This paper presented a brief overview of the climate regime of Nigeria and discussed various aspects of the variable nature of rainfall and temperature patterns across the country. We reviewed results from a number of studies that showed significant shifts in rainfall amounts and distribution, including changes in the onset and duration of the rainy season. These changes have serious consequences for agriculture, including crop and livestock production; water resources management; agro-forestry, fisheries, and many other agricultural activities. We also pointed out that the relationship between climate variability and agricultural production is complex and moderated by several factors, especially management practices on agricultural lands.

The paper has broadly reviewed evidence of the impacts of climate variability and future climate change on agricultural systems and livelihoods. Several recent modeling studies show significant changes in the projected future climate for Nigeria, including temperature increases of between 2 – 3°C by the middle of the current century. One study (Abiodun et al., 2013), suggests that the projected warming, which increases the occurrence of extreme temperature and heat wave events over the entire country, will likely enhance the frequency of extreme rainfall events in the south and southeast and reduce the annual rainfall northeastern Nigeria. We highlight some of the uncertainties in the amount and direction of projected changes in future climate for Nigeria from climate models and noted the additional challenges that these uncertainties present for developing appropriate adaptation policy responses. We also note that scenarios can be built to guide decision making under uncertainty.

Despite considerable uncertainty about future climate, we know enough to build meaningful scenarios on which decision-making can be based. Uncertainty about the local impacts of global climate change trends, particularly in developing countries, has hampered adaptation action to date. But even in locations with limited existing research, the test cases developed in the World Bank study discussed in this paper (Cervigni et al., 2013a) were able to build robust scenarios to 2030. The World Bank study identify sets of adaptation actions that can serve as good precautionary steps to prepare for a range of possible climate change outcomes. These scenarios show that degradation of natural resources has a direct impact on agricultural productivity and livelihoods by reducing the resilience of the agro-ecosystems to extreme

climate events. This further undermines the region's future capacity to cope with climate change.

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ASSESSMENT OF INTERNAL SYSTEM EVALUATION PRACTICES IN SOUTH WESTERN NIGERIAN UNIVERSITIES

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Abstract

Evaluation is key to improvement in higher institutions. When the efficacy of the system is not evaluated periodically and especially if the results of such evaluation is not ploughed back into the system, it will be difficult to establish whether there is progress toward the achievement of institutional goals. This survey utilized the input, process and output evaluation strands of the CIPP and FAMOUS evaluation models to assess the interaction of internal evaluation practices in six South-western States in Nigeria consisting of 18 universities drawn from private, state and federal institutions using multi-stage random sampling technique and a sample size of 844 respondents in all. 4 research questions were raised and 1 hypothesis tested using ANOVA. The findings reveal that the process of internal evaluation is not strictly pursued by all institutions and many rely only on the accreditation exercise by the NUC, which is external to the institutions. There was also no uniformity of approach with the few who appeared to practice internal system evaluation. Also results are not ploughed back into system functioning. This was found to affect the nature of output of the universities. It was suggested that internal evaluation of the university system be taken more seriously and even follow some kind of format to ensure uniformity.

Keywords: System Evaluation, Universities, Methods, Student Performance

BACKGROUND TO THE STUDY

The National Universities Commission (NUC) is the regulating body mandated to ensure that standards are maintained in the universities in Nigeria. This is achieved through an external evaluation process, referred to as the accreditation exercise. This exercise may not be adequate because it is not regular and it has been observed, to concentrate on auditing individual programmes, thus, it did not give a broader picture of the situation in the system. It is noted, that the result of the first and only system accreditation/evaluation conducted by the NUC in 2012 was not really publicized, so it had little impact on system improvement. It is further noted that for the NUC accreditation purposes, which is external, most institutions were usually at their “peak performance”, with near perfect records, facilities and personnel documented. However, after the exercise, scarcely were efforts made to conduct what is known as the school’s self-evaluation (internal evaluation), the essence of which will be to ensure agreement between the reports of the internal and the external evaluations of an institution referred by (Alade, Oke and Esiobu, 2010) as the whole school evaluation process. This exercise ensures sustained standard and the continuous readiness of the institutions for accreditation. Hurteau, Houle & Mongiat (2009) add that the evaluation process is a process whose primary function is to produce legitimate judgments that will serve as the basis for decisions and recommendations. If the evaluation process is faulty, it will impact on the educational output. After the NUC accreditation, it is not clear, whether efforts are made to sustain good practices by the universities, through appropriate internal evaluation of the system, to ensure conducive learning environments. Hurteau, Houle & Mongiat (2009) opine that the evaluation process is a process whose primary function is to produce legitimate judgments that will serve as the basis for decisions and recommendations. If the evaluation process is faulty, it will impact on the educational output.

