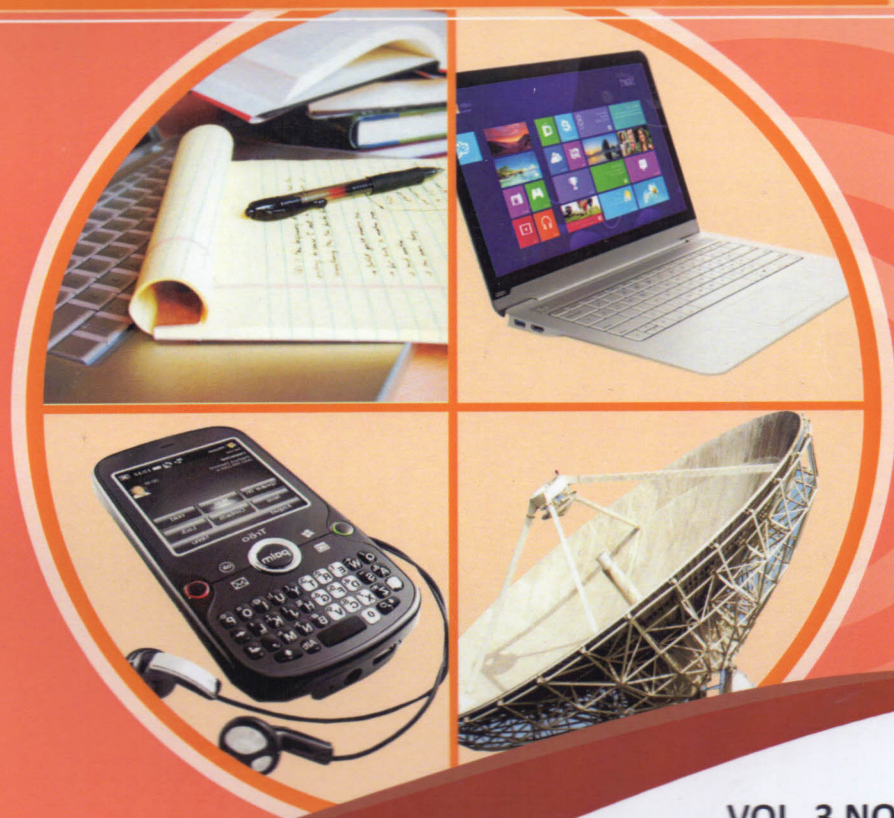


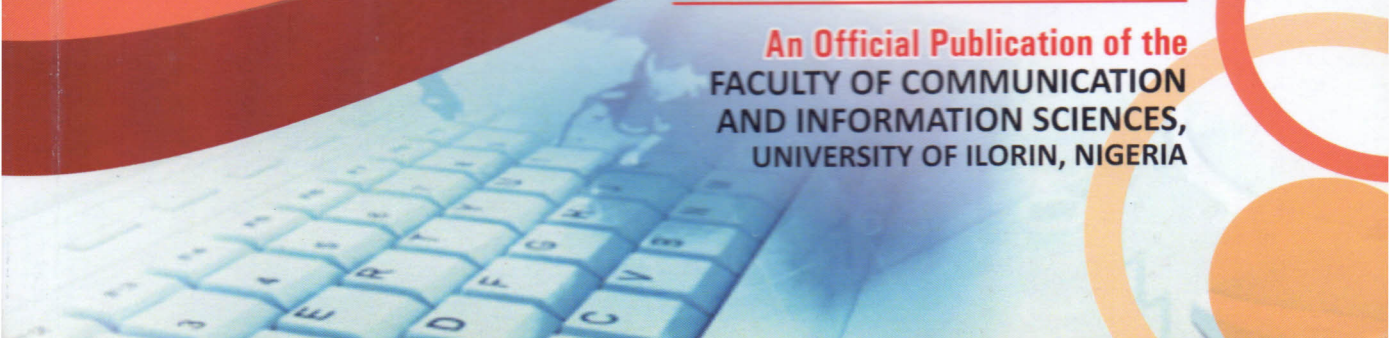


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EDITORIAL PREFACE

There are sixteen articles published in this edition. The first article by Adewole, Akintola, Mabyoje and Ogbomon addressed the issue of knowledge discovery from large databases using association rule mining. Apriori algorithm was implemented to discover hidden knowledge from a library database. They reported that borrowing a particular book may leads to borrowing another book based on the association between Data structure in C (DS) textbook and Programming in C (C) textbook. These authors concluded that the discovered pattern can help librarians in restructuring their bookshelf arrangement, and for book recommendation system and that the system can also help students to have good knowledge of related books.

