

Access And Utilization of Electronic Databases by Academic Staff at Aliko Dangote University of Science and Technology, Wudil, Nigeria

¹Ahmad Saleh, ²Sani Lawan Kurfi and ³Rabi Sidi Musa

¹ University Library, Aliko Dangote University of Science and Technology, Wudil, Kano

²Department of Library and Information science , Federal University Dutsin-Ma

³Sule Hamma Library , Yusuf Maitama Sule University, Kano

Email: ahmadsaleh@kustwudil.edu.ng; sanilawal0014@gmail.com; rabikhadisidi@gmail.com

Phone: +2348037708469

Abstract:

The study investigated access and utilization of database in the university library by academic staff in the faculty of science. The population of the study was one hundred and fifteen (115) academic staffs in the faculty of science, where total enumeration sampling was used, 110 questionnaires was filled and returned. The data collected were analyzed using descriptive statistics presented in frequency counts percentages. The findings of the study revealed that the academic staffs are visiting library for research purposes; science direct as the highest database use by academic staffs; Basic Electronic Information Library BEIL is the highest use among the offline database; also, academic staff prepare to use their email as the medium to serve their information needs; among the challenges are power failure in the library, low bandwidth and lack of assistance from library staff. The Findings of the study revealed that science direct are the highest utilized database, follow by ProQuest, AJILS; and European-American Journals and Research 4 Life; This shows academics staff are utilizing databases in the university library. Also, the findings of the study indicated that electric power supply is among the challenges in the library, than lack of assistance from library staff, low bandwidth and lack of internet subscription. The study recommended that library managers and information scientist to provide uninterrupted power supply, subscription of databases and internet/ higher bandwidth for service satisfaction; training and re-training for library staff.

Keywords: Access, Utilization, Database and University Library and ADUSTECH, Wudil

Introduction

Access to different online and offline databases assist academic and non academic staffs in the area of teaching, learning and research; academic library provides relevant and adequate information resources to users. Academic library is the custodian of information resources both online and offline databases; those information resources include: e-books, e-journals, e-newspapers, e-magazines, internet, video, Online Public Access Catalogue (OPAC), etc.

Linux (2019) define database as a set of data that has a regular structure and that is organized in such a way that a computer can easily find the desired information; database as a stock of information stored electronically with the retrieval mechanism for easy and effective access. They are one of the most important advances of the last few decades in the field of data processing. He further stated that database is bibliographic information stored in a computer or in a central computer and retrospective search is made possible remotely from a distance computer through the use of software. Generally, databases are made available either for the use of online or offline search services.

Online database is a platform for the user to search for scholarly information where it consists of several journals, in particular, disciplines and can be accessed via online. Online databases are usually being subscribed by the universities in order to support the research works among lecturers, researchers and students. Online databases are collections of electronic information sources by publishers from various fields and disciplines. The offline database access it gives access to some places, such as rural areas and remote regions, cell towers and Internet cables simply don't exist. The connectivity will be achieved with the help of remote database access through wireless medium. Once the data has been sent to outer net server we can access it at anytime and anywhere by offline database (Without internet)

Information sources such as educational databases are efficient if they provide relevant information, useful, accurate; up-to-date that can help users solve their problems. Accessibility of database in academic library creates an enabling environment for the utilization of library resources and enhances teaching, learning and research. The main goal of the academic library is to support the objectives of its parent organization in the area of teaching, learning and research with its abundant wealth of information resources. Hence, library is the nerve centre of research, the central and primary place of the institution's academic activities.

University Library ADUSTECH, Wudil, Kano State is an academic library which possess all qualities and functions of academic libraries. Therefore, library provided up-to-date information resources, online/ offline databases for the information needs of users; which when use effectively by users would translate into improved teaching, learning and research effectively. The staffs, students and researchers require quality information resources;

Statement of the Problems

Access and utilization of databases is very vital in enhancing teaching, learning and research in academic environment. Databases are designed to provide necessary information resources to users for the smooth running academic activities. However, access and utilization of databases are facing number of challenges that academic staff are going through. This attributed to lack of database subscription, lack of internet connectivity, low bandwidth, lack of Information Communication Technology (ICT) facilities, outdated information resources, etc. this study focus on how databases can be effectively access and utilize to met the demand of users.