This suggests that perception of the individual is of importance. Perception is derived from people's view of life and has great influence on opinion, action and decision.

A study conducted on a State University by Osakinle, Onijigin and Falana (2010) revealed a positive and significant relationship between teaching effectiveness and learning environment. Another study by Ikonta, Bakare, Onyene & Uzoka (2011) found out that the content and content delivery in the teaching and learning processes are vital to quality assurance practices.

Method is the pathway that leads to the achievement of set goals. In this instance evaluation can be seen as one of the ways that helps the process of goal attainment. In academia, it includes all the resources and tasks put together to ensure that the goals/objectives are achieved (Bakare, 2013). If method is considered in this light, then evaluation becomes part of the process of helping the undergraduate (who can be seen as the adult learner) reach his learning goals. In fact, considering the peculiar characteristics of the learning adult, it becomes the glue that binds all the activities together. Curriculum content refers to the subjects offered and taught at the different levels in the university. The content taught definitely influences the quality of the graduate, and if the courses offered are not responsive to the labour market they are meant to service, then it will lead to unemployable graduates because the graduates will not be able to function effectively in the labour market.

Conceptual framework

To conduct evaluation exercises conveniently and validly, evaluation model or models based on sound theoretical bases should be adopted. For this study therefore, two models were combined. These are Stufflebeam's (2003) CIPP model and the FAMOUS model by Ohia (2009).

CIPP is an acronym for context, input, process and output stages for guiding the process of evaluation in Stufflebeam's (2003) model. It is a decision-oriented approach. CIPP model is quite comprehensive, and one would often not use every part in a single evaluation. Its strongest drawback is that it does not emphasize feedback at every stage that the next model does.

The FAMOUS evaluation model by Ohia (2009) is another evaluation tool that is popular for system and student evaluation. This model may be a little more convoluted than the simpler looking CIPP model but it has a main advantage over it. It is a formative type of approach to evaluation, hence the emphasis on feedback to the system for improvement. The system is also sensitized about the need to change strategies if necessary so that things can be done more efficiently and effectively.

The two models were combined for the study to ensure a more effective system evaluation process. It was based on the input, process and output of the institution but feedback was emphasized at every level. The study also attempted to establish the level of institutional support available for evaluation process to enhance the production of quality graduates for the Nigerian nation. It will also help identify major challenges, provide justification for intervention.

