

**JOURNAL OF CONSTRUCTION INNOVATION AND COST MANAGEMENT (JCICM)**  
**VOLUME 1 ISSUE 1**

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## EDITORIAL

The vision for this Journal was borne out of the need for publication of high-quality research papers on innovation and cost management. This comes at a time when myriads of journals have become a dump site for falsified, misleading and arbitrarily researched projects. This brings a need for a journal driven by scientific competency, editorial integrity and ethical rigor- JCICM prides itself in filling this gap. With cities becoming mega and smart, infrastructures are facing increasing needs to innovate and transform in an era of volatility and disruption. JCICM is committed to dissecting, discussing and disseminating research outcomes that can inform strategic policies, business decisions and research directions, in the age long tradition of academic writing with flavour of local and global value.

Famakin, Oshodi and Ibrinke have carried out a study into the Performance of Quantity Surveying Firms. Strategic Learning Assessment Map (Slam) Framework is utilized to assess the knowledge stock-learning-flow-performance (KS-LF-P) in quantity surveying firms. The authors collected data from quantity surveyors through a firm wide Cross sectional survey. The SLAM model was tested using exploratory factor analysis, correlation analysis and multiple regression analysis. A strong positive relationship between knowledge stocks, learning flows and the performance of quantity surveying firms was indicated. Also, it was discovered that the level of individual performance in an organization is influenced by the feed forward learning flow which ultimately shows that performance of Quantity surveyors at organizational level is strongly tied to provision of learning strategies to improve their knowledge base, skill sets and competencies.

Leadership, team capability, firm structure and strategy as parameters of multi-cultural team management in small and medium-sized construction firms are largely underdeveloped areas in the body of knowledge. Zakariyyah, Dada, Ijaola, Ameh and Olaniyan observed that the top dimensions of leadership capability, organizational structure and strategy and team capability are creativity in designs/construction processes; periodic site meeting to monitor and review performances and clear roles and responsibilities respectively. A convenience sampling technique through field survey was carried out with the aid of questionnaires to test the Multi-Cultural Team Management parameters. With the aid of descriptive and inferential statistics, they established that multi-cultural team management

could be better improved if indigenous construction firms work on having good leadership that can identify the different parameters and dimensions to project and organizational management and devise means of instituting, reviewing and maintaining such to the advantage of the firm.

Onukwube and Oyewo contend that Site management is a key occupational category in the construction industry. In a study of predominant performance criteria and its influence on time performance, they conducted a simple random survey of 78 respondents to identify performance measure of construction site managers. It was revealed that, Contract Managers or Owners of firms scored construction site managers averagely as regards their performance. The study therefore proposed planned training to improve productivity, communication skills, work ethics and team building of construction site managers.

Total Quality Management has been suggested as a strategy to solve performance problems in the construction industry. Bello, Zakariyyah, and Soyingbe critically assesses the understanding of this novel concept for proper implementation by identifying factors pivotal to defining quality, assessing construction stakeholders' perception of quality as culture and the evaluation of prevalent barriers to quality culture implementation for the purpose of improved quality performance. A survey of forty-one construction stakeholders comprising of clients, consultants and contractors were selected using purposive sampling to test their underlying quality culture. The study discovered that quality culture criteria involve conformity to specification used on a project, beating client's expectations and elimination of defects in the product and process. Also, a lack of standardisation in processes and arbitral solutions to issues rather than a holistic solution could serve as a constraint to implementation of the total quality management system. Bello, Zakariyyah and Soyingbe concluded that culture must be imbibed into the DNA of a firm's policy and process for it to be functional and effective; it must not just be on paper but diligently executed and consistently monitored.

Public Procurement is essential as it is a route to provision of developmental infrastructure which is a vital organ in developing the economies of developing countries such as Nigeria. Nigeria's failing projects and high abandon rate has been blamed on the flawed procurement system- examining the quality and frequency of use of prequalification criteria on public procurement projects is a step in solving a National

dilemma. Ajayi, executes this undertaking with a survey of 373 construction professionals particularly in the public procurement sector and discovered that the prequalification criteria vital to selection of competent contractors are; current fixed asset, professional and technical expertise, past project experience, Health and Safety regulation and work currently executed by the contractor.

