

## Full Length Research

# Comparative Study of Electronic Information Resources Usage in Public and Private Universities.

Adaeze Nwona Nzewi PhD(CLN)

Medical library, College of Health Sciences and Technology, Nnamdi Azikiwe University, Nnewi Campus

Accepted 22 February 2024

The study was carried out to examine comparative study of electronic information resources usage in public and private universities. The study was guided by five research questions and four null hypotheses formulated and tested at 0.05 level of significance. The study adopted comparative research design, the population of the study was 8,563 comprising 2,524 undergraduates' in two Public Universities and two Private Universities and 6,039 undergraduates in Anambra State, Nigeria. The Universities used for the Study are NnamdiAzikiwe University, Awka; Chukwuemka Odumegwu Ojukwu University, U/Igbariam; Legacy University Okija; and Paul University, Awka. The sample of this study was 428 comprising 302 undergraduate students in public universities and 126 undergraduate students in private universities. The instrument for data collection was researcher designed questionnaire titled "Undergraduates' Use of Electronic Information Resources Questionnaire (UUEIRQ)". The instrument were validated by four lecturers, one from each university. The reliability of the instrument was 0.79 which was determined using Cronbach Alpha statistic. The data were collected through the administration of 428 copies of the questionnaire to respondents and 405 copies were retrieved completely filled and used for data analyses representing 95% rate of returns which include: 284 public and 121 private university students. The research questions were answered using frequency count, percentages, mean and standard deviation and the null hypotheses were tested using the t-test statistic. The result of the data analyses revealed that: Undergraduate students to a high extent access EIRs in private university libraries and low extent in public university libraries. The undergraduate students to a high extent utilized EIRs in private university library and to a low extent in public university libraries. The challenges of the use of EIRs among undergraduate students in public and private university libraries include: unfriendly user interface, inadequate electronic information gadgets, and slow internet network connectivity among others. From the findings, recommendations were made.

**Keywords:** Electronic Information Resources, Usage, Public Private, and Universities

**Cite This Article As:** Nzewi, A.N. (2024). Comparative Study of Electronic Information Resources Usage in Public and Private Universities. *Inter. J. Acad. Res. Educ. Rev.* 12(1): 17-26

## INTRODUCTION

Information is the life-wire of any developed society most especially the university environment and its utilization is as old as man. Information technology has a great influence in all aspects of librarianship and information service delivery. The evolution of information technology in the 21<sup>st</sup> century has influenced undergraduate students' use of information resources. Today, many students access information electronically through the Internet using desktop, laptop, palmtop and mobile phones. Electronic information resources supply all the information that a library provides through computer network. These include electronic journals, books, databases, library web pages articles from magazines, bibliographies,

encyclopedias, pamphlets among other resources that are accessed on electronic media (Biokuromoye, Victor & Ebhomeya, 2014).

Electronic information resources (EIR) refer to those materials that require computer access, whether through a personal computer, mainframe, or handheld mobile devices in order to disseminate information. They may either be accessed remotely via the Internet or locally (International Federation of Library Associations and Institutions (IFLA), 2012). Dhanavandan and Tamizhchelva (2012). It is also define an electronic information resource as a resource which requires computer access or any electronic product that delivers a collection of data, be it text referring to full text basis, electronic journals, image collections, other multimedia products and numerical, graphical or time based, as a commercially available title that has been published with an aim to being marketed. These may be delivered on CD ROM, on tape, via Internet. A number of techniques about related standards have been developed which allow documents to be created and distributed in electronic form. IFLA (2012) in support of the above definition, defines electronic resource as any work encoded and made available for access through the use of a computer. It include electronic data available by remote access and direct access (fixed media). In other words; remote access (electronic resources) refers to the use of electronic resources via computer networks. Direct Access (electronic resources) refers to the use of electronic resources via carriers (discs/disks, cassettes, cartridges) designed to be inserted into a computerized device or its auxiliary equipment.

Recent technologies have enabled new forms of handling information and have created more dynamic and flexible tools for managing and making it accessible than the print formats. This has created a major shift from the traditional set up of library which focuses on the physical collection of information resources, to a stage where information is predominantly stored in digital formats. This advancement has caused changes both in the way users' access information and the way libraries provide and manage resources. (Luka, 2015). Electronic information resources (EIR) are information materials in the library that can only be accessed electronically, with the use of Information and Communication Technology (ICT) facilities (Ukachi, 2013). Electronic information resources that are often consulted in the University libraries include: Internet, CD-ROM databases, online databases, Online Public Access Catalogues (OPACs), electronic journals, electronic books and digitized materials. Multiple access speed, richer in content, reuse, timeliness and anywhere access are some of the features of electronic information resources. Electronic information resources according to Ani, Ngulube and Onyancha (2014) are simply referred to as electronic resources or e-resources; they are information stored in electronic format in computer or computer related facilities (CD-ROMs, digital libraries or the Internet). The use of electronic information resources is a factor that considers largely the influence in the nature of electronic information environment that is available by the state of ICT in a given University.

