

Environmental Factors as Correlate of Electronic Database Use among Undergraduates in Federal Universities in Southwest, Nigeria

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Abstract

This study examined the environmental factors as correlate of electronic database use among undergraduate students in federal universities, Southwest, Nigeria. The study was a descriptive survey research in which relevant data were collected from 475 undergraduates drawn by multistage random sampling across the Departments and Faculties/Colleges of three federal universities: Primary data were obtained through the use of questionnaire and analysed using frequency counts, percentages, mean, standard deviation and Pearson Product Moment Correlation (PPMC). Analysis of environmental factors revealed that majority of the respondents had a serene environment. Likewise, majority of the respondents do not make use of the available electronic databases investigated. Lack of internet access in the classrooms and poor networking were identified as the prevailing environmental factors confronting undergraduates on electronic database use. Pearson Product Moment Coefficient revealed positive and significant relationship ($p < 0.05$) between environmental factors and electronic database use ($r = 0.513$). The study concluded that relationship exists between environmental factors and the use of electronic database. Therefore, it was recommended that the library management should provide easy access to internet information and increase the time allotted to students for the use of the electronic database.

Keywords: Environmental Factors; Electronic Database Use; Undergraduates; Federal Universities; Southwest; Nigeria

Introduction

The advent of Information and Communication Technology (ICT) had transformed the way in which information is being packaged, disseminated and used. Presently, most libraries are using the electronic platform to render their services. Stewart (2011) observes that the global society was propelled to “the information society.” WordIQ (2007) noted that Advanced Research Project Agency Network (ARPANET) the core networks forming the Internet were launched in 1969 by the U.S as a Department of Defense communication medium and even recognised as “Information Superway” while the development of World Wide Web (www) in the early 1990s opens the way for a knowledge society. Therefore, the emergence of a computer with internet access enhances the world wider database used by students and researchers to acquire knowledge or engage in participatory research.

A database can be described as collections of information from one or more fields that are organised to be easily accessed, managed and updated in support of learning (Adamou and Ntoka, 2017). The impact of electronic database use to meet the scholarly needs of library users cannot be overemphasized. An electronic database (e-database) is one division of electronic resources and non-print (online or CD-ROM) information materials in the library that are used by librarians to enhance teaching and learning process of the academic staff and students. Databases are collections of scholarly research work in various disciplines which varies depending on subject coverage and features that can be accessed globally or locally using a computer system and its peripherals. It is a repository of knowledge that contains full-text documents, abstracts or description of articles in various disciplines. It can also be referred to as an organised collection of information on a specific subject or multidisciplinary subject areas that can be searched and retrieved electronically (Kenchakkanavar, 2014). This means that an electronic database is available in various disciplines, organised information, large storage capabilities as well as easy and fast accessibility with the potential of enhancing scholarly research among scholars.

It serves as the first point of consulting for any academic research work by undergraduate students because it is one of the information resources made available by the Librarians to support the objectives of institution in the area of teaching, learning and research activities (Akintola and Olayiwola, 2014). The e-database use is expected to increase undergraduates' level of performances in doing class assignments, project work, writing term papers, supplementing class

works, retrieving current literature for studies and widen scope on areas of subject discussion. Amusa and Atinmo (2016) state the benefits of e-database over the print resources to include provisions such as greater number of access points, remote access, assistance to students to be well informed on different discipline and regular updates of information materials among others. Therefore, access to e-database has become an important aspect of the educational sector because of its easy access for library users as against frustrating hours spent in seeking information from print materials.

Ajebomogun and Ajebomogun, (2015) reiterate that in spite of various initiatives by Food and Agriculture Organisation (FAO), World Health Organisation (WHO) and United Nations Environment Programmes (UNEP) with support of Research4Life through Access to Global Online Research in Agriculture (AGORA), Health Information Network Access to Research Initiatives (HINARI) and Online Access to Research in the Environment (OARE) among others to bring databases to the doorstep of researchers. It is worrisome that most researchers and undergraduate students in developing countries are not painstakingly using these laudable initiatives to adequately utilise these electronic information resources available globally.

