AVAILABILITY, ACCESS AND USE OF ELECTRONIC INFORMATION RESOURCES IN TERTIARY INSTITUTIONS OF ANAMBRA STATE, NIGERIA

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Abstract

This study is on the availability, access, and use of electronic information resources in tertiary institutions in Anambra State, Nigeria. The study employed a descriptive survey design. Two hundred and twenty-five undergraduate students and seventy-nine lecturers from tertiary institutions in Anambra State were used for the study. Observational Checklist and Questionnaire on Electronic Information Resources (EIR) were the instruments used to collect data for the study. Five research questions were answered and three hypotheses were tested. The data were analyzed using frequency percent, mean and standard deviation and Independent Samples t-test. The result showed that Most EIR facilities are not available in most tertiary institutions in Anambra state; the EIRs are not thoroughly accessible by lecturers and students in tertiary institutions of Anambra state; there was no significant difference in mean rating scores for lecturers (M=2.49, SD=.73) and students (M=2.51, SD=.81), $t(.115) = 302$, $p = .909$ two-tailed on the use of EIR in tertiary institutions; there was no significant difference in mean rating scores for lecturers (M=3.19, SD=.73) and students (M=3.28, SD=.64), $t(.925) = 302$, $p = .356$ two-tailed on the reasons for using Electronic Information Resources in tertiary institutions and there was no significant difference in mean rating scores for lecturers (M=3.28, SD=.68) and students (M=3.38, SD=.61), $t(-1.27) = 302$, $p = .205$ two-tailed on the barriers to effective use of electronic information resources. Based on the findings and implications, it was recommended that schools should make extra efforts to source for the fund from both the government, cooperate organizations and alumni to adequately equip schools with ICT facilities that will help for effective use of EIR. It was suggested that the present study could be replicated in other tertiary institutions in Nigeria other than the ones used for this study.

Keyword: Availability, Access, Electronic, Information, Resources, Nigeria

Introduction

The advent of technology and its revolutionary improvement resulted in the growth of electronic information. Electronic information in the wake of the twentieth century has seen an improvement in both organizational performance and research output. This makes information

grow at a surprising rate in recent times in every human society. Thus, the world is indeed gradually becoming a global village. Thus, the globalization of technology has become the current trend in all phases of life. Technology as one of the elements of ICT provides and gives access to a quantum of information through researchable sites. The importance of technology can not be overemphasized especially in the educational system.

Technology has the potential to achieve the overall goals of education and that of society. This is largely so because both the goals of education and that of society are derived from the needs, problems, and wider aspirations of society. Technology generally is a body of knowledge or a set of tools that helps make things easier or resolve problems. Technology is the use of scientific knowledge for practical purposes or applications, whether in industry or everyday life (Ondari-Okemwa, 2014). Technology here involves equipment incredibly simple or complex including computers, MP3 players, radios, and televisions, laptops, among others. Technology provides the availability of information through electronic information resources.

Electronic resources can be defined as the storehouse of information preserved through modern ICT devices, refined and stored in cyberspace in the most concrete and compact form and can be accessed simultaneously from various points by many users. Electronic resources refer to those kinds of documents in digital formats which are made available to users through a computer-based information system. Electronic information resources include e-journals, e-reports, PDAs and PCs, e-conferences, e-books electronic databases for abstracting/indexing and citation databases and referencing tools. Electronic resources are information that can be assessed via the Internet.

There are pertinent roles electronic resources can play in the educational system. Dewett and Jones (2001) highlighted some of the important roles of electronic information resources to include: easy access to data, ensuring information efficiencies, codifying the knowledge base, promote efficiencies and innovation. Other benefits include greater speed, linkages and lower cost. There are also challenges and constraints to electronic information resource usage, especially in developing countries. Omeluzor, Akibu and Akinwole (2016) averred that in many developing countries, particularly in Africa, a lack of awareness about what EIRs are has become a major challenge. Thus, one could argue that the absence of e-resources and lack of understanding of these resources probably could contribute to a low level of education, especially in the rural areas. Poor internet connectivity is also a big challenge to the use of EIRs in many developing countries (Omeluzor et al, 2016). Both internet connection and electricity supply are most times epileptic. Limited access to EIRs, which stems from limited subscription to databases, is also another challenge among others in many developing countries. If the use of EIRs would become a reality in these countries, these issues must be properly addressed especially in tertiary institutions.

