Information and Communication Technology Accessibility as Correlate of E-Resources Usage among Postgraduate Students in Nigerian University Libraries

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Abstract

Purpose: This study examined the correlation of ICT accessibility and use of e-resources in Nigerian university libraries among postgraduate students.

Design: A survey research design and multi-stage sampling technique were used to select 2726 postgraduate students from 16 Nigerian federal conventional universities. Two instruments (questionnaire on ICT Accessibility and an Interview Schedule for e-resources/ ICT librarians) were used to collect data and data was analysed using percentages and Pearson's Product Moment Correlation.

Findings: The extent to which postgraduate students' level of accessibility to ICT facilities for using e-resources was low (weighted average = 2.44). The frequency of the usage of e-resources by the postgraduates' was adjudged low (weighted average = 2.45). Major problems postgraduate students encountered in accessing e-resources in their libraries range from internet down time, password issues, inadequate skilled staff, awareness of e-resources by the students to epileptic power supply. There is positive, very strong and significant relationship between postgraduate students' ICT accessibility and their use of library e-resources ($r = .776$; $df = 2284$; $p < .05$).

Research = Implications: The postgraduate students who were expected to access and use the library's ICT facilities for retrieving their needed electronic information had low level of accessibility to the ICT facilities. The implication is that it would impede their rate of learning and also affect their general scholarships, particularly now that the whole society is in the information age where students communicate using ICT facilities.

Originality/ Value: The study has added to the body of knowledge university libraries' support in provision of ICT facilities with flexible policy use could afford postgraduate students' access to e-resources.made a pointer to University librarians on how to improve on e-resources access and utilization by setting a conducive policy use.

Keywords: Academic libraries, E-Resources Use, ICT Accessibility, Postgraduate Students, University Libraries, User studies.

Paper type: Empirical research

Introduction

University libraries and information professionals especially librarians are in an ongoing effort to understand the evolving factors in students' search for information in university library-environment that are undergoing rapid change. More recently, a particular focus of inquiry has been on those factors that will compliment research students more than ever, to use the library's electronic resources to seek information as opposed to just surfing the Internet. Using the Internet and other information sources to retrieve information without any mediation by the library may wage students learning and research activities.

Research is the most important component of postgraduate studies (Smith, 2006). Research enables postgraduate students to systematically investigate society's problems and proffer solutions to them. It is through research that postgraduate students can contribute to knowledge. In the broadest sense, research has been defined in Oxford Online Dictionary (2012) as the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions. It

involves a systematic process for recognising a need for information, acquiring and validating that information and deriving conclusions from

with problems, collect data on subject areas, interpret and subsequently make recommendations on how to solve the problems. The presentation of a standard research work (theses/dissertations) by postgraduate students to their departments is the major component that will lead to the award of their final degrees. To present standard research work, students will need the libraries in order to explore the information resources therein.

University libraries have the task for providing a broad range of resources to meet postgraduate students' research needs, collect information for their assignments and term papers, prepare for examinations and enlarge their general knowledge. In addition, postgraduate students may need these information resources to write articles and to collaborate with other researchers elsewhere in the world. The information resources include print and electronic resources. Bajpai, Mai and Bajpai (2009) defined e-resources as one which requires computer access or any electronic product that delivers a collection of data, be it text referring to full text bases, e-journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim of being marketed. In the present context, they are defined as those electronic information resources and services that users access electronically via a computing network from inside the library or remote to the library; and according to (Sharma, 2009) they include: e-journals, e-data archives, e- manuscript, e-books, e-magazines, e-thesis, e-newspapers, e-mail, e-research reports, e-bibliographic databases, CDROM, e-reference sources, e-tutorials, online databases and other portable computer database

The use of e-resources provides some potential benefits to both university libraries and users. The reasons for actually embarking on the purchasing of electronic resources are generally accepted because of the ease of usability, readability, affordability and accessibility. Other benefits of e-resources to postgraduate students include:

Multi-access: A networked product can provide multiple points of access at multiple points round the clock and to multiples simultaneous users. Speed: An electronic resource is lot

it. This implies that postgraduate students focus inwards into the society and discover areas

quicker to browse or search, to extract information from, and to integrate that information into other material and to cross-search or reference among the different publications. Functionality: E- resources will allow the postgraduates to approach the publications to analyze its content in new ways by clicking of the mouse on search mode. Content: The e-resources can contain a vast amount of information, but more importantly the material can consist of mixed media i.e. images, video, audio animation which could not be replaced in print. In addition, they have the character of mobility, they save physical Space, they are convenience to use and they save time and money (Velumani, 2013).