Technologies have created a new service environment in every sphere of activities which has removed conventional boundaries of seeking information and encourage a conducive learning environment. The importance of environmental factors in the effective use of e-database cannot be overemphasized. Oginni and Adesanya (2013) described environmental factors as known features of the environment that impact the operations and growth of an organisation. A conducive environment is likely to promote the use of e-database among undergraduate students. Environmental factors are presumed to be a hindrance to the effective use of e-database if not well managed. Oyedum (2012) maintained that improperly managed of environment could discourage effective use of library resources. This is in consonance with Tait, Martzoukou and Reid (2016) that environmental factors must be considered in setting up electronic library in order to have positive influence on students' effective use of the print and e-resources. Environmental factors in this study include ventilation, computer system facilities, internet facilities, power supply and conducive environment.

Conducive environment tends to boost daily exploration of information technology (IT) development and application in academic libraries. Provision of good seating arrangement, enough reading space

and proper ventilation is the antidote to undergraduates' use of library resources. Prangya and Rabindra (2013) listed various variables that influence environmental factors such as power supply, ventilation, internet bandwidth and software compatibility among others. A learning environment should be appealing and quiet to enable easy assimilation and wider study.

Thus, electronic database has become an integral part of modern library and information services in Nigerian universities. It has a lot of qualities which include large storage capacity, orderliness, remote access and availability round the clock among others. These integrated library system resources along with print resources are provided in the federal university libraries in Southwest, Nigeria in appreciable quantity and quality for the use of students and to meet the National University Commission (NUC) accreditation demand. However, personal observation and literature investigations done in the course of this study showed that the electronic database was being underutilized thereby leading to a low level of undergraduates' performances in terms of assignments, term papers and project work (Haruna, Oni and Akpoduado, 2018). The reasons for the poor use of the electronic database may include environmental factors such as inadequate workstations, erratic power supply, poor internet access, noisy environment, poor ventilation, power outage, poor internet bandwidth among others. This may consequently reduce the electronic database use and also minimise the quality of information to be derived from the electronic database. Hence, this study investigates environmental factors as correlate of electronic database use among undergraduates in federal universities in Southwest, Nigeria.

Objectives of the Study

- i. determine the level of electronic database usage among undergraduates in the federal universities in Southwest, Nigeria;
- ii. identify the prevailing environmental factors that are affecting electronic database use among undergraduates in federal universities;
- iii. examine the perceived effect of environmental factors on electronic database usage;

Research Questions

- i. What is the level of electronic database use among undergraduates in the selected federal universities in Southwest, Nigeria?
- ii. What are the prevailing environmental factors that are affecting electronic database use among undergraduates in federal universities?
- iii. What is the perceived effect of environmental factors on electronic database usage?

Hypothesis of the Study

The following null hypothesis was formulated and tested at 0.05 level of significance.

H_{01} : There is no relationship between environmental factors and electronic database usage among undergraduates in federal universities in Southwest, Nigeria.

Literature Review

Electronic database is one of the examples of electronic resources that are commonly used in the library; it is a source of information that has the capacity to inculcate learning skills on students in their areas of study. It also creates innovation in learning, teaching and research work as a result of the acceptance of electronic database. For any meaningful development in the academic society, there is a need to improve on electronic database resources and environmental factors to encourage learning. Akinola, Shorunke, Ajayi, Odefadeha and Ibikunle (2018) opined that any student who wants to perform better should have the ability to explore the digital environment.

Environmental factors include anything that may influence any of the five senses: sight, sound, smell, touch and taste. It also comprises landscape, architecture, interior layout, lighting, air quality and temperatures, human relationships and interactions within their environment. The physical stimuli in workplace environment can be classified into five different factors, namely; sound (noise music), temperature (heat, cold), air (pollution, freshness), light and colour (sunlight, incandescent, fluorescent, window views), and space (density, arrangement of work stations). All these determine the totality of forces and actions that can affect performance and use of the library. Kiilu and Otike (2016) said drawing users to the library, the librarians are advised

to work on their environments and improved on it to reduced levels of stress and anxiety of their users. Literature had also revealed that environmental factors can influence the use of electronic databases by the students in the academic library (Folorunso and Njoku, 2016; Oyedum, 2012). This implies that electronic databases statistics will be improved with advancement in the environment.

