ISSN: Print- 2814-0702
Online-2814-0710

LAFIA JOURNAL OF LIBRARY & INFORMATION SCIENCE (LJLIS)

Vol. 8, No.2, 2025

A Publication of the Department of Library and Information Science
Federal University of Lafia, Nasarawa State

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Published in Nigeria by:
Department of Library and Information Science

ISSN: Print - 2814 - 0702
Online - 2814 - 0710

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

ASSESSMENT OF THE INFLUENCE OF AWARENESS AND UTILIZATION OF LIBRARY ELECTRONIC RESOURCES ON ACADEMIC PERFORMANCE OF LIBRARY AND INFORMATION SCIENCE STUDENTS IN UNIVERSITIES IN BENUE STATE, NIGERIA

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Abstract
This study assessed the influence of awareness and utilization of library electronic resources on academic performance of library and information science students in universities in Benue State. Research design adopted for the study was descriptive survey. The population of the study comprised of 1,201 students from Moses Orshio Adasu University, Makurdi and Joseph Sarwuan Tarka University, Makurdi in Benue State. Simple random sampling technique was used to sample 411 respondents. The instrument used for data collection was a self-structured questionnaire structured on a 4-point Likert scale. The findings of the study revealed that, library electronic resources are available in libraries in the universities in Benue State. The findings of the study also revealed that, library and information science students in universities in Benue State are aware of the electronic resources and also utilizes the electronic resources. The study also revealed that, awareness and utilization of electronic resources significantly influence academic performance of library and information science students in universities in Benue State. The study also found that, library and information science students in universities in Benue State faced challenges in awareness and utilization of library electronic resources. Based on the findings of this study, the study concluded that, if respondents utilized these library electronic resources religiously, academic performance of LIS students would be enhanced. The study recommended that universities in Benue State should create programme for students to be aware of the available library electronic resources. It's also recommends that the Universities in Benue State should encourage students to utilize the available library electronic resources to enhance their academic performance.

Keywords: Influence, Awareness, Utilization, Electronic Resources, University Library

Introduction

Library is an agent of educational, social and economic development. That plays vital roles in the academic performance of students in the universities generally and library and information science in particular. Also, a library is one of the social institutions that has the primary role of acquiring, processing, organizing, preserving as well as conserving the print and non-print library resources for users. Library is a collection of books and other forms of recorded information purposefully selected and systematically organized and preserved by qualified library personnel for use by either the public or a target group (Oluwaniyi, 2010). According to Norman (2012) a library is a collection of materials, books or media that are easily accessible for use and not for display purpose. Opotta (2016) outlined the types of libraries to include school library, academic library, special library, public library, national library and university library.

The purpose of setting up libraries is to acquire, process, organizes, preserve and make available current and relevant print and non-print materials that will meet the needs of its users at appropriate time. According to Adegbore (2011) their major aim is to support the curricular educational needs of the students as well as to support the teaching staff in their up-to-date information resources required for their teaching jobs (Igbo & Dike 2006). According to Akporhonor (2005) academic libraries are attached to tertiary institutions such as Universities, Polytechnics, Colleges of Education, Colleges of Agriculture, Colleges of Technology and Research Institutes. Agber (2025) reported that university libraries are yoked with the responsibility of selection and acquisition of information materials. This is true; especially that it includes electronic resources. The primary purpose of the university library is to support teaching, learning and research in ways consistent with, and supportive of the institution's mission and goals. Ola (2021) highlighted the major functions of the university library including developing collections of print and non-print media resources such as electronic resources.

Electronic resources can be defined as the electronic representation of information which can be accessed via systems and computer network and they provide accurate and timely information (Johnson, Evensen, Gelfand, Lammers, Sipe & Zilperet, 2012; Ukpebor, 2012; Yebowaah & Plockey, 2017). The importance of electronic resources to students cannot be over-emphasized. They offer both undergraduate and postgraduate students the chance to access a variety of relevant and current information from different subject fields. The emergence of electronic resources, according to Zhang and Liu (2011), Ukpebor (2012), Ani and Edem (2012), has tremendously transformed the handling, management and utilization of library resources in Nigerian academic environments and university library in particular. It is of paramount importance for students to be aware of the available electronic resources to enhance academic performance. In essence, this study is important because it will expose the available library electronic resources and measure its utilization on academic performance of library and information science students in universities in Benue State, Nigeria.