University libraries invest considerable sums of money for providing students with e-resources they need for their research work, with the consideration that getting better on the use of e-resources among postgraduate students will guide to increase in scholarly productivity. Moreover, there appears to be a sweeping change in university library's collections from the print to the e-resources that provide easier access and improve students' ability to retrieve their needed information and perhaps stir new ideas and finally improve the quality of their work (Vakkari, 2008).

The important query is whether university libraries gain value for the money invested on e-resources. This query has provoked researchers and ignites their anxiety on the dearth of literature on the use of e-resources in university libraries in Nigeria. Bhat,2009; Okiki and Asiru, 2011; Oyedapo and Ojo, 2013 reported that several academic libraries expend millions of dollars a year on e-resources; yet, many of them are underutilised and many more are unknown to the users. Therefore, it appears that university research students find it difficult to locate and use the e-resources for their scholarly work. Consequently, to justify the investment on e-resources, it is the library's responsibility to ensure that the use of its e-resources is maximised by its users. To accomplish the goals of deriving value from investment on e-resources and their use, university libraries should implement a planning and action initiative by considering factors to influence the use of its e-resources among the group of its primary users such as postgraduate students.

The present study assumes an even greater importance that more postgraduate students are using the Internet and other information sources and other ICT tools to retrieve information they need, and these information are unmediated by the library

The various ICT and their access is a factor that could influence use of e-resources in university libraries. ICT accessibility, according to Ismail and Zainab (2011), refers to the 'how' and 'where' users retrieve e-resources. The 'how' refers to the gateways used to access e-resources and the 'where' refers to the location where the service could be used. University libraries and postgraduate students are increasingly becoming puzzled by the variety of e-resources that are communicated in a multitude of ways, which includes computers, the Internet, videos, radio, telephone, printers, and etcetera. The provision of ICT access points in university libraries will allow postgraduate students use of e-resources. This means that some of the students that have access to computers and computer networks may have some flexibility of doing their research work while those students without access to ICT will not be flexible in the course of their study. In addition, access to ICT for postgraduate students will simplify their word processing activities, making their editing work easy and improving the presentation of their assignment and research reports. Some of the students that lack ICT access in their libraries may miss information through the subject gateways, and this will result to confusion and frustration (Nfila, 2008).

To maximise the potentials and benefits of e-resources, it is perhaps useful for postgraduate students in Nigeria to be knowledgeable on how to use the library and their e-resources, and to have complete or easy access to different ICTs in their libraries. Considering the potentials and benefits for the provision of e-resources for postgraduate students in university libraries, postgraduate students have not optimally utilised these enormous resources for their daily scholarly activities (Mutula, 2004 and Ozoemelem, 2009). In Nigeria, low usage of e-resources by postgraduate students was reported by Aguolu and Aguolu (2002); Folorunso, Ogunseye and Sushil (2006); Rosenberg (2006) and Ozoemelem (2009). On the whole, the likely cause of low use of e-resources by postgraduate students in university libraries for their research work is probably lack of ICT accessibility, Agyen-Gyesi (2008) . Studies have made known certain factors that can influence the use of e-resources in university libraries. For instance, Moskal, Dziuban, Upchurch, Hartman and Truma (2006) reported that computer anxiety and computer literacy are key factors to using library e-resources.

Statement of the Problem

With the introduction of ICT, university libraries in Nigeria are providing resources in electronic formats. Undeniably, many of the university libraries have made significant investment in providing services from side to side e-resources and other computer-based technologies so that users such as postgraduate students can increase access to e-resources that will add value to their scholarly research work. while the use of e-resources by postgraduate students is normally and internationally accepted as contributing to their research work, active literature records low use of e-resources by postgraduate students in most university libraries in Nigeria. This has diminished the potentials and benefits, bearing in mind the enormous investment on e-resources. This may be due to postgraduate students' inadequate access to ICT in the libraries and this will affect their overall development.