Prefabrication has been touted as the required solution to assuaging the dearth of housing facilities and help reduce overcrowding on current housing facilities in Nigeria. Oloto, Adebayo and Iweka give an overview of the state of the art of Prefabrication in Nigeria. From their systematic literature review of recent publication on Prefabrication, they established that financial factors, training availability, government incentive and leadership, managerial and expertise issues could serve as inhibitors to the adoption of prefabrication or modular housing units. However, a concerted effort between the private sector and a sincere public sector leadership would drive the process and enable a rapid adoption of the novel building concept.

Health and Safety is an ever-important discourse in construction as it concerns human wellness which is vital to human performance and sustainability. The recent trend in building collapse during construction calls for a urgent overview of health and safety insurance policies in the Nigerian construction industry. Ameh and Farinde noted that despite availability of regulations and laws on site safety and health of workers, fatalities and injuries remain unabated. Ameh and Farinde thereby investigate contractor's compliance with available health and safety regulations. They discovered that there is a significant difference in compliance with health and safety regulations by multinational/foreign firms, and indigenous firms. They consequently recommended enforcement of safety regulations by the government as that is crucial to enabling the available law. Continuous aggressive awareness campaign is also suggested to ensure clients and contractors alike understand health and safety requirements for workers.

Akinsiku and Oyediran opined that the construction business environment holds constraint to healthy competition against the Nigerian Indigenous contractors. They maintained that the majority of high net worth projects in the country are executed by foreign contractors who form only 5% of the contractors in the country. The study in investigating the causes of inability of Nigerian Indigenous Construction Contractors to undertake massive construction projects discovered that factors such as; poor monitoring, controlling and funding challenges, bankruptcy and cost overruns, technical issues, site organization and layout, and materials and construction methods are debilitating factors beating down the competitiveness of Nigerian contractor as against their counterparts from foreign nations.

Foreign Direct Investment (FDI) inflow is critical in developing and diversifying the Nigerian economy, which is dependent on the state of infrastructure within the country. Babalola and Fayomi investigated the influence of macroeconomic variables on FDI inflows in the Nigerian construction sector. An ex-post facto survey using secondary data based on annual time series data of the Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) was used for the study. It was discovered that the exchange rate has a positive but significant impact on FDI inflows and that FDI inflows influence the construction sector in Nigeria. Invariably, improving the infrastructure base of the country is vital in attracting FDI inflows which is also imperative in boosting the construction industry's opportunity to meet infrastructure deficit.

Saka and Ogunsemi examined the causal relationship between the Nigerian Construction Sector (NCS) output and Gross Fixed Capital Formation (GFCF) and the Gross Domestic Product (GDP) using Nigerian Time Series Data (TSD) from 1970 through 2013. Vector error correction Model (VECM) framework was utilized in carrying out the empirical investigation and results showed that NCS positively causes GFCF and GDP growth which invariably implies that Nigeria can accelerate its GFCF and GDP growth by increasing investment in NCS.

## **Constraints of Nigeria Indigenous Construction Contractors (NICCS) In a Competitive Business Environment**

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Nigeria Indigenous Construction Contractor (NICC) is facing a lot of constraints among which are the quest for survival and relevance in the Nigeria construction sector. Majority of high net-worth construction projects are awarded and executed by foreigners' managed firms which constitute less than 5 percent of the total number of construction companies operating in Nigeria. This has put the NCCs into a precarious condition as the nation's construction sector is completely monopolized by foreigners. However, the NICCs are the architects of their own misfortune as over the years, researchers have observed that the outputs of construction activities by NICCs fall below the expected quality standard required, as such, clients' preference for foreigners' managed construction companies. This study sets out to investigate the causes of these constraints and why NICCs are majorly predisposed to poor project performance. The study adopted the review of literatures as well as the use of questionnaire to elicit information from construction practitioners. The study identified 19 factors, ranked in order of importance on why clients prefer foreigners' managed construction enterprise in Nigeria. Factor analysis was used to group these factors into 5 principal factors namely: poor monitoring, controlling and funding challenges, bankruptcy and cost overruns, technical issues, site organization and layout, and materials and construction methods. The findings of the study will assist in improving the competitiveness of NICCs, by so doing; reduce the cost of construction as the competition nest of performing contractors in Nigeria would be widened.