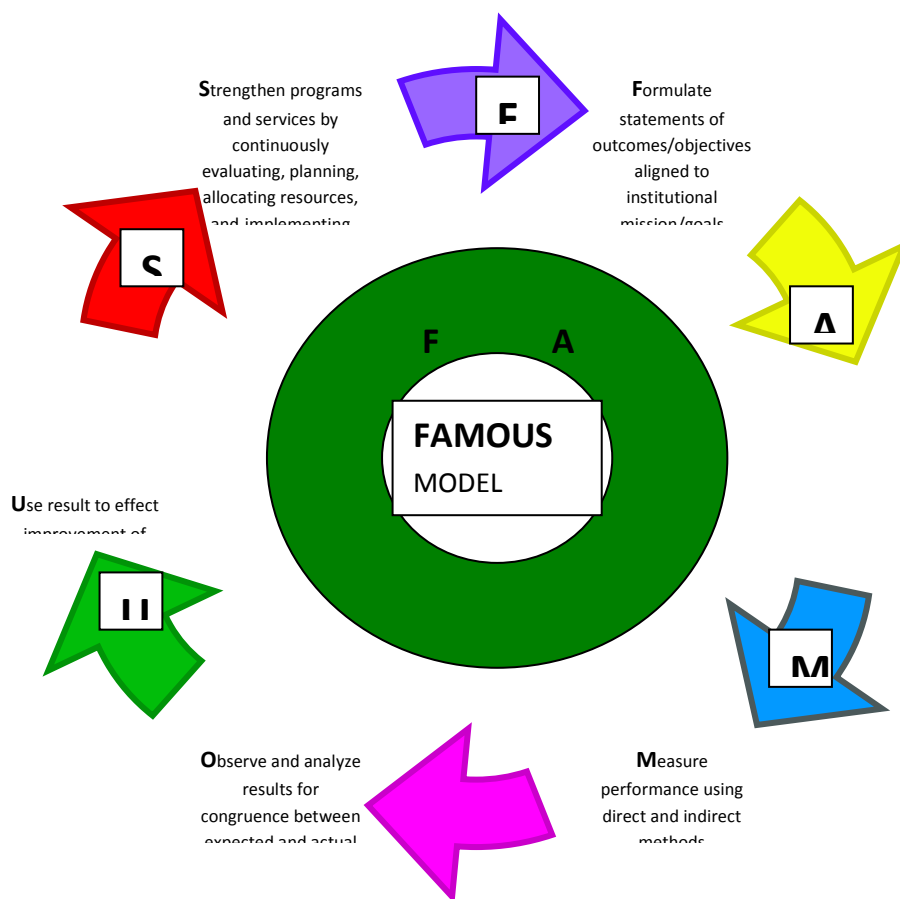


Fig 1: FAMOUS evaluation model (Ohia, 2009)

Statement of the Problem

It is common knowledge that the NUC conducts external evaluation of Nigerian universities intermittently through the accreditation process. However, this is not enough because it is still necessary to engage in regular internal evaluation of the university system for efficiency and sustenance of the standards attained at the time of accreditation. As it is, one cannot confidently say that internal evaluation is carried out by every university not to talk of the results being fed back into the system. This could be a dangerous trend because if regular and rigorous internal evaluation is not carried out, there cannot be improvement in the system and quality of the graduates may be affected; it might even result in system failure. The study therefore assessed the internal system evaluation practices in the universities in South West Nigeria.

Purpose of the Study

This study assessed the practice of internal system evaluation of universities in South West Nigeria within the context of the institutions. This was in a bid to improve services and the quality of graduates. The study therefore examined current evaluation practices so as to document the effect of internal evaluation practices

Research Questions

The study posed the following research questions:

1. Do universities engage in internal system evaluation?
2. Are the approaches to the internal evaluation process uniform among the universities especially with respect to method and frequency of the evaluation exercise?
3. Do the universities show evidence of the use of modern teaching methods, sufficient assessment activities and provision of feedback for students and for lecturers?
4. What is done with the result of internal evaluation?

Hypothesis

1. There is no significant difference between the perception of students and lecturers about the internal evaluation procedures in private and public universities in the south west.

Significance of the Study

The study is significant in many ways. Some of them are:

1. The outcome will call the attention of programme planners to a renewed awareness of the importance of the evaluation process in achieving institutional objectives.
2. The findings will serve as a reference point for work in the field of institutional evaluation and method employed.
3. Nigerian University administrators will realize the importance of internal evaluation and the need for feedback to be given and be integrated into the system to ensure improvement of all activities within the system.

Methodology

The study made use of both the survey and ex post facto designs. It audited what was going on with institutional system evaluation.

Population: The population of the study comprised all undergraduate students in full time programmes of all the Universities in the South Western zone of Nigeria, the lecturers and the administrators.