Therefore availability and use of EIRs is vital in enhancing students' academic work. Thus, Obande and Abdulsalami (2020) define use as an act or instance of making practical or application of something for a given purpose. It is also describe as to put or bring into action or service or apply to a given purpose. In the context of this study, use can be described as adoption of EIRs by undergraduates in university libraries for academic purposes.

In recent time, there has been the need of electronic information resources (EIRs) in university libraries to meet up with the objective of their parent institutions. Electronic information resources are invaluable tools for study, learning and research (Togia and Tsigilis, 2009). For any university library to thrive in this information age, the library irrespective of the size of its collection must embrace Information Communication Technology. Online dictionary of library and information science (2014) defines electronic information resources as materials consisting of data and/or computer program(s) encoded for reading and manipulation by a computer, such as a CD-Rom drive or remotely via network such as the Internet by use of a peripheral device directly connected to the computer. In this present day and age, information retrieval and dissemination has improved drastically with the help of information, communication and technology (ICT). Hence, users do not necessarily come physically to the library to use the print resources (e.g. books, journals, magazine, etc) but they can access these same resources in electronic form via the Internet in their offices, homes, schools, etc. With advances in ICT and e-publishing, online databases, such as Emerald insight, Ebscohost, TEEEL, Science Direct, OARE Sciences, HINARI, Academic Search Premier, online public access catalogue (OPAC), CD-ROMs, , e-journals, e-books collections on various subjects and so on can be accessed and help overcome the usual barriers of accessibility, time and space (Prangya & Rabindra, 2013; Sharma, 2009).

According to Ayeni, Omoba, Tella and Tella (2007), electronic information resources have many roles and benefits that can positively impact performance of students and researchers in the university as well as other advanced institutions of learning. It is important that students are familiar with the use of electronic information resources for faster and more efficient use of the library. It is evident that electronic information resources facilitate the libraries to get the benefits of large number of resources at an affordable cost and in minimal time. Moreover, the technology has changed the expectations of users, their patience, and their willingness to accept services that are available on demand worldwide. Electronic information resources are the answer to the expectations of the users (Ani, 2013). Electronic information resources use, no doubt, has myriad advantages for libraries as users/undergraduate students now access

information resources across the globe without restriction which was practically impossible in the past.

University library is one of the libraries categorized under academic libraries in institutions of higher learning. The term university library, according to Edoka, in Edem and Egbe (2016), is a generic name used to refer to all libraries located in universities. It also refers to as the bosom of the university using the material and human resources at its disposal to support teaching, learning and research objectives of the institution both in public and private universities. Public university libraries are the libraries found in public university environment to serve the university community. These libraries are established and funded by governments. The public university libraries are established to provide relevant information and quality services necessary for sustaining teaching, learning and research activities in realization of its role as the only place which can take care of students as well as teachers regarding to their educational needs in the public universities (Akwang, 2013).

Similarly, private university libraries are simply those libraries established in the private universities to support teaching, learning and research. These universities are established by individuals, groups, church and private organizations whose funding comes from tuition, investments, and private donors, not from taxpayers. The private university libraries stock a wide range of print and non-print resources on various discipline offered in the university (Udoh, 2012). This implies that university libraries with the available resources and service provide opportunity to all students, lecturers, researchers and non-teaching staff to meet their information needs manually or computerized (Abinew & Vuda, 2013).

University library computerization has greatly influenced the way information is being used. Libraries and information centers are becoming more attractive as a result of Information and Communication Technologies (ICTs) that have broken every barrier that hinders access to information. Abinew and Vuda (2013) opine that libraries have transformed into digital and virtual libraries where books, journals and magazines have changed into e-books, e-journals, and e-magazines. This has increased the global dissemination of information.

Undergraduates are students, male and female in tertiary institutions undergoing courses in different disciplines to obtain bachelor's degree. In this context, tertiary institutions are universities which are the focus of this research. The undergraduates learn as well as carryout research as one of the requirements for the courses they offer. For effective learning and research, university library serves the undergraduates' relevant information in electronic format. They use the relevant information for class assignments, seminars, term papers and projects. The undergraduates also use information to satisfy their social and psychological needs as well as recreation or leisure purpose. Hence, the need to examine comparative study of electronic information resources usage in public and private universities in Anambra State, Nigeria.

## Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

**H01:** *There is no significant difference between the mean responses of undergraduate students of public and private universities on the extent students access electronic information resources.*

**H02:** *There is no significant difference between the mean responses of undergraduate students of public and private universities on the extent to which students use electronic information resources.*

**H03:** *There is no significant difference between the mean responses of undergraduate students of public and private universities on the challenges of the use of electronic information resources.*

## Review of Related Literature

The various types of electronic information resources in university libraries such as electronic books, journals, online database, CD ROOM database, digital institutional repository, digital library and virtual libraries are discussed below:

**Electronic books:** Libraries now provides access to a variety of electronic books, as well as the other printed works (such as essays, poems, or historical documents). Some of these electronic books and texts are part of large, searchable databases which enable users (undergraduates) to access books through electronic forms (Quadri, Adetimirin & Idowu, 2014).

**Electronic journals:** Most of the university libraries now have an offline e-Journals Database to help you find journal materials that are useful to users and an online version of e-journals which the library subscribe to have access to current journal publication (Ankrah & Atuase, 2018).

**Online database:** Is a web-based filing system designed to store information. It is a database accessible from a network, including from the Internet. Most university libraries subscribe to online databases of books and journals that are relevant to the university curriculum which will help to facilitate teaching and learning in the university environment (Ankrah & Atuase, 2018).

Online sources: These are materials that are available online. It can be an online magazine or newspaper, television website such as NBC or CNN. Peer-reviewed journals, webpages, forums and blogs are also online sources. Some other names for online sources are 'electronic' sources, 'web' sources and 'internet' sources. These are very useful electronic information resources which many libraries are now making available to satisfy the urgent needs of their user community (Omeluzor, Saturday & Ogo, 2018).

**CD-ROM database:** The name is an acronym for "Compact Disc Read-Only Memory". This implies that computers can read CD-ROMs, but cannot write on the CD-ROMs which are not writable or erasable. Until the mid-2000s, CD-ROMs were popularly used to distribute software for computers and video game consoles. Some CDs, called enhanced CDs, hold both computer data and audio with the latter capable of being played on a CD player, while data (such as software or digital video) is only usable on a computer which university now used to store valuable data for use by the librarians or library users (Amankwah, 2014).

**Digital institutional repository:** Is an institutional repositories digital collections used in capturing and preserving the intellectual output of a single or multi-university community which provide a compelling response to strategic issues facing academic institutions. Joseph (2014), explains that "this is an online, searchable, web-accessible database containing intellectual works by scholars and researchers organized to increase access to scholarship and ensure their long term preservation.

**Digital library:** This library may be perceived as an information service or a collection of electronic information resources, in which all the information resources are available in computer process able form. Mutula and Ojedokun (2016) identify examples of digital libraries to include; Bartleby Library, Great Books Online (<http://www.bartleby.com>), Library of Congress (<http://www.loc.gov>) and New York Public Library (<http://digital.nypl.org>).

**Virtual libraries:** These libraries refer to an information service or collection of electronic resources whose collections are entirely in virtual or digital form and information is accessed over a network. Such a library provides access to virtual indexes, catalogues, and books. These types of libraries do not have physical space, where users visit to access information resources (Amankwah, 2014).

The advent of electronic information resources has been a blessing to libraries and information centers. According to Schutte (2014), utilization of electronic information resources and services has led to the shift from an emphasis on the book and journal collection to an emphasis on information services. Use of EIRs affords researchers and undergraduates the opportunity to have access to global information resources, especially the Internet for their school work. Undergraduate students in university libraries make use of EIRs for many purposes mostly for academic purposes that is, retrieving current literature for studies and preparing for examinations, doing class assignments, carrying out research projects, and communicating and collaborating with peers and teachers via the Internet on e-mail or by following blog discussions (Adeniran, 2013). Undergraduate students use e-books and e-journal articles to acquire knowledge and carry out research work (Ajayi, Shorunke & Aboyade, 2014). Course materials are provided on CD-ROM for students' use which helps them to use EIR at their convenient time. With the emergence of ICT, EIRs have become widely used and accepted among undergraduates and have increased tremendously in volume around the globe (Oyedapo & Ojo, 2013). All these resources have really improved the quality of education as this is evident in the literature.

