

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

9-28-2021

Adoption and Utilization of Electronic Databases by Postgraduate Students in Selected Universities in North-central, Nigeria

Lawal Abubakar
alawalabubakar15@gmail.com

Abdulwahab Olanrewaju Issa
drissa.ao@unilorin.edu.com

Zainab Olanihun Ambali
ambali.zo@unilorin.edu.ng

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Alternative and Complementary Medicine Commons](#), [Business Commons](#), and the [Education Commons](#)

Abubakar, Lawal; Issa, Abdulwahab Olanrewaju; and Ambali, Zainab Olanihun, "Adoption and Utilization of Electronic Databases by Postgraduate Students in Selected Universities in North-central, Nigeria" (2021). *Library Philosophy and Practice (e-journal)*. 6402. <https://digitalcommons.unl.edu/libphilprac/6402>

Adoption and Utilization of Electronic Databases by Postgraduate Students in Selected Universities in North-central, Nigeria

Lawal Abubakar

Abubakar Gimba Library,
Ibrahim Badamasi Babangida University, Lapai,
Niger State, Nigeria
alawalabubakar15@gmail.com

Abdulwahab Olanrewaju Issa

Department of Library and Information Science,
Faculty of Communication and Information Sciences,
University of Ilorin, Kwara State, Nigeria
drissa.ao@unilorin.edu.ng

Zainab Olanihun Ambali

Serials Unit,
University Library,
University of Ilorin, Nigeria
ambali.zo@unilorin.edu.ng

ABSTRACT

The study aimed at identifying the types of e-databases available, perceptions towards the ease and extent of use, and usefulness of the adopted e-databases and identify the challenges associated with the use of adopted e-databases by the postgraduate students in the selected universities, in North-central, Nigeria. The study adopted descriptive survey design where set of questionnaires were used to collect data from 1726 postgraduate students across five universities in North-central, Nigeria. The study found that Internet facility, e-journals, e-books, science direct, AGORA, DOAJ and TEEAL are the major e-databases available and accessible in selected libraries. The e-databases used on daily basis are Internet, e-books and e-journal while EMERALD, HINARI, EBSCOHOST, OARE, JSTOR and TEEAL are mostly accessed on yearly basis. The study identified poor interregional networking and Internet connection, high cost of e-databases, epileptic power supply and insufficient fund to subscribe to them as major challenges with the use of adopted e-databases. We concluded that there is a significant relationship between the perceived ease of use and use of e-databases among postgraduate students in those university libraries; as well as between perceived usefulness and use of e-databases.

Key words: Electronic database, Postgraduate students, Selected universities, North-central, Nigeria

Introduction

The advent of Information and Communication Technology (ICT) in Nigeria has brought tremendous changes to the library operations which led to the paradigm shift of libraries from the custodian traditional information resources providers, to the modern digital information services. In today's technology enriched environment, electronic databases become an indispensable tool in learning and research activities, more so to the extent that every higher institutions of learning have incorporated them as an integral part of service delivery (Islam & Sheik, 2019). Mani, Shahul and Thimagal (2019) observed that e-databases play a major role in current educational scenario, and almost all institutions have been shifting all their printed information resources into electronic information resources. The e-databases have enormous advantages over the traditional print-based resources. These advantages include the ease and availability up-to-date information, provision of advanced and streamlined searches, improvement and fastness of access to a lot of information and provision for simultaneous search of multiple files, among others (Yusuf & Farouk, 2017, Eiriemiokhale, 2020). The use of digital library and e-resources becomes more pertinent as the COVID-19 pandemic rages on across world. Therefore, library digital services and e-database must be upgraded especially for academic and students, including graduate students in order to minimise the disruption of face-to-face academic activities occasioned by the global health crisis (Mehta & Wang, 2020). The concept of electronic database means the collections of publishers from various disciplines to make electronic information resources easily accessible to the scholarly environment.

In addition, electronic databases provided various types of information resources such as: statistical databases, image databases, newspaper articles database, electronic books, theses and dissertations databases, conference papers, indexes and abstracts databases online or offline (Ashikuzzaman, 2018). These databases provide specialized information that is widely used by academics, doctors, students and other spectrum of the researchers. Naqvi (2012) postulated that databases are categorized into specific discipline while some are multidiscipline. Examples of specific databases include Medline which is used by medical researchers, and *PsycInfo* used by psychological researchers while *ScienceDirect*, *JSTOR* are multidisciplinary databases. In the same vein, electronic databases are also categorized into private and general databases. Private databases only access by the employees of the organizations that maintain the databases while the general databases are designed to be accessed by the general public.

Most importantly, it should be noted that for use of electronic data, library must adopt the particular database in the library. Therefore, adoption of electronic database refers to the process of choosing specific electronic database into the library system to fast-track the accessibility and retrieval of information resources by the library users. The adoption and utilization of electronic databases have become inevitable to every libraries of higher institutions that want to excel in this 21st century. Also, it is necessary for every academic library to embraces the adoption of e-databases and other relevant electronic resources in order to meet the information needs of their users. In the same vein, it should be noted that the importance of e-database to postgraduate students cannot be overemphasized. This is because e-databases provide a rich source of specialized information and essential reference tools for detailed research for both the students and

other researchers. Conyers (2006) also viewed e-databases as being easily retrievable in university libraries, to meet users' information needs.