Statement of the Problem

Awareness of electronic resources indicates students' knowledge of the availability of the resources; their services and the extent to which electronic resources are utilize to enhance their academic performance. Students need to be aware of complete potential electronic resources. Awareness of electronic resources indicates the extent to which students have information and knowledge of electronic resources being subscribed to by a library. When students have adequate information on the resources available in the library, they are encouraged to utilize them as the need arises. The utilization of electronic resources has tremendous impact on the academic performance of students. Awareness and utilization of electronic resources is very important so as to keep students alert of the available resources through which they can utilize the needed information. If students are aware of the electronic resources, they will utilize them to improve their academic performance.

Therefore, students' academic performance is a key feature in university education. It is one among the major criteria for measuring the success or failure of students. Similarly, universities are ranked high based on the involvement of their students in academic performance activities. It is however, unfortunate that, no Nigerian University is among the best one thousand (1,000) universities worldwide. This could be as a result of no or inadequate relevant library electronic resources. The emergence of electronic resources initiative has brought academic relief to students and leverage to learning and research activities especially in low income countries like Nigeria and Benue State in particular for those students that are aware of the existence of electronic resources. Students of Library and Information Science in Universities in Benue State make use of the opportunities granted by the availability of electronic resources to expose themselves to diverse resources to attain their academic productivity.

The researcher's has however, observed that there is low level of awareness and utilization of electronic resources by students of library and information science in universities in Benue State. Low level of awareness and utilization is capable of causing low or poor academic performance, low grades or average (CGPA), massive failure in examination and poor research work. It is pertinent at this point to imagine whether students of library and information science in Benue State are aware of the opportunities presented by library electronic resources and whether they utilize them to enhance their academic performance.

There is therefore the need for an empirical study to ascertain whether students of library and information in universities in Benue State are aware and utilize library electronic resources to advance their academic performance. For now, there seems to be no known study and this has provoked the researcher to ask the following questions: what are the available library electronic resources that enhance academic performance of library and information science students in universities in Benue State? If they are available, to what extent are library and information science students in universities in Benue State aware of the available library electronic resources for their academic performance? If they are aware, to what extent do library and information science students utilize the available library electronic resources for academic performance in universities in Benue State? If they utilized, what is the influence of awareness of library electronic resources on academic performance of students of library and information science in universities in Benue State,

Nigeria? It is in the light of the above that the researcher's felt the need to examine the influence of awareness and utilization of library electronic resources on academic performance of library and information science students in the universities in Benue State, Nigeria.

Objectives of the Study

The main objective of this study is to assess the influence of awareness and utilization of library electronic resources on academic performance of Library and Information Science Students in the universities in Benue State, Nigeria. Specifically, the study sought to:

i. find out the kinds of library electronic resources available for utilization to improve academic performance of library and information science students in Universities in Benue State.
ii. ascertain the influence of library and information science students' utilization of library electronic resources on their academic performance in universities in Benue State, Nigeria.
iii. identify the challenges faced by students of library and information science in getting aware and utilizing library electronic resources to promote their academic performance in universities in Benue State.

Review of Related Literature

Electronic resources are library resources that are available in computer process-able form. Electronic resources are systems in which information is stored electronically and made accessible through electronic systems and computer networks. Awareness of electronic resources means students have information and knowledge of e-resources been subscribed to (Aina, Mutula & Tiamiyu, 2008). When users of a library have adequate information on what resources available in the library, they are encouraged to use them as the need arises. These resources include OPAC, CD-ROMs, Online- Databases, E-journals E-books, Internet resources etc. Multiple accesses speed, richer in content, reuse, timeliness, anywhere access is some of the features of e-resources. Electronic information resources are a wide range of products going from electronic periodicals to CD-ROMs, from mailing list to databases, have a common feature of being used and sometime modified by a computer (Thanuskodi, 2012). Moreover, there are different types of electronic resources.