However, literature has revealed low usage of EIRs by undergraduates in Nigeria (Omoike, 2013). The uses of EIRs have become necessary in the academic environment as they serve as motivating factors to users by providing opportunities to share, acquire, transfer and disseminate information on any subject of concern. Electronic information resources provision makes it possible for users to access new tools and applications for information seeking and retrieval. E-resources have become invaluable research tools that complement the print collection in the traditional library setting.

OPAC is another EIR used by undergraduates as means of getting access to library collection. With OPAC, library undergraduates can locate information resources they need in the library easily. It improves searching capabilities of the library resources because information resources can be located as easy as possible compared to the traditional card catalogue. With the help of OPAC, undergraduates can browse online the physical collection of the library anywhere

regardless of their geographical location (Obuh, 2011). Thus, this initiative has saved their time and cost of travelling from their remote locations and reduce the number of physical presence in the library. Therefore, by using the library OPAC, students can access bibliographical records of variety of information resources independently without looking for assistance from the library staff or a colleague and without being necessarily present in the library since they can access it from their remote locations using computer, Ipad, smart phones or other electronic devices (Obuh, 2011).

The manual system of searching for information resources does not permit multiple access and usage of the same information resources by different users unlike online services. It is worthy of note that, EIRs are of great importance to the academic and research needs of undergraduate students in university libraries since they are available in various formats (Fabunmi, Paris & Fabunmi, 2016).

In the same vein, due to the several advantages of EIRs such as their timeliness, search facilities, remote access and up-datedness, they have become more indispensable after the arrival of the Internet in the academic environment. The provision of EIRs in tertiary institutions of learning is a new way of gaining quick access to a great number of research information globally (Aina, Okunnu, & Dapo-Asaju, 2014). As a result of the potential benefits offered, they have been embraced by university libraries. Undergraduates would benefit from the EIRs if they are well harnessed as they will provide excellent opportunities to access scholarly information which are beyond the reach of libraries due to geographical barriers and limited finances.

Use of Electronic information resources (EIRs) has become inevitable for undergraduates in the digital age, given the volume of academic materials that are available in EIRs. Even though university libraries conduct workshops and seminars to sensitize undergraduate students on the use of electronic information resources that are available in Ahmadu Bello University library, the literature has established that their use by undergraduate students have been very low (Aina, Okunnu, & Dapo-Asaju, 2014).

It is important to note at this point that the undergraduates in the universities today use electronic information resources and services much more than any other category of library users in the university. This is because they are more computer literate, considering the impact of the computer age on them (Oyededeji, 2016). This is supported by Scoyoc and Cason (2016) that the vast majority of undergraduates of all categories turn to the computer services like the Internet for their academic works. Schayan (2017) states that "the way undergraduates who were once used to read through books page by page have now turned to the Internet for their academic needs is unimaginable. Ezeji (2018) maintains that undergraduates of all categories in one way or the other use computer and other electronic information resources for their academic work.

Students in universities find electronic information resources useful because they are time saving. Adomi, Omodeko and Otolu (2014) assert that students have to access the Internet to supplement notes given to them by lecturers, to complete class assignment, write the project and to communicate via e-mail. In this regard, Temopir (2015) opined that it is clear that there is increase in the use and services of electronic information resources because of the advancement in technology and vast development of information resource all over the world.

## **METHODOLOGY**

The design of the study was comparative research design. Anaekwe (2002) states that comparative research design is concern with comparing two groups in an attempt to draw a conclusion. The comparative research design is chosen because it enable the researcher to collect and describe systematically the data on undergraduates' use of electronic information resources (EIRs) in public and private university libraries in Anambra State, Nigeria. The Universities used for the Study are Nnamdi Azikiwe University, Awka; Chukwuemka Odumegwu Ojukwu University, Legacy University Okija and Paul University, Awka. The population of the study was 8,563 comprising 6,039 undergraduates in two public universities and 2,524 undergraduates in two private universities, Anambra State, Nigeria. This number consists of duly registered undergraduate students in 2020/2021 academic session in the two public and two private university libraries in Anambra State.

The sample of this study was 428 comprising 302 undergraduate students in public universities and 126 undergraduate students in private universities. This 428 represent 5% of the total population using simple random sampling technique Thus: The sample size represents a percentage of 5% of total population (6,039) of undergraduates. This is supported by Nwanna in Agbonmiewalen (2017) who recommends that when the population runs into few hundred use 40% or more, when several hundred use 20%, when thousand use 10% and when several thousand use 5% or less.