A tertiary institution, also known as a higher institution, refers to all post-secondary education, including both public and private universities, polytechnics, colleges of education, and mono-technics. It is instrumental in fostering growth, reducing poverty and boosting shared prosperity. Tertiary education benefits not just the individual, but society as well. It prepares individuals not only by providing them with adequate and relevant job skills but also by preparing them to be active members of their communities and societies. At the tertiary education level, computers and related electronic resources have come to play a central role.

Tertiary institutions in developing countries especially in Nigeria believe that educational developments offer rich opportunities to embed technological innovations within the learning environment. It makes developing countries strive to be equally competitive in international markets, with the zeal to use appropriate blends of technologies within their learning environment and consequently enhance their learning experiences. William (2012) stated that although many universities across the world have incorporated internet-based information learning systems, the success of their implementation requires an extensive understanding of the end-user acceptance process. Technological advances have led to the increase of electronically available information resources. There have been several changes in the higher education sector in Nigeria, especially at public tertiary institutions. These striking changes include how information is provided to the university community.

Many tertiary institutions in Nigeria disseminate information using an Electronic Hybrid Online Public Access Catalogue (OPAC). The major objectives of the adoption of e-resources in the education sector are to facilitate access to internet-based information resources, as well as the timely dissemination of both local and international research output through information resources.

Information resources are a complex varied set of goals, applications and services used for producing, distributing, processing and transforming information including telecommunications, television and radio broadcasting, hardware and software, computer services and electronic media (Kincheloe, 2014). Information resources are those materials, strategies, manipulations, apparatuses or consultations that help to enhance research and development. Information resources include all forms of information carriers that can be used to promote and encourage effective research activities and developmental projects. As stated by Allgood (2016) information resources are an indispensable part of the contemporary world and the pervasiveness of ICT has brought about a rapid technological, political, economic and educational transformation, through electronic information resources. Electronic information is a broad term that encompasses abstracting and indexing services, full-text materials such as newspapers and reference books, electronic journals, article delivery services and free resources on the Internet (Breaks, 2017). These electronic information resources can be accessed via electronic networks from third-party information providers or mounted locally within the institution.

Electronic Information Resources are those materials or services that require technology for access, manipulation or reproduction. Electronic Information Resources include websites, online databases, e-journals, electronic integrating resources and physical carriers in all formats whether free or fee-based require supporting research in the subject covered and maybe audio-visual and or text files (Bothmann & Holmberg, 2010). Electronic Information Resources is also defined as a work encoded and made available for access using a computer. It includes electronic data available by remote access and direct access (Denton & Coysh, 2014). An electronic information resource can also be any information source that provides access in an electronic format. They may come as full-text journals, newspapers, e-books, dictionaries, and encyclopaedias (Jay, Simpson, & Smith, 2012). According to Ekwelem, Okafor and Ukwuoma (2009), Electronic Information Resources can be accessed electronically through computer network facilities such as online library catalogues, the Internet, the World Wide Web, digital libraries, CD-ROM databases, and online academic databases. It is, therefore, the various

infrastructures used in the creation, processing, storage, and dissemination of information and various services rendered by these infrastructures in the libraries.

Electronic Information Resources (EIR) allows most institutions the opportunity to acquire literature securely and timely. Therefore, electronic resources provide access to unlimited sources of information through search engines, which are continuously being upgraded to provide an efficient way to help users find what they want. Electronic information sources generate opportunities to find new interests, activities and friends, which might be positive in terms of one's quality of life. According to Shuling (2017), electronic information has gradually become a major resource in every academic environment. The emergence of electronic information resources has tremendously transformed information accessibility and utilization in the academic environment. Park (2013) noted that by using electronic resources, researchers and students could have access to global information resources, particularly by using the internet for their scholarly intercourse. Electronic Information Resources are important to students in a tertiary institution because of their flexibility, and dynamism in information retrieval, storage and processing as they aid access to timely, accurate and relevant academic information (Adomi, Omodeko & Otolo, 2014). Based on the numerous importance of electronic recourses in education, there is a need to determine the availability, access, and use of EIR in tertiary institutions.