**Keywords:** Capacity, competition, infrastructure, patronage, performance

### **INTRODUCTION**

The population and economy of Nigeria is fast growing. As such, there is the need for massive investment in infrastructure to sustain her current level of growth. Nedozi, Obasanmi and Ighata (2014) opined that investing in infrastructure will drive Nigeria's economic growth, provide jobs, raise the quality of life, deliver vital services and contribute to macroeconomic stability. Adeagbo (2014) supported this assertion by admonishing that for sustainable and national economic development, infrastructure provision should be taken seriously. However, Nigeria has massive infrastructural deficit estimated at \$300 billion, representing 25 percent of the nation's Gross Domestic Product (Balogun, 2016). With this level of deficit, it would be difficult for Nigeria to attain Millennium Developmental Goal of sustainability within its economy. Although successive governments have tried to invest in infrastructural funding, yet, improvement in this area has been very minimal.

The Federal Government of Nigeria recognizes this phenomenon as opined by the Minister of Finance that government investment in critical infrastructure across the country would unlock job, create wealth and strengthens economic development across all states in Nigeria

(Nnabugwu, 2017). According to Oluwakyesi(2011), Nigeria's physical infrastructural gap is prevalent in the transportation sector – road, rail, airports, and seaports. Furthermore, The World Bank (2016) reported that Nigeria has a whopping housing deficit of 17million units as at 2013 with the cost estimated to be N60 trillion (\$200billion). To bridge this massive housing and infrastructural deficit, spending within the construction sector alone in Nigeria is estimated to grow annually from \$23 billion in 2013 to \$77 billion in 2025 (Balogun, 2016).

These are huge figures which hitherto provide ample opportunities for players in the Nigeria construction sector of the economy. However, intensive infrastructure provision and mammoth construction activities may be hampered by inadequate capacity, and constraints of capacity development of Nigeria Indigenous Construction Contractors (NICCs). The capacity development of NICCs is crucial to bridging the present-day infrastructural gap of the nation. There exist ample opportunities for the growth and profitability of the construction sector in Nigeria but is the NICC ready to tap into this? To tap into this opportunity, Sawhney, Agnihotri and Paul (2014) suggested that considerable effort should be made to boost the

capacity of the sector, reduce wastages, improve competencies and increase project performance which should be paramount to the development the NICCs.

Nonetheless, the construction industry is globally confronted with many challenges. These challenges are paramount in developing countries and are more of socio-economic stress, resource shortages, institutional flaws and a general inability to deal with the key regulatory issues of the industry (Ofori, 2000; Gale & Fellows, 1990). These difficulties as identified by Selleh (2009) include economic instability, scares resources, relatively unskilled labour forces, low-level productivity, excessive wastages, poor infrastructure, fraudulent practices, financial difficulties, government influence, activities of the informal sector and inability to adopt best practices.

The implication of these resulted in the inability of construction enterprises to hire permanent staff, their lack of effective management, poor management accounting, lack of profits, inaccurate estimating, and under-pricing. (Rwelamila, Lobelo& Ebohon, 1997; Agumba, Adegoke & Otiena, 2005; Inuwa, Wanyona & Diang'a, 2014).

In the study by Chilipunde (2010), the lack of technical skills required in project implementation, deficiency in understanding of the contract documentation and the preparation and submission of tenders are huge constraints facing construction enterprises which should be ironed out as a matter of urgency. This view was corroborated by Kayanula and Quartey (2000); Ramokolo and Smallwood (2008); in which it was discovered that the lack of contracting business capacity in terms of managerial know-how places significant constraints on small construction enterprises development and growth. According to Songer, Chinowsky and Butler (2006), the construction industry is severely faced with leadership challenges, issues relating to workforce development, lack of qualified and skilled personnel, aging workforce; and the need to deal with issues such as teamwork, communication, training and education. The consequence of this according to Ogunlana (2010) results in the Nigerian government's lack of confidence in the participant of the construction sector and most importantly, the NICCs. In Nigeria, few companies, mainly foreign corporations control a large percentage of the total workload of the

construction industry, while a large number of small and medium-sized enterprises, usually indigenous firms share a meagre percentage of the construction workload (Idoro, 2004). According to Idoro (2010), the practice remains a concern to stakeholders in the construction industry because it does not promote indigenous participation, capacity building and technological development in the construction industry and it constitutes unnecessary drain of the nation's scarce foreign exchange. Idoro (2010) explains that the preference given to foreign contractors in the award of construction contracts is because clients view their work quality better than that of NICCs. Therefore, Idoro (2012), strongly advocates that there is the need (for indigenous contractors) to regain the confidence of clients by improving on their performance which is a function of their capacity to deliver.