The emergence of electronic resources has greatly transformed information handling, management and usage in Nigerian University Communities such as CD-ROM database, online databases, online journals, OPACs, Internet and other computer-based electronic networks (Quadri, Adetimirin & Idowu, 2014). Ankrah and Atuase, (2018) identified various types and forms of e-resources in academic libraries like e-databases, e-journals, e-data archives, e-manuscript, e-maps, e-books, e-magazines, e-thesis, WWW, e-newspapers, e-research reports, and e-bibliographic databases. In addition, Amankwah, (2014) listed different types of electronic resources that are used in the study as e-journals, e-books, online databases, electronic conference proceedings and CD-ROM databases. Incidentally, these electronic resources have the potential of influencing academic performance of students.

Academic performance represents performance outcomes that indicate the extent to

which a student has accomplished specific goals that were the focus of activities instructional environment, specifically in school. Spinath (2012) emphasizes the importance of academic performance with regard to different perspectives such as for individual and societies as well as psychological and educational research. Academic performance refers to a student's success in meeting short or long-term goals in education.

In addition, awareness is the key to the best use of scholarly literature. Being aware of availability of a given service does not necessarily mean outright use of that service. Awareness is knowledge about particular information and manifested through a particular behavior (Akpojotor, 2016). Oni and Ahiauzu (2008) also indicated that Awareness is knowledge about something that exists or understanding of a situation or subject at the present time based on information or experience. It can also be seen as knowledge or perception of a situation, fact, consciousness, recognition, realization, grasp and acknowledgement concern about and well-informed interest or familiarity in a particular situation or development.

Awareness of the changes in technology in recent years has dramatically altered how resources are accessed, stored and disseminated (Tsakomas & Papatheodorou, 2006). Whereas awareness of library resources in academic libraries was previously based upon the collection of physical library materials, it is now increasingly the case that academic libraries are moving into the virtual arena. With advances in technology and e-publishing, Emerald, Science Direct, Academic Search Premier, Ebscohost, TEEEL, Oare Sciences, Hinari, Virtual Library (NUC), online public access catalogue (OPAC), CD-ROMs (Compact Disc-Read Only Memory), e-books collections, e-journals covering a variety of subjects, and major bibliographic databases like AGORA and MEDLARS, access to information on a local, regional, national and international basis has overcome the traditional barriers of time, easy of accessibility and space (Prangya & Rabindra, 2013).

Utilization of electronic library resources is significant to students who are the beneficiaries of the resources. Therefore, utilization of library electronic resources is not only a choice but inevitable in the era of information technology (Dar, Jeelani, Mir, & Ganaie, 2017; Prakash, 2017 & Aboluwarin, 2001). Amankwah (2014) posited that to utilize the growing range of electronic resources, users must acquire and practice the skills necessary to exploit them using a variety of online databases. However, many university libraries in Nigeria have not been able to acquire collections enough to meet the needs of their users as the 10% of allocations meant for the library as stipulated by the National University Commission (NUC) has not been adhered to in many Nigerian universities (Nnadozie & Nnadozi, 2008). Lack of time is the main reason given for not using electronic resources. Unfamiliarity with computerized searching comes next (Rehman & Ramzy, 2004). Chisenga (2004) indicated that most libraries had internet connectivity, very few were offering web-based information services to their users. Popoola and Halison (2009) submit that lack of time is the main reason given for not using electronic resources. Unfamiliarity with computerized searching comes next.

Bhatt and Rana (2011) also identified that the most common problems with e-resources are low speed connectivity, lack of awareness about statutory provision for accessing e-resources by the institutions, technical problems, unavailability of sufficient e-resources, doubts in permanency,

high purchase price and lack of legal provision. A similar study by Shukla and Mishra (2011) revealed that majority of research scholars have problem of low internet connectivity.