Availability and Accessibility of resources and information are imperative to the successful conduct of research. Moon, Hossain, Kang and Shin (2012) in discussing the role of access to information in education, opined that access to relevant information is necessary for academic staff to make an efficient decision in his/her research. This view is affirmed by Adeloye (2000) that access and use of information are needed "for problem-solving and decision-making" in the research process. Hoq (2012) also viewed the availability, access and use of information as being vital in educational activities. Aina (2012) in a discourse argued that access to information is critical in Africa. The availability of electronic information resources is the provision for and inclusion of the resources in the collection of information at the disposal of users in academic institutions. The availability of electronic resources provides authoritative, reliable, accurate and timely access to information (Roberts, 2005). In addition to this, the resources can enable innovation in teaching and increase timeliness in research. Available ICT and e-resources must be known to the users which implies that electronic resources must be made available in several brands to the users in different institutions. That is to say, that availability and access to electronic information resources influence academic activities in school.

However, poor accessibility of electronic information resources is a result of cyber restrictions, lack of guidance on use, server problems, slow connectivity and poor computer literacy skills. A report by Foster, Heppensta, Lazarz and Broug (2015) has revealed a low level of research productivity by academic staff in many African universities, especially in universities in Anambra State; which they attributed to the poor state of accessibility and utilization of electronic information resources. According to Foster *et al*., (2015), the low publication output from Nigerian universities is essentially linked to a lack of/inadequate accessibility and utilization of electronic information resources by academic staff in research. Frankor and Akussah (2012) affirmed that academic staff in African universities had little access to relevant and reliable information when making decisions on their research activities. Accessibility and utilization of

electronic information resources are enabled by the state of ICT or electronic information environment in a given institution.

Utilization is the action of making practical and effective use of the physical substance. According to Person (2013) utilization is an act of usage, or making practical and effective use of the material to achieve certain goals. Utilization in this study is using electronic information resources to support academic purposes. Okam (2017) stated that the use of electronic resources in tertiary institutions serves as strategies for achieving the policies of various educational commissions in different countries. The use of electronic resources also facilitates interaction and collaboration not only among learners but also lecturers at local and global levels. It enhances the performance of lecturers in terms of instructional delivery and provides students with maximum attention to meet through mail feedback facilities of social media for the attainment of national goals. A good number of researches in this technological age are anchored on the ability to use various electronic resources during information gathering. Indeed, lecturers and students use various means and methods to accomplish work through the utilization of electronic information resources such as computers, presentation software, animation, overhead projector, video, internet, mobile phone, CD ROM, interactive board, e-mail and network. Osakwe (2012) asserted that tertiary institutions in Nigeria face challenges in the utilization of electronic resources for research. These challenges could be a result of a lack of knowledge of the skills for utilization of electronic information resources, power outages, lack of proper management of e-resources, and lack of total commitment from students and lecturers (Jonathan, 2013). Other hindrances and challenges faced by users in the utilization of e-resources include lack of awareness, lack of information literacy skills necessary to search databases and lack of time, the challenge of locating "good citable stuff". Ozoemelem (2016) stated that users rarely access and make use of e-resources due to the high cost of the resources. Therefore, to ensure adequate access and proper utilization of Electronic Information Resources in tertiary institutions, electronic information resources need to be effectively managed.

This study in Anambra state investigated the availability, access and use of electronic information resources in tertiary institutions. The students and lecturers appear to be those who will benefit maximally from the use of these resources. Adu and Olatundun (2013) carried out a study on the use and availability of ICT in schools: strategies for school leaders. The study was carried out in Oyo State Nigeria. Results indicated that the internet was ranked most available and used in the university. Low level of usage of electronic resources, in particular, text databases is linked to several constraints: Interrupted power supply was ranked highest among other factors like speed and capacity of computers, retrieval of records with high recall and low precision, retrieving records relevant to information need, lack of knowledge of search techniques to retrieve information effectively, non-possession of requisite IT skills and problems accessing the internet. The study is related to the present study in terms of the design of the study and because e-resources are major ICT resources, but differs from the present study in terms of the area of the study and because the present study also looked at the access and use of EIRS in tertiary institutions.