The instrument for this study was questionnaire designed by the researcher and titled: "Undergraduates' Use of Electronic Information Resources Questionnaire (UUEIRQ). The questionnaire consists of three clusters. Focused on the extent of the accessibility of EIR by undergraduates in public and private university libraries. The questionnaire was

designed based on a four point rating scale and indicated responses strength as follows: Strongly Agree/Very High Extent/ Very Highly Aware (SA/VHE/VHA), Agree/High Extent/Highly Aware (A/HE/HA), Disagree/Low Extent/Lowly Aware (D/LE/LA) and Strongly Disagree/Very Low Extent/Very Lowly Aware (SD/VLE).

The three hypotheses were tested using t-test analysis technique at 0.05 level of significance. The null hypotheses were accepted if the t-calculated value is less than the t-table value at 0.05 level of significance and rejected if the t-calculated value is greater than the t-table value at 0.05 level of significance. The choice of this statistical tool (t-test) to test the research hypotheses is because it shows the mean difference between the public and private university libraries variables.

## Results and Discussion

### Hypothesis 1

**H01:** *There is no significant difference between the mean responses of undergraduate students of public and private universities on the extent students access electronic information resources.*

**Table 1:** t-test analysis of the mean *responses of* undergraduate students of public and private universities on the extent students access electronic information resources

Variables	N	Mean	S.D	DF	t-calculated	t-critical	Decision
Public Universities	284	2.40	0.96	403	-2.38	1.97	<b>Accepted</b>
Private University	121	2.78	1.04				

The data in Table 1 shows that the calculated t-value is -2.38 while the t- critical value is 1.97 at 0.05 level of significant and at 403 degree of freedom. Since the t-calculated value is less than the t-critical value, the null hypothesis was upheld. Therefore, there is no significant difference *between the mean responses of* undergraduate students of public and private universities on the extent students access electronic information resources.

### Hypothesis two

**H02 :** *There is no significant difference between the mean responses of undergraduate students of in public and private universities on the extent to which students use electronic information resources.*

**Table 2:** t-test analysis of the mean ratings *responses of* undergraduate students of public and private universities on the extent to which students use electronic information resources

Variables	N	Mean	S.D	DF	t-calculated	t-critical	Decision
Public Universities	284	2.38	1.01	403	-4.40	1.97	<b>Accepted</b>
Private University	121	2.86	1.00				

The data in Table 2 shows that the calculated t-value is -4.40 while the t- critical value is 1.97 at 0.05 level of significant and at 403 degree of freedom. Since the calculated value is less than the t-critical value, the null hypothesis was upheld. Therefore, there is no significant difference *between the mean responses of* undergraduate students of in public and private universities on the extent to which students use electronic information resources.

**H0<sub>3</sub>:** *There is no significant difference between the mean responses of undergraduate students of public and private universities on the challenges of the use of electronic information resources.*

**Table 3:** t-test analysis of the mean ratings *responses of* undergraduate students of public and private universities on the extent to which students use electronic information resources

Variables	N	Mean	S.D	DF	t-calculated	t-critical	Decision
Public Universities	284	2.73	0.98	403	-1.24	1.97	<b>Accepted</b>
Private University	121	2.87	1.06				

The data in Table 3 shows that the calculated t-value is -1.24, while the t- critical value is 1.97 at 0.05 level of significant and at 403 degree of freedom. Since the calculated value is less than the t-critical value, the null hypothesis was accepted. Therefore, there is no significant difference *between the mean responses of* undergraduate students of public and private universities on the challenges of the use of electronic information resources.

## **Discussion of the Findings**

### **The extent undergraduate students' access electronic information resources in public and private university libraries in Anambra State, Nigeria**

Table 1 showed that *there is no significant difference between the mean responses of* undergraduate students of public and private universities on the extent students access electronic information resources. This finding is in conformity with the study of Tofi and Fanafa (2019) who found out that, e-journals, e-newspapers, Online Public Access Catalogue (OPAC), CD-Rom database, e-magazines, e-books, online database, e-research reports, virtual library online, science direct online and Ebscohost reference databases were the electronic information resources access by students in Francis Sulemanu Idachaba Library University of Agriculture, Makurdi, Benue State, Nigeria. The finding is also in tandem with the findings of Obande and Abdulsalami (2020) that electronic information resources were accessed by students to a high extent in private universities. Meanwhile, Das (2014) reported that accessibility of electronic information resources were on a low extent in University of Agriculture Library, Abeokuta, Nigeria.