Aremu and Olabode developed an efficient cancer classification model by examining the existing body of knowledge in the field of molecular biology relating to gene expression, Artificial Neural Network, Differential Evolution Algorithm and classification; design a learning mechanism for cancer classification using Differential Evolution algorithm for Artificial Neural Network; simulate the model designed ; and evaluate the efficiency of the designed model and compare the results with existing acclaimed result. They concluded that the result of the simulation gives classification accuracy of 99.85%, which was slightly higher than the result of the reviewed DE-LSSVM hybrid model. Bello, Jolayemi, Faruk, and Ayeni addressed the problem of using visualisation through the use of ICTs to provide a cheap solution built primarily for the University of Ilorin, a Geographic Information System, to help with the navigation process. An extreme programming software development model was employed in the development process to create adequate understanding of the project and also hasten it up, while ensuring smooth transitions in the development process. The application was designed and developed using HTML5, CSS3, and Google Polymer for the client-side of the application program, while the server-side of the application was developed using JavaScript, Google Maps API, as well as Google Map API for the routing scheme implemented in the application.

The next article by Udende and Oyewo looked at the political communication and voting Pattern of Nigerian Electorates in terms of a comparative analysis of the 2011 and 2015 presidential elections. They reported an insignificant difference in the voting pattern as the 2011 presidential election showed a relatively general geographical spread in favour of President Jonathan while the reverse is the case in the 2015 presidential election except that in the 2015 election, President Buhari fails to win any state in the South-South and South-East geo-political zones. The authors concluded that the voting pattern has changed insignificantly. Based on the findings, the study recommends the need for electorate to eschew voting based on ethnic and religious sentiments. Abikoye and Nwokolo in their article focused an object oriented paradigm for implementation of Elgamal algorithm. In the proposed system, Object oriented paradigm was designed to implement a particular public key cryptosystem called the Elgamal Cryptosystem considered with the help of JAVA Programming language for use over texts. Since the

Elgamal cryptosystem over a primitive root of a large prime is used in messages; the proposed system showed how secured messages were sent over the network, and how the generations of public key was done in an encapsulated way.

Kwanya, Kibe and Owiti looked at the image of academic librarians in Kenya, their report indicated that majority of academic library users in Kenya perceived an academic librarian positively as a person, male or female, employed by an academic institution to organise and manage a library which supports the programmes of the institution. They also perceived academic librarians to be performing routine clerical roles such as collecting, keeping, arranging and lending information materials (books) as well as maintaining order in the library. Jane, Esohe and Dawha focused on the application of computer technologies to serials services in research institute libraries in North Central Nigeria. These authors reported that the opinions of librarians on factors constraining the application of computer technologies to serial services and strategies for enhancement differed significantly. On this basis, they recommended that library managements should address irregular power supply; inadequate computer technology infrastructure and inadequate funding which serve as deterrent to the integration of computer technologies to serial services in the libraries.

Akakandelwa and Mwafuilwa based on their experience from Lusaka Zambia investigated the usage of internet health information resources by health professionals at the University Teaching Hospital, Lusaka. The authors reported that most of the respondents had access to Internet health information resources on a daily basis. Furthermore, most of the respondents used Internet health information resources mainly for research, teaching, communication, and preparation of seminar presentations. However, the findings showed that most respondents were not familiar with the specific Internet health information resources subscribed to by the University of Zambia, resulting into the low utilization of these resources. The authors recommended improved marketing strategies of the existing Internet health information resources, improved ICT infrastructure, and introduction of information literacy programmes. A related article by Okiki focused on the availability of electronic infrastructures and accessibility of information resources among faculty members in Nigeria Universities. Okiki reported significant interactive effect of accessibility of information, availability of electronic infrastructures and electronic information resources among faculty members in Nigeria federal universities.

The article by Olasinde and Oyewo examined the media and society health by analyzing the attitude and habit of Nigerian undergraduates towards Ebola Virus (EVD) information. The authors reported that Ebola is not a spiritual punishment from God but rather a universal threat which is not restricted to any social class of people. The outbreak of Ebola had led to a drastic change in health practices of some youths who are considered very mobile, and that the use of a number of media outlets could be quite effective and efficient in reaching a profoundly large audience with health campaign messages. The authors concluded that since known cure or vaccine been established or

discovered for the virus, individuals should play safe by not engaging in health compromising practices.

Bariku and Tseggy article focused on the influence of negative political advertisements on voters' choices in the 2015 presidential election in Nigeria. The research report indicated that while negative political advertisements did not influence the voting choices of the electorate during the election, as attested to by a majority of the respondents, negative political advertisements did not also dissuade the voters from coming out to vote in the presidential election. The authors recommended that political parties and their campaign organisations should focus more on issues-based campaign than on attacking their political opponents.