Adeleke and Nwalo (2017) also carried out a study on the Availability, use and Constraints the use of electronic information resources by postgraduate students. The study recommended that the usage of electronic resources be made compulsory, intensifying awareness campaigns concerning the availability, training on the use of electronic resources and the problem

of power outages be addressed. Anderson (2011) investigated the availability and management of electronic information resources in scientific research. The result of the study showed that most of the electronic information resources are available for use in scientific research and management there are inadequate personnel to handle some of the available e-resources. This study is related to the present study in terms of the level of respondents and also it looks at the availability of e-resources which is one of the major variables of the present study, but differs in terms of the area of study and also because the present study looked at the accessibility and use of electronic information resources in tertiary institutions. Pereware (2016) investigated the Availability of Electronic Information Resource Databases in University Libraries in South-South, Nigeria. The findings of the study revealed, among others, that the majority of the EIR databases available in the federal and state university libraries in south-south, Nigeria were free-based databases. The nature and subscription of available EIR databases are very low. This study is related to the present study in terms of the design of the study. Another study was conducted by Nwabueze and Urhiewhu (2015) on the availability and use of digital information resources by undergraduates of universities in Delta and Edo states, Nigeria. The findings also revealed that students make use of DIRs to a low extent. The constraints encountered by students towards the accessibility of DIRs in the four libraries are epileptic power supply, non-availability of online databases, lack of formal training in Internet skills among students, slow bandwidth, network problems and server slowness.

A study was conducted by Emwanta and Nwalo (2014) on the influence of computer literacy and subject background on the use of electronic resources by undergraduate students in South-Western Nigeria. Results of the study revealed that 8 (7.1%) of the respondents at the Federal University of Technology Akure (FUTA) and 30 (19.0%) at the Obafemi Awolowo University, Ile-Ife (OAU), 30 (26.8%) of the respondents at FUTA and 32(20.3%) at OAU indicated that the internet is most useful in discovering literature relevant to their subject background. A study also was carried out by Thanuskodi (2012) on the use of e-resources by teachers and researchers at the Faculty of Arts in Annamalai University Nagar, India. The result of the study revealed that teachers and researchers are aware of the availability of e-resources but cannot properly access them due to some reasons. And the level of use is limited due to a lack of knowledge to carry out use effectively. Another study was carried out by Ozoemelem (2016) on the use of Electronic Resources by postgraduate students of the Department of Library and Information Science at Delta State University Abraka, Nigeria. The result of the study revealed that there is a low level of skillfulness in the use of electronic resources and that the internet is the most used medium for sourcing e-resources, though the usage of e-resources is quite high. The relationship between the study and the present study is in terms of the design of the study, method of data analysis, in terms of using electronic information resources, which is one of the variables of the present study. The two studies differ because the present study also investigates the availability and access of e-resources in tertiary institutions in Anambra State.

A study was investigated by Adeniran (2013) on the usage of electronic resources by undergraduate students at the Redeemer University Nigeria. The result of the study revealed that the use of e-resources has a tremendous impact on the academic performance of undergraduate students of the Redeemer's University and the need to acquire more skills in the use of e-resources. A study by Tyagi (2014) investigated an analytical study on the usage of electronic information resources at the Pharmacopoeia Libraries in India. The finding of the study revealed that pharmacopoeia libraries used electronic information resources to address issues relating to drug

indexes and compendia through online databases, e-journals and internet resources. The study relates to the present study in terms of the use of electronic information resources, design of the study and method of data analysis but differ in terms of location and level of users. Also, the present study looks into the accessibility of e-resources. Shaqour and Daher (2010) carried out a study on the factors influencing students' use of electronic resources. The purpose of the study was to verify the influences of first-degree university student's use of electronic resources and their opinion regarding the use. Okite-Amughoro (2014) investigated the use of electronic information resources for academic research by postgraduate students at Delta State University, Abraka, Niger. The findings of the study showed that postgraduate students at Delta State University are aware of the existence of EIR, but the optimal use of these resources is hampered by limited access to some EIR due to lack of information searching skills, limited space, low bandwidth and erratic power supply. This study is related to the present study in terms of utilization of EIR in tertiary institutions but differs because the present students also looked at the availability and accessibility of EIR in tertiary institutions. Owolabi, Ajiboye**,** Lawal and Okpeh (2012) carried out a study on the use of Electronic Information Sources (EIS) by Faculty Members in Nigerian Universities. The study found that the majority of the academic staff is always using Electronic sources. It was also discovered that the main objective of using EIRs is to support the academic staff in carrying out research since they are in academic environments they are expected to conduct research for their promotions and also as their contribution to knowledge. Kumar and Singh (2011) investigated access and use of electronic information resources by scientists of the National Physical Laboratory in India. The study is a case study. The study determined the usefulness of e-resources to the scientists of the National Physical Laboratory, New Delhi, India and their skills in using various search methods and techniques to access and utilize these resources. This study is related to the present study in terms of accessibility and utilization of EIR in tertiary institutions but differs because the present students also looked at the availability and use of EIR for research in tertiary institutions. Ekwelem, Okafor and Ukoma (2009) carried out a study on students' use of electronic information resources at the University of Nigeria, Nsukka. Findings from the study revealed that 52.3% of the respondents agreed that EIS provides reliable access to information resources while 92.5% of the respondents rated the internet as the most preferred EIS and the barriers to the effective use of EIS by students include, finance, inadequate skill and epileptic power supply.