However, despite the fact that the importance of e-database in higher learning cannot be overestimated, it should be noted that there are some factors (predictors) that seem to influence the adoption and use of these databases among the postgraduate students. These factors are Perceived Ease of Use and Perceived Usefulness. The term Perceived Ease of Use (PEOU) is the degree to which a person believes that using a particular system would make work easy. In other words, Sigh (2012) posited that perceived ease of use is the term that represents the degree to which an innovation is perceived not to be difficult to understand, learn or operate. In the context of this study, perceived ease of use (PEOU) refers to the extent to which users believe that their continued use of e-database is free of effort. This means that if a system is relatively easy to use, individuals will be more willing to learn about its features and finally intend to continue using it.

Studies indicate that PEOU is positively associated with continuance intention in the context of Web-based learning (Chiu & Wang, 2008). On the other hand, another important factor considered pertinent in the adoption and use of e-database is perceived usefulness. Cho (2015) described perceived usefulness as individuals' perception that using the new technology will improve job performance. Similarly, Sigh (2012) defined perceived usefulness as the extent to which a person deems a particular system to boost his/her job performance. This means that the extent to which a person believes that using a particular technology will enhance her/his job performance or the degree to which a person believes that using a particular system would enhance his/her job performance. Based on this submission, it can be deduced that perceived ease of use and perceived usefulness seem to had effect on the adoption and use of electronic database vice-versa. Therefore, it against this backdrop that this study intends to examine predictors for the adoption of electronic database by postgraduate students in selected universities in North-central, Nigeria.

Statement of the Problem

The emergence and use of ICT is one of the most significant developments affecting scholarly communication. Indeed, the development of computer applications has changed the libraries' operating system. Undoubtedly, the adoption of electronic database has led to a paradigm shift from traditional mode of operation to the modern systems of operation, which has increased the level of efficiency and effectiveness in academic libraries. Abubakar (2010) opined that in advanced countries, the paradigm shift to ICTs has led to a dramatic change in library collections from traditional print resources to the electronic resources, where a greater percentage of the budget of most of the libraries are spent on e-resources, such as e-journal, e-books, online databases, and subject databases. Several studies (Chiu & Wang, 2008, Sigh, 2012, Cho, 2015) had examined adoption and utilization of e-databases among students and academics. Many of the university libraries in Nigeria have made significant investment in providing services to ensure that students especially at the postgraduate level, can have access to e-resources that will add value to their academics and research work (Oyeniya et al. 2020). However, research efforts are scanty regarding the predictors for the adoption and use of e-databases among the postgraduate students

in North-central, Nigeria. Hence, this study set out to examine the predictors of adoption and utilization of e-database among postgraduate students in selected universities in North-central, Nigeria.

Research Questions

Based on the study's specific objectives, the following research questions are raised to guide the study:

- i. What are the types of e-databases that are available in selected universities in North-central, Nigeria?
- ii. What is the postgraduate students' perception towards the ease of use, extent and usefulness of the e-databases in selected universities in North-central, Nigeria?
- iii. What are the challenges associated with the use of adopted e-databases by the postgraduate students in the selected universities in North-central, Nigeria?

Hypotheses

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

H₀₁: There is no significant relationship between perceived ease of use and use of e-databases among the postgraduate students in the selected universities in North-central, Nigeria.

H₀₂: There is no significant relationship between the perceived usefulness and use of e-databases among the postgraduate students in the selected universities in North-central, Nigeria.

Study Justification

The e-database is one of the significant library resources in this competitive time, because of the fact that most of the higher institutions of learning have shifted their collections to the preferential e-databases and some other e-resources. Thus, Mani, Shahul and Thimagal (2019) noted that e-databases play a major role in current educational scenario, as nearly all institutions have been shifting all their printed information resources into e- information resources. Conyers (2006) affirmed that e-databases are easily retrievable in university libraries, to meet users' information needs. Most importantly, it should be noted that for use of e-data, library must adopt the particular database to meet the information needs of their clients. Therefore, adoption of e-database refers to the process of choosing specific e-database into the library system to fast-track the accessibility and retrieval of information resources by the library users.

The adoption and utilization of e-databases has become inevitable to every libraries of higher institutions that want to excel in this 21st century. Also, it is necessary for every academic library to embraces the adoption of e-databases and other relevant e-resources in order to meet the information needs of their users. Thus, it should be noted that the importance of e-database to postgraduate students cannot be overemphasized. This is because e-databases provide a rich source of specialized information and essential reference tools for detailed research for both the students and other researchers. Research efforts are scanty regarding the predictors for the adoption and use of e-databases among the postgraduate students in North-central, Nigeria. This is the reason why this study set out to examine the adoption and utilization of e-databases among the postgraduate students in selected universities in North-central, Nigeria.

Study Setting

This study seeks to investigate the predictors of adoption and utilization adoption of e-databases by postgraduate students in selected universities in North-central, Nigeria. The study covered Al-Hikmah University, Ilorin, Kwara State; Federal University of Technology, Minna, Niger State, and Nasarawa State University, Keffi, Nasarawa State, Nigeria. Variables covered are the perceived use of e-databases, perceived ease of use of the e-databases, and extent of use of e-databases. The study excluded other tertiary institutions such as polytechnic and colleges of education in North-central, Nigeria.