Research Methodology

The study adopted a survey research design. According to Nworgu (2006), survey research design aims at collecting data on, and describing in a systematic manner, the characteristic features or facts about a given population. The rationale for choosing this design as the appropriate one for this study was because, the population is relatively large. The population of the study comprised of 1,201 students of Library and Information Science from the two selected universities in Benue State namely: Joseph Sarwuan Tarka University Makurdi (JOSTUM) and Moses Orshio Adasu University, Makurdi formerly known as Benue State University (BSU). A sample of 411 respondents was drawn for the study using simple random sampling technique. The choice of simple random sampling technique was because; it gives each element of the population equal and independent chance of being included in the sampling. Taro Yamen's formula for sample size determination was applied in drawing the sample. Descriptive and inferential statistics were both used to analyze the data that was generated from the instrument. Weighted Mean scores and Standard Deviation were employed to analyze the research questions.

Data Analysis, Interpretation and Discussion

Research Question 1: ***What are the available library electronic resources for academic performance of library and information science students in universities in Benue State?***

To answer research question one, the analysis of Frequency and Percentage on the available library electronic resources for academic performance of library and information science students in universities in Benue State is presented in Table 1.

Table 1: Checklist on Available Library Electronic Resources in Universities in Benue State

		BSUM Library		JOSTUM Library	
S/No	**Library Electronic Resources**	**AV**	**NA**	**AV**	**NA**
1	E-books				
2	E-journal				
3	Online Database				
4	Online Public Access Catalogue (OPAC)				
5	E-Newspapers		X		X
6	E-Magazines		X		X
7	E-Government Publications				
8	E-Theses		X		X
9	E-Conference papers				

AV= Available, NA= Not Available

Table 1 shows the list of library electronic resources in University libraries in Benue State with items 1-9. The observation checklist indicated that apart from items 5, 6 and 8 which were

checked NA , all other items (1,2,3,4,7 & 9) were checked AV.

Research Question Two: ***What is the influence of utilization of library electronic resources on academic performance of students of Library and Information Science in Universities in Benue State Nigeria?***

To answer research question five, the analysis of mean scores and standard deviation on the influence of utilization of library electronic resources on academic performance of students of Library and Information Science in Universities in Benue State is presented in Table 2.

Table 2: Mean Scores and Standard Deviation of the Influence of Utilization of Library Electronic Resources on Academic Performance of Students of Library and Information Science in Universities in Benue State

Utilization of Library Electronic Resources	N	$\bar{x}$	SD	Decision
I am motivated to study more any time I utilized electronic resources for learning to enhance my academic performance	411	2.91	1.15	High Extent
It has provided me with current and up -to-date information than the printed resources to study	411	2.85	1.23	High Extent
I access them easily to help me in my exams	411	3.03	1.09	High Extent
It widened my scope of learning.	411	2.83	1.21	High Extent
It widens my literature search for productivity writing	411	2.80	1.25	High Extent
My aggregate scores improved because I utilized the electronic resources in the library.	411	2.96	1.15	High Extent
It exposes me to new facts that enhance my academic performance	411	2.57	0.94	High Extent
It aids me in writing my projects, thesis or dissertations	411	2.80	1.19	High Extent
It increases my access to online journals, articles.	411	2.94	1.14	High Extent
It gives me unlimited access to information resources and makes it easier for me to study and pass examinations	411	3.03	1.10	High Extent
Cluster Mean Score and Standard Deviation		**2.87**	**1.15**	**High Extent**

Key: N=Number, $\bar{x}$= Mean, SD= Standard Deviation

Table 2 shows that, all the items have Mean scores above the decision point of 2.50. The cluster Means scores and Standard Deviation was 2.87 and 1.15. This shows that utilization of library electronic resources influence academic performance of students of Library and Information Science of Universities in Benue.