Capacity improvement of construction contractors is very important, not only for the contractor's development but also to the government of the day and the people. Report by CIB (1999) suggested that the capacity development of construction contractors will improve the effectiveness of the construction industry to meet the demand for building and civil engineering products, this, in turn, will support sustained national economic growth and social development objectives.

### **Challenges Facing Nigeria Indigenous Construction Contractors (NICCs)**

The importance of the construction sector of any country cannot be over-emphasized. It is one of the largest employers of labour, and contributes substantially to the Gross Domestic Products (GDP) of most countries (Chiang, Tao & Wong, 2015; Gregori & Pietroforte, 2015). Major economic developments are often achieved via a consistent and vibrant construction sector. In most developing economies, the construction industry helps in galvanizing economic activities which in turn leads to development and growth. In Nigeria, the economy has grown considerably owing to the activities of the construction industry. Olowookere (1988) reported that close to 60% of Nigeria's capital investment was provided by the construction sector and as well as about 30% of the country's Gross Domestic Product. This increase in economic activities will generate high demands for construction activities. In other words "construction activities drive the economy, while

the economy drives construction productivity”. However, NCCs have been denied fair share of major construction activities in the country; high net-worth projects are often awarded to the few construction companies managed by foreigners who exhibit high technical and managerial quality with easy access to funding and high-quality project execution (Ogbebor, 2002; Oseni, 2002; Akintude, 2003, Idoro, 2007). Nigeria construction contractors have over the years being plagued with poor project performance regarding meeting completion dates, work quality, and capital management. Most indigenous contractors complete construction contracts at sums greater than the initial contract sums and within time frames more than the pre-planned completion time schedule (Mansfield, Ugwu & Doran 1994). Rwelamila, Henjewe and Mkandawire (2013) opined that concerted efforts are to be exerted to address capacity constraints of construction contractors which are likely to stifle construction growth.

Aniekwu and Okpala (1987) identified the problems confronting Nigeria’s construction contractors and classified it as both systemic and structural. Notable among the challenges are lack of easy access to credit facilities (Adam, 1997), lack of well-structured regulatory authority (Aibinu & Odeyinka, 2006), cost and time overruns, poor quality projects, health and safety issues (Elinwa & Joshua, 2001; Mansfield, Ugwu & Doran 1994), and most importantly, continual dominance of the industry by the foreign contractors to the disadvantage of the Nigeria construction contractors (Oluwakiyisi, 2011; Idoro, 2007). Emuze (2011) opine that cost overruns could exacerbate budget constraint problems, time overruns and construction delays may impede service delivery, while poor quality project is likely to increase maintenance cost and shorten the service life of infrastructure. Poor health and safety practices would increase both industry and public fatalities.

The operations of NCCs are characterized by lack of performance and incompetence when compared with their foreign counterparts, and this has adversely affected their patronage in the contracting business (Aibinu & Jagboro, 2002). Evaluation of NCCs in most studies revealed that their project performance is characterized by cost and time overrun, poor quality, poor management, financial difficulties, poor planning and high frequency of litigations and project abandonment

(Mansfield, Ugwu & Doran 1994; Adams, 1997; Achuen, Izam & Bustani, 2000; Bala, Bello, Kolo, & Bustani, 2009; Yilmaz & Ergonul, 2011; Odediran, Adeyinka, Opatunji & Morakinyo, 2012; Oladimeji & Ojo, 2012). The probable reasons for low patronage of NCC most especially in connection with high net-worth project procurement includes shortage in the availability and supply of adequate manpower and material resources, ambiguous process of construction execution, geographical effect of weather, inadequate monitoring of workers’ activities, lack of dedication to duties by workers and difficulty of workers adapting to changes in construction module (Bala, et al., 2009).

The few foreigners’ managed construction firms with perceived higher capacity with good capacity development take advantage of the weaknesses of NCCs. A study by Aniekwu and Audu (2010) revealed that the foreign constructing contractors make up 5 percent of the total population of registered contractors while their indigenous counterparts are 95 percent of the total contractors. However, the foreign contractors are better patronized with the majority of the high net-worth jobs awarded to them. These and many other factors have placed the NCCs at a disadvantage with little or no patronage in the procurement of high net-worth project when compared with the foreign contractors as enormous demand for infrastructural needs. Inexperience, lack of appropriate strategic planning, the absence of appropriate planning techniques, little knowledge of variables likely to influence planning process, and inappropriate comprehension of performance measurement index are grossly responsible for the under-performance and lack of patronage of Nigeria contracting contractors’ project performance (Inuwa, 2014). Ugochukwu and Onyekwena (2014) noted that due to the poor performance of NCC, Nigeria government could not entrust its construction project to them. The government prefers to award its complex and capital-intensive projects to foreign construction company operating in Nigeria.