A study by Smith et al. (2007) examined the factors that influenced the use of electronic databases and services in academic and research institutions in Tanzania and found that access was limited by lack of awareness of available resources, lack of interest, time and commitments to use the resources. Other factors affecting the utilisation of electronic databases that were identified in the study include lack of competence of the users, lack of knowledge, negative attitudes, poor practices and inadequate infrastructure. Also, Study on electronic resources information use of Faculty of Law members at Babcock University in Ogun state by Madukoma, Onuoha and Ikonne (2014) established factors that affects the use of electronic database as power fluctuations, inadequate orientation/training, and lack of awareness of electronic resources in the library. The study recommended that the library administration should provide modern technologies; create adequate awareness of electronic resources acquired in the library; provision of orientation/training of faculty members. Studies conducted outside Nigeria on the use of electronic databases by Singh, Ogbonnaya and Ohakwe (2011) on factors affecting the use of electronic databases in Malaysia showed that information specialists have long sought to understand what factors are pertinent in encouraging a person to search for information electronically. The identified factors are language proficiency: computer literacy and information literacy affecting the use of electronic databases of the library.

In another study, Alison, Kiyingi and Baziraake (2012) found that utilisation of electronic databases was influenced by human and institutional factors including information literacy, low bandwidth and a limited number of resources available to users. The study also revealed that the non-availability of electronic resources, discipline and institutional factors affected the use of the resources by academics and researchers. Ugwuanyi, Okwor and Ezeji (2014) observed that environments that will aid students' electronic database use should be provided by the academic libraries administrators. Their study revealed the prevailing environmental factors encountered as follows: low speed access, an inadequate computer system in the library, internet service fluctuation, erratic power supply, and frequent breakdown of a

computer system, excess time use during downloading of Portable Document Format (PDF) files and unaware of the location of needed information resources

Report from six Federal Universities in different geo-political zones of Nigeria by Oyedum (2012) revealed that resources availability made the greatest contribution to students' use of university; followed by information literacy and next in this decreasing order is the contribution of noise. These factors contributed significantly to the undergraduate students' use of the university libraries. A total of 98.1% of the respondents suggested provision of current library materials while 97.6% suggested the provision of adequate library stock. They also suggested the provision of ICT facilities (96.6%) and provision of conducive atmosphere (96.5%) as an aid to the use of university libraries. Omotayo (2010) emphasized that there are many environmental factors determining the adoption and use of electronic databases in developing countries. Among such factors are infrastructure, institutional policy on Information Communication Technology (ICT) resources development, technology supply problems, adequate human resources, education and training, and economic factors. Ong, Lai and Wang (2004) categorised the environmental factors being determinants to access and use of electronic databases into three categories namely, connectivity infrastructure, costs and physical infrastructure of the internet. It was further highlighted that in Nigeria, physical infrastructure and connectivity infrastructure ranked as the highest environmental constraints to electronic database access and usage. Unlike in Nigeria, Okon, Ngulube and Onyancha's (2014) study on factors affecting electronic databases and Internet resources use in Kenya showed connectivity infrastructure as the most limiting factor. Furthermore, the researcher stated that some environmental factors such as good ventilation, level of noise and physical facilities of the library such as comfortable furniture and illumination can influence the use of electronic databases.

Ingutia-Oyieke and Dick (2010) investigated the environmental barriers to the use of electronic databases. The identified barriers were mainly related to Information Communication Technology (ICT) infrastructure. Problems relating to Information Communication Technology (ICT) infrastructures in Africa are frequent power outages on campus. This problem was not created by universities but had serious repercussions on the internet facilities which often cause break down. Instances of power outages resulting in damage to computers in the library had been reported and frequent periods of equipment downtime as a result of the power outages. The researchers concluded that an

Information Communication Technology (ICT) infrastructure evolves and become more complex as the teaching and learning experience evolved. When implementing effective Information Communication Technology (ICT) infrastructure, decision-makers should consider ICT progression and ensure that it supports research and teaching.

According to Akobundu (2007), perhaps the major obstacle to electronic database access and use is the environment. The principal environmental factors include the polluted air in urban and industrialised cities of the world, wide ranges of temperature, pests, and so on. A large percentage of information materials are made of paper that has undergone several stages of chemical processing. The demand for paper caused manufacturers to use the wood pulp and acid in its production. Sulphur-dioxide and nitrogen dioxide increase the acidity and contribute to its deterioration. The ultraviolet rays of the sun also have a negative effect on the quality of the paper. Noise is another environmental factor. Noise from traffic or other users' conversation can be negative environmental factors, as can noise from library staff or equipment.