Objectives of the Study

The objective of this study is to investigate the level of access and utilization of databases by academic staff at the faculty of science, Aliko Dangote University of Science and Technology, Wudil, Kano state. The specific objectives are:

1. To find out the databases use by academic staff in the university library;
2. To know the level of database utilization in the university library; and
3. To identify the challenges associate with the utilization of databases in the university library.

Method

A descriptive survey was adopted for this study. The population of study is academic staffs in the faculty of science, where the total enumeration sample was used, 115 questionnaires were distributed, and 110 were successfully filled and returned. The data collected was analyzed and presented using descriptive statistics.

Literature Review

Databases are useful because of the volume of information they contain and because of the convenience of being able to access them both on-campus and remote access at anytime and anywhere (Okore et-al., (2009). Several reasons have been advanced for preference of digital information resources over print resources by libraries and information centres. Some of these reasons, according to Iwehabura (2009) include the ability to provide convenience and easier access to current and up-to date information by users in various places such as homes, offices and other workplaces, and hostels; easy storage and easy sharing of the same information resources among various users at a time, saving space with relatively easy maintenance and easy linkage to indexing and abstracting databases.

Electronic databases are large, regularly updated file of digitized information related to a specific subject or field, consisting of records of uniform format organized for ease and speed of search and retrieval and managed with the aid of database management system software (Abubakar & Akor, 2017). The changes in the world of Information and Communication Technology (ICT) have shifted the content of library resources from printed information to online information resources (Israel & Edesire, 2016). As a result of technological revolution, libraries do not need to be in a physical space to be able to provide information to its users. This is because ICT is contributing significantly towards the removal of geographical barriers across the globe (Prakash, 2017). Libraries

have also formed cooperation among themselves to facilitate resources sharing (Yebowaah & Plockey, 2017). These electronic databases are changing the landscape of information provision by university libraries.

Theo Bothman et-al, (2014), opined that some databases cover variety of types of information sources e.g. articles, books, conference papers, dissertations and theses reports all in one database. Some covered one main discipline, for example Education, Library and Information Science or Chemistry while some is multidisciplinary databases such as Science Direct and Institute of Scientific Information (ISI)/ Web of Science.

A study by Unobe (2015) on availability and utilization of on-line information sources and services in federal universities' medical Libraries in north west geo-political zone of Nigeria discovered that, both the library staff and medical students agreed that Online Public Access Catalogue (OPAC) (33:59.9%), search engines (35:61.4%) and online institutional repositories (46:80.7%) were available in the libraries. Other sources of consensus agreement by the two groups were e-journal/conference proceedings (41:71.9%), e-books (45:78.9%), e-databases (45:78.9%) and e-encyclopedia (40:70.1%) along with dictionaries. On-line information resources and services were available in the medical libraries studied although the library staff rated online databases, electronic resources consortium and Local Area Network (LAN) databases low. The users (medical students) on their part also rated low email electronic alert and selective dissemination of information.

Adeleke and Nwalo (2017), opines that availability of electronic resources such as Compact Disc Read Only Memory (CD-ROM) technology enables libraries to provide instant, easy and convenient access to substantial amount of relatively current and retrospective information at fixed or predictable cost. They further listed the electronic resources acquired by libraries which includes; electronic journals (E-Journals), electronic books (E-Books), etc. All these can be housed in a database.

The study of Lawal A I, Olanrewaju A; and Zainab O. A. (2021), On the use of adopted e-databases by the postgraduate students in the selected universities in North-central, Nigeria. The results showed that 87.2% stated that poor interregional networking and cooperation is one of the challenges associated with the use of the adopted e-databases while 12.8% against this challenge. Furthermore, results showed that 73.0% claimed that technological knowhow is another challenge associated with the use of e-database while 27.0% against this. Similarly, 80.9% stated that epileptic power supply is another challenge associated with the use of e-database with only 19.1% against this statement. Lastly, the results showed that 57.4% claimed that insufficient of fund to subscribe to the e-databases is another challenge associated with the adopted e-databases while 42.6% against this statement. Thus, it can be deduced that poor interregional networking and cooperation, technology knowhow, epileptic power supply and insufficient of fund to subscribe are some of the major challenges associated with the use of the adopted e-databases