According to Adams (1997), there have been concerted efforts at promoting Nigeria’s contractors’ involvement and increase their participation in the construction industry. However, the efforts have not been successful. In this regard, this current study sets out to address this issue of the low contracting capacity of Nigeria Construction Contractors and its effects on

business patronage.

### **Features of Nigeria Construction Industry**

The Nigerian construction industry is made up of two groups; the organized and liberal groups (Dantata, 2008). The organized groups consist of the formalized and registered construction firms that carry out building production and construction management in Nigeria (Onengiyeofori, 2016). They can be foreigners managed or indigenously managed and are usually composed of skilled and unskilled workers with full employment in the firms. These groups of contractors have permanent office addresses and sometimes buildings or office complexes of their own. They own relevant construction equipment and have permanent office staff. The liberal or unorganized construction group consist of people who are involved in the construction process without requisite construction knowledge; they found themselves in the industry by providence. They are usually characterized with no permanent office address; they make use of freelance labourers as they do not have permanently employed skilled workers, no permanent equipment of their own as they prefer to rent. Unfortunately as the case may be, this is the group of contractors that dominate the Nigeria construction market.

In Nigeria, few companies' mainly foreign corporations control a large percentage of the total workload of the construction industry, while a large number of small and medium-sized enterprises, usually indigenous firms share a meagre percentage of the construction workload (Idoro, 2004). According to Idoro (2010) much preference is given to expatriate contractors over their indigenous contractors in the award of construction contracts as they view their performance regarding quality standard of work as being better than indigenous contractors. The NICCs have not been able to meet up with the demand expected of it. The performance of NICCs has over the years being plagued with poor project performance regarding meeting completion deadlines, work quality, and capital management. Most projects are completed at sums greater than the initial contract sums and within time frames of more than the pre-planned completion time (Mansfield, Ugwu & Doran 1994).

The lack of requisite construction management knowledge by the owners of this construction outfit and their failure to have the right project team make them susceptible to

business failure and poor project performance (Inuwa, Wanyona & Diang'a, 2014). Therefore, Idoro (2012), advocates the need for indigenous contractors to regain the confidence of clients by improving on their performance.

In the face of all these challenges, the NICCs have grown rapidly in recent years with a high rate of expansion more than any sector of Nigeria economy. However, majority of NICCs are largely unregistered, operate haphazardly and have very little formal business systems. They constitute the largest percentage of total contractors and employ very few permanent staff, usually less than ten employees. NICCs are either family owned business or solely owned in which the business dies when the owner is no more.

### **RESEARCH METHOD**

Debois (2016) asserted that questionnaires are cost- efficient, practical, gives speedy results, maintains user anonymity, and can cover all aspects of a topic. Therefore, a questionnaire was used to elicit information from consultants and clients involved in construction activities in Lagos state. The survey questions were designed in a manner such that the questions were simple and unambiguous. This method intended to guarantee the participation of many respondents as it is difficult at times to elicit information from construction professionals because of their very busy schedules. The target population for this study are primary stakeholders involved in construction projects. This includes private sector clients and consultants.

The design of the questionnaire for this study was structured and multiple-choice type. The survey consists primarily of two parts:

Section A, this encompasses the background information of respondents; this section consists of six questions aimed at assessing the suitability and reliability of the responses from the respondents for the study. It focuses on the form of ownership of the respondents' firm, their organization type, professional background, minimum academic qualification, industry's experience and types of projects involved.

Section B, this was designed in line with the purpose of this study. To elicit responses on why clients, prefer foreign contractor to indigenous contractor. 20 factors were identified, and the respondents were asked to rank these factors based on their experience on previous projects using a Likert scale of 1 – 5 with 1 being the lowest

perception (not important) and 5 being the highest (very important)

Data collected were analysed using descriptive statistics for the respondent's background information. Mean score was used for the ranking of identified 25 and 18 factors on challenges being faced by indigenous contractors how to improve the performance of indigenous contractors respectively. Kruskal-Wallis test was employed to determine whether there is statistically significant difference in the perception of respondents in the ranking of these factors. Factor analysis was conducted to determine the relationships among the identified 20 factors.