Objectives of the Study

The main objective of this study is to investigate the correlation of ICT accessibility on use of e-resources by postgraduate students in university libraries in Nigeria. Others are to:

1. find out the extent to which ICT is accessible for using e-resources by the postgraduate students in university libraries in Nigeria;
2. determine the frequency of use of the available e-resources by the postgraduate students in university libraries in Nigeria;
3. investigate major problems of accessing e-resources by postgraduate students in university libraries in Nigeria;
4. find out the relationship between ICT accessibility and use of e-resources by the postgraduate students in federal university libraries in Nigeria.

Hypothesis

1. There is no significant relationship between ICT accessibility in university libraries in Nigeria and use of e-resources by the postgraduates.

Literature Reviewed

Accessibility explains the opportunity or right to use something (Oxford Advanced Learners Dictionary, 2000). Accessibility is becoming a more significant theme in library science, because having information in electronic format in university libraries has little meaning if users cannot access it. Means of access refer to the systems through which the user materially gets hold of the materials from the collection, be it an open stack system or web-based access to resources (Agyen-Gyasi, Lamptey and Frempong, 2010). ICT accessibility is the degree to which computer and other computer-related gadgets are used freely by as many people as possible to retrieve and satisfy their information needs.

According to Aguolu and Aguolu (2002), resources may be available in the library and even identified bibliographically as relevant to students' subject of interest; however, the students may not be able to locate or lay hands on the resources identified through bibliographies. Aguolu and Aguolu (2002) noted that availability of information does not necessarily imply its accessibility, because the sources may be available but access to it is prevented in the library for one reason or the other. Students may identify citations in indexes, but may not have access to the sources containing the relevant articles. Ugah (2008) informed that, the more accessible information sources are, the more likely they are to be used. He added that students tend to use information sources that require the least effort to access.

Some university libraries are providing access to e-resources through e-book readers, such as the Amazon Kindle and the tablet computers (Rotman and McQuivey, 2009). Such university libraries that provide access to e-resources through the use of e-book readers include the Turku City Library in Finland (Turku City Library, 2010), the West Vancouver Library in Canada (Hui, 2010) and the University libraries of the American University in Washington, DC (American University, 2010). To facilitate access and use of e-resources to incoming medical students, the University of California, Irvine School of Medicine has provided Apple ipad tablet computers which have already been loaded with the course materials for the first year (Vasich, 2010). Furthermore, in providing access to e-resources to students, the Cushing Academic library Boston, USA has taken advanced step by getting rid of all printed materials, with all the library resources to be used on laptops and tablet computers (Abel, 2009).

To provide increased and better access to e-resources use for its research students, Penn State University Library, USA teamed up with Sony to introduce the Sony Reader and experimented on how best to provide materials for research use (Behler, 2009). The Sony Readers were used to access e-resources by the research students on multiple courses to find out their suitability in accessing research materials. It was, however, found that the Sony Readers lacked many functionalities required for academic use, such as better interaction with the text, and that the devices were not at all suitable for use in the hard sciences, which require good representation of diagrams and colour. Therefore, Conole et. al. (2008) asserts is true, that students are learning in a complex and changing environment using a complex plethora of technological tools to support their learning. This of course should be provided by their libraries in order to ease access to e-resources retrieval.

Pattuelli and Rabina (2010) studied the attitudes of LIS students' of Pratt Institute, New York, USA towards using e-readers to access their library's e-resources. Their major findings was that the portability of the device and its convenience of use anywhere and anytime were pivotal to enhancing the students' reading experience, and that outweighs the limitations of the device usability. Students reported on reading, using more e-resources due to the ease and portability of e-readers, but commented on the limitations of sharing and transferring e-resources. Their result corroborated with those of Aaltonen, Mannonen, Nieminem and Neiminem (2011) who reported that most open access materials can be easily read, downloaded and used by students at the University Library of Helsinki University of Technology.