The National Universities Commission (NUC) and other educational bodies in Nigeria have a goal to enforce the policy that all tertiary institutions in Nigeria must be equipped with information and communication technology facilities. In this regard, it has encouraged the use of electronic information resources for the facilitation of the educational process. There are several measures by the government and well-minded individuals to provide these facilities to tertiary institutions, especially in Anambra State to encourage and support the use of these electronic information resources for instruction, research, data management, and management of the process of education.

Despite the said government and other bodies' efforts, the tertiary institutions in Anambra state have not benefited maximally from the efficacies of these resources. There is still low manpower, knowledge, and skills in the area of use, and access to these resources. Where the resources are available they are greatly underutilized by lecturers and students. Some studies have

acknowledged that there exists a gap in the availability, access and use of electronic information resources in tertiary institutions in Anambra State.

Should the missing gap persist, NUC and other educational bodies' goals to actualize the use of these resources for the facilitation of the educational process may be difficult to achieve. A need, therefore, arises to explore why there is a persistent problem with the availability, access and use of electronic information resources in tertiary institutions in Anambra state despite NUC and other bodies' efforts. This study has both practical and theoretical significance. Theoretically, this study is anchored on the Technology Acceptance Model by Davis, Bagozzi, & Warshaw (1989). The theory states that the inclusion of technology in the teaching-learning processes must come before the user accepts the technology. This means that it could be of relevance with the use of EIR in teaching students and increases understanding of those with low attaining intelligence quotient. The theory forms the basis for the availability, access and use of electronic information resources. This is because it allows the users to have access to and effectively use e-resources to get useful information by themselves and if this is achieved, the students will come to accept this innovation, that is (information gotten through electronic means), and could improve their interest in learning. It would increase the users' strength in constructing knowledge and inclusion of ideas, which creates permanence and functionality of knowledge, especially when the environment for it is suitable. Hence the findings of this study could help to validate the technology acceptance model.

Practically, it is hoped that the following people will benefit from the findings of this study: the National University Commission (NUC), the National Board for Technical Education (NBTE), the National Commission for Colleges of Education (NCCE), lecturers and students.

The main purpose of this study explore the Availability, Accessibility, and Utilization of Electronic Information Resources in tertiary institutions of Anambra State, Nigeria.

The study adopted a descriptive survey design. Descriptive design is a type of research design that involves the collection of information from a sample of the population through their responses to questions (Ali, 2006). It is an efficient method for systematically collecting data from a broad spectrum of individuals and educational settings. This design is considered appropriate because it generally satisfies the characteristics of descriptive survey research methods in which the researcher investigates, identifies, determines or describes situations or events as they are and this study aims at collecting data and describing it systematically to show the characteristic features or fact about a given population.

The sample for this study comprised 225 final-year undergraduate students and 79 lecturers summing up 304 respondents from four tertiary institutions in Anambra State. The researcher sampled all the final year students from four tertiary institutions that are, two from public tertiary institutions and two from private tertiary institutions in Anambra State. The institutions are Nnamdi Azikiwe University, Awka180; Tansian University, Umunya 120; Federal Polytechnic, Oko 148; and Divine Mercy College of Education, Nnobi 70; and 79 lecturers. The researcher used a Taro Yamane formula for calculating the sample sizes of the four selected tertiary institutions and used a stratum random sample to calculate the sample size of each of the institutions. The 79 lecturers were drawn from the four tertiary institutions using simple random sampling techniques

(balloting without replacement). For the undergraduate students, only the students who have already started writing their final year project were purposively sampled for this study, making a total of 304 respondents for the study.