## DISCUSSION

Why Clients Prefer Foreign Contractors to Indigenous Contractors Table 1 presents the ranking of the perception of respondents on why clients prefer foreigners' managed construction firm to indigenous construction firms. The analysis of the ranking regarding the overall mean score values for 20 identified factors ranges from 2.05–3.04. Poor monitoring and controlling strategy have the highest overall score of 3.04, while all other 19

funds, poor project performance in terms of meeting completion dates, use of poor quality materials, management of project within a scheduled time period, poor quality work on the part of our local contractors with mean values of 2.81, 2.80, 2.72, 2.66, 2.61 and 2.53. The five least factors are; completion of construction contracts at sums greater than initial sums, use of inappropriate construction methods, more waiting periods, poor safety culture, and, slow in making decisions concerning the projects in this order with means of 2.36, 2.36, 2.27, 2.24, and 2.07.

However, the ranking of the perception of consultants and clients vary from the overall ranking. While the five highest ranked factors by consultants agree with the overall ranking, the ranking by clients except for poor monitoring and controlling strategy (3.00) was more ranked than others. The client ranked poor project performance in terms of meeting completion dates (2.95), use of poor quality materials (2.89), inability to meet work quality (2.74), and unavailability of funds (2.74) respectively. To test if there exist any significant difference in the perceptions of consultants and client as to why foreign contractors

	Client		Kruskal-				
	N=19		Wallis sig				
	Mean	Std.	Mean	Std.	Mean	Std.	
		Dev.		Dev.		Dev.	
Poor monitoring and controlling strategy	3.04	0.985	3.05	1.008	3.00	0.943	0.811
Inability to meet work quality	2.81	1.002	2.84	0.977	2.74	1.098	0.696
Unavailability of funds	2.80	1.047	2.82	1.107	2.74	0.872	0.897
Poor project performance in terms of meeting completion dates	2.72	0.914	2.64	0.910	2.95	0.911	0.174
Use of poor quality materials	2.66	0.940	2.58	0.896	2.89	1.049	0.178
Management of project within a schedule time period	2.61	1.004	2.56	1.014	2.74	0.991	0.441
Poor quality work on the part of our local contractors	2.53	1.088	2.55	1.086	2.47	1.124	0.817
Poor design	2.50	0.940	2.42	0.875	2.74	1.098	0.279
Lack of understanding of the project	2.49	1.126	2.44	1.118	2.63	1.165	0.525
Unavailability of machinery and equipment	2.42	0.876	2.49	0.900	2.21	0.787	0.261
Lack of experience in executing construction works	2.42	0.907	2.49	0.920	2.21	0.855	0.325
Poor storage of materials	2.41	1.019	2.40	1.082	2.42	0.838	0.898
Poor site layout	2.39	1.057	2.35	1.075	2.53	1.020	0.437
Contractors in construction project often led to bankruptcy and project abandonment	2.38	0.989	2.35	0.947	2.47	1.124	0.661
Shortage of labour, plant and materials	2.36	0.959	2.35	1.004	2.42	0.838	0.567
Completion of construction contracts at sums greater than initial sums	2.36	0.973	2.36	0.969	2.37	1.012	0.896

factors range from 2.07–2.81, these includes inability to meet work quality, unavailability of

are preferred to local contractors in the analysis of the ranking, Kruskal-Wallis test at a significance



level of 5% was performed. The results show that there is no statistically significant difference in the perceptions of respondents group on why clients prefer foreign contractor as the p-value of the

factors is greater than 0.05. This implies that both the perception of consultants and clients are harmonious.