Research Question Three: ***What are the challenges faced by Library and Information Science Students in awareness and utilization of library electronic resources for academic performance in universities in Benue State?***

To answer research question six, the analysis of Mean scores and Standard Deviation on

the challenges faced by Library and Information Science Students in awareness and utilization of library electronic resources for academic performance in universities in Benue State is presented in Table 3.

Table 3: ***Mean Scores and Standard Deviation of the challenges faced by Library and Information Science Students on Awareness and Utilization of Library Electronic Resources for Academic Performance in Universities in Benue State***

Challenges	N	$\bar{x}$	SD	Decision
Inadequate power supply	411	2.58	0.90	Agreed
Limited access to computer terminals	411	2.65	0.83	Agreed
Power network connectivity	411	2.62	0.90	Agreed
Lack of computer skills to utilized the resources effectively	411	3.01	1.13	Agreed
Low bandwidth	411	2.63	0.87	Agreed
Lack of user education program	411	2.51	0.96	Agreed
Incompetency of library ICT staff to assist students	411	3.04	1.10	Agreed
Cost involved in the utilization of the resources.	411	2.60	0.90	Agreed
Lack of intellectual knowledge of the free online resources to access and utilize them.	411	2.86	1.22	Agreed
Restrictions on access to certain important e-resources	411	2.81	0.91	Agreed
Inadequate computer terminals	411	2.62	0.87	Agreed
Cluster Mean Score and Standard Deviation		**2.72**	**0.96**	**Agreed**

Key: N=Number, $\bar{x}$= Mean, SD= Standard Deviation

Table 3 shows that, all the items have Mean scores above the decision point of 2.50. The cluster Means scores and Standard Deviation was 2.72 and 0.96. This shows that Library and Information Science Students faced challenges in awareness and utilization of library electronic resources for academic performance in universities in Benue State.

Discussion of Findings

Based on the findings of the study, discussions were made on each of the research question the study sought to answer. On the availability of types of library electronic resources, the study found that library electronic resources available in universities in Benue State includes e-books, e-journals, online database, Online Public Access Catalogue (OPAC), e-government publications as well as e-conference papers. The finding was in line with the postulation of Edem (2016) whose study is on the extent of availability and utilization of electronic resources by post graduate students in the university of Calabar library and found that, electronic resources were available in the university of Calabar library.

On utilization of library electronic resources by students of library and information science in universities in Benue State, the study found, utilization of e-resources influence students' academic performance such as e-books, e-journals, online database, OPAC, e-magazines, e-newspapers, e-government publications, e-theses and e-conference papers. This finding agrees

with that of Daramola (2016), Tofi and Kanafa (2019), Oni, Oshiotse and Mamoh (2016) who found that students utilized available electronic resources for research purpose; and it influences their academic performance.

On the challenges of awareness and utilization of library electronic resources, the study established that, students in universities in Benue state are faced with challenges of awareness and utilization of available library electronic resources such as inadequate power supply, limited access to computer terminals, poor network connectivity, lack of computer skills to utilized the resources effectively, low bandwidth, lack of user education program, incompetency of library ICT staff to assist students, cost involved in the utilization of the resources, lack of intellectual knowledge of the free online resources to access and utilize them, restrictions on access to certain important e-resources and inadequate computer terminals. This finding agrees with that of Adeleke and Nwalo (2017) who found that, interrupted power supply, lack of knowledge of search techniques to retrieve information effectively and none possession of requisite ICT skills and problems accessing the internet among others as challenges that students are faced with in utilizing library electronic resources.

Conclusion

Based on the findings of this study, it was established that awareness and utilization of library electronic resources have influenced the academic performance of Library and Information Science Students in universities in Benue State. The study concluded that, if respondents are aware and utilizes library electronic resources religiously; academic performance of LIS students would be enhanced.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. The Universities in Benue State should encourage students to utilizes the available library electronic resources to enhance their academic performance
2. Since the utilization of these library electronic resources is depended on the availability of power supply, good internet network, ICT facilities and students' skills in utilizing them, librarians should provide facilities and also train and re-train their staff to address the challenges in awareness and utilization of library electronic resources.
3. The universities in Benue State should create programme for students to be aware of the available library electronic resources.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

DIGITAL INFORMATION LITERACY SKILLS AS A PREDICATOR OF PRODUCTIVITY OUTPUT OF ACADEMIC LIBRARIANS IN FEDERAL UNIVERSITIES IN NORTH-CENTRAL, NIGERIA.