Results

Data in Table 1 on available electronic information resources in tertiary institutions in Anambra state showed that out of the 26 EIR facilities listed, items 9,11,12, and 14 of EIR facilities are highly available with a real limit scale of 76-100; items 1,3,5,8,13, 18 and 20 are available with a real limit of 50-75; while items 2,4,6,7,10,15,16,17,19,21,22,23,24,25 and 26 are not available with a real limit of 1-25. This showed that most EIR facilities are not available in tertiary institutions in Anambra State.

Table 1: Frequency (F) and Percentage (%) of Available Electronic Information Resources in Tertiary Institutions in Anambra State

S/N	Items	F	%	Decision
1.	Electronic journals (e-Journals) examples	2	50	A
2.	E-conference proceedings	0	0	NA
3.	Electronic books (e-books)	2	50	A
4.	E-Reference	1	25	NA
5.	E-newspapers	2	50	A
6.	E-lecture notes PPts	0	0	NA
7.	E-indexes	1	25	NA
8.	E-abstracts	2	50	A
9.	Electronic Dictionaries	4	100	HA
10.	E-listserv, discussion groups	0	0	NA
11.	E-Academic Purposes Reports	4	100	HA
12.	Databases	4	100	HA
13.	E-projects/thesis	2	50	A
14.	E-mail	4	100	HA
15.	E-Video/Picture/Image/Graphics files e.g. YouTube	0	0	NA
16.	E-data archives	0	0	NA
17.	E-zines	1	1	NA
18.	Web Rings	3	75	A
19.	Library Networks	1	25	NA
20.	Websites	2	50	A
21.	Digital Archives	0	0	NA
22.	Bulletin Boards	0	0	NA
23.	Virtual Conferences	0	0	NA
24.	Web Exhibitions	1	25	NA
25.	Virtual Help Desks	0	0	NA
26.	E-prints	0	0	NA

Key: *=F Frequency; % = Percentage: N=Number of the Respondents =4; Highly Available (**HA**); Available (**A**); Fairly Available (**FA**) and Not Available (**NA**).*

Data in Table 2 on how accessible are electronic information resources in tertiary institutions in Anambra state showed that items 29,31,35,39,40,41, and 46 are highly accessible within the real

limit scale of 76-100-, while items 30,34,45,21, and 48 are accessible within the real limit scale of 50-75, items 27 and 28 are fairly accessible within the real limit scale of 26-49, And items 32,33,36,37,38,16,42,44,23,49,51, and 52 are not accessible within the real limit scale of 1-25 respectively. This indicates that the EIRs are not thoroughly accessible to students and lecturers in Anambra state tertiary institutions.

Table 2: Frequency (F) and Percentage (%) of Accessibility Electronic Information Resources in Tertiary Institutions in Anambra State (N = 304)

S/N	Items	F	%	Decision
27.	Electronic journals (e-Journals) examples	125	41.1	FA
28.	E-conference proceedings	137	45.1	FA
29.	Electronic books (e-books)	244	80.3	HA
30	E-Reference	211	69.4	A
31.	E-newspapers	266	87.5	HA
32.	E-lecture notes PPts	77	25.3	NA
33.	E-indexes	50	16.4	NA
34.	E-abstracts	268	88.2	HA
35.	Electronic Dictionaries	206	67.8	A
36.	E-listserv, discussion groups	26	8.6	NA
37.	E-Academic Purposes Reports	17	5.6	NA
38.	Databases	12	3.9	NA
39.	E-projects/thesis	234	77.0	HA
40.	E-mail	281	92.4	HA
41.	E-Video/Picture/Image/Graphics files e.g. YouTube	256	84.2	HA
42.	E-data archives	28	9.2	NA
43.	E-zines	16	5.3	NA
44.	Web Rings	24	7.9	NA
45.	Library Networks	206	67.8	A
46.	Websites	284	93.4	HA
47.	Digital Archives	161	53.0	A
48.	Bulletin Boards	200	65.8	A
49.	Virtual Conferences	21	6.9	NA
50.	Web Exhibitions	13	4.3	NA
51.	Virtual Help Desks	74	24.3	NA
52.	E-prints	4	1.3	NA