From the education perspective, Odewumi and Falade's article focused on the impact of computer assisted instruction packages on junior secondary creative arts in Ogbomoso, Nigeria. They reported that there was a significant difference between the scores of students taught creative arts with the computer assisted instructional packages and those taught using conventional method; and also, there was no significant difference between the mean achievement scores of male and female students taught creative arts with the computer assisted instructional packages. Based on these findings, the article recommended that creative arts teachers should be encouraged to use the Computer Assisted Instructional Packages for teaching related concepts in Cultural and Creative arts. Another article from the education perspective by Oyelekan, Aderogba, and Arowolo looked at the science teachers' disposition to the Use of electronic books as resource for science teaching in Ilorin, Nigeria. The results of the study demonstrated that majority of the teachers indicated positive disposition towards the use of e-books. While there was no significant difference in the disposition of experienced and less experienced science teachers the use of electronic books, there was significant difference in the disposition of male and female science teachers on the use of electronic books, with males having a better disposition than females. These authors recommended that proprietors of schools should provide good Internet and computer facilities in their schools to facilitate easy download of e-books since teachers were positively disposed to their use.

Bashir, Adebayo, Abdulsalam, Sadiku and Mabayoje in their own article examined a survey of cloud computing awareness, security implication and adoption in Nigeria IT based enterprises. They reported that the trend of awareness and adoption were very minimal with many being sceptical although few businesses were aware of the cloud technology. The survey also revealed that the stakeholders were precarious of the security-level of the cloud-based computing. Babatunde in his own article designed a web based mathematical application for high school in Nigeria using the Javaserer Faces (JSF) technology framework, Glassfish server and Prime Faces technology to help students improve and develop their abilities in assignments solution, summations, mathematics projects and increase their reasoning. The author reported that the application designed make students grab the understanding of mathematics concepts,

help solve problems faster and easier, and increase their performance in mathematics. And lastly, Adeniran provided an analytical framework for use by the university to decide whether to deploy a RFID based (ID) cards to identify and/or store electronically the data of staff and student, describing the benefits of RFID technology and its effectiveness as a security mechanism and also studying its technological features, current applications, and future trends. The author recommended that the information from the study may be useful in identifying the kind of data needed to be stored on the RFID chip to reduce rogue access threat on staff and students' privacy while complementing the university's management.

No doubt, this edition has featured a numbered of interesting articles from authors locally and internationally. It is on this note that I invite our readers to come along and review these articles.

AVAILABILITY OF ELECTRONIC INFRASTRUCTURES AND ACCESSIBILITY OF INFORMATION RESOURCES AMONG FACULTY MEMBERS IN NIGERIA UNIVERSITIES

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Abstract

The study investigated the availability of electronic infrastructures and accessibility of electronic information resources among faculty members in Nigeria Universities. In order to determine accessibility and availability of electronic infrastructures and information resources among faculty members, three research questions were raised and a lone hypothesis was formulated thus: there no significant correlation between accessibility and availability electronic Infrastructure and electronic information resources and research output among faculty members in Nigerian universities The study adopted quantitative approach as research paradigm. Questionnaire was used as the primary instrument for data collection on accessibility and availability of electronic infrastructures /e-resources and research output of faculty members in the study. A sampling frame of 10% of academics in each of the universities was selected giving a total of one thousand and fifty-seven (1,057) an equivalent of 10% of the population. The values of the reliability estimates range from (r=0.69) to (r=0.83). The data for the study were analysed with SPSS. The finding of the study revealed that there is significant interactive effect accessibility of information, availability of electronic infrastructures and electronic information resources among faculty members in Nigeria federal universities.

Keyword: Electronic Infrastructures, Availability, Information Resources, Accessibility and Nigerian Universities

Introduction

The emergence of electronic information resources has broken the long age barrier to valuable information resources which until now were difficult to access especially by scholars in the developing nations. For any academic library to thrive in this current dispensation of global competitiveness, the library irrespective of the size of its collection must as a matter fact embrace as well deploy Information Communication Technology for effective library service. While commenting on the positive impact of electronic information resources to users community especially students, lecturers and researchers, Dadzie (2005) notes that electronic resources are invaluable research tools that complement the print-based resources that are available in a traditional library setting. The information resources and services available in institutional information systems (library, archives, records offices, documentation centers, and data centers) must be capable of supporting research activities (Shokun and Kaushik, 2002). Agba, Kigongo-Bukenya, and Nyumba (2004) state that the shift from print to electronic information means that both faculty members and students in a university system must use these resources for better quality, efficient, and effective research more than ever.

Electronic information resources found in libraries include online databases, CD ROMs, and internet. It is important to note that electronic resources are quite expensive to acquire especially considering the slim budget allocations of university libraries (Ifijeh, 2012). The availability of electronic information resources could be smoothly managed in the library with the existence of basic infrastructure such as internet facilities, bandwidth, capable technical support, computer systems, electricity power supply, etc. Oketunji (2006) opined that the future of libraries is very much linked to their abilities to harness and sustain connectivity to available infrastructures as a base for providing effective and efficient access to information by their clientele. That is the availability of necessary infrastructure is the underlining factor for effective provision of electronic resources in libraries.