Sample Size and Sampling Technique: The sample comprised 720 undergraduates, 82 lecturers and 42 administrators selected from eighteen (18) Universities in South West Nigeria. The 18 universities were selected using stratified random sampling technique. The universities were first stratified according to their State of location, next, in each State; they were stratified according to type of ownership, that is, Federal, State and Private. One University was thus selected randomly from each ownership type. Using random sampling technique and the proportionate ratio of students' (undergraduates) population to lecturers in each selected university, 720 students were selected in all. The sample was taken pro-rata according to the institutional student strength. 72 lecturers in all were proportionately and randomly selected among those taking Faculty and University-wide courses as they were the ones who had contact with the higher number of students. 42 Sectional Heads in all were selected from the Academic Planning Units of the Universities for interview to corroborate the

documentations and other information obtained from other sources in the universities. This made a total of 844 respondents in all.

Instrumentation:

The instruments used were a set of questionnaires, interview and observation schedules with a checklist. The Questionnaire was titled “Questionnaire on Institution Evaluation” (QIE). The QIE was constructed by the researchers. The response format was Likert type and the scoring followed the format of strongly agree SA (4), agree A (3), disagree D (2) and strongly disagree SD (1). The negative statements were reverse scored. The instrument was validated and the reliability quotient from the test-retest conducted during the pilot study at three weeks interval yielded 0.68. The Observation Schedule was to observe the lecturers teaching methods while the checklist was for facilities available in each university.

Data collection: The main researchers visited the different institutions to meet the respondents. They were aided by their trained assistants 2 (Ph.D candidates). There were visits to the institutions’ lecture rooms for the purpose of observation of facilities in the different universities and classroom teaching interactions. The selected lecturers in the different universities were sometimes interviewed and also students. The key administrative officers were also interviewed so as to corroborate the information gathered from the questionnaires.

Analysis: Collected data were analyzed using descriptive statistical tools (frequency counts, percentages, mean and standard deviation and the hypotheses with ANOVA.

Results

All 18 of the universities sampled in the study were visited. The findings are presented as follows:

Research question 1: Do universities engage in internal system evaluation?

Of the 42 administrators asked if they conducted any kind of internal system evaluation, 28 (66.7%) claimed their institution did while the remaining 14 (33.3%) opined they do not rigorously pursue internal system evaluation activities.

Research question 2: Are the approaches to the internal evaluation process uniform among the universities especially with respect to (a) the method and (b) frequency of the exercise,

Information on question 2 was gathered through three sources – the students, lecturers and administrators. There was a general consensus (100% agreement) with mode of students’ evaluation - through various continuous assessment tasks and examinations; and the Lecturers’ – through the Annual Performance Evaluation (APER) process and assessment of publications. However few 195(27%) students indicated that they were allowed to evaluate their lectures’ performance. Minimal opportunities were provided for the staff and students to express their general satisfaction level with the quality of services being offered by the system.

The administrators' responses to how internal evaluation was conducted in the universities yielded the result presented in Table 1 below.

Table 1: Pattern of the Administrators' Responses to the Method of Data Collection from Internal Evaluation in the Universities

Mode of collection	Fed	State	Pri	Percentage
Use of questionnaire	8	9	9	26 (62%)
Online opinionaire	2	1	2	5 (12%)
Physical visits	2	1	-	3 (7%)
Personal interviews	1	2	1	4 (10%)
None conducted	3	1	-	4 (10%)
				42 (100)

Table 1 presents the administrators' responses to the method used to collect internal evaluation information from the institutions. The most popular method they reported was the use of questionnaire (62%), while the least popular (7%) was paying physical visits. The pattern of the administrators' responses on the frequency of internal evaluation conducted in their universities is as presented in Figure 2 below.