The finding of Lawal A I, Olanrewaju A; and Zainab O. A. (2021), on their study revealed that Internet facility, e-journals, e-books, Science Direct, Access to Global Online Research in Agriculture (AGORA) and The Essential Electronic Agricultural Library (TEEAL) are the major e-databases available in the selected university. Results revealed that out of 141 respondents, 141(100.0%) claimed that Internet facility and e-journals are available in their university library. Furthermore, the results showed that 132 (93.6%) stated that e-books available in their library while 9 (6.4%) against this. In the same vein, the result showed that 123(87.2%) affirmed that science direct is available in their library while 18 (12.8%) against this. Also, results revealed that 76(53.9%) claimed that Access to Global Online Research in Agriculture (AGORA) and The Essential Electronic Agricultural Library (TEEAL) are available in their library while 65(46.1%) against this.

The databases are of different nature as they are developed keeping in view the user community. In Aliko Dangote University of Science and Technology, Wudil, university library is using the following:

- Full text or textual: Science Direct;
 - Open source databases: Information Resources (IR's):
 - Catalogue databases: Online Public Access Catalogue (OPAC) NewGenLib
- The features of online and offline databases are elaborated below:

Table 1: Differences Between Online/ Offline Databases

S/N	Online Databases	Offline Databases
1	Dynamic and current information.	1. Static and old information.
2	Online connectivity using net.	2. In-house connectivity.
3	Pay per use model.	3. Have to pay subscription irrespective of use.
4	Costly.	4. Economical.
5	Digital form.	5. In Compact Disc (CD) form.
6	Access points more.	6. Access points better than manual but not similar to online.
7	Roles can be used to limit the hits.	7. Many a times not available.
8	Searching online and needs network connection.	8. Available in library and used any time.

Types of Online Databases

Online databases now cover a huge range of different types of information, but the majority fall into major categories given below:

- Reference Databases
- Directory Databases

Reference Databases: Reference or secondary databases comprise only bibliographic reference on the subject. It comprises clues to the intellectual contents and physical character of pieces of the graphic or printed record of humanity such as journal, articles, book, research reports etc. These are fall into the following:

a. Bibliographic Databases: A bibliographic database is a database of bibliographic records and sometime abstracts of literature. It comprehends an organized digital collection of references to published literature including journal and newspaper articles, conference proceedings and paper reports, government and legal publications, patents, books etc. It provides very rich subject descriptions in the form of keyword, subject classification terms or abstracts. References cite the author, title and the source may include index and an abstract that serve to identify a document. Many references also cite other forms of literature such as patents in which the invention serves as the author and primary claim serves as the abstract. Bibliographic databases describe analytics which contain very rich subject descriptions.

b. Referral Databases: It guides the user towards the address of a person of an organization. This type of databases offers references to information or data such as, names and addresses of organization, persons, institutions, other directory type of data and information system etc. These are of following types.

c. Directory Databases: Offer the information of published directories or serve a purpose similar to that of published directories without having published equivalent. These are not full text databases although they may not represent complete text of a publication in machine readable form nor they are numeric databases although they contain numeric information. These are not definitely bibliographic databases because they provide primary sources or source document for the users. The directory databases may lists organizations, individuals, electronic or printed publications, materials, chemical substances, computer software and audio visual material etc.

d. Source Databases: These databases comprehend the original source data in machine readable form. After concentration these database, the user should have be information i.e. required and should not need to seek information in an original source. Data are available in machine readable as well as in printed form. It can be grouped according to their content such as:

e. Full Text Databases: A full text database or a complete text database is a database that comprises the complete text of source document such as books, dissertations, journals, magazines, newspapers or other kind of textual documents in addition to the citation and indexing found in bibliographic databases. In 1990 it became common when computer storage technology made them economic and technologically possible. Full text databases offer the apparent advantage of immediate availability of the complete text of a source document. These databases enable to search the complete text of document online by names, terms or concepts. Britannica Online contains entire encyclopedia articles; Lexis-Nexis provides the full-text of articles from newspapers, magazines, and other publications, Journal Storage (JSTOR) Full-text periodicals covering a wide range of topics, including humanities, social sciences and natural sciences.