Availability, accessibility and use of information resources are indispensable to the teaching, research and community activities of faculty members in any university system. Information resources therefore, refer to the totality of documents and other non-book materials with which a library satisfies the information needs of its clientele. In addition of information sources to any library is therefore a function of its resource development processes. With deployment of electronic information resources access to information that might be restricted to the user because of distance has been resolved (Sabouri, et al 2010). Thus, information availability establishes a new standard for system and network that are always on for applications and data that are always available and for end users that are always connected. Availability of information resources also entails acquiring and also providing means by which users could get necessary information resources needed. It tries to ensure that every user gets document, which could satisfy his/her quest for information. In this paper electronic information resources are invaluable tools for study, learning and research Togia and Tsigilis (2009).

Unfortunately, unfettered access to information does not exist in any society, either in the developed or developing ones. Access to information is not equal to all classes, and the capacity for effective use of it differs markedly among individuals, classes and nations (Neelemaghan, 1985). Access to information carries with it the implication that access can be widened or restricted. This implies action either on the part of the person seeking access or on the part of a person authorized to allow access. A study carried out by Foster, Heppensta, Lazarz and Broug (2008) revealed a low level of research productivity by faculty members in African universities; which they attributed to the poor state of accessibility and utilization of electronic information resources. Publication output of faculty members in African universities in international journals was used as the indicator of research productivity in the study. The up-to-datedness of contents in courses, the continuous academic growth and competence of faculty members and the quality of learning environment depend on how effective the academic library is in identifying and connecting information on current developments in various subject fields with the concerned academic community. Hanif, Ahmed, and Nasir (1997) claim that:

In order to satisfy the diverse information needs and interests of the academic community, the library collection must be adequate in terms of quantity, quality and currency. The collection must also be accessible to the community. The provision of quality information will invariably have positive impact on the learning environment; on the contrary, if the quality of the information provided leaves much to be desired, the result would be worse.

According to Borishade (2002) one of the major objectives of the National Virtual Library Project is "to improve the quality of teaching and research in institutions of higher learning in Nigeria through the provision of access to electronic resources. Ray and Day (1998) observe that traditional library and informational services (LIS) can no longer adequately meet academic needs, because of the cost of printed materials, the ever-increasing number of academic publications, and changes in learning and teaching methods. As a result of these limitations and due to rapidly developing technology, academics must use electronic information resources effectively. Foster, Heppensta, Lazarz and Broug (2008) reported that there is a low level of research productivity by faculty members in African universities; which they attributed to the poor state of accessibility and utilization of electronic information resources. Research output of faculty members in African universities in international journals was used as the indicator of research productivity in the study. According to Foster et al., (2008), the low publication output from African universities is essentially linked with lack of/inadequate accessibility and utilization of electronic information resources by faculty members.

Oduwole and Akpati (2003) carried out a research on the accessibility and retrieval of electronic information at the library of the University of Agriculture, Abeokuta, Nigeria. The study revealed that the usage of electronic information resources cuts across all members of the university community. There was an increase in library use in the university. The increase was a result of the introduction of The Essential Electronic Agriculture Library (TEEAL) that has 130 journal titles on CD-ROM. Furthermore, Sani and Tiamiyu (2005) reported the availability and use of OPACs in University of Agriculture Abeokuta. Similarly, Anasi, (2005) reports that some of the Nigerian universities, like University of Ibadan, University of Ilorin, University of Jos, University of Lagos and Ahmadu Bello University, Zaria subscribed to ISI (Institute for Scientific Information) and EBSCOHOST database.

However Igbeka and Okpala (2004) posited that, since the 1995 introduction and availability of CD-ROM literature search into the University of Ibadan library system, the number of users of the CD-ROM facility was small to the number of registered library users. This, according to them might be a result of lack of current awareness or dissatisfaction of users owing to low information literacy skill. Mahajan (2006) explored the perception of researchers on the Internet use in research on productivity of faculty members at the Panjab University, Chandigarh, India, across three academic disciplines. It was found that scientists (99%) agreed on the positive effect of the Internet on research than the social scientists (50%), while all responses from researchers in humanities were in negation. This study therefore

investigates the perception of faculty members in Nigerian Federal Universities on the availability and Accessibility of electronic Infrastructure and electronic information resources for Research Output

Objectives of the study

The aim of the study was to assess the perception of faculty members in Nigerian Universities on the availability and accessibility of electronic information resources for research output

1. Identify both the electronic infrastructures and information resources available for faculty members in Nigeria universities;
2. Find out the level of adequacy of electronic infrastructures for effective electronic resources provision in the University libraries;
3. to assess the extent of accessibility on electronic Infrastructure and electronic information resources among faculty members in Nigerian universities;
4. to determine the effect of availability and accessibility of electronic Infrastructure and electronic information resources among faculty members in Nigerian universities.

Research questions

The following research questions guided the study:

1. What are the level of electronic Infrastructures and information resources available for faculty members in Nigeria universities websites?
2. What is the level of adequacy of basic electronic Infrastructures support for information resources provision in the University libraries?
3. What is the extent of accessibility on electronic infrastructure and information resources among faculty members in Nigerian universities?

Hypothesis

There is no significant correlation between accessibility and availability electronic Infrastructure and electronic information resources and research productivity of faculty members in Nigerian universities.