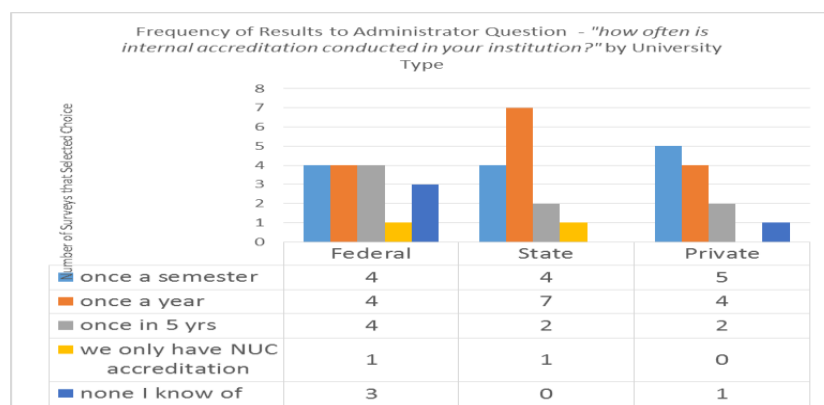


Figure 2: Bar chart of Administrators' Responses on Frequency of Internal Evaluation by University Type

As presented in Figure 4, 13 (31%) of the administrators responded the frequency was once per semester, 15 (36%) reported once a year, 8 (19%) responded once in 5 years, 2 (5%) responded that they only do the NUC accreditation exercise while 4 (10%) of them answered "none that I know of".

Research question 3: Did the universities show evidence of the use of modern teaching methods, sufficient assessment activities and provision of feedback for students and for lecturers?

Responses from the questionnaire by lecturers and the observations on whether modern teaching methods were employed in the universities indicated that majority (13 – 72%) of the universities used the writing board exclusively and still relied heavily on the straight lecture method of instruction. The remaining 5 (28%) had evidence of using ICT to enhance their instructional process; these one even had the interactive boards installed in some lecture rooms, albeit with the writing board still next to it.

Students were also asked whether lecturers gave them frequent feedback on their academic performance and their responses are indicated in fig. 3 below:

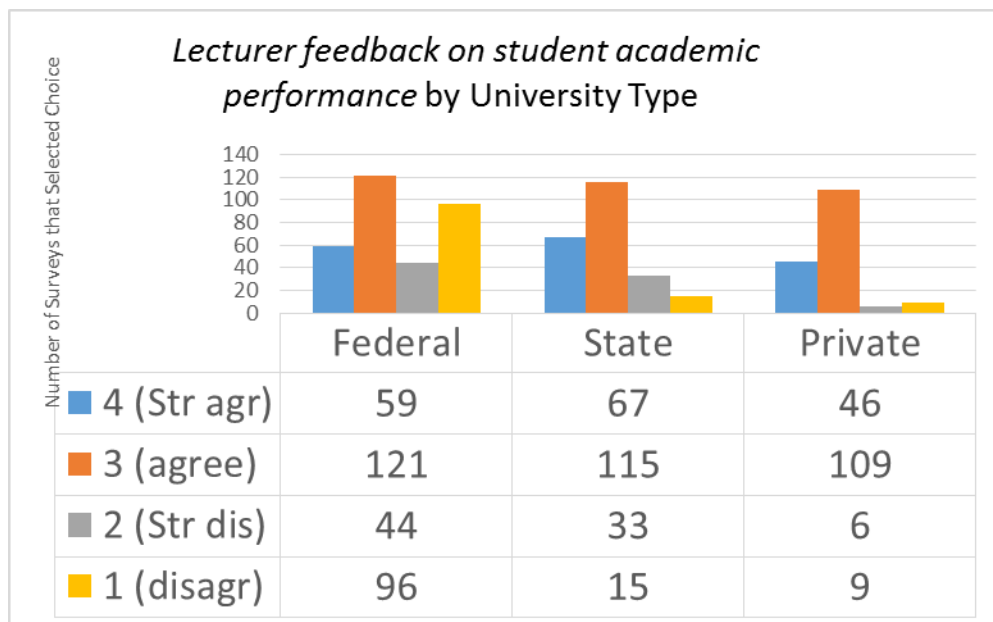


Fig 3: Students' response on feedback about their academic performance by lecturers

Majority of the students said they were given feedback but 13.33% in Federal universities claimed they were not given adequate feedback on their academic performances.