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Abstract
The purpose of this paper is to investigate the information literacy skills as a predicator of productivity output of academic librarians in Federal Universities in North-Central, Nigeria. Specific objectives of the study were to identify the digital literacy skills of academic librarians, ascertain the productivity output of academic librarians and examine the influence of information literacy skill on productivity outputs of academic librarians in Federal Universities in North-Central, Nigeria. Descriptive Survey research design was employed as the research design. A sample size of 162 librarians was drawn from seven Federal Universities in North Central Nigeria. Data collected were analyzed using descriptive and inferential statistics. Results of the data analysis showed a significant association between digital literacy skills of academic librarians and their productivity outputs. Findings of the study demonstrated that the influence of information literacy skill is a strong component of productivity outputs of academic librarians in Federal Universities in North-Central, Nigeria. Findings further demonstrated that there is significant influence of media literacy, communication literacy and visual literacy as components of digital literacy on productivity outputs of academic librarians in Federal universities in North-Central, Nigeria. Based on the findings, the study concluded that academic librarians in the study possess high level of basic digital competency, and used a variety of methods to develop those skills. The study thus recommended that academic librarians in public university libraries in North-Central Zone, Nigeria should enhance their information literacy skills through training and retraining in order to attain the highest level of information literacy skills that will lead to higher research productivity. The study also recommended among others, that workshops and seminars on media literacy should be organized concurrently while the librarians should be motivated to engage in self-training on media literacy Libraries and librarians must collaborate to teach media literacy, not only to their users and communities but to society as a whole.
Keywords: Digital Information Literacy Skills, Productivity Output, Academic Librarians, Federal Universities.

Introduction

The digital age has transformed every aspect of knowledge production and dissemination. Information is now created, shared, and preserved through digital platforms, fundamentally altering the operations of academic libraries and the roles of librarians. Academic librarians are no

longer mere custodians of printed information; they are active participants in the digital knowledge ecosystem, mediating between technology, content, and users (UNESCO, 2023; Saripudin, Sumarto, Juanda, & Abdullah, 2018).

Globally, digital literacy is considered a foundational skill for professional practice in the twenty-first century. Digital literacy—defined broadly as the ability to access, manage, evaluate, create, and communicate information using digital technologies—is now regarded as a core professional competency for librarians (UNESCO, 2018). It thrives under a grounded root in information literacy. Information literacy is the skill to collect existing information, organizing, using, filtering, evaluating the information and making valid inferences according to the results, and using the information effectively, efficiently, and ethically (Gündüzalp, 2021). Information literacy remains central, referring to the abilities required to discover, evaluate and use information ethically and effectively (ACRL, 2016).Information literacy also serves as the core skills of a modern professional librarian.

Mann, (2015) defined a librarian as a "professionally trained person responsible for the care of a library and its contents, including the selection, processing, and organization of materials and the delivery of information, instructions, and loan services to meet the and the needs of its users. Thus, a professional Librarian emits productivity in service delivery to users in any given community, thereby resounding the capacity of their productivity. Productivity of librarians encompasses service innovations, database development, and digital resource creation (Adetomiwa & Okwilagwe, 2018. Challenges such as research funding, lack of mentoring, poor access to scholarly databases, and heavy administrative responsibilities have led to career stagnation for many librarians and limited their contributions to institutional and national development (Fabunmi, 2022). Federal university libraries in the North-Central Nigeria play critical roles in supporting teaching, research, and community engagement (Oseji, 2020). However, studies indicated that these libraries face infrastructural deficits, including inconsistent Internet connectivity, limited ICT facilities, and insufficient technical training (Emiri, 2017). These factors hinder librarians from integrating digital tools into their research and service delivery effectively.