Review of Literature

Adequate and appropriate information resources provide opportunities for individuals to get the access which has depended on the availability of emerging technologies as means for creating, storing, and distributing, retrieving, and using information resources the existing literature, such as Udoudoh (2009) and Popoola (2008) suggest that the library is central to the provision of relevant information resources and services for adequate support of teaching, learning and research in any academic environment.

Popoola and Haliso (2009) define information resources as those information-bearing materials that are in both printed and electronic formats, such as textbooks, journals, indexes, abstracts, newspapers and magazines, reports, CD-ROM databases, the Internet/E-mail, video tapes/cassettes, diskettes magnetic disk, computers, micro forms and so on. These information materials are the raw materials that libraries acquire, catalogue, stock, and make available to their patrons. According to Hanif et al (1997), a good library should be well equipped with books and periodicals in all subjects to advance study and research. The duty of a university library is to collect, organise and disseminate information to academics, research scholars and students, and support the generation of new knowledge.

Hanif et al (1997) report that there was inadequate recent publications and current journals. Besides, the information needs of the faculty members were not adequately met by the existing library services. Ray and Day (1998) observe that traditional library and informational services (LIS) can no longer adequately meet academic needs, because of the cost of printed materials, the ever-increasing number of academic publications, and changes in learning and teaching methods. As a result of these limitations and due to rapidly developing technology, academics must use electronic information resources effectively. They enumerated the advantages of electronic resources over printed resources to include:

- i. obtaining information from the most appropriate source;
- ii. searching for specific information for specific needs;
- iii. accessing more information faster;; and
- iv. the availability of resources from outside the library by dial-up access (Ray and Day, 1998).

It is common knowledge that the availability of online information, improved Internet connectivity and changes in scholarly publishing techniques have all contributed to more information being available to more researchers. According to Agulu and Aguolu (2002), resources may be available in the library and even identified bibliographically as relevant to one's subject of interest, but one may not be able access them. One may identify citations in indexes, but may not have access to the sources containing the relevant articles. The more accessible information sources are, the more likely they are to be used. Users tend to use information sources that require the least effort to access. Availability of an information source does not necessarily imply its accessibility, because the source may be available but cannot be access for one reason or the other.

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access for one reason or the other. Leelavathi and Doraswamy (2007) observe that use of electronic information resources is still inadequate among the engineering faculty of the universities in developing countries. They present the findings of a survey on knowledge and use of digital resources by academics in Indian universities through CD-ROM databases, online databases, online journals, OPAC and so on available in the engineering college libraries. (45%) of the Academics said that they acquired the skills to use digital resources through the 'self-study' method (reading books/journals, materials and so on. Some of the faculty members (49.37%) opined that the information available in the digital resources is always 'adequate'. Also, (50.62%) and (41.25%) of the faculty members saw 'lack of training' and 'lack of time', respectively, as the main problems in securing access to digital resources.

Magara (2002) opines that CD-ROM and online retrieval services were the most use electronic resources in Uganda. The availability of the Internet in that country enhanced communication and resource sharing among the communities. Okello-Obura and Magara (2008) claim that users of electronic information at Makerere University, Uganda derived a lot of benefits from electronic resources which helped them in gaining access to a wider range of information, leading to improved academic performance. The major objectives of the adoption of e-resources in the university were to facilitate access to Internet-based information resources as well as timely dissemination of local and international research output. Swain and Panda (2009) observe that faculty members prefer using e-articles over electronic theses and dissertations (ETDs). Some online databases, like Emerald Management, EBSCOHOST, and PROQUEST, are fairly used while other online databases are not of high demand.

The study carried out by Idioidi (2005) reveals that, despite the advent of information and communication technology in Nigerian universities, and automation of library systems, very few users have the capability to use information technology effectively in the libraries. He concluded that a high level of computer illiteracy among librarians is one of the major factors militating against promoting higher level of information literacy of library users. However, some studies, for example, Kinengyere (2007), found out that available information is not necessarily accessed and used by users. The study shows that the availability of information does not necessarily mean actual use because the users may not be aware of the availability of such resources, they do not know how to access these resources, or do not know what the resources offer. To buttress this study Ray and Day (1998) cited limited time and lack of effective information retrieval skills as factors affecting users' access to electronic information. Therefore, a perceived lack of various resources, such as time, equipment, funding, training and insufficient information on software coupled with lack of knowledge and skills of staff, insufficient technical support and the risks associated with implementing innovations in teaching, particularly those using technologies, were cited as the most prohibiting barriers to faculty members use of electronic information resources in their teaching (Manda and Nawe, 2008).