Review of Related Literature

Types of Electronic Databases

The concept of e-databases has generated a lot of discussions in recent years. Various scholars view the concept from different angles. For example, Kwadzo (2015) defined e-databases as a collections of electronic information resources (EIRs) by publishers from various fields and disciplines, which can be accessed online or off-line. Ahiauzu (2008) defined electronic information resource databases as a collection of e-journals, books and other study materials available through the computer and the Internet. Some can be accessed free of charge, while others are subscribed to by universities or organizations before access can be granted. These e-databases are categorized into textual, numerical, open source, commercial, bibliographic, non-bibliographic, online and offline (Hendeson, 2009).

A study conducted by Ndinoshiho (2010) showed that from the 22 types of databases listed, 17 databases were available in the federal universities namely: *Access to Global Online Research in Agriculture (AGORA)*, *Health Inter-Network Access to Research Initiative (HINARI)*, *Elton B. Stephens CompanyHOST (EBSCOHOST)* resources, *African Journal Online (AJOL)*, *Online Access to Research in the Environment (OARE)*, *Database of African Theses and Dissertations (DATAD)*, *The Essential Electronic Agricultural Library (TEEAL)*, *International Network for the Availability of Scientific Publications (INASP)*, *Massachusetts Institute of Technology (MIT) Open CourseWare*, *Directory of Open Access Journals (DOAJ)*, *Journal Storage (JSTOR)*, *World Public Library*, *LexisNexis*, *Questia*, *Ebrary*, *The Observatory* and *E-granary*. The state universities in South-south, Nigeria had 12 namely: AGORA, HINARI, EBSCOhost Resources, AJOL, OARE, TEEAL, DOAJ, JSTOR, Ebrary, Oxford Online Journal, Biomed Central and Aluka Publication.

Ease and Extent of Use and Usefulness of Electronic Databases

On the perceived ease of use of electronic database among the postgraduate students, Ford, Miller and Moss (2001) found that females experienced more difficulty finding information online, feel competent and comfortable using the Internet, using it less frequently than males and using of a less varied set of Internet application, with a similar result in studying faculty members. Also, males had more computing skills than females, while age and year of obtaining highest educational qualifications were important factors for establishing computer skills. In the case of Jordan, it was

found that perceived credibility, perceived ease of use, perceived usefulness as well as computer self-efficacy- all have a significant effect on the adoption and use of e-government services among the Jordanian (Rabaa'i, 2015). The study further indicated that perceived ease of use was the most important factor in predicting Jordanians' intention to adopt and use e-government services.

Similarly, Adetomiwa (2018), found that the Internet needs to be available before a person can use e-databases; revealing the theoretical understanding of the respondents, while most respondents used e-databases for accessing journal articles. In contrast, the result of respondents' experience in using e-databases indicated that the majority had search techniques and ability to retrieve information and compare/evaluate information obtained from different e-database sources, respectively. In contrast, studies on the perceived usefulness of the e-database among students and other information users. Ibrahim (2004) investigated the use and perception of the United Arab Emirates University (UAEU) faculty members of e-resources. Analysis confirmed frequency of use of e-resources was low since their perception toward their usefulness is very small, to a large extent. Reasons cited were lack of time because of the time needed to focus on teaching; lack of awareness about e-resources provided by the library; ineffective communication channels, and language barrier.

Tyagi (2011) examined the reasons why postgraduate students use e-information sources, based on choices fixed by the scientists, pharmacopoeia associates and scientific assistants. Various professional purposes for which EIS was used were elicited from the respondents. The finding from the study indicates the purpose of using the electronic information sources. All the respondents study use EIS for writing research information publication and subject specific information. The study used e-resources because they are less expensive. Only few of the postgraduate students think that e-resources are less useful. These reasons according to the author attracts the postgraduate students need to use EIRs. In addition, Latif et al. (2018) in their study reported that perceived ease of use and perceived usefulness had a significant positive relationship with collaborative learning.

Kwafoa, Anhwere and Manu (2019) showed that postgraduate students at the University of Cape Coast, Ghana, use e-resources to complete assignments, write project work, update lessons note, for research, and update themselves on new information in their fields of study. Also, Akinola et al. (2018) presented the information on the frequency of use of e-databases. The study confirmed that *JSTOR* ranked highest as the most frequently used e-database and was followed in succession by *AJOL*, *AGORA*, *HINARI*, *EBSCOHost*, and *DOAJ*. Findings showed that majority of them used *JSTOR* daily, they use *AJOL* and *AGORA* weekly, *JSTOR* monthly. Baro, Endouware and Ubogu (2011) also found that amongst the medical students at Delta State University in Nigeria, the majority was not aware and did not use the information resources such as *Medline*, *HINARI*, Cumulative Index to Nursing and Allied Health Literature (*CINAHL*) and the Next Unit of Computing (*NUC*) virtual library as sources of information to retrieve materials related to medical literature.

Challenges Associated with the Use of Electronic Databases

Based on the challenges that e-database users encountered, Omeluzor et al. (2014) opined that lack of personal computer and erratic power supply among others are major constraints that inhibit use of EIRs by postgraduates in Nigeria universities, which invariably affects their research output. Bakare et al. (2013) found that limited time and lack of effective information retrieval skills are the main barriers to using e-databases. Baro, Endouware and Ubogu (2011) identified the challenges hindering students' use of e-databases in Delta State University in Nigeria to include lack of training in information literacy skills and ineffective user education program in the medical libraries and medical schools to equip the students with the necessary skills to use the medical databases and other EIRs.