For the part of the question which sought to find out what was usually done with the results of internal system evaluation polls conducted, responses by administrators are shown in fig.4 below:

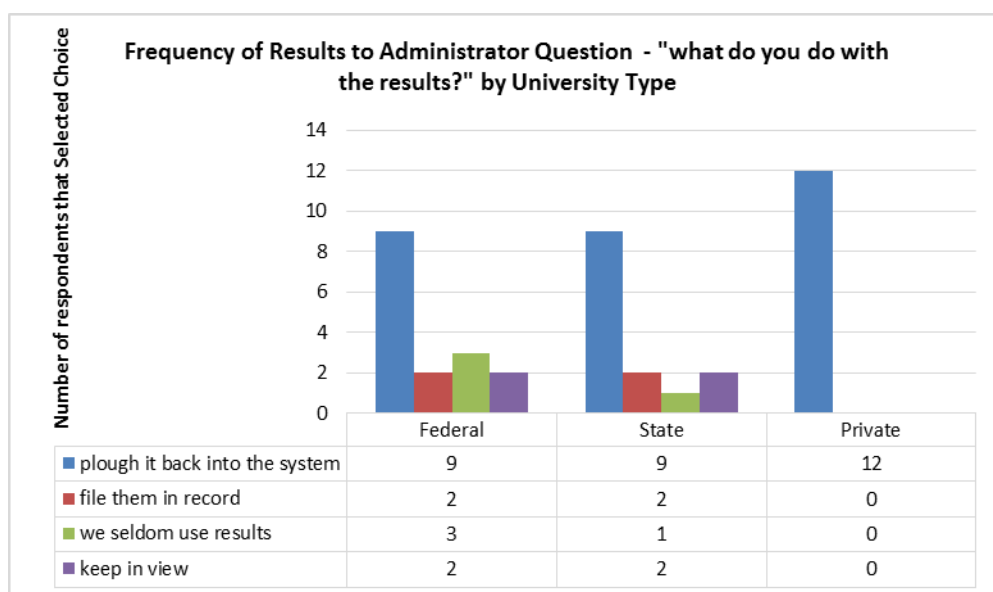


Fig. 4: Action taken on internal system evaluation data collected

The Responses ranged from ‘they are ploughed back into the system’, ‘filed away’ to ‘not used at all’. 30 (71.42%) administrators responded that they plough result of evaluation back into the system, of these, 30% each came from the federal and state universities while 40% (the highest), were from the private universities. 50% of those who responded that they filed them away were from the federal and state universities respectively. 75% of those who responded that they seldom used the results were mainly from the federal universities. All those who responded that they kept the result in view were also from the federal and state universities.

The one hypothesis stated that there will be no significant difference between the responses from the lecturers, students and administrators of the universities to the process of internal system evaluation in their institutions. The total individual responses of the perception on common items across the private and public institutions were subjected to treatment with ANOVA. Results indicated that:

Table 2: ANOVA

Internal system evaluation practices in universities

Group	N	Mean	Std. Deviation
Student	720	26.20	5.50
Administrator	42	22.79	3.61
Lecturer	82	27.12	5.40
Total	844	125.11	5.47

	Sum of squares	df	Mean Square	F	Sig.
Between groups	562.06	2	281.03	9.58	.00
Within groups	24669.88	841	29.33		
total	25231.94	843			

Responses show that lecturers have the highest score of 27.12, followed by students at 26.20. The calculated $F(2/841)$ of 9.58 shows a statistical difference in the responses. It was therefore subjected to further tests to determine where the difference lies. Evidence from table 8 indicates that the calculated F value of 9.58 is statistically significant since it is greater than the theoretical F value of 3.00 given 2 and 841 degrees of freedom at the 5 percent level of significance. The hypothesis which states that there will be no significant differences between lecturers, students and administrator responses in their perception of presence of internal system evaluation practices in the universities was therefore rejected. Since the F value was statistically significant, it was thus necessary to perform a post-hoc analysis to determine homogenous sub-sets which is reported in Table 2:

Discussion

The universities studied (18) revealed a presentation of different styles of internal system evaluation practices. Evidence of internal system evaluations were found in some of the universities, although the way that institutions conducted their evaluation varied. Findings revealed a general lackluster level of internal system evaluation. Many institutions were found to rely only on the external

evaluation (accreditation exercise) by the NUC. Those who showed evidence of internal evaluation did it sporadically and without zeal.