One area that academic libraries could create access and meet postgraduate students' e-resources research needs is by the provision of knowledge and learning commons (Forrest, 2006). A knowledge commons is a virtual environment created within a library furnished with computers with a variety of databases and gadgets for learners and researchers to do self-study and group learning in a laboratory situation (Stevens, 2006). A learning commons is similar and, many times, interchangeable with knowledge commons. Learning commons is a

multi-media centre that creatively provides spaces for all sorts of flexible approaches to learning by students. Therefore, as maintained by Stevens (2006), as the library becomes more patronised, it will find this concept appropriate in delivering and making access to e-resources in an increasingly virtual environment.

Assessing the Nigerian university libraries against the definition of a library by UNESCO (2007) as "any organized collection of printed books and periodicals of any other graphic and audio visual materials, electronic/digital resources of the services of the staff to provide and facilitate such materials as are required to meet the information, research, educational or recreational needs of its users", the question then is how many university libraries in Nigeria fit into this definition of a library as defined by UNESCO (2007)? Ugah (2008) studied the relationship between accessibility and library use by students in Micheal Okpara University of Agriculture Umuahia, Nigeria and noted that the problem of Nigerian students is not the question of wanting to use the library, but whether or not the university library can provide for their needs, and whether there is access to what is provided. This assertion was in consonance with the studies of Iyoro (2004) and Popoola (2008) who reported that information is an essential commodity that is needed for improved productivity among student researchers in the Nigerian university system and libraries should provide and make it accessible.

According to Ajayi and Adetayo (2005), access to e-resources for students' use will bring them in contact with cultural, scientific, technical and social ideas. They added that access to library e-resources would produce great critical thinkers and well thought Further Education (FE) graduates from Nigerian universities. This in turn will add to the manpower need of the nation and subsequent socio-economic development of the entire nation. This implies that access and use of e-resources by postgraduate students' would facilitate their overall and holistic development.

Many Nigerian university libraries have websites, primarily to show case their resources and research profiles (Akintunde, 2006). Most of the university libraries are connected to the internet, thereby facilitating postgraduate students to interact with their colleagues around the world. The students could also access quality electronic information resources through the internet to facilitate their research. For instance, Jagboro (2003), in her study on internet use at Obafemi Awolowo University, Ile-Ife (OAU), Nigeria submitted that internet access for retrieving e-resources was provided to students in the library. Similarly, Sanni and Idiodi (2004) reported that at the University of Benin, Nigeria access to e-resources for students and staff can be accessed from cybercafé available in the computer centre and the university library, and that the library's collection can be accessed through the online public access catalogue (OPAC). Egberongbe (2011) informed that there are e-resources in the University of Lagos library and that students in the study were familiar with e-resources and could access maximum relevant materials from e-journals for research purposes.

Internet access to e-resources was reported to be provided to postgraduates of the Federal University of Technology Akure but none of the postgraduates used e-mail to communicate with lecturers (Ojokoh & Asaolu, 2005). Furthermore, Oduwole (2005) also reported on the increasing number of universities connected to the internet, but lamented that the services were mitigated with problems such as the limited work stations, queues, poor support services and lack of proper coordination.

The prevailing problems to provision of access to e-resources in university libraries to their users have not decreased due to certain imminent factors, such as passwords and licences issues, infrastructure, information about their availability, etc. To create awareness of the availability of certain e-resources, the University of Ibadan official bulletin special release (2006) announced the availability of the following e-resources in Kenneth Dike library: AGORA, HINARI, LANTEEL, EBSCOHOST, E-GRANARY and DIGITAL LIBRARY. Ani, Esin & Edem (2005) reported that at the University of Calabar library, 16 computer systems and online databases such as AGORA, HINARI and EBSCOHOST were subscribed to for their students' use. Similarly, Akintunde (2006) wrote that the University of Jos library had subscribed to e-resources such as AGORA, HINARI, OARE, MEDLINE, E- GRANARY, JSTOR, and OXFORD UNIVERSITY PRESS JOURNAL, and these are made available and accessible for free to students in the library. Until and unless the postgraduate students are aware of the availability of the e-resources in their libraries with due and prompt access, the problems will persist.