f. Numeric Databases: Numeric database also variously known as fact, source and non-bibliographic databases, data files and data marks provides organized numeric data such as statistics, time series, demographic reports, corporate financial records, stocks market quotations, chemical and physical properties, chemical nomenclature and graphics structure, Most numeric data bases can be manipulated interactively by the users. Numeric databases also contain transactional data (the large database called transactional databases).

g. Multimedia Databases: Multimedia databases contain a mix of different media such as text, audio, video and still graphics (photographs, diagrams and illustration, graphs, charts, maps and even representation of works of art). These databases also include textual information to describing the image, music or video etc.

h. Dictionary Databases: Dictionary databases are parallel to directory databases in so far as each record identifies something. The purpose of some of the dictionary databases is deceptive to the user. While the dictionary databases also serve to provide the measure of control in the use of bibliographic databases, Example: Cambridge Advanced Learner's Dictionary

i. Hybrid Databases: These types of databases contain a mixture of textual and numeric data.

Barriers in the Implementation of Online Databases in Libraries

- **Uniformity:** Since the accessibility of the diverse criteria it became problematic to choose best one. And this cause lack of uniformity among standard.
- **Classification:** As the universities are using various classification schemes i.e. DDC (Dewey Decimal Classification), CC (Colon Classification) etc. So it is difficult to find uniformity in the class number of documents.
- **Cataloguing:** For the cataloguing of document libraries are using different cataloguing schemes and the availability of various cataloguing schemes cause a lack of quality and uniformity of databases, reengineering the of cataloguing system, become big problem for the librarian.
- **Subject Headings:** Subject headings descriptors are one of the field elements in bibliographical records. The field subject heading has an important role in retrieving the desired documents from the databases. Unfortunately its systematic use is not widely practiced by many of the libraries. Some library made use of the field either by locally made standards thesaurus or by locally developed keywords. These cause lack of uniformity among the subject headings.
- **Software:** Software packages for library applications are not well developed. Some commercial software: NewGenLib Library management software, KOHA Management software, Software Lifecycle Management (SLIM), MAITRAYEE software, etc. are available on the market. Thus it has become a major problem for the librarian to select the best one or the suitable one for the library requirement. Library software has its own unique features and limitations.
- **Lack of Training:** Within a library before installing databases, a proper training is necessary. Only a few agencies/ organization provide training for proper consumption of information available on online databases. But these training programmes are not satisfactory for the proper usage of online databases.
- **Lack of Skilled Manpower:** In libraries lack of skilled manpower slow down the operation process of online database and not make available the passable knowledge that the user wants. And occasionally there is conflict arises between the staff that have adequate knowledge of computer and digitalization and staff which do not have such knowledge.
- **Lack of Manual:** Lack of manual is one of the factors behind the failure of working of online database. Either as a published document online or Compact Disc Read Only Memory (CD-ROM), well defined instructions about the system should be needed. Another problem is that there are so many library house-keeping software packages available on the market but these are not have single guidelines for their users. Thus the lack of proper guidelines for users establishes an obstacle to the effectual application and procedure of system.
- **Lack of Advisory Services:** To solve the problems related to the proper operation of databases, librarians need assistance. But there is lack of medium or forum for the libraries undertaking automation providing excellent advice and services to the libraries whenever required. Also because of the absence or lack of manuals and the advisory services libraries often provide either absolute or inappropriate information.

Results and Discussion

Results from the study reveals that (115) total enumeration was use as respondents in the faculty of science in the Aliko Dangote University of Science and Technology, Wudil, Kano State, were 110 was appropriately filled and returned the questionnaires distributed, which representing 95.6% response rate.

Table 2: Personal information of the respondents

S/N	Items	Response	Percentage
1	Professor/ Reader/ Senior Lecturer/ Lecturer I/ Lecturer II	44	40%
2	Assistant Lecturer/ Graduate Assistant	66	60%
	Total	110	100%

Table 2: Information of the participants shows that forty four (44) of the respondents are from professor’s cadre to Lecturer II cadre which represent 40%, while sixty six (66) are Assistant Lecturer and Graduate Assistant which represent 60%.