Armstrong (2005) asserts that understanding availability of information resources requires the academic to have the ability to identify what resources are available, for exploitation, where they are available, how to access them, the merits of individual resource, type and when it is appropriate to use them. This may have great implication for academics research activities. According to Igbo (2008) it is necessary for one to decide where to look, what clues to search for and what to accept especially now that we are faced with staggering quality of information. It is therefore assume that only an academic who is information literate can do this; hence the relevance of information literacy and availability of information resources to academic research productivity cannot be over emphasized hence the need to determine how information literacy skills and availability of information resources influence academic staff research productivity of Nigerian federal universities. In conclusion, Arunachalam (2002) argued that one does not have to use technology because it is there, but one uses it if there is a genuine advantage.

Research Methodology

According to Trumbull (2000), research design is a blueprint that helps the researcher to seek, explore, and discover answers to research questions. Also, Welman, Kruger and Mitchell (2005) describe a research design as the plan according to which we obtain research participants (subjects) and gather information with a view to reaching conclusions about the research problem. The research design for this study is survey (descriptive), which is a systematic approach of collecting data to find out respondent's opinion. The population of this study is made up of the University faculty members from twelve selected federal universities in the six geographical zones in Nigeria. A sampling frame of 10% of academics in each of the universities was selected giving a total of one thousand and fifty-seven (1,057) an equivalent of 10% of the population. The values of the reliability estimates range from ($r=0.69$) to ($r=0.83$), and these indicate that the questionnaire instrument was reliable to use for data collection in the study. The data gathered were analyzed using descriptive and inferential statistics and ANOVA. The instruments used to elicit information from respondents were the questionnaire.

Results

Table 1: Questionnaire distribution and response rate

Name of university	Frequency	Percent (%)	Cumulative percent
Ahamadu Bello University	93	10.7	10.7
FUT, Yola	33	3.8	14.4
Nnamdi Azikwe University	64	7.3	21.8
Usman Dan Fodio University	33	3.8	25.5
University of Benin	73	8.4	33.9
University of Ibadan	101	11.6	45.5
University of Lagos	69	7.9	53.4
University of Ilorin	62	7.1	60.5
University of Jos	116	13.3	73.8
University of Lagos	70	8.0	81.8

University of Maduguiri	96	11.2	93.0
University of Nigeria, Nnsuka	61	7.0	100.0
University of Portharcourt	873	100	
Total			

Table 1 shows that 10.7% of the respondents are from Ahamadu Bello University, 7.9% of the sample respondents are from University of Ilorin while Nnamdi Azikwe University represents 7.3 % of the respondents. The table also reveals that 8.4 % of the faculty members is from University of Benin and 7.1% of the faculty members are from university of Jos. University of Lagos has the highest percentage of 13.3 % of the sample size which implies that they have the highest number of respondents follow by university of Ibadan representing 11.6% of the sample size. 8.0% and 11.2% of the respondents are from University of Maduguiri and University of Nssuka respectively. However, Federal University of technology, Yola and Usman Dan Fodio University had the lowest number of respondents, representing 3.8% each of the sample size. 7.0% of the faculty members under study is from University of Portharcourt.

Table 3: Designation distribution of the academic staff

Designation	Frequency	Percent (%)	Cumulative percent
Professor	30	3.4	3.4
Reader	57	6.5	10.0
Senior Lecturer	228	26.1	36.1
Lecturer I	212	24.3	60.4
Lecturer II	213	24.4	84.8
Assistant Lecturer	101	11.6	96.3
Graduate Assistant	32	3.7	100.0
Total	873	100.0	

Table 2 presents the designation of the faculty members in their various institutions. Their designation is measured with seven categories. The designation distribution of the faculty members as shown in table 3 indicates that professor has the lowest percentage, representing 3.4% of the sample size while senior lecturer has the highest percentage of about 26%. This implies that there are more senior lecturers in the sample size than any other designation. 24.3 % and 24.4% of the respondents represent Lecturer I and lecturer II respectively. Assistant lecturers in the sample size are about 11.6% while 3.7% of the respondents represent the graduate assistant in the sample size.

Table 3: Highest Educational Qualification Distribution

Educational qualification	Frequency	Percent (%)	Cumulative percent
PHD	448	51.3	51.3
M. Phil	76	8.7	60.0
Master Degree	307	35.2	95.2
PGD	12	1.4	96.6
Bachelor Degree	27	3.1	99.7
Others	3	0.3	100.0
Total	873	100.0	

As shown in table 3 majority of the participants about 51% had PHD as the highest educational qualification; follow by Master degree holders representing 35.2% of the sample while 8.7% of the participants had M. Phil as the highest educational qualification. 3.1% of the participants had Bachelor Degree as the highest educational qualification. However, 1.4% of the participants are PGD holders and 0.3% of them stated that they had other qualification not listed in the questionnaire as their highest educational qualification.

Answer to Research Questions

This section provides answers to the research questions and hypothesis in the study.

1. What are the level electronic Infrastructures and electronic information resources available for faculty members in Nigeria universities websites?