**Table 1: Reason why construction clients prefer foreign contractors**

Use of inappropriate construction methods	2.36	0.853	2.42	0.854	2.21	0.855	0.525
More waiting periods	2.27	1.150	2.35	1.092	2.05	1.311	0.148
Poor safety culture	2.24	0.873	2.20	0.869	2.37	0.895	0.395
Slow in making decisions concerning the projects	2.07	0.849	2.09	0.845	2.00	0.882	0.663

### Factor Analysis

Norusis (2000) explains that factor analysis helps to detect clusters of related variables and reduce the number of variables by bringing inter-correlated variables together under more all-purpose, principal variables. Although the identified factors affecting the performance of indigenous contractor have been ranked, the purpose of this study is to identify the key inter-correlated factors that predispose indigenous contractors to poor performance and subsequently limits their patronage to little net-worth project. To categorize and classify these factors appropriately, factor analysis was used to investigate the pattern of the relationship that exists. Principal factor extraction with varimax orthogonal rotation was carried out on the identified factor. Before carrying out the test of the factors, factor analysis test requires that various tests for the appropriateness of the factor extraction be carried out. These include the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, measure of sampling

adequacy (MSA) and Barlett test of sphericity.

Table 2 shows the outcome of the rotated component matrix of the 20 identified reasons why foreign contractors are preferred to local contractors. The analysis produced a 5-factor solution with eigenvalues greater than 1. The minimum eigenvalue is 4.54 while the maximum is 7.99 with a cumulative percentage of variance explained by the extracted 5-factors being 66.23%. The variables with higher loadings on a factor play a more significant role in naming the factor. Thus, the 5-factor groupings extracted are interpreted as:

Factor 1: poor monitoring, controlling and funding challenges

Factor 2: bankruptcy and cost overruns  
Factor 3: technical issues

Factor 4: site organization and layout

Factor 5: materials and construction methods

**Table 2: Factor analysis groupings using varimax orthogonal rotation.**

Factors	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Poor monitoring and controlling strategy	0.88				
Shortage of labour, plant and materials	0.78				
Unavailability of funds	0.77				
Inability to meet work quality	0.76				
Lack of experience in executing construction works	0.69				
Poor project performance in terms of meeting completion dates	0.65				
Bankruptcy and project abandonment		0.72			
Completion of construction contracts at sums greater than initial sums		0.71			
Poor design		0.52			
More waiting periods			0.76		

Poor quality of work				0.58	
Lack of understanding of the project				0.48	
Poor storage of materials					0.83
Poor site layout					0.59
Slow decision making					0.52
Use of poor quality materials					0.84
Poor safety culture					0.83
Unavailability of machinery and equipment					0.80
Management of project within a schedule period					0.59
Use of inappropriate construction methods					0.57
Eigen Value	7.19	5.36	7.99	7.31	4.54
Percentage of variance explained	24.68	7.99	7.31	7.08	19.17
Cumulative percentage of variance explained	24.68	32.67	39.98	47.07	66.23
Kaiser-Meyer-Olkin measure of sampling adequacy = 0.515					
Bartlett test of sphericity = 285.760, significance p = 0.000					

### **Factor 1: Poor Monitoring, Controlling and Funding Challenges**

This factor grouping represents 24.68% of the total variance. The major components factors of poor monitoring, controlling and funding challenges are poor monitoring and controlling strategy, shortage of labour, plant, and materials, unavailability of funds, and inability to meet work quality among others. These components loadings are high, viz 0.88, 0.78, 0.77 and 0.76 respectively. It is evident that poor monitoring and control of construction projects leads to poor construction outputs, delays in execution of critical works items. Funding challenges lead to the inability of indigenous contractors to purchase required materials, plants and machinery that will guarantee an increase in the rate of construction output. Plants and machinery do not only make construction jobs easy, safe and quicker, but the proper use also reduces the overall cost mostly for large contracts, guarantees quality output, safety, speed and timely completion of projects. However, this is a challenge being encountered by indigenous contracting organizations.

**Factor 2: Bankruptcy and Cost Overruns** This grouping accounts for 7.99% of the total variance of the reason why clients prefer foreign contractors to indigenous contractors. It consists of three components which are: bankruptcy and project abandonment, completion of construction contracts at sums greater than initial sums, and poor design. Lack of patronage of indigenous contractors does lead to bankruptcy and insolvency. According to Ugochukwu and Onyekwena (2014), bankruptcy results in poor project execution and abandonment. Related to

bankruptcy is the issues of completion of construction contracts at sums greater than initial sums, this has been identified as the major outcomes of projects executed by indigenous contractors (Mansfield, Ugwu& Doran 1994). Poor design often leads to final construction contract sums being greater than the initial sums. A poorly designed building will always be reviewed with wide modifications from the existing design that will lead to increase in the initial contract sum. It is therefore not surprising that these three factors loaded together.