Table 3: Information on Purpose of Coming to Library

S/N	Items	Response	Percentage
1	Research	71	64.5 %
2	Access to internet	19	17.3%
3	Checking email	NIL	NIL
4	Check online database	14	12.7%
5	Check offline database	06	5.5%
	Total	110	100%

Table 3: On the Access and Utilization of Database in the Aliko Dangote University of Science and Technology, Wudil, the responses shows that 71 respondents which represent 64.5% as the highest percentage agreed that they are in the university library for research. While 19 respondents which represent 17.3% are in the library to access internet; checking online database with 14 responses which represent 12.7% and checking offline database with only six (6) respondents which represent 5.5%. These results revealed that majority academic staffs from faculty of science are coming to the library for research purpose. These findings agreed with the Teymourikhani (2017), online databases contain more scholarly works than other online resources. Electronic databases are now necessary for research because they give researchers remote access to a wider range of relevant information. Also, Emmasiegbu and Anaehobi (2021) expressed that the use of databases in the academic setting had both direct and indirect effects on academic staff efficiency. In addition to teaching and community service, academic staff members are expected to conduct high-quality research and impart ideas relevant to their areas of expertise.

Table 4: On the online database, the response shows that Science Direct has the highest response ninety (90) which represent 81.8%, PreQuest seven (7) respondents representing 6.4%, AJILS three (3) representing 2.7%, European-American Journals and Research 4 Life 6 and 4, representing 5.5% and 3.6% respectively. This findings collaborate with the Bello and Chioma (2020) study on assessed the globalization of libraries and information services and the level of ICT adoption in academic libraries in Oyo State, Nigeria. Their findings revealed that faculty members had access to Electronic Granary (E-GRANARY), EBSCOhost software, Journal Storage (JSTOR), JAYPEE Digital, Health InterNetwork Access to Research Initiative (HINARI), Access to Global Online Research in Agriculture (AGORA), Online Access to Research Environment (OARE), the Institutional Repository (IR), and the Directory of Open Access Journals (DOAJ). Providing authentic and dependable resources that meet the information demands of the learning community is a requirement for academic libraries. University libraries are considered the heart of the institution.

Table 4: Utilization of Online Databases in the University Library

S/N	Items	Response	Percentage
1	Science Direct	90	81.8%
2	ProQuest	07	6.4%
3	Aggregated Journal Library Subscription (AJLS)	03	2.7%
4	European-American Journals	06	5.5%
5	Research 4 Life	04	3.6%
Total		110	100%

Table 5: Utilization of Offline Database in the University Library

S/N	Items	Response	Percentage
1	E-Granary	Nil	Nil
2	The Essential Electronic Agricultural Library (TEEAL)	17	15.4%
3	Caliber Server	10	9.1%
4	Basic Electronic Information Library (BEIL)	63	57.3%
5	Library Software NEWGENLIB	20	18.2%
Total		110	100%

Table 5: On the offline database, the response shows that TEEAL with seventeen (17) respondents represent 15.4%, Caliber Server with Ten (10) respondents represent 9.1%, BEIL with Sixty Three (63) respondents which represent 57.3% as the highest percentage and Library Software NEWGENLIB with Twenty (20) respondents represent 18.2%. this findings revealed that the offline databases are not utilize which support previous studies by Leonard et al. (2020) and Baro et-al. (2011), whose findings revealed a low level of awareness of the existing electronic databases. The findings again agreed with Okiki’s (2012) assertion that faculty members at the College of Health Sciences of the University of Ghana were unaware of some databases available at the Library.

Table 6: Through which medium you where serve the information

S/N	Items	Response	Percentage
1	Print	13	11.8%
2	Flash Drive	40	36.4%
3	Sent to your Email	48	43.6%
4	Use Bluetooth to transfer to you device	09	8.2%
Total		110	100%

Table 6: On the medium serve your information needs, the response shows that Printing document with thirteen respondents which represent 11.8%, using Flash Drive with forty (40) respondents which represent 36.4%, using Email with forty eight (48) respondents which represent 43.6% as the highest and using Bluetooth with Nine (9) respondents which represent 8.2%. The high rate of accessibility of these resources may be attributed to the library’s effort to transition from print databases to electronic databases. The findings confirm the extent to which technology is transforming library services.