Methodology

The study adopted the descriptive survey design of the expost factor type. The Multi-stage sampling technique was adopted to select 10 out of the 16 Federal Conventional Universities. The specialised universities and newly established ones were not selected because they do not have postgraduate programmes. Purposive selection of four faculties (Arts, Education, Science and Social Sciences) and purposive selection of two departments in each faculty with the highest number of postgraduates was carried out (Table 1). Lastly, proportionate random sampling technique was used to select the levels of the postgraduates. The sampling fraction used for selecting the sample was 5%. Therefore, a total of 2627 postgraduate students out of 54, 578 were selected. Questionnaire was used to collect data. Data collected were analysed using descriptive statistics which include: frequency count, percentage, mean and standard deviation. In addition, Pearson Product Moment Correlation was used to test for relationship for the hypothesis.

Table 1: Samples Selected Based on Faculties/Depts in Each University

S/N	University	Population of PG Students	Sample Size per University (5%)	Target Sample per Faculty in Each University	Target Sample per Dept	Target Sample for Each Group of PG students/Dept		
						M (50%)	MP/P (30%)	P (20%)
1	Ahmadu Bello University Zaria	8800	440	110	55	27	16	11
2	Bayero University Kano	2481	124	31	16	8	5	3
3	University of Abuja	3157	157	39	19	9	6	4
4	University of Benin	2002	100	25	13	6	4	3
5	University of Calabar	9946	497	124	62	31	19	12
6	University of Ibadan	10986	549	137	69	34	21	14
7	University of Jos	2641	132	33	17	9	5	3
8	University of Lagos	10450	522	130	65	33	19	13
9	University of Maiduguri	1692	84	21	11	6	3	2
10	Usman Danfodio University Sokoto	2423	121	30	15	8	4	3
	Total	54578	2726					

Key: M: Master's, MP/P: MPhil / Ph.D, P: Ph.D

Results and Discussion

Objective 1: find out the extent to which ICT is accessible for using e-resources by the postgraduate students in university libraries in Nigeria.

From Tables 2 only seven items out of 21 yielded high mean scores on accessibility of ICT facilities in respect of the postgraduate students (means range between 2.51 and 3.03). For the remaining 14 items, the mean scores were low, falling below the 2.50 mark out of 4.00 highest points possible. This showed that most of the ICT facilities were not accessible to the postgraduate students. On the whole, the postgraduate students' level of accessibility to ICT facilities was low (weighted average = 2.44).

The result pertaining on how accessible ICT facilities for postgraduate students to retrieve e-resources were revealed that the postgraduate students' access to ICT facilities was low. Here, the question remains whether the university libraries could afford to increase the number of networked computers and other ICT facilities to match the ever increasing number of postgraduate students in their universities. The increase in postgraduate students' admission without a corresponding increase in the number of ICT facilities to provide access to e-resources will remain a problem in university libraries in Nigeria, for lack of deliberate increase in ICT facilities. Most likely, only very few postgraduate students could likely afford access to needed ICT facilities without the university libraries support. This will certainly have dual implications on both the students and the libraries. On the students' part, necessary ICT facilities to make e-resources accessible for their research work would be lacking. This would slow their research work and eventually set in frustration. Also, the university libraries will not have justified its existence if the needed e-

resources available could not be retrieved for use because of lack of access to ICT facilities.