Bashorun, Isah and Adisa (2011) examined users' perception of e-resources by the postgraduate students of University of Ilorin, revealing a low frequency level of e-resources usage, owing to lack of time, as time was required to focus on teaching; lack of awareness of e-resources provided by the library; power outage, ineffective communication channels, slow network and inadequate searching skills. In a study involving postgraduate students of the University of Cape Coast, Ghana, Ankrah and Atuase (2018) identified poor Internet connection as the most important challenge impeding accessibility to e-resources.

Methodology

This study adopted descriptive survey research design. The population of the study, as at 2018/2019 academic session, was 1726, comprising all the postgraduate students in Al-Hikmah University (AU), Ilorin, Kwara State (56); Federal University of Technology (FUT), Minna, Niger State (946); and Nasarawa State University (NSU), Keffi, Nasarawa State, Nigeria (724). The selection was purposively done to reflect the representation of federal, state and private universities in its coverage of the geopolitical zone. Using the stratified random sampling technique, a sample size of 184 was drawn, spread across AU (50), FUT (70) and NSU (64), respectively. A questionnaire titled "*Adoption and Utilization of Electronic Database Among Postgraduate Students Questionnaire*" was used to collect data from the respondents. The instrument was face-validated by 4 research experts in the Department of Library and Information Science with a reliability co-efficient of $r=0.73$, using Cronbach alpha. Out of the numbers administered across the three universities, 45 (AU), 49 (FUT) and 47 (NSU) copies of the questionnaire were returned and formed the basis of the analysis; representing 94% response rate. Data collected for the five research questions of the study were analyzed using descriptive statistics while Pearson Product Moment Correlation (PPMC) was used to test the two hypotheses of the study.

Results and Discussion of Findings

Bio-data of the Respondents

Table 1: Bio-data of the Respondents (N=141)

Institution	Frequency	Percent
Al-Hikmah University, Ilorin, Kwara State	45	31.9
Federal University of Technology, Minna, Niger State	49	34.8
Nasarawa State University, Keffi, Nasarawa State	47	33.3
Total	141	100.0
Gender		
Male	92	65.2
Female	49	34.8
Total	141	100.0
Age		
20-29	49	34.8
30-39	63	44.7
40-49	20	14.2
50 and above	9	6.4
Total	141	100.0
Working Experience		
1-5	47	33.3
6-10	38	27.0
11-15	18	12.8
16-20	38	27.0
Total	141	100.0

Results in Table 1 showed that out of 141 respondents, 34.8% majority were from FUT, Minna, followed by NSU, Lafia, with 33.3% while AU, Ilorin had the least 31.9% of the responses. Based on gender, the results indicated 65.2% male and 34.8% female; implying male dominance among the respondents. Furthermore, 44.7% fall within 30 and 39 age range, closely followed by those of 20- and 29 represented by 49(34.8%). Next to this are the respondents that fall between the ages of 40-49 represented by 20(14.2%) while 9(6.4%) fall between the ages of 50 and above. On the working experience of the respondents, the results showed that out of 141 respondents, 47(33.3%) respondents had 1-5 years working experience while 38(27.0%) respondents had a working experience of 6-10 and 16-20-years working experience. Lastly, 18(12.8%) respondents had a working experience of 11-15 years.

Research Question 1: What are the e-databases available in selected university libraries in North-central?

Table 2: E-databases Available in the Selected University Libraries

S/N	E-databases	Available	Not Available
1	Internet	141 (100.0%)	-
2	E-books	132 (93.6%)	9 (6.4)
3	E-journals	141 (100.0%)	-
4	EMERALD	56 (39.7%)	85 (60.3%)
5	HINARI	38 (27.0%)	103 (73.0%)
6	AGORA	76 (53.9%)	65 (46.1%)
7	SCIENCE DIRECT	123 (87.2%)	18 (12.8%)
8	DOAJ	76 (53.9%)	65 (46.1%)
9	TEEAL	76 (53.9%)	65 (46.1%)
10	JSTOR	69 (48.9%)	72 (51.1%)
11	EBSCOHOST	67 (47.5%)	74 (52.5%)
12	OARE	54 (38.3%)	77 (61.7)

Results in Table 2 revealed that Internet facility, e-journals, e-books, *ScienceDirect*, *AGORA*, *DOAJ* and *TEEAL* are the major e-databases available in the selected university. Results in Table 4.2 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 *AGORA*, *DOAJ* and *TEEAL* are available in their library while 65(46.1%) against this.

Research Question 2: What are the postgraduate students' perceptions towards the ease and extent of use and usefulness of the e-databases in selected universities in North-central, Nigeria?