Along this line Olalude (2007) identified some environmental issues affecting the use of electronic databases. These are; unstable power supply, lack of awareness on the relevancy of the available electronic databases, lack of initial capital outlay to put up internet facilities and services shortage of Information Communication Technology (ICT) specialists and adequate computer literacy skills development on the part of potential internet service consumers. Moreover, most of the literature identified irregular power supply, inadequate infrastructure facilities and high cost of electronic resources as the major constraints to the use of electronic databases in Nigeria. Hence, this study examined the influence of environmental factors as a correlate of electronic database use among undergraduates in federal universities in Southwest, Nigeria.

Methodology

The descriptive survey design was used in obtaining necessary data for the research. Multistage sampling technique was adopted for the study. The first stage was by stratified random selection of three (3) universities out of the six federal universities in Southwest, Nigeria. The stratification was based on whether or not the universities are convention (offering all kinds of courses) or specialised (having specific focus). In Southwest, Nigeria, we have four (4) conventional universities, from among which Obafemi Awolowo University (OAU) and University of Ibadan (UI) were selected; two (2) specialised universities, out of which

the Federal University of Agriculture (FUNAAB), Abeokuta, was selected. The population of the study comprised 49,335 undergraduates in the three selected federal universities Southwest, Nigeria. The second stage was a purpose selection of two faculties that were common to all the selected universities, Faculty of Agriculture & Forestry and Faculty of Science. Similarly, five (5) departments (Departments of Agricultural Economics, Agricultural Extension and Rural Development, Chemistry, Physics and Mathematics) that were common to both faculties were purposively selected. Also, undergraduates in 300 and 400 levels of the total departmental students' population were selected on purpose. This is because they are more likely to be the set of undergraduates who might have used electronic databases in solving their assignments in the past as well as currently in preparing for their research work. The final stage of the sampling process was simple random selection of 40% of students in each level of the sampled department which led to a sample size population of 491 undergraduate students. A total of 491 copies of the questionnaire were distributed and 475 (97%) copies were returned and found usable for this study. The response rate of (97%) is considered adequate for the study because the standard and acceptable response rate for most studies is 60%. Questionnaire was used for detailed information. The results are presented in tables for easy understanding.

Results and Discussion of Findings

Table 1: Gender of Respondents

Gender	No. of respondents	Percentage (%)
Male	260	54.7
Female	215	45.3
Total	475	100

Table 1 revealed the number of respondents according to gender. The analysis shows that the male respondents were more than the female respondents, having 260 (54.7%) while the female respondents have 215 (45.3%). This finding therefore shows that the male undergraduates are more than their female counterparts.

Research Question 1: What is the level of electronic database use among undergraduates in the selected federal universities in Southwest, Nigeria?

Table 2: Level of Electronic database use among Undergraduates across selected federal institutions

Electronic Databases	HU (%)	U (%)	RU (%)	NU (%)	Mean (\bar{x})	Standard Deviation (SD)
AGORA	100 (21.1)	93 (19.6)	120 (25.3)	162 (34.1)	2.28	1.14
HINARI	61 (12.8)	128 (26.9)	98 (20.6)	188 (39.6)	2.13	1.08
OARE	66 (13.9)	93 (19.6)	117 (24.6)	199 (41.9)	2.05	1.08
EBSCOHOST	66 (13.9)	94 (19.8)	107 (22.5)	208 (43.8)	2.04	1.09
JSTOR	77 (16.2)	92 (19.4)	107 (22.5)	199 (41.9)	2.10	1.12
AJOL	77 (16.2)	102 (21.5)	100 (21.1)	196 (41.3)	2.13	1.12
SCIENCEDIRECT	77 (16.2)	123 (25.9)	105 (22.1)	170 (35.8)	2.23	1.10
TEEAL	74 (15.6)	88 (18.5)	112 (23.6)	201 (42.3)	2.07	1.11

Key: HU= Highly Utilised; U= Utilised; RU= Rarely Utilised; NU= Not Utilised

Table 2 shows the result of the findings, it was revealed that majority (66.5%) and (66.3%) of the respondents do not make use of OARE and EBSCOHOST databases. In addition it was revealed that 65.9% and 64.4% were not using TEEAL and JSTOR. A total of 60.20% of the respondents were not using HINARI, AGORA (59.41%) and SCIENCE DIRECT (57.9%) electronic databases for their academic activities. The implication of the findings is that the respondents are not using the electronic databases that are available for their academic needs.