### **Factor 3: Technical Issues**

This factor account for 7.31% of the variance explained of why foreign contractors are preferred to local contractors. The three components include more waiting periods, poor quality of work, lack of understanding of the project. Idle time is the waste of construction manpower because of late delivery of equipment or materials, changes in design and not having sufficient experience in the work to be done. Idle time increases the burden on Contractors and ultimately affects the project. The lack of understanding of the project leads to idle time and in most cases results in poor quality of works. Idoro (2010) found out that construction clients rate project executed by foreign contractors higher regarding defects observed after the construction than those executed by indigenous contractors. This is an indictment on the ability of indigenous contracts, except the trend of poor quality construction is halted; it might be difficult for indigenous contractors to regain the confidence of clients in them to handle high net-worth construction project.

#### **Factor 4: Site Organization and Layout**

This factor grouping has the least percent of variance; the group represents 7.08% of the variance explained. The three components include poor storage of materials, poor site layout, and slow decision making. Adequate and proper site organization and layout guarantees that the works are undertaken efficiently and safely. Precise sizing and location of temporary facilities help reduce travel times, site bottleneck, idle times, and help to ensure the effectiveness of the workplace with better worker confidence. Adequate storage of materials ensures that construction materials are constantly available for workers to prevent idle time which often leads to time overruns. Site storage entails the provision of ample storage space, protection, and handling for materials, components and equipment that are to be readily available on site during the building process. Failure to properly plan for storage can lead to site congestion, having excess materials on site than storage space can accommodate. Excessive materials on site can lead to pilfering, improper handling which may lead to materials shortage.

#### **Factor 5: Materials and Construction Methods**

This is the second most important factor loadings with 19.17% of the variance explained. It is not surprising these factors loaded together. Issues such as the use of poor quality materials, poor safety culture, unavailability of machinery and equipment are all components of this factor with loading factors of 0.84, 0.83, and 0.80 respectively. The other two factor loadings are management of project within a schedule period, use of inappropriate construction methods with loading factor of 0.59 and 0.57 respectively. Some contractors tend to cut corners by the use of poor quality materials to get more profit. However, this act has done more harm than good as it tends to limit the level of indigenous contractor's patronage. Another reason is that the majority of indigenous contractor tender for work without adequate provision for their profits and overheads. It is during the construction phase that they tend to make more profit by the use of poor materials. Agwu and Olele (2014) opined that construction workers are three times more likely to be killed and twice as likely to be injured as workers in other occupations. This emphasizes the need for safety consciousness on

construction sites. Construction accidents have direct and indirect cost. Direct costs are: hospital bills, premiums for accident benefits, liability and property loss while the indirect costs are: time lost in attending burial ceremonies, time lost in the investigation, idle time, damaged equipment and losses arising from site closure. Incidences like this should necessitate the need for a proactive safety culture in construction processes (Laufer & Ledbetter, 1986). It is therefore pertinent that indigenous contractors should know that not only does site safety guarantee performance, it also increases construction profitability. Other factors such as adequate scheduling and the use of the most appropriate construction method will ensure the free flow of construction activities and ensure prompt project delivery within the stipulated time.

#### **CONCLUSION AND FURTHER STUDIES**

There is no gain saying that opportunities exist for NCCs if only they can improve on the constraints as identified in this study. This study, by the groupings of factor analysis generated five major areas NCCs should focus on, they are: (i) poor monitoring, controlling and funding challenges, (ii) bankruptcy and cost overruns, (iii) technical issues, (iv) site organization and layout, and (v) materials and construction methods. The ability of NCCs to work around these five specific areas will help improve on their capacities to deliver high performing projects by so doing increase the confidence of construction clients in their ability to deliver successful projects. Furthermore, the NCCs can be of great significance in the economic and sustainable development of Nigeria. The huge deficit in the country's infrastructure will encourage and promote their patronage only if the challenges presently being faced by NCCs are surmounted. On the reason why client patronizes foreigners' managed contractors, the study found that poor monitoring and controlling strategy, inability to meet work quality, unavailability of funds, and poor project performance in terms of meeting completion dates as well as the use of poor quality materials. NCCs should concentrate on this basic area for its capacity improvement. In conclusion, the ability of NCC to compete with the foreign firms will help to foster competitions and drive a healthy competition among contractors of which construction clients and the Nigeria economy will be the greatest beneficiaries.

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