Table 7: On the challenges when accessing information in the library, the responses shows that lack of internet connection with eleven (11) respondents which represent 10%, while Low bandwidth with Nineteen respondents which represent 17.3%, electricity failure in the library with fifty five (55) respondents which represent 50%, system breakdown with five (5) respondents which represent 4.5% and lack of assistance from library staff with Twenty (20) which represent 18.2%. This finding agreed with Azubuike, Ekere, and Orsu, (2021) study on awareness and utilization of electronic databases for scholarly research by faculty of education lecturers in Federal Universities in

South East, Nigeria revealed that challenges abound as regards the awareness and utilization of online subscription databases for scholarly research. From their findings, faculty of education lecturers in the three universities under study strongly agreed that epileptic network connectivity is the major challenge faced in utilizing e-databases with mean scores of 3.56 (UNN), 3.65 (NAU) and 3.54 (MOUAU); Erratic power supply with mean scores of 3.57 (UNN), 3.70 (NAU) and 3.38 (MOUAU); apathy towards information technologies with mean scores of 3.43 (UNN), 3.70 (NAU) and 3.63 (MOUAU); indifference with mean scores of 3.44 (UNN), 3.73 (NAU) and 3.54 (MOUAU); poor computer literacy education with mean scores of 3.39 (UNN), 3.56 (NAU) and 3.36 (MOUAU).

Table 7: Challenges face when accessing your information needs

S/N	Items	Response	Percentage
1	Lack of Internet connectivity in the library	11	10%
2	Low bandwidth in the library	19	17.3%
3	Power failure in the library	55	50%
4	System breakdown	05	4.5%
5	Lack of assistance from library staff	20	18.2%
Total		110	100%

Table 8: Have you meet your information needs?

S/N	Items	Response	Percentage
1	Yes	76	69.1%
2	No	34	30.9%
Total		110	100%

On the question “Have you Meet your Information Needs; the response shows that seventy six (76) respondents said YES which represent 69.1% and thirty four (34) respondents said NO which represent 30.9%. The accessibility of e-databases is the key to maximizing the maximum usage of resources; these findings agreed with the study of Larson (2017) which indicated that users of online databases faced problems such as no access to the databases outside the university campus and difficulty accessing some current articles freely, among others. It is anticipated that faculty members in institutions of higher learning will improve the quality of their teaching and research by making efficient and effective use of electronic databases. Therefore, the management of the academic library must immediately identify any issues that prevent patrons from making good use of the library’s electronic databases (Larson 2017).

Conclusion

The main function of any academic library is to facilitate teaching, learning, and research by providing users with up to date and relevant information resources. Technological advancement has revolutionized how academic libraries function and the types of services they deliver to patrons. The use of electronic databases in academic libraries today is one of the transformations that libraries have witnessed over the past decades by technology. Despite the online and offline databases subscription, the level of utilization of the databases among the academic staffs are not encouraging; with the availability of those databases its enough for the academic staffs to meet their information needs. The study established that most of the faculty members are aware of the availability of electronic databases in the library. They also depend heavily on them for their research purposes and teaching.

Recommendations

The following recommendations are made:

- The library management should create more awareness on the use of online databases; the library should use emails, text messages and university websites to notify its clientele on the databases availability for utilization.
- To continuing subscribing of databases, higher speeds internet, uninterrupted power supply.

- Training and re-training of faculty members on the use of databases. Organizing capacity building training, workshops and in-house seminars for library staff on utilization of databases.
- On the system breakdown, library management should provide expertise (computer technician), to ensure smooth services and dissemination of information.