Table 3: Perceived Ease of Use of Adopted E-databases in Selected University Library

S/N	Statements	SA	A	D	SD
1	Using e-databases is cumbersome	58(41.1)	-	38(27.0)	45(31.9)
2	Easy of learning to use e-databases	27(19.1)	76(53.9)	27(19.1)	11(7.8)
3	Interacting with e-databases is frustrating	27(19.1)	38(27.0)	67(47.5)	9(6.4)
4	Easy to manipulate e-databases	38(27.0)	103(73)	-	-
5	Rigid and inflexible to interact with	9(6.4)	-	27(19.1)	105(74.5)
6	Interacting with the e-databases requires enormous mental efforts	29(20.6)	-	27(19.1)	85(60.3)
7	I have a clear understanding of the use of e-databases	38(27.0)	85(60.3)	9(6.4)	9(6.4)
8	E-databases are generally easy to use	27(19.1)	96(68.1)	18(12.8)	-

NOTE: SA+A=Agree while D+SD=Disagree

Result in Table 3 revealed perceived ease of use of the adopted e-databases in selected university library. The results in the table showed that out of 141 respondents, 58(41.1%) agree that they find it cumbersome to use the e-databases while 83(58.9%) disagree with this statement. Also, the results revealed that 103(73%) agree that they find it easy when learning to use e-database while 38(26.9%) disagree with this statement. Furthermore, the result showed that 65(46.1%) agree that interacting with e-databases is often frustrating while 76(53.9%) disagree with this statement. Also, the result showed that 141(100.0%) agreed that they find it easy to get the electronic resources to do what they want it for while none of the respondents disagree with this statement.

Similarly, the result showed that 9(6.4%) agreed that e-databases is rigid and inflexible to interact with while 132(93.6%) against this statement. Furthermore, the result revealed that 29 (20.6%) agreed that interacting with e-databases requires a lot of their mental effort while 112 (79.4%) against this statement. In addition, the result confirmed that 123(87.3%) agreed that their interaction with e-database is clear and understandable while 18(12.8%) against this statement. In overall, the 123(87.3%) agreed that they find e-database easy to use while 18(12.8%) against this. In summary, it can be deduced that majority of the respondents had positive perception towards the ease of use of e-databases. Table 4 outlines the perceived usefulness of the e-databases adopted by respondents in selected universities library.

Table 4: Perceived Usefulness of E-database adopted in Selected University Library

S/N	Statements	SA (%)	A(%)	D(%)	SD(%)
1	E-resources improve the quality of work	54(38.3)	87(61.7)	-	-
2	Using e-resources gives greater control over work	92(65.2)	49(34.8)	-	-
3	E-resources help accomplish tasks more quickly	45(31.9)	87(61.7)	9(6.4)	-
4	E-resources support critical job aspects	63(44.7)	58(41.1)	20(14.2)	-
5	E-resources usage increases productivity	74(52.5)	47(33.3)	9(6.4)	11 (7.8)
6	T E-resources usage improves job performance	85(60.3)	47(33.3)	9(6.4)	-
7	E-resources usage enhances job effectiveness	47(33.3)	54(38.3)	20(14.2)	20 (14.2)
8	E-resources usage is generally useful	49(34.8)	56(39.7)	27(19.1)	9 (6.4)

NOTE: SA+A=Agree while D+SD=Disagree

Result in Table 4 revealed that all 100.0% agreed that the use of e-databases improves the quality of the work they do and give them greater control over their work while none of them against this. Furthermore, the result showed that 132 (93.6%) agree that e-databases enables them to accomplish tasks more quickly while 6.4% against this statement. In the same vein, 85.8% agreed that e-databases support critical aspects of their job and also increases their productivity at

work while 14.2% against this statement. Also, the result showed that 93.6% agreed that the use of e-databases improves their job performance while 6.4% against this statement. Similarly, the result indicated that 71.6% agreed that using e-databases enhance their effectiveness on the job while 28.4% against this statement. Overall, the result showed that 74.5% agreed that they found e-databases useful for their jobs. Thus, it can be noted that majority of the respondents had positive perceptions toward the usefulness of the e-databases. The extent to which postgraduate students use the adopted E-databases is shown in Table 5.

Table 5: Extent to which Postgraduate Students Use the Adopted E-databases

S/N	E-database	Daily	Weekly	Monthly	Yearly
1	Internet	105 (74.5%)	27 (19.1%)	9 (6.4%)	-
2	E-books	103 (73.0%)	38 (27.0%)	-	-
3	E-journals	96 (68.1%)	45 (31.9%)	-	-
4	EMERALD	27 (19.1%)	9 (6.4%)	36 (25.5%)	69 (48.9%)
5	HINARI	18 (12.8%)	27 (19.1%)	18 (12.8%)	78 (55.3%)
6	AGORA	18 (12.8%)	27 (19.1%)	54 (38.3%)	42 (29.8%)
7	ScienceDirect	27 (19.1%)	78 (55.3%)	27 (19.1%)	9 (6.4%)
8	DOAJ	27 (19.1%)	20 (14.2%)	65 (46.1%)	29 (20.6%)
9	TEEAL	18 (12.8%)	40 (28.4%)	36 (25.5%)	47 (33.3%)
10	JSTOR	9 (6.4%)	29 (20.6%)	47 (33.3%)	56 (39.7%)
11	EBSCOHOST	27 (19.1%)	-	38 (27.0%)	76 (53.9%)
12	OARE	9 (6.4%)	47 (33.3%)	20 (14.2%)	65 (46.1%)