### **The extent undergraduate students' use electronic information resources in public and private university libraries in Anambra State, Nigeria**

Table 2 indicated that *there is no significant difference between the mean responses of* undergraduate students of public and private universities on the extent to which students use electronic information resources. The finding of this study relate with the study of Tofi and Fanafa (2019) that, e-journals, e-newspapers, Online Public Access Catalogue (OPAC), CD-Rom database, e-magazines, e-books, online database, e-research reports, virtual library online among others were electronic information resources utilized among students on high extent. The finding is also in line with the finding of Biokuromoye, Victor and Ebhomeya (2014) which revealed that students in Niger Delta University and Rivers State University of Science and Technology (RSUST) use electronic resources but to a low extent as a result of slow internet connectivity.

### **Challenges of the use of electronic information resources among undergraduate students in public and private university libraries in Anambra State, Nigeria**

Table 3 revealed that *there is no significant difference between the mean responses of* undergraduate students of public and private universities on the challenges of the use of electronic information resources. The study of Edem and Egbe (2016) also correspond with the later study on the challenges of the use of electronic information resources among undergraduate studentssuch as lack of computer skills, slow network, inconsistent internet connectivity, power outage and irrelevant electronic information resources were the problems postgraduate students encountered while accessing and using electronic resources in UNICAL Library. The study is also in agreement with Obande and Abdulsalami (2020) which revealed lack of advanced searching skill, navigation problems, library staff indifference, poor internet connectivity, technological constraint, lack of ICT skill, student poor orientation, frequent breakdown of the system, lack of personal laptop and other electronic gadgets, erratic power supply, and lack of awareness and use of electronic information resources by some students as challenges to utilization of electronic information resources.

## **Conclusion and Recommendations**

Based on the results of the findings, it was concluded that, were highly aware, accessed and utilized to a low extent in public universities but high extent in private universities and the challenges of the use of electronic information resources among undergraduate students in public and private university libraries were; unfriendly user interface, inadequate electronic information gadgets, slow internet network connectivity, lack of consistent training of users, inadequate knowledge of electronic information resources, lack of or inadequate information resources, lack of subscription to relevant e-journals, lack of appropriate skills among users and lack of maintenance and poor infrastructure.

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

1. There is need to provide guidance to students for them to have more access to electronic information resources especially in public university libraries where the level of accessibility of electronic information resources is low.
2. Since electronic information resources are used in public universities on a low extent and to higher extent in private universities, efforts should be made by the university administrators and library management in public university libraries to enlighten the students on the needs for them to use electronic information resources.
3. There is also the need for university administrators to double their efforts in order to address the challenges confronting student use of electronic information resources such as improvement of internet network connectivity in the university system, provision of adequate electronic information gadgets and other facilities needed for enhancing students use of information resources.

## REFERENCES

- Abinew, M. E. & Vuda, K. I. (2013). Use of internet by information professionals in some selected university libraries in South West, Nigeria. *An International Journal of Information Technology*, 6(1), 9-12.
- Adabayo, K.B. (2018). Use of electronic information resources: A case study of higher education environment: An empirical analysis. *New Library World*, 3(4), 1-11.
- Adeniran, T. I. (2013). Students use of electronic information sources at the University of Nigeria, Nsukka. *Journal of Library, Archive & Information Science*, 19(1), 89-97.
- Adeniran, T. I. (2013). Students use of electronic information sources at the University of Nigeria, Nsukka. *Journal of Library, Archive & Information Science*, 19(1), 89-97.
- Adomi, A.G.A. (2015). Computer and internet use by first year clinical and nursing students in a Nigeria teaching hospital. *Medical Information and Decision Making*, 3(10), 112-154.
- Adomi, E.I., Omodeko, A. M. & Otolu, N.U. (2014). Internet access in school media centers; *Internet Reference Service Quarterly*, 2(4), 165-184.
- Adomi, E.I., Omodeko, A. M. & Otolu, N.U. (2014). Internet access in school media centers; *Internet Reference Service Quarterly*, 2(4), 165-184.
- Afalabi, M. & Etuk, M. E. (2014). *Library users education, Institutional Manual for Library Patrons*. Uyo: Pen-mark Publishers.
- Afolabi, I, M. (2016). Towards effective development of electronic information resources in Nigeria's university libraries. *Library Management*, 29(617), 504-514.
- Afolabi, M.O., Udoh, J. S. & Akpactor, F. B. (2017). Application of digital libraries and electronic technologies. *African Journal of Library, Archival and Information Science*, 12(2), 145 –154.
- Agbonmiewalen, O. K. (2017). Information technology: Whither Nigeria library and documentation centers. *Leading Library and Information Centres*, 2(2), 27-35.
- Aina, R. F. Okunnu, G. M. & Dapo-Asaju, B. F. (2014). Awareness, accessibility and use of electronic databases among academic staff of Babcock University Business School. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 3(6), 149-159.
- Ajayi, F. K., Shorunke, G. I. & Aboyade, A. S. (2014). Information retrieval skills and use of library electronic resources by University undergraduates in Nigeria. *Information and Knowledge Management*, 3(9), 6-14.
- Akpanobong & Akwang (2014). Influence of physical environmental variables on the satisfactory utilization of e-library in academic institutions of Akwa Ibom State, Nigeria. *Journal of Applied Technologies in Library and Information Management* 3(3), 108-120.
- Akwang, N. E. (2013). *Library and Information Science handbook for students in tertiary education in Nigeria*. Uyo: Doran Books.
- Akwang, N. E. (2014). Quality assurance indices and information services delivery in University Libraries in South – South Zone of Nigeria. A *Ph.D Thesis, at the Department of Library and Information Science*, MJCE Faculty of Humanities and Social Sciences, Abia State University, Uturu, Nigeria.
- Akwang, N. E. (2015). Undergraduate use of E-books in e-libraries of Akwa Ibom State University, Nigeria. *International Journal of Information Technology*, 28(9), 173-184.
- Anaekwe, I. O. (2002). *Research and rules guiding research in social and management sciences*. Logas: Tony Publishers.
- Ani, O. E. (2013). Adoption of information and communication technology (ICT), in academic libraries: A strategy for library networking in Nigeria, *The Electronic Library*, 23(6), 701-8.
- Anikweze, K. R. (2013). Barriers in using digital scientific information at German Universities and other higher education institutions. *Campus-Wide Information Systems*, 22(5), 290-297.