Table 2: Accessibility of ICT Facilities to Postgraduate Students

S/N	ICT Facilities	Accessibility								$\overline{X}$	Std. Dev.
		Highly Accessible (4)		Accessible (3)		Fairly Accessible (2)		Not Accessible (1)			
		N	%	N	%	N	%	N	%		
1	Computers	965	42.2	750	32.8	233	10.2	337	14.7	3.03	1.06
2	Scanner	540	23.6	648	28.4	397	17.4	700	30.6	2.45	1.16
3	Printer	557	24.4	775	33.9	285	12.5	668	29.2	2.53	1.15
4	Wireless Access Point (WAP)	466	20.4	846	37.0	313	13.7	660	28.9	2.49	1.11
5	Digital Camera	459	20.1	766	30.9	416	18.2	704	30.8	2.40	1.12
6	Fascimile	304	13.3	747	32.7	269	11.8	965	42.2	2.17	1.12
7	Internet Connectivity	635	27.8	809	35.4	282	12.3	559	24.5	2.67	1.13
8	Websites	566	24.5	937	41.0	295	12.9	487	21.3	2.70	1.07
9	Television	514	22.5	763	33.4	379	16.6	629	27.5	2.51	1.12
10	Video Conference	358	15.7	666	29.1	341	14.9	920	40.3	2.20	1.13
11	Telegraph	346	15.1	717	31.4	362	15.8	860	37.6	2.24	1.11
12	E-mail	591	25.9	854	37.4	226	9.9	614	26.9	2.62	1.14
13	CD-ROM	489	21.4	639	28.0	346	15.1	811	35.5	2.35	1.17
14	Fixed Telephones	367	16.1	682	29.8	395	17.5	841	36.8	2.25	1.11
15	Mobile Telephone Network	515	22.5	908	39.7	249	10.9	613	26.8	2.58	1.11
16	Multimedia Projector	396	17.3	648	28.4	441	19.3	800	35.0	2.28	1.12
17	Micro Slides	314	13.7	719	31.5	501	21.9	751	32.9	2.26	1.10
18	Audio Tapes	485	21.2	589	25.8	441	19.3	770	33.7	2.35	1.15
19	Audio Tape Player	390	17.1	811	35.5	312	13.7	772	33.8	2.36	1.12
20	Video Tapes	454	19.9	777	34.0	277	12.1	777	34.0	2.40	1.15
21	Photocopier	571	25.0	585	25.6	382	16.7	747	32.7	2.43	1.18

Weighted Average=2.44

This finding bear out the report of Osagie (2008) who examined the perception and use of ICT facilities in Kenneth Dike Library among postgraduate students of the University of Ibadan. His result revealed that the use of ICT facilities to support learning and research by the postgraduate students was low, irregular and ineffective. Certainly, this will create a challenge to the use of e-resources by the postgraduate students. Similarly, Behler (2009) reported on provision of access by Penn State University library, using Sony Reader and found out that the Sony Reader lacked much functionality for academic use such as better interaction with text and is not suitable for use in the hard sciences. This lack of functionalities hindered their research students' access to needed e-resources. Contrary to low access to ICT facilities as found in this study, Abel (2009) reported that the University of the Cushing Academic Library, Australia, took advanced step and got rid of most printed materials, with all library resources to be used on laptops and tablet computers. His finding demonstrated ready access and use of e-resources by postgraduate students.

Access to the following types of ICT facilities in the libraries as revealed by the systems librarians includes branded desktops and few laptops for managerial staff. In all the university libraries, ICT facilities available include photocopiers, television, UPS, scanners, satellite dish, projectors, internet connectivity, interactive boards, printers, radio, CD-ROM, and desktops (branded and clone). The total number of functional computers available for use by the students in all the universities libraries as informed by the systems librarians was 1822. This number is to be used by the total number of postgraduate students in the ten universities sampled, which is 54,578 apart from the undergraduate students. The ratio is 1: 29. This number is grossly inadequate.

Objective 2: determine the frequency of use of the e-resources by the postgraduate students in university libraries in Nigeria.