Research Question 2: What are the prevailing environmental factors that are affecting electronic database use among undergraduates in federal universities?

Table 3: Prevailing environmental factors

<i>Environmental Factors</i>	<i>Poor(%)</i>	<i>Fair (%)</i>	<i>Good (%)</i>	<i>Excellent(%)</i>	\bar{x}	<i>SD</i>
Internet Connectivity	199 (41.9)	107 (22.5)	92 (19.4)	77 (16.2)	1.60	1.15
Network	196 (41.3)	100 (21.1)	102 (21.5)	77 (16.2)	1.62	1.14
Electronic Resources	188 (39.6)	98 (20.6)	128 (26.9)	61 (12.8)	1.76	1.05
Power Supply	208 (43.8)	107 (22.5)	94 (19.8)	66 (13.9)	1.94	1.07
Library Location	199 (41.9)	117(24.6)	93 (19.6)	66 (13.9)	2.04	0.97
Ventilation	23 (4.8)	71(14.9)	152 (32)	229 (48.2)	2.24	0.88

The findings in Table 3 revealed that respondents confirmed there is adequate (80.2%) ventilation in the institution libraries. Also, confirmed that locations of the libraries were good (73.3%). Furthermore, more than average (66.9%) and (63.2%) of the respondents signifies their satisfaction with power supply and electronic resources facilities. However, internet connectivity and network have a little above average (56.3%) and (52.2%) simultaneously.

Research question 3: what is the perceived effect of environmental factor on electronic database usage?

Table 4: Perceived effect of environmental factor on electronic database usage

<i>Items</i>	<i>SD</i>	<i>D</i>	<i>A</i>	<i>SA</i>	\bar{x}	<i>Std Dev.</i>
Library internet facility is weak	97 (20.4)	73 (15.4)	143 (30.1)	162 (34.1)	2.78	1.125
Time has been a limiting factor	79 (16.6)	136 (28.6)	150 (31.6)	110 (23.2)	2.61	1.017
Space constraint will allow its effective usage	91 (19.2)	151 (31.8)	128 (26.9)	105 (22.1)	2.52	1.038
Limited access to computer system	87 (18.3)	156 (32.8)	143 (30.1)	89 (18.7)	2.49	0.997
Inadequate facilities for using e-databases	81 (17.1)	155 (32.6)	175 (36.8)	64 (13.5)	2.47	0.928
Limited speed of access to internet	83 (17.5)	154 (32.4)	170 (35.8)	68 (14.3)	2.47	0.942
Obsolete equipments	82 (17.3)	191 (40.2)	126 (26.5)	76 (16)	2.41	0.954

<i>Items</i>	<i>SD</i>	<i>D</i>	<i>A</i>	<i>SA</i>	\bar{x}	<i>Std Dev.</i>
Lack of enough seating capacity	123 (25.9)	144 (30.3)	129 (27.2)	79 (16.6)	2.35	1.039
Irregular power supply	129 (27.2)	145 (30.5)	82 (17.3)	119 (25.1)	2.32	1.053
Lack of effective cooling system	116 (24.4)	177 (37.3)	105 (22.1)	52 (10.9)	2.30	1.008
Frequent breakdown of computer system	111 (23.4)	194 (40.8)	98 (20.6)	72 (15.2)	2.28	0.986
Library does not have standby generator to provide power	125 (26.3)	178 (37.5)	95 (20)	77 (16.2)	2.26	1.023
Library environment is not conducive for me	125 (26.3)	182 (38.3)	108 (22.7)	60 (12.6)	2.22	0.975
Library location is far to lecture rooms	139 (29.3)	179 (37.7)	107 (22.5)	75 (15.8)	2.15	0.965
There is too much heat in the library	152 (32)	170 (35.8)	89 (18.7)	64 (13.5)	2.14	1.015

Key: SD = Strongly Disagree; D = Disagree; A = Agree; SA = Strongly Agree; \bar{x} = Mean and SD = Standard Deviation

Table 4 revealed the findings of the study that majority (67.0%) and (67.8%) of the respondents confirmed to disagree with the statement that library location is far and that there is too much heat in the library respectively. This indicated that the library is located in a serene environment and as well ventilated for the respondents. In addition, 64.2% and 63.8% disagree to the statement that frequent breakdown of computer system and that the library does not have standby generator. On the other hand, 64.2% and 54.8% of the respondents confirmed that the libraries internet facilities are weak and that time as limiting factors that affect in the effective use of electronic databases that are available respectively. This showed that internet facilities need and time should be worked on, as they stands as perceived effect of environmental factors on electronic database use.