- Ankrah, R. O. & Atuase, E. A. (2018). Analyzing and evaluating usefulness and usability in electronic services. *Journal of Information Service*, 32(5), 400-419.
- Asogwa, C. V. (2014). The challenges of optimizing e-teaching opportunities for effective educational services delivery in University of Nigeria, Nsukka. *Journal of Educational Review*, 20(2), 123-132.
- Biokuromoye, Victor and Ebhomeya (2014). Extent of use of electronic resources and identify the type of electronic resources used by undergraduates in universities in Nigeria. *Journal of Education, Humanities and Literature*, 2(9), 91-116.
- Dhanavandan, E. R. & Tamizhchelva, O. K. (2012). User perception of electronic resources in the University of Ilorin, Nigeria. *Journal of Emerging Trends in Computing and Information Sciences*, 2(11), 554-562.
- Edem, N. B. & Egbe, N. (2016). Availability and utilization of electronic resources by postgraduate (PG) students in the University of Calabar (UNICAL) Library. *Journal of Information and Knowledge Management*, 6(2), 60-69.
- Egbemgbe, H. S. (2011). The use and impact of electronic information resources at University of Lagos. *Library Philosophy and practice*. Retrieved from <http://www.webpages.uidaho.edu/~mbolin/egberongbe.htm>
- Ekenna & Mabawonku, (2013). Availability and use of electronic resources in African universities: The Nigerian perspective. Retrieved: [www.pnla.org](http://www.pnla.org)
- Emeghara, I. S. E. (2015). Users and internet skills: A report from Delta State University, Abraka, Nigeria. *Electronic Journal of Academic Special Librarianship*, 6(3), 5-15.
- Ewang, N. K. (2015). Use of e-journals and data bases by the academic community of Mysore: A Survey. *Annals of Library and Informational Studies*, 54(6), 19-22.
- Ezeji, M. (2018). Emerging patterns and trends in utilizing electronic resources in a higher education environment: An empirical analysis. *New Library World*, 111(3/4), 87-103.
- Fabunmi, U. O., Paris, F. G. & Fabunmi, I. M. (2016). Internet resources and productivity in scientific research in Nigerian universities. *Journal of Information Science*, 29(2), 102-116.
- International Federation of Library Associations and Institutions (IFLA), (2012). World first academic blog for library and information students. Retrieved from: [www.lisbdnetwork.com](http://www.lisbdnetwork.com).
- Isibika, I. & Kavishe, N. I. (2018). Management problems of electronic information resources: a case study of University of Nigeria, Nsukka library. *International Journal of library and Information Science*, 5(5), 56-71.
- Johnson, S. (2012). Book acquisition practices in Nigerian university libraries: Challenges and prospects. *Library Management Journal*, 29(4/5), 414-421.
- Ku, K. M. (2018). Services collection development: *Electronic resources collection development policy*. [Http://lib.hku.hk/cd/policies/cdp.html](http://lib.hku.hk/cd/policies/cdp.html).
- Luka, H. O. (2015). Security and crime challenges in public libraries in Nigeria. *Journal of Information and Knowledge Management*, 2(1), 1-4.
- Obande, O. B. & Abdulsalami, L. T. (2020). Availability, awareness and use of electronic information resources amongst library registered students in Federal University Lafia and Nasarawa State University, Keffi. *Journal of Engineering and Information Technology*, 7(2), 2354-4155.
- Obi, D. K.H. (2012). Use of e-journals by faculty members of Istanbul University, Turkey: The results of a survey. *Journal of Academic Librarianship*, 76(8), 89-100.
- Obi, M. P. (2017). Electronic access to information and its impact on scholarly communication. Retrieved from: <http://www.csu.edu.au/special/online99/3056.html>
- Obuh, E. A. (2011). Re-equipping the Nigerian public library system and services for the 21st century. *International Journal of Library and Information Science*, 5(10), 110-125.
- Oméluzor, D. Saturday, A. & Ogo, I. E. (2018). Improving access to information in reference materials through technology: The role of libraries. *The Nigeria Library Link: Journal of Library and Information Science*, 11(12), 11-15.
- Omoike, R. W. (2013). Information technology application to libraries in developing countries: The need for caution. *Global Review of Library and Information Science*, 1(1), 97.
- Otti, O. O. C. (2005). Electronic information awareness, attitude and use by academic staff members of University of Lagos, Nigeria. *Library Philosophy and Practice*. (e-journal). Paper 834. Retrieved from <http://digitalcommons.lenl.edu/LPP/Omotayo.htm>
- Otti, O. O. C. (2015). Emerging trends in the development of school libraries in Nigeria. *African Journal of Education and Information Management*, 8(2), 12-21.
- Oyedapo, R. T. & Ojo, P. I. (2013). Facilitating information seeking and inquiring process among researchers. *Global Review of Library and Information Science*, 1(1), 35-37.
- Schayan, W. N. (2017). Professional development activities of librarians in Nigeria. *Library and Information Education and Practice*, 4(6), 140-148.
- Schutte, G. B. (2014). Usage of academic libraries: The role of service quality, resources and users' characteristics,