Results in Table 5 indicated that out of 141 respondents, 74.5% use Internet daily while 19.1% use it weekly and 6.4% use it monthly. Furthermore, the results showed that 73.0% use e-books daily while 27.0% use it weekly. Also, the result revealed that 68.1% use e-journals daily while 31.9% use it weekly. Similarly, the result showed that 48.9% use *EMERALD* yearly while 25.5% use it monthly. Also, the result showed that 55.3% use *HINARI* yearly while 19.1% use it weekly. Furthermore, the result showed that 38.3% use *AGORA* monthly while 29.8% use it yearly. The result also revealed that 55.3% use *ScienceDirect* weekly while 19.1% use it daily and monthly. In addition, the result shows that 46.1% use *DOAJ* monthly while 20.6% use it yearly. Furthermore, the result confirmed that 33.3% use *TEEAL* yearly while 28.4% use it weekly. Result also showed that 39.7% use *JSTOR* yearly while 33.3% use it monthly. Furthermore, the result showed that 53.9% use *EBSCOHOST* yearly while 27.0% use it monthly. Lastly, the result showed that 46.1% use *OARE* yearly while 33.3% use it weekly. Thus, it can be deduced that majority of the respondents use Internet, E-books and E-journal daily while majority of the respondents use *EMERALD*, *HINARI*, *EBSCOHOST*, *OARE*, *JSTOR* and *TEEAL*, yearly.

Research Question 3: What are the challenges associated with the use of adopted e-databases by the postgraduate students in the selected universities, in North- central, Nigeria?

Table 6: Challenges Associated with the Utilization of the Adopted E-database

S/N	Challenges	Yes	No
1	High cost of e-database	123 (87.2%)	18 (12.8%)
2	Insufficient of effective information retrieval skills	103 (73.0%)	38 (27.0%)
3	Epileptic power supply	114 (80.9%)	27 (19.1%)
4	Lack of personal computer	27 (19.1%)	114 (80.9%)
5	Poor Internet connection	20 (14.2%)	121 (85.5%)
6	Insufficient fund to subscribe to data	81 (57.4%)	60 (42.6%)

Result in Table 6 showed the challenges associated with 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

Results from the Test of Hypotheses

H₀₁: There is no significant relationship between perceived ease of use and use of e-databases among the postgraduate students in the selected universities in North-central, Nigeria.

Table 7: PPMC Result on Relationship between Perceived Ease of Use and Use of E-databases

Variable	Mean	SD	N	Df	R-cal	P-value	Remark
Perceived Ease of Use	19.4232	2.412	141	139	.152	.000**	Sig...
Use of E-databases	15.3561	2.112					

** Correlation is significant at .001 level (2-tailed)

The results in Table 7 shows the summary of the relationship between perceived ease of use and use of e-databases among the postgraduate students. The result revealed that there is a significant relationship between perceived ease of use and use of e-databases among postgraduate students. This is shown in the table where r-cal= 0.152; df = 139 and P = 0.000, which is less than the 0.05 level of significance. This implies that there is a significant relationship between the perceived ease of use and use of e-databases among postgraduate students in the selected universities in North-central, Nigeria.

H₀₂: There is no significant relationship between the perceived usefulness and utilization of e-databases among the postgraduate students in the selected universities in North-central, Nigeria.

Table 8: PPMC Result on Relationship between Perceived Usefulness and Use of E-databases

Variable	Mean	SD	N	Df	R-cal	P-value	Remark
Perceived Usefulness	14.8142	2.5211	141	139	.219	.000**	Sig...
Use of E-database	10.3121	1.7253					

** Correlation is significant at .001 level (2-tailed)

The results in Table 8 shows the summary of the relationship between perceived usefulness and use of e-databases among postgraduate students. The result revealed that there is a significant relationship between perceived usefulness and use of e-databases among the respondents; where $r\text{-cal} = 0.219$; $df = 139$ and $P = 0.000$, which is less than the 0.05 level of significance. This implies that there is a relationship between perceived usefulness and use of e-databases among postgraduate students in selected universities in North-central, Nigeria.

Discussion of the Findings

The first finding of this study showed that Internet facility, e-journals, e-books, *Science Direct*, *AGORA*, *DOAJ* and *TEEAL* are the major e-databases available in the studied university libraries. This finding is in agreement with the work of Ndinoshiho (2010), which reported that many institutions subscribed to databases, such as *AGORA*, *ScienceDirect*, *DOAJ*, and e-journals. However, it contradicts those of Akinola et al. (2018), which reported that *HINARI*, *INFORM* and *OARE* are the major e-databases available at Engineering College Chennai, Tamilndu, India. Based on the perception of the postgraduate students towards the ease of use of e-databases, the study found that majority of the respondents had positive perception toward the ease of use of e-databases. This is because majority of them claimed that they found it easy to get the e-databases to do what they want it for through their usage. This finding is in line with that of Rabaa'i (2015) and Adetomiwa (2018), which reported that majority of the postgraduate students in Jordan adopted e-databases because they perceived that it is easy to use. Most importantly, they can easily locate information materials electronically.