Table 3: Postgraduate Students Frequency of Use of E-resources

S/N	In the University Library, I use:	Daily (4)		Once a week (3)		Occasionally (2)		Never (1)		$\overline{X}$	Std. Dev.
		N	%	N	%	N	%	N	%		
1	E-journals	827	36.2	606	26.5	358	15.7	494	21.6	2.77	1.15
2.	E-data archives	458	20.0	594	26.0	477	20.9	756	33.1	2.33	1.13
3	E-manuscripts	457	20.0	611	26.7	491	21.5	726	31.8	2.35	1.12
4	E-books	538	23.5	589	25.8	473	20.7	685	30.0	2.43	1.15
5	E- magazines	526	23.0	773	33.8	370	16.2	616	27.0	2.53	1.12
6	E-theses	431	18.9	655	28.7	444	19.4	755	33.0	2.33	1.12
7	E-newspaper	732	3.2	601	26.3	359	15.7	593	26.0	2.64	1.18
8	E-mail	744	32.6	667	29.2	338	14.8	536	23.5	2.71	1.15
9	E- research reports	577	25.3	671	29.4	389	17.0	648	28.4	2.52	1.15
10	E-bibliographic databases	317	13.9	727	31.8	464	20.3	777	34.0	2.26	1.07
11	E-maps	279	12.2	684	29.9	540	23.0	782	34.2	2.20	1.04
12	CDROM	386	16.9	751	32.9	376	16.5	772	33.8	2.33	1.11
13	E-reference sources (dictionary etc.)	365	16.0	708	31.0	519	22.7	693	30.3	2.33	1.07
14	E-tutorials	454	19.9	732	32.0	363	15.9	736	32.2	2.40	1.13
15	Online databases	386	16.9	741	32.4	451	19.7	707	30.9	2.35	1.09
16	Other electronic databases	339	14.8	711	31.1	581	25.4	647	28.3	2.32	1.04

Weighted Average =2.45

Table 2 revealed that the postgraduate students frequently used only five of the 16 e-resources listed. These were e-journals (x = 2.77), e-mail (x = 2.71), e-newspaper (x =2.64), e-magazine (x = 2.53) and e-research reports (x = 2.52). They do not use all the 11 other e-resources to any appreciable extent. The weighted average of 2.45 summarises the results to the effect that the postgraduate students' frequency of use of e-resources was low.

The study found out that the result of the postgraduate students' frequency of use of e-resources was low. This finding is not cheering to the library managers and librarians who spent fortunes to subscribe e-resources for use to their researchers. The result indicated that out of the listed e-resources expected to be available in any university library; only five (5) were frequently used. These are e-journals, e-mail, e-newspaper, e-magazine and e-research reports. The frequencies of the use of e-resources range from daily to occasionally. The postgraduates do not use the other 11 e-resources to any appreciable extent. Among the most used e-resources, majority of the respondents used them once a week and occasionally. Only few respondents used e-resources daily. This finding is in agreement with those of Ojo and Akande (2005) who surveyed postgraduate medical students of University College Ibadan (UCH) and revealed that the students' frequency of use of e-resources was low. In addition, Okiki and Asiru (2011) reported that postgraduate students from the Universities of Lagos, Ibadan and Ife used e-resources daily, weekly, monthly and occasionally. But that the breakdown generally revealed low frequency of e-resources use by the postgraduate students of the three universities.

This low frequency of use of e-resources by the postgraduates is somehow beyond belief because most of the students had reasonable user education and medium computer literacy levels as established by Abubakar & Adetimirin (2015) and (2016) respectively among same respondents. The five e-resources frequently used are probable; this is because universally postgraduate students used them for their scholarly works. However, the other e-resources are supposed to be put to use by the students based on their levels of user education and medium computer literacy level already established. It was, however, revealed that use of e-resources is not up to the worth in comparison to investments made in acquiring these resources.

The low use of e-resources by the postgraduate students will have implications: First, this will amount to huge loss of finance made for the subscription of e-resources in the university libraries because the provision of the e-resources was unjustified, for lack of use. Secondly, the postgraduate students' research output will not be qualitative enough for lack of use of current and standardised information resources. It is clear from the study that the five e-resources were accepted by the postgraduate students, but the volume of frequent usage of the other 11 e-resources among the postgraduate students was not found to be at optimum level. Many of the respondents might be unaware and have not used

them, possibly, for their study and research. So the library can take initiatives to organize orientation programmes and user awareness programme for these 11 e-resources.

Objective 3: investigate major problems of accessing e-resources by postgraduate students in university libraries in Nigeria.