Test of Hypothesis

H01: There is no relationship between environmental factors and electronic database usage among undergraduates in federal universities in Southwest, Nigeria.

Table 5: Summary of the Pearson Product Correlation Showing Relationship Between Environmental Factors and Electronic Database Usage

		<i>Electronic Database Use</i>	<i>Environmental factors</i>
Pearson Correlation	Electronic Database Use	1	.513**
	Sig. (2-tailed)		.000
	N	475	475
Environmental factors	Electronic Database Use	.513**	1
	Sig. (2-tailed)	.000	
	N	475	475

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Table 5 shows the pearson product correlation moment relationship on environmental factors and electronic database use among undergraduates in selected federal universities in southwest, Nigeria. It was revealed that there is a significant linear relationship ($r = 0.513$, $N = 475$, $p < 0.05$) between environmental factors and electronic database use. Statistically, the null hypothesis is rejected.

Discussion of the Findings

The findings revealed that majority of the respondents were not using the electronic databases. This finding corroborated Edem (2016) study on faculty awareness and utilisation of The Essential Electronic Agricultural Library (TEEAL) for teaching and research at the University of Calabar, Nigeria. It was found that TEEAL was not adequately used by the respondents. The non-use of these electronic databases could be attributed to human and institutional factors including low bandwidth and limited number of resources available to users (Alison, Kiyangi and Baziraake, 2012). Kiilu and Otike (2016) opined that librarians should look at their environments and improved on it to reduced levels of stress and anxiety of their users.

The study revealed that respondents confirmed that ventilation and locations of the libraries were excellent followed by power supply and electronic resources facilities that are good. On the other hand,

internet connectivity and network were fair. The findings corroborated Oyedum (2012) study on the conduct and influence of physical facilities on the use of an academic library in Nigeria. It was discovered that proper ventilation, power supply, adequate computer terminals; high bandwidth among others are the environmental factors that encourages the students to patronised the library.

The study found that majority of the respondents disagreed with the statement that library location is far from their lecture rooms and that there is too much heat in the library. This indicated that the library is well ventilated and located in a serene environment. This study agrees with Okon et al (2014) study on factors affecting electronic databases in Kenya that good ventilation, physical facilities in the library can influence the use of electronic databases. In addition, statement such as frequent breakdown of computer system and that the library does not have standby generator were disagreed with by the respondents. On the other hand, respondents confirmed that the libraries internet are weak and there is time constraint which was a limiting factor that affect the effective use of electronic databases that are available in the libraries.

The study established that there is a significant positive linear relationship between environmental factors and electronic database use. The result is also in consonance with Basiru and Okwilagwe (2018), in their study of Awareness of Electronic databases by academic staff in private universities in South-west Nigeria where there is a significant positive correlation, also, the study is in line with Ankrah and Acheampong (2017) study in Students' Use of Electronic Resources in University of Professional Studies, Accra, Ghana which revealed significant weak positive correlation on the use of electronic resources.

Conclusion

The following conclusions have been drawn from the findings based on the null hypothesis and research questions formulated to guide the study. It was concluded that there exists significant relationship between environmental factors and electronic database use. The most perceived environmental factors were time constraints, downloading and fluctuation of internet service. The findings also show that there is a positive significant effect between environmental factors and electronic database use. Thus, indicates that environmental factors have a strong effect on the use of electronic database. The students are expected to patronise serene and hospitable environment for the use of electronic database.

Recommendations

1. The library management should increase the time slot given to students for searching.
2. Adequate fund should be provided by the federal governments for the timely subscription of electronic databases by the university library of the selected federal universities in Southwest, Nigeria.
3. The management should improve on widening the internet bandwidth and networking in the selected federal university to improve access and speed of electronic database for library users as timely access to information request will encourage constant usage of electronic database.
4. The management should provide access for internet free services in the selected federal universities in Southwest, Nigeria.

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