Reference

- Abubakar, M. S. & Akpor, P. U. (2017). Availability and utilization of electronic information databases for research by agricultural scientists in federal university libraries in North Central Nigeria. *Library Philosophy and Practice (e-journal)*. Retrieved from <http://digitalcommons.unl.edu>
- Adeleke, D.S & Nwalo K.I.N (2017) Availability, use and constraints to use of electronic resources by postgraduates students at the university of Ibadan. *International journal of Knowledge Content Development and Technology*.7.4:51-69
- Ajani, F. O., Ismaila, Y. A. & Ayodele R. O. (2021) Assessment of Library Database Utilization For Academic Activities Among Kwara State University Lecturers During COVID-19 Pandemic Period. *Journal of applied Information Science and Technology* 14 (2) 2021
- Azubuike, F. C., Ekere, F. C., & Orsu, N. (2021). Awareness and utilization of electronic databases for scholarly research by faculty of education lecturers in federal universities in south east, Nigeria. *Library Philosophy and Practice (e-journal)*. 5797. <https://digitalcommons.unl.edu/libphilprac/5797>
- Baro, E. E., Endouware, B. C., & Ubogu, J. O. (2011). Awareness and use of online information resources by medical students at Delta University in Nigeria. *Library Hi Tech News*, 28(10), 11-17
- Bothma, Theo.et.al (2014) Navigating information literacy: Your Information Society Survival 1 Toolkit. Philippa Van Aardt.Cape Town. 2-94
- Chukwueke, C. (2016) *Availability and Utilization of Electronic Information Resources by Undergraduates students*. Unpublished Undergraduate Project, Department of Library and Information Science, Michael Okpara University of Agriculture, Umudike.
- Emmasiegbu, M., & Anaehobi, S. E. (2021). Challenges to using electronic databases by lecturers in a government-owned university in Anambra state, Nigeria. <https://digitalcommons.unl.edu/libphilprac/5224>.
- Israel, O. & Edesiriu, O. (2016). Undergraduates' computer skills and the use of online information resources: A case study of library and information science students of Delta State University, Nigeria. *International Journal of Academic Library and Information Science*, 4 (3), 87-93. <http://www.academicresearchjournals.org/IJALIS/Index.htm>.
- Iwehabura MF (2009). "Skills and Training needs for use of electronic information resources (EIRS) among students in four Tanzanian Universities. *Heartland J. Libr. Info. sci.* 2(1&2):1-21.
- Larson, A. G. (2017). Faculty awareness and use of Library subscribed online databases in the University of Education, Winneba. Ghana. *Library Philosophy and Practice (e-journal)*. 1515. <http://digitalcommons.unl.edu/libphilprac/1515>.
- Lawal A I, Olanrewaju A; & Zainab O. A. (2021), "Adoption and Utilization of Electronic Databases by Postgraduate Students in Selected Universities in North-central, Nigeria". *Library Philosophy and Practice (e-journal)*. 6402. <https://digitalcommons.unl.edu/libphilprac/6402>
- Leonard, A., Hamutumwa, N. M., & Mnubi-Mchombu, C. (2020). Use of electronic resources by law academics: *A case study from the University of Namibia. Collection and Curation*, 39(3), 57-68. <https://doi.org/10.1108/CC-06-2019-0017>
- Linux,Raju (2009) Abstract interpretation of database query language. *Computer language systems and structures. Elsevier* 38(2):123-157
- Okere, O. O (2009) Awareness, Motivation and Utilization of the Agricultural Information Resources in the University Library, Federal University of Technology Akure, Nigeria. *Middle Belt Journal of Library and Information Scienc*.Vol.11.
- Okiki. O. C (2012). Electronic information resources awareness, attitude and use by academic staff members of University of Lagos, Nigeria. *Library Philosophy and Practice*. <http://digitalcommons.unl.edu/libphilprac/828>.
- Prakash, I. N., (2017). Resource Sharing: A Library Perceptive. *International Journal of Library & Information Science*, 6 (1). <http://www.iaeme.com/IJLIS/issues.asp>.
- Teymourikhani, A. (2017). Web-based citation1: *A New Metric for Evaluating Scientific Journals*. IFLA WLIC. <http://creativecommons.org/licenses/by/4.0>.
- Yebowaah, F. A. & Plockey, F. D. D. (2017). Awareness and Use of Electronic Resources in University Libraries: A case study of University for Development Studies Library. *Library Philosophy and Practice*. <http://digitalcommons.unl.edu/libphilprac>.