When inquired of the major problems postgraduate students could encounter in accessing e-resources in the libraries, the responses from the e-resources librarians range from internet down time, password issues, inadequate skilled staff, awareness of e-resources by the students to epileptic power supply. In addition, the systems librarians from University of Maiduguri added the challenge of security situation in the state. Considering these challenges, few of the university libraries have taken serious steps to mediate, so that the postgraduate students could access e-resources in their libraries. Such measures taken are forming synergy between the faculties and the libraries, staging seminars which are an avenue for user education. Others are provision of generators to power the systems, use of the library's websites by placing a link on "asks the librarian". On the overall, the responses on what the libraries are doing to promote access to e-resources and their use include sensitising the students; encourage the purchase of more computers and other ICT facilities. The baffling one was that, 'it is up to the library management'. Perhaps, this indicates the kind of working relationships between the systems unit and the library management.

Objective 4: find out the relationship between ICT accessibility and use of e-resources by the postgraduate students in federal university libraries in Nigeria.

Hypothesis Test: There is no significant relationship between ICT accessibility in university libraries in Nigeria and use of e-resources by postgraduate students.

A correlation analysis of ICT accessibility and use of e-resources by the postgraduate students is presented on Table 4 below.

Table 4: Relationship between ICT Accessibility and Use of E-resources

Variables	Mean	Std. Deviation	N	r	Df	Sig.p	Remarks
ICT Accessibility	56.1260	17.7799	2285				
USE of E-Resources	41.4871	13.3645	2285	.776*	2284	.000	Significant

*significant at $p < .05$

From Table 4, there is positive, very strong and significant relationship between postgraduate students' ICT accessibility and their use of library e-resources ($r = .776$; $df = 2284$; $p < .05$). Hence, as ICT facility accessibility to postgraduate students improves, their use of e-resources also improves. The hypothesis was, therefore, rejected.

In testing the hypothesis of significance of the relationship between the postgraduate students' accessibility to ICT facilities and the use of e-resources, it showed that as the postgraduate students' accessibility to ICT improves, the use of e-resources also improves. This implies a high correlation of ICT access on the use of e-resources in the university libraries among the postgraduate students. The more access to ICT facilities at their disposal, and they are allowed access to it, the more the use of the e-resources contained in them (ICTs). The postgraduate students can access and disseminate e-resources like e-books, e-journals, and can improve their learning by using different modern ICTs in form of computers, wireless access points, internet connectivity, e-mail, printer, photocopier, CD ROM, etc. Okello-Obura and Ikoja-Odongo (2010) observed that a great percentage of LIS postgraduate students (72%) of the University of Makerere, Uganda, proposed that more networked computers and other ICT facilities should be purchased by the University to help student's access e-resources. This implies that the LIS postgraduate students do understand that it is likely that without the University's support to provide ICT facilities, e-resources use will be a chase of mirage.

University libraries support in provision of ICT facilities with flexible policy use could afford postgraduate students' access to e-resources. A study of British students by Conole, Laat, Maarten, de, Dillon, and Darby (2008) supports this assertion and reveals that students are learning in a complex and changing environment, using a plethora of technological

tools to support their learning. Computer ownership is high, and students have become accustomed to being able to electronically access e-resources. Conole et al (2008) conclusion was that students are using technologies to support all aspects of their learning processes, i.e., communicating with tutors and other students, keeping abreast of course administration, finding and managing learning materials, processing data, and creating assignments/presentations. Accordingly, Ajayi and Adetayo (2005) argued that access to library's e-resources through modern ICT facilities would produce great thinkers and well taught Further Education (FE) graduates from Nigerian universities.

Conclusion

For sufficient and proper knowledge to be acquired by postgraduate students in Federal university libraries in Nigeria, use of e-resources is necessary and important. This would make them have full mastery of their specialisation in addition to making them viable human resources for the development of the society. Certainly, e-resources are provided in the University libraries with the plan of having relevant and fast retrieval of information for the postgraduate students. Though, it was noted that due to lack of ICT access in the libraries the e-resources were not fully retrieved and used for their research and other scholastic works. Therefore, lack of ICT access for postgraduate students should be viewed as obstacle that should be overcome so that they can influence the students to fully optimise and benefit from the e-resources provided in the university libraries. Once this factor is willingly provided in the federal university libraries in Nigeria, their level of use of e-resources would enlarge with equivalent increase in knowledge and general holistic development.

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