Furthermore, the study examined the perception of postgraduate students toward the perceived usefulness of e-databases adopted in the university libraries. It found that majority of them had positive perceptions toward the usefulness of e-databases adopted in the university libraries. From the findings, the majority indicated that e-databases improved the quality of their work and give them greater control over their work. This finding corroborates that of Tyagi (2011), which examined the reasons why postgraduate students use e-databases. The reasons identified by the respondents to use e-databases is that it offers them many benefits. Based on this finding, it can be deduced that perceived usefulness played a major role in determining the intention to adopt e-resources while perceived ease of use fully mediated the impact that information quality and system quality had on behavior intention. The reason why these studies corroborate each other

may be attributed to the fact that they were conducted in the academic environment or because they used the same questionnaire to collect data from the respondents.

Also, the study investigated the extent to which postgraduate students use e-database. The study found that majority of the respondents use Internet, E-books and E-journal daily while majority use *EMERALD*, *HINARI*, *EBSCOHOST*, *OARE*, *JSTOR* and *TEEAL* yearly. The reason why majority of the respondents use Internet, e-books and e-journals may be subject to the fact that they are easily accessible or may be attributed to the fact that most of the information obtained from these databases is relevant to their information needs. This implies that the extent to which postgraduate students use all the e-databases available in their library is low. This finding agrees with that of Bashorun, Isah and Adisa (2011), which examined the users' perception of the e-resources by postgraduate students of University of Ilorin, in which they found that the extent to which postgraduate students use e-databases is low. Similarly, Eiriemiokhale (2020) recorded low e-databases usage among lecturers in South-west, Nigeria.

Factors responsible for the low usage of these databases included poor power outage, ineffective communication channels, slow network and inadequate searching skills. In addition, the study identified challenges associated with the use of adopted e-databases, and found that poor interregional networking and Internet connection, high cost of some of the e-databases, epileptic power supply and insufficient of fund to subscribe data are some of the challenges associated with the use of the adopted e-databases. This finding corroborates those of Climah and Nwokocha (2013), who reported that incessant power outage, poor interregional networking and cooperation, slow Internet connection and insufficient fund to subscribe. The reason why these studies reported similar cases may be due to the fact that they were conducted in the university and also used the same quantitative research approach to carry out the study.

Furthermore, the study tested two null hypotheses. The first null hypothesis which stated that there is no significant relationship between perceived ease of use and use of e-databases among the postgraduate students in the selected universities in North-central, Nigeria. From the result of the tested hypothesis, the hypothesis was rejected because the r -cal (0.152) and P -value (0.000) is less than the 0.05 level of significance. This, in turn, means that there is a relationship between the perceived ease of use and use of e-databases among postgraduate students in the selected university libraries in North-central, Nigeria. Similarly, the second null hypothesis, which stated that there is no significant relationship between perceived usefulness and use of e-databases, was also rejected.

This is because the r -cal which is 0.219 and P -value, which is 0.000 is less than the 0.05 level of significance; implying that there is a relationship between perceived usefulness and use of e-databases among postgraduate students in the selected universities in North-central, Nigeria. This finding is in agreement with those of Latif et al. (2018), which reported that perceived ease of use and perceived usefulness had influence on the use of information resources. The implication of this is that since the postgraduate students perceived e-databases are easy to use and also derived some benefits for using it, they will continue using them.

Conclusion and Recommendations

The study concluded that perceived ease of use and perceived usefulness are the predictors for the adoption and use of e-databases among postgraduate students in the selected university libraries. This accounted for the daily usage of e-databases by majority of these students. Thus, based on the findings of the study and the conclusion drawn, the study recommended that:

- i. University management should subscribe to more databases and computer network with appropriate packages for searching and browsing of the needed information.
- ii. Literacy skills' seminar should be organized for students on how to use the databases and how to apply it to their work.
- iii. Based on the use of e-databases, library management should encourage students to continue using the available databases and also provide training for their users in order to be more effective.
- iv. More funds should be allocated to these libraries to subscribe to relevant databases, which will support the teaching and learning of the parent institutions and research activities of the postgraduate students.
- v. Library management should provide good Internet facility and standby generator that will help to solve the problem of poor Internet and epileptic power supply, which are so disruptive to the use of these databases.

References

- Abubakar, M.B. (2010). E-resources for effective academic library service in Nigeria: Opportunities and challenges. *Journal of Nigeria Library Association, Borno State Chapter*, 1(9): 1596-4437.
- Adetomiwa, B. (2018). Knowledge of electronic databases as a predictor's research productivity of academic staff in Nigeria private university. *Library Philosophy and Practice (e-journal)*. 1780.
- Ahiauzu, B. (2008). Use of library: a practical approach, 2nd ed, Owerri: Springfield Publishers. 102
- Ashikuzzaman, M. (2018). A brief history of mobile technology: With 5G on the horizon, take a look back at how we got to this point. [Accessed September 22, 2020] <http://www.lisbdnet.com/library-services/>
- Islam, A. & Sheikh, A. (2019). A study of the determinants of postgraduate students' satisfaction of using online research databases. *Journal of Information Science*, 1-15.
- Akinola, A.O., Shorunke, O.A., Ajayi, S.A. Odefadehan, O.O. & Ibikunle, F.L. (2018). Awareness and use of electronic databases by postgraduates in the University of Ibadan. *Library Philosophy and Practice (e-journal)*. 2065.
- Bakare, O.D., Owolabi, O.A., Banigboye, O.B. & Bankole, O.M. (2013). Factors Affecting Library by Academic Staff and Students of Federal University of Agriculture. Abeokuta, Ogun State. *PNLA Quarterly*. Available at <http://connection,ebcohost.com/c/articles/86978>
- Baro, E.E., Endouware, B.C. & Ubogu, J.O. (2011). Awareness and use of online information resources by medical students at Delta State University in Nigeria. *Library Hi Tech News*, 28(10): 11-17.
- Bashorun, M.T., Isah, A., & Adisa, M.Y. (2011). User perception of electronic resources in the University of Ilorin, Nigeria. *Journal of Emerging Trends in Computing and Information Sciences*, 2(11): 554-562.
- Chiu, C.M. & Wang, E.T.G. (2008). Understanding web-based learning continuance intention: The role of subjective task value. *Information and Management*, 45(3): 194-201.
- Cho, Y.C. (2015). Exploring factors that affect usefulness, ease of use, trust, and purchase intention in the online environment, KDI school of public policy and management. *International Journal of Management and Information Systems*, 19(1): 23-24.