- Library Trends*, 49(4), 626-634.
- Scoyoc, F. & Cason, J. A. (2016). Use of academic library: A case study of Covenant University, Nigeria.: *An International Electronic Journal*, 2(1), 30-45.
- Shachaf, B. N. & Haira, S. R. (2007). Channel expansion theory of multimedia instructional presentation. *International Journal of Organizational Communication*, 68(3), 832-843.
- Temopir, G. S. (2015). User satisfaction with services in the academic libraries in Cross River State: A comparative study. *Gateway Library Journal*, 9(5), 21-29.
- Tenopir, B. I. and King, L. L. (2007). Reaction of undergraduate to e-resources in Nigerian university libraries. *International Journal of Information Science*, 6(2), 121-132.
- Tofi, P. N. & Fanafa, E. R. (2019). Availability, accessibility and use of electronic information resources for research by students in Francis Sulemanu Idachaba Library, University of Agriculture, Makurdi, Benue State, Nigeria. *Journal of Library and Information Science*, 5(2), 31-44.
- Togia, E. I. & Tsigilis, I. N. (2009). Nigerian university libraries and the challenges of information provision in the 21st century. *Library Bulletin*, 3(1&2), 17-28.
- Tsakomas, B.S. & Papatheodorolly, B. B. (2016). Use of Internet and e-resources by the students of Business Management: A survey of P.G students of Business Administration, Sambalpur University. *Indian Journal of Library and Information Science*, 2(3), 45-53.
- Udoh, J. S., Akpaetor, F. B. (2016). Digital planning and delivery of instruction in Nigeria's universities. *Journal of Educational Media and Technology*, 18(2) 56-67.
- Udoh, J. S., Nta, S. N. & Akpaetor, F. B. (2016). Electronic resources and undergraduate engagement in autonomous learning of information literacy skills in Akwa Ibom State University, Nigeria. *Journal of Educational Media and Technology*, 19(3), 101-112.
- Ukachi, M. A. (2013). Usage of e-journals by researchers in Aligarh-Muslim University. *International Information and Library Review*, 3(8), 170-179.
- Yusuf, M.O. (2016). Using the Internet for teaching, learning and research in high education in Nigeria. *Journal of Nigerian Library Association of Teachers of Technology*, 9(1), 163-17.