The overall result shows that for most of the 8 components listed the mode is 2 which means that there are rated by the respondents as available when needed except for CD-ROM databases which its mode is 4 which implies that it is not readily available. The table reveals that computers and photocopy facilities has a mean value of 2.7071 and 2.7068 respectively. Also, Search engines, E-books and E-journals there mean scores are 2.5567, 2.0137 and 2.1489 respectively. And the e-references sources and electronic databases had mean scores of 2.4868, and 2.1604 respectively. The table also reveals that online public access catalogue has a mean of 2.2096. Based on mean scores obtained it could be deduced that photocopy facilities are the most available information resources follow by Search engines, E-books and E-journals and the lowest average score was is the availability of CD-ROM databases as type of information resources. See table 4 for detail.

Table 4: Frequency of faculty members on Availability of ER/EIR

Variables	Minimum	Maximum	Mean	Mode	Std. D
E-books	1	4	2.0137	2	0.8984
E-journals	1	4	2.1489	2	0.8925
CD-ROM databases	1	4	1.8648	4	0.9873
Internet	1	4	2.5418	2	0.8599
E-references sources	1	4	2.4868	2	0.8931
Electronic databases	1	4	2.1604	2	0.8723
Search engines	1	4	2.5567	2	0.9482
Websites	1	4	2.4937	2	0.8701
OPAC	1	4	2.2096	2	0.9253
Computer	1	4	2.7071	2	0.9645
Photocopy Facilities	1	4	2.7068	2	0.9477

N=873.

2. What is the level adequacy of basic electronic infrastructures support for electronic information provision in the University libraries?

Table 5: Level of Adequacy of the Basic Infrastructures

Adequacy of basic infrastructures	Frequency	Percentage
Very adequate	268	30.7
Adequate	302	34.6
Quite adequate	159	18.2
Not adequate	144	16.5
Total	873	100.0

Table 5 reveals that 268(30.7%) respondents indicated that the basic electronic infrastructures support were very adequate, 302(34.6%) indicated that the basic electronic infrastructures support were adequate, 159(18.2%) indicated that infrastructures were quite adequate, Lastly, 144(16.5%) respondent indicated that electronic infrastructures supports were not adequate respectively.

3. What is the extent of accessibility of electronic Infrastructure and electronic information resources among faculty members while performing research activities?

Table 6: Frequency of the faculty member on accessibility Infrastructure and electronic information resources while performing research activities

S/N	Information Resources	Very frequently	Frequently	Often	Rarely	Never	Mean	Std. Deviation
1.	Computers	135 (15.5%)	688 (78.8%)	20 (2.3%)	24 (2.7%)	6 (0.7%)	4.0561	0.58874
2.	E-books	133 (5.2%)	241 (27.6%)	92 (10.5%)	48 (5.5%)	359 (41.1%)	2.7033	1.58120
4.	E-journals	299 (34.2%)	419 (48.0%)	39 (4.5%)	48 (5.5%)	68 (7.8%)	3.9542	1.14347
5.	OPAC	211 (24.2%)	267 (30.6%)	73 (8.4%)	111 (12.7%)	211 (24.2%)	3.1787	1.52882
6.	CD-ROM databases	105 (12.0%)	126 (14.4%)	85 (9.7%)	221 (25.3%)	336 (38.5%)	2.3620	1.41892
7.	E-Abstracting	302 (34.6%)	260 (29.8%)	178 (20.4%)	38 (4.4%)	95 (10.9%)	3.7285	1.27730
8.	Internet	153 (17.5%)	605 (69.3%)	15 (1.7%)	48 (5.5%)	52 (6.0%)	3.8694	0.96564
10.	Audiovisuals	63 (7.2%)	321 (36.8%)	96 (11.0%)	74 (8.5%)	319 (36.5%)	2.6964	1.45363
11.	E-References sources	206 (23.8%)	390 (44.7%)	88 (10.1%)	30 (3.4%)	157 (18.0%)	3.5292	1.36952
12.	Electronic databases	125 (14.3%)	317 (36.3%)	61 (7.0%)	99 (11.3%)	271 (31.0%)	2.9152	1.51208

13.	Digital camera	113 (12.9%)	168 (19.2%)	52 (6.0%)	229 (26.2%)	311 (35.6%)	2.4765	1.54804
14.	Search engines	183 (21.0%)	534 (61.2%)	83 (9.5%)	23 (2.6%)	50 (5.7%)	3.8900	0.95629
15.	World wide web	195 (22.3%)	603 (69.1%)	50 (5.7%)	10 (1.1%)	15/ (1.7%)	4.0916	0.68793

Table 6 shows that World Wide Web as information resources was the most frequently used out of all the other resources. This is because it has the highest mean value ($M=4.0916$, $SD=0.68793$) and nearly 69% said that they frequently access WWW for research activities. Also, information resources that are highly accessed or frequently used by faculty members while performing research activities were computers with mean scores of ($M=4.0561$, $SD=0.58874$), E-journals ($M=3.9542$, $SD=1.14347$), search engines ($M=3.8900$, $SD=0.95629$) and internet ($M=3.8694$, $SD=0.96564$). In addition, table shows that the following information resources were often used by faculty member for research activities; e-abstracting ($M=3.7285$, $SD=1.27730$), e-indexing ($M=3.6163$, $SD=1.20988$), e-reference sources ($M=3.5292$, $SD=1.36952$) and OPAC ($M=3.1787$, $SD=1.52882$). This can also be confirmed by the results obtained on how often these information resources were often used during research activities. Thus, it could be deduced that World Wide Web, e-books, E- journals, search engines (e.g. yahoo, mamma etc) and internet services are highly used by faculty member while performing research activities.