- Chimah, J.M. & Nwokocha, U. (2013). Empirical Study of Motivation; Challenges and Strategies in the Use of electronic Information Resources by Postgraduate Library User in Southeast Nigeria Federal Universities. *International Journal of Library and Information*
<http://www.academicjournals.org/article/139451-7616>
- Conyers, A. (2006). Building on sand? Using statistical measures to assess the impact of electronic services. *Performance Measurement and Metrics. Internet*, 7(1): 37-44.
- Eiriemiokhale, K.A. (2020). Frequency of use and awareness of electronic databases by university lecturers in South-West, Nigeria. *Library Philosophy and Practice (e-journal)*. 4106.
- Ford, N., Miller, D. & Moss, N. (2001). The role of individual differences in internet searching: An empirical study. *Journal of The American Society for Information Science and Technology*, 52(12):1049–1066, 2001
- Henderson, A. 2009. *Electronic Databases and Publishing*, New Brunswick: Transaction Publishers.
- Ibrahim, A.E. (2004). Use and user perception of electronic resources in the United Arab Emirates University (UAEU). *Libri*, 1(1): 18-29.
- Kwafoa, P.N.Y., Anhwere, B.K. & Manu, A.E. (2019). Use of electronic resources by postgraduate students in University of Cape Coast. *International Journal of Library and Information Science*, 11(2): 7-13.
- Kwadzo, G. (2015). Awareness and usage of electronic databases by geography and resource development information studies graduate students in the University of Ghana. *Library Philosophy and Practice (e-journal)*. 1210. <http://digitalcommons.unl.edu/libphil prac/1210>
- Latif, A., Sikandar, S.M., Abubakari, S.M. Grace, O., & Sadia. L. (2018). Using technology acceptance model to measure the use of social media for collaborative learning in Ghana: *Journal of Technology and Science Education*, 8(4): 1-2.
- Lolade, F.O. (2020). Awareness and use of electronic information resources by students of college of health sciences in Olabisi Onabanjo University, Nigeria. *Journal of Information and Knowledge Management*, 1(11): 11-12.
- Mani, M., Shahul, H. & Thirumagal, A. (2019). Impact of ICT knowledge, library infrastructure facilities on students’ usage of e-resources –an empirical study. *Library Philosophy and Practice (e-journal)*. 2225.
- Maxwell, N.O. & Stephen, B. (2020). Use of electronic resources by students in a premier postgraduate theological University in Ghana. *SA Journal of Information Management*, 21(1): 2. a1026.

- Mehta, D. & Wang, X. (2020). COVID-19 and digital library services – a case study of a university library. *Digital Library Perspectives*, 2(1): 13-22.
- Naqvi, T. H. (2012). Use of electronic databases by postgraduate students and research scholars at GBPUAT Library, India. *Library Philosophy and Practice (e-journal)*. 809.
- Ndinoshiho, J.M. (2010). The use of electronic information services by undergraduate nursing students at the University of Namibia's Northern Campus: A descriptive study. *Information Development*, 26(1): 57–65.
- Ofordule, J.O., Agbanu, N.A. & Nwankwo, N.G. (2019). The use of resources as a correlate of user satisfaction in University libraries. *International Journal Science and Humanities*, 1(9), 1-2.
- Rabaa, A.A. (2015). An Empirical Investigation on the adoption of e-government in developing countries: The case of Jordan. *Computer and Information Science*, 8(3): 2015
- Omeluzor, S.U., Madukome, E., Bamidele, I.A. & Ogbuiyi, S.U. (2014). Use of electronic information resources and research output by academic staff in private universities in Ogun State. *Canadian Social Science Journal*, 8(3). 8- 15.
- Oyeniya J., Oyeniran, O., Omotosho, L., Adebayo, O., & Oyeniran, S. (2020). Evaluation of the availability, accessibility and usage of electronic resources in University Library. *International Journal of Multidisciplinary Sciences and Advanced Technology*, 1(2): 138-149
- Tyagi, S. (2011). Use and awareness of electronic resources at IIT Roorkee, India: A case study. *Journal of Library and Information Science*, 2(1): 1-20.
- Yusuf, M. & Farouk, B.L. (2017). Awareness, access and use of academic databases by faculty members: A case study of Bayero University Library. *International Journal of Library and Information Science*, 6(3): 13-26.