Generally, students were examined through continuous assessment and semester examinations, lecturers were usually evaluated by the annual performance evaluation reports (APER) records. Peer assessment by fellow lecturers was hardly practiced and neither was students' assessment of their lecturers. There was also no uniformity in the method of conducting these types of evaluation and the results were largely not ploughed back into the system for improvement. Therefore there were haphazard internal evaluation processes in place in less than half of the institutions examined. There were no clear cut methods and the prominent elements to be evaluated were often found not to be properly tackled – like student, lecturer and administration. Furthermore, the little efforts shown in evaluation were found to end up mostly in the archives/ records and not revealed to the personnel, except for three prominent institutions that took the trouble, to practice proper quality assurance by having a special unit to be in charge, making physical visits for inspection and calling erring staff in for informal chats to relate student comments or staff observations. This practice is however not popular with others and it was thus difficult to note the impact of internal evaluation practices. All these run contrary to the dictates of the FAMOUS model by Ohia (2006) which encourages evaluation at all stages of educational activities as well as the plough back of the results/reports for system improvement.

The administration is supposed to audit the system frequently to ascertain the satisfaction of student and staff about the adequacy and effectiveness of the provision. It was found that the institutions that dedicated a unit (like the quality assurance unit) to conduct internal evaluation practices fared better than those who left it to the whims and caprices of individual departments, that were subsequently not necessarily held accountable to the authorities by reporting appropriately. The responses, when the administrators were asked how often internal evaluation was conducted in their universities revealed an interesting result. This was noted because there were those who picked 'once in five years', which suggests that they may be the type of institutions who relied only on NUC's seasonal accreditation assessment and do not vigorously conduct internal system evaluation in between. The fact that responses show once in 5 years suggest that many do not practice the proper internal system evaluation that is supposed to be regular and conducted for all, in line with Alade, et al (2010)'s advocacy for whole school evaluation practices.

Many of the administrators from the various universities also admitted that results of any internal system evaluation were either filed away, kept in view or were not used at all. This result reveals that many do not plough back their evaluation results to help the system. Only the private universities showed that they make use of results of internal evaluation. The federal universities showed the highest rate of not using the result of evaluation productively. The result of research question 1 which showed a high degree of compliance as to whether internal system evaluation was conducted however does not seem to be reliable because attempts made to verify the responses on the same item from other sources like the oral responses of the administrators themselves and those from the students and lecturers ran contrary to this information.

The question on whether students got the opportunity to assess their lecturers showed a particular trend. The trend suggests that there were more chances of students assessing their lecturers in federal and private universities and less in state universities. Also lecturer to lecturer assessment was not popular.

Many lecturers were found not to grade and return students' marked scripts during the continuous assessment process. This is an important part of the evaluation process which is capable of seriously affecting student output, if neglected.

It was found that the institutions that had a separate office for quality assurance or the like were more likely to conduct some form of internal system evaluation. Eleven of the universities did not have a QA office, which suggests that their system evaluation process may be haphazard.

The only hypothesis tested examined the mean of individual scores of some responses within the three groups of respondents on their perception about internal evaluation practices in their own universities and this showed a significant difference among them with lecturers having the highest mean score. This generally indicates that they are nearer the expected responses. While they were all not expected to agree that internal system evaluation was being conducted, the responses showed a difference in their perspective of what is going on in their institutions.

Conclusion and Recommendations

The study assessed the practice of internal system evaluation in the universities in South West Nigeria and its attendant implications. Elements that influence system functioning were determined and findings revealed that internal system evaluation was not very common in the institutions and they lacked uniformity in their method of data collection across universities. Based on the findings, the followings were recommended:

1. That a general/common format be used for internal system evaluation for the sake of uniformity.
2. That the feedback aspect be emphasized since without it the evaluation process will not be complete or useful if the outcomes are not ploughed back into the system to improve it.
3. That the importance of internal system evaluation should be emphasized to propel the institutions in the right direction in terms of growth and achievement of objectives.

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