Key: *=F Frequency; % = Percentage: N=Number of the Respondents =304; Highly Accessible (**HA**); Accessible (**A**); Fairly Accessible (**FA**) and Not Accessible (**NA**).*

Measures of central tendency were computed to summarize the data for the lecturers and students on the uses of electronic information resources in tertiary institutions in Anambra state in Table 3. Measures of dispersion were computed to understand the variability of scores for the use of electronic information resources variable. The following are the results of this analysis; items 53 to 69 had mean ratings of 1.78, 1.67, 1.73, 1,85, 2.19, 2.44, 2.57, 2.62, 2.74, 2.72, 2.83, 2.85, 2.87, 2.90, 2.84, 2.93, 2.91 and standard deviation of 1.03, .93, .98, 1.07, 1.17, 1.16, 1.14, 1.12, 1.09, 1.09, 1.05, 1.05, 1.02, 1.02, 1.02, 1.05, 1.05 respectively. The cluster mean of 2.50 indicated that

the lecturers and students in tertiary institutions in Anambra state use electronic information resources. However, based on the small standard deviation of .75, the scores did not vary.

Table 3: Mean ($\bar{x}$) and Standard Deviation (SD) on the uses of electronic information resources by lecturers and students in tertiary institutions (N = 304)

		Lecturers		Students		Grand		Decision
S/N	**Items**	$\bar{x}$	**SD**	$\bar{x}$	**SD**	$\bar{x}$	**SD**	
53.	To provide an overview of the research activity	1.78	1.05	1.78	1.02	1.78	1.03	D
54.	Current awareness purposes	1.72	1.02	1.66	.89	1.67	.93	D
55.	To read a biography of educators	1.71	1.06	1.73	.94	1.73	.98	D
56.	Carrying out assignments	1.89	1.17	1.84	1.04	1.85	1.07	D
57.	E-mail purposes	2.18	1.19	2.20	1.16	2.19	1.17	D
58.	News updates	2.37	1.19	2.47	1.16	2.44	1.16	D
59.	For up-to-date information	2.47	1.22	2.60	1.11	2.57	1.14	A
60.	For teaching during group discussion	2.49	1.21	2.66	1.08	2.62	1.12	A
61.	For writing articles for publication	2.68	1.14	2.76	1.07	2.74	1.09	A
62.	To update subject knowledge	2.72	1.13	2.72	1.08	2.72	1.09	A
63.	For academic information purposes	2.89	1.06	2.81	1.05	2.83	1.05	A
64.	For reference purposes	2.92	1.05	2.82	1.05	2.85	1.05	A
65.	For career development	2.91	1.10	2.85	.99	2.87	1.02	A
66.	For quiz	2.94	1.07	2.89	1.00	2.90	1.02	A
67.	For forum	2.91	1.06	2.96	1.00	2.94	1.02	A
68.	For survey	2.99	1.08	2.92	1.00	2.93	1.02	A
69.	For blogs	2.85	1.17	2.93	1.00	2.91	1.05	A
	Cluster mean	2.49	.81	2.51	.72	2.50	.75	A

Key: *$\bar{X}$ = Mean; SD = standard deviation: N=Number of the Respondents =304* Strongly Agree (SA) = 3.50-4.00, Agree (A) = 2.50-3.49, Disagree (D) =1.50-2.49 and Strongly Disagree (SD) = 0.50-1.49

Measures of central tendency were computed to summarize the data for the lecturers and students on barriers to effective use of electronic information resources in Anambra State in Table 4. Measures of dispersion were computed to understand the variability of scores for the barriers to effective use of electronic information resources variable. The following are the results of this analysis; items 83 to 897 had mean ratings of 3.37, 3.38, 3.17, 3.20, 3.30, 3.33, 3.31, 3.34, 3.33, 3.35, 3.41, 3.34, 3.37, 3.38 and standard deviation of .77, .82, .94, .91, .90, .82, .81, .86, .78, .80, .79, .77, .82, respectively. The cluster mean of 3.32 indicated that the lecturers and students in tertiary institutions in Anambra state agree on barriers to the effective use of electronic information resources. However, based on the small standard deviation of .65, the scores did not vary.