Hypothesis

There is no significant correlation between accessibility, availability electronic Infrastructure, electronic information resources and research output of faculty members in Nigerian universities.

Table 7: Correlation of interactive effect of accessibility and availability electronic Infrastructure and electronic information resources and research output of faculty members

		Information Accessibility skills possess	Availability of information resources by	Research Output
Information Accessibility skills possess by faculty members in Nigeria federal universities	Pearson Correlation	1	.343(**)	.473(**)
	Sig. (2-tailed)		.000	.000
	N	873	873	873
Availability of information resources by faculty members in Nigeria federal universities	Pearson Correlation	.343(**)	1	.332(**)
	Sig. (2-tailed)	.000		.000
	N	873	873	873
Research Output	Pearson Correlation	.473(**)	.332(**)	1
	Sig. (2-tailed)	.000	.000	
	N	873	873	873

** Correlation is significant at the 0.01 level (2-tailed).

Table 7 above shows that there is positive and significant interactive effect between information accessibility skills possess, availability of electronic information resources by faculty members and research outputs. The relationships that exist between three variables were tested at 0.01% significant level. This implies that the higher the accessibility of information skills possess by faculty members, the higher the rate of availability of electronic information resources available to the faculty members and thus the combination of this two variables brought influence greater research output. Therefore, the null hypothesis is rejected and thus deduced that there is significant interactive effect accessibility of information skills possess and availability of electronic information resources available on research output of faculty members in Nigeria federal universities.

Discussion of Findings

Understanding and making the best use of the huge amount of information resources available is one of the key challenges facing today's users of information resources. Adams and Bonk (1995) observed that availability and accessibility of ICT facility (such as network connections) is imperative for effectiveness and efficiency in access and use of e-resources in universities. The world is currently facing what is termed information overload. Thus; this research explored the relationship between information accessibility skills and availability of electronic information resources as factors influencing research productivity faculty members in Nigerian universities. The number of the available electronic information resources was found to be adequate, with the exception of CD-ROM databases. Across the universities selected, the distribution of the respondents on percentage basis was nearly uniform in terms of availability of computers, e-books, e-journals, electronic database, search engines, OPAC, Internet service, reference sources, photocopy and newspaper/magazines. This result of this study was lined with Nwezeh (2010) found that at the Obafemi Awolowo University, 15.7% of their respondents (faculty members) have access to computers in their offices, while 69.6% have Internet access in office. Thus, by implication there is low level of adoption and integration of ICT facilities (computers, the Internet and campus/Intranet/LAN) in research in the two surveyed universities.

The finding shows that there is a positive multiple combined relationship between information accessibility skills possessed by faculty members and availability electronic information resources on research productivity ($r=0.493$). The regression table on level between information accessibility skills possessed by faculty members and electronic information resources availability indicated that the R-value of 0.241 is significant; confirming that between information accessibility skills and information resources availability has a positive significant effect on research productivity of the respondents. This findings aligns with Kinengyere (2007), who conducted a study on the effect of information literacy on the utilization of electronic information resources in selected academic and research institutions in Uganda. The study reveals that information literacy skill is very vital in influencing utilization of available e-resources. Similarly, Opoola (2008) argues that social scientists in Nigerian universities make use of the

available library information resources and services, such as current awareness, photocopying, referencing, statistical data analysis, E-mail, selective dissemination of information and online database searching, in support of their research activities. According to him, these sources have contributed immensely to the research productivity of faculty members.

Conclusion and Recommendations

This study investigated perception of faculty members on provision of electronic infrastructures and accessibility of electronic information resources for research Output in Nigeria Universities. The study also reveals that awareness of the availability of electronic information resources services in the universities was not widespread among faculty members. The study also revealed that databases are only accessible to the faculty members through the use of basic infrastructure such as electricity, computer systems which include hardware, software and human ware, and internet facilities in both libraries and their offices. It is on note that, availability and accessibility of both electronic infrastructures and information resources to faculty members in Nigerian universities will lead to increase in research output of faculty members. It is therefore imperative that Libraries put basic infrastructures in place to ensure effective access to electronic information resources.

Based on the findings the researcher recommends the followings:

Awareness programme on availability of information resources should be given by librarians regularly to increase research productivity of academics.

In view of the fact that research output contributes towards image building for universities as well as ranking, it becomes highly necessary for universities to invest more on access to information resources especially electronic resources.

University administrations should provide more computers with Internet access in their universities. The bandwidth for Internet connectivity should be increased to improve the speed of accessing information from the Internet.

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