Table 4: Mean ($\bar{x}$) and Standard Deviation (SD) on the barriers to effective use of Electronic Information Resources in Tertiary Institutions

		Lecturers		Students		Grand		Decision
S/N	**Items**	$\bar{x}$	**SD**	$\bar{x}$	**SD**	$\bar{x}$	**SD**	
70.	Inadequate access to EIR	3.34	.78	3.41	.76	3.37	.77	A
71.	Lack of experience in the use of EIR	3.36	.82	3.39	.82	3.38	.82	A

72.	Unstable power supply	3.14	.98	3.23	.88	3.17	.94	A
73.	High cost of access to EIR	3.15	.96	3.27	.85	3.20	.91	A
74.	Poor management of information resources	3.26	.94	3.27	.85	3.26	.90	A
75.	Lack of awareness of the availability of EIR	3.25	.86	3.37	.76	3.30	.82	A
76.	Poor internet connectivity	3.27	.88	3.39	.74	3.33	.81	A
77.	Lack of professional training on the use of EIR	3.24	.93	3.39	.76	3.31	.86	A
78.	Non-subscription for relevant online resources	3.28	.82	3.40	.72	3.34	.78	A
79.	Insufficient electronic resources	3.30	.86	3.37	.73	3.33	.80	A
80.	Lack of campus-wide connectivity to the internet	3.30	.83	3.41	.73	3.35	.79	A
81.	Inability to master the required ICT skills for using EIR	3.36	.80	3.48	.73	3.41	.77	A
82.	Lack of adequate training facilities on EIR	3.26	.86	3.43	.75	3.34	.82	A
83.	Lack of sustained interest amongst staff and users	3.34	.78	3.41	.76	3.37	.77	A
84.	Improper orientation on the use of EIR	3.36	.82	3.39	.82	3.38	.81	A
	Cluster mean	3.28	.68	3.38	.61	3.32	.65	A

Key: *X = Mean; SD = standard deviation: N=Number of the Respondents =304*

Data in Table 5 showed an independent-sample t-test conducted to compare the mean rating of lecturers and students on the use of EIR in tertiary institutions. The result showed that there is no significant difference in the mean rating scores for lecturers (M=2.49, SD=.73) and students (M=2.51, SD=.81), $t(.115) = 302$, $P = .909$ two-tailed. The null hypothesis was, therefore; not rejected indicating that there is no significant difference in the uses of electronic information resources for both lecturers and students.

Table 5: t-test on the mean ratings of lecturers and students on the uses of electronic information resources in tertiary institutions in Anambra State

Respondents	N	Mean ($\bar{X}$)	SD	t	df	Sig	Decision
Lecturers	79	2.49	.73	.115	302	.909	NS
Students	225	2.51	.81				

Data in Table 6 showed an independent-sample t-test conducted to compare the mean rating of lecturers and students on the barriers to effective use of electronic information resources. The result showed that there was no significant difference in mean rating scores for lecturers (M=3.28, SD=.68) and students (M=3.38, SD=.61), $t(-1.27) = 302$, $P = .205$ two-tailed. The null hypothesis was, therefore, not rejected indicating that both lecturers and students encounter similar problems to the effective use of electronic information resources.

Table 6: t-test on the mean ratings of lecturers and students on the barriers to effective use of electronic information resources

Respondents	N	Mean ($\bar{X}$)	SD	t	Df	Sig	Decision
Public	170	3.28	.68	-1.27	302	.205	NS
Private	134	3.38	.61				

Conclusion

From the result obtained in the study, it was seen that most of the EIR facilities are not available in tertiary institutions. The EIR facilities are fairly accessed by both lecturers and students at a minimum level. Students slightly had a higher mean rating than their lecturers on the use of EIR in tertiary institutions and both students and lecturers differ on how they use these facilities. Students and lecturers agree on the reasons for using EIR in tertiary institutions and the test of hypothesis showed that there is no significant difference in their reasons for using EIR. Lastly, the respondents accepted that both lecturers and students in Anambra state tertiary institutions are faced with similar problems outlined as barriers to the effective use of EIR. The corresponding hypothesis showed that there is no significant difference between lecturers and students on the barriers to the effective use of electronic information resources.

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