Statement of the Problem

The digital literacy skills of academic librarians in Nigeria—particularly those in the North-Central region—require critical assessment. The interplay between digital competence and research productivity has not been thoroughly explored empirically in this context. Understanding how digital literacy influences librarians' productivity outputs will provide insights into capacity gaps and inform interventions by policymakers, professional bodies, and universities. This study, therefore investigated the digital information literacy skills as a predicator of productivity output in academic librarians in federal universities in north-central zone, Nigeria.

Objectives of the Study

1. identify the digital literacy skills possessed by academic librarians in Federal Universities in North-Central, Nigeria,

2. ascertain the productivity output of academic librarians in Federal Universities in North-Central, Nigeria,
3. examine the influence of information literacy skill on productivity outputs of academic librarians in Federal Universities in North-Central, Nigeria,

Research Methodology

For the research design, the study adopted a descriptive survey design. This research design involves using a range of qualitative and quantitative research methods to collect data that aids in accurately describing a research problem. The population of study comprised of 162 academic librarians from Federal University Libraries in North-Central Nigeria. For Sample and Sampling, the study adopted Census method for the study; the entire population of the study which is 162 was used.

Review of related Literature

The capability of individuals to use technology to create, navigate, disseminate, evaluate and store information is basically described as digital literacy. Digital literacy refers to "the ability to understand and use information in multiple formats from a wide variety of sources when it is presented via computers" and, particularly, through the medium of the internet (Pangrazio et al, 2020). Adeleke, (2016) is of the opinion that academic librarians require certain skills and competencies to establish and maintain a digital repository. The skills, according to the author, include traditional library skills and knowledge, as well as management and technical skills, familiarity with metadata creation, and knowledge of copyright. These skills will equip them to deal with digitization and archiving of the content. Digital competencies are the skills necessary to work in digital library environments and manage electronic library infrastructures and services (Hamad et al, 2021).

Anuradha and Rengaraj, (2017) argued that modern technologies have substantially changed the working of libraries in the information era. This is because in the 21st century library services, libraries are required to make use of new technologies in critical library activities such as acquiring library materials, cataloguing the materials acquired, preserving the materials, , diffusing them as well as providing reference services to users, among others. Anuradha however, added that the existence of modern technologies does not completely replace traditional library services; instead, there is now a harmonization of services to better serve users. That is to say those modern technologies have been completely integrated into library services. Olijo, (2018) in making a case on the importance of skill in the utilization of new technologies notes that despite the fact that progress has been recorded in the area of hardware and software competence, the challenge of low utilization is a limitation in harnessing the potentials of new technologies. Liu & Briggs, (2015) further reported the following as roles of librarians in the present digital knowledge society as: subject expert, global information provider, resource manager, creator, preservator, navigational guide, communicator, financial manager, time managers, legal advisor, personnel manager, tech-savvy, mentor and leader, buttressing the fact that academic librarians play multifaceted roles in enhancing productivity in university libraries. Their responsibilities extend beyond traditional

library tasks to encompass various services and support functions that contribute to the overall productivity output and effectiveness of librarians and the academic institution.

Productivity is what man can accomplish with material, capital and technology. Productivity is mainly an issue of personal manners. It is an attitude that we must continuously improve ourselves and the things around us (Tangen, cited in Abdelwahed & Doghan, 2023). Productivity is defined as the ratio of what is produced to what is required to produce it. Productivity measures the relationship between output such as goods and services produced, and inputs that include labour, capital, material and other resources (Xiaojuan & Libin, (2020).

There is enough literature on the organizational productivity output of librarians especially on service delivery (Darling-Hammond, 2015). There is, however, a dearth of literature on the research output of individual librarians. Not much work has been done on job satisfaction and research output of academic librarians in universities in Nigeria. From the preliminary investigation carried out by researchers such as, (Fennewald, 2018), it was found that the librarians appeared to be dissatisfied with their job. Their dissatisfaction with their job could be due to the promotion criteria (especially publication output) which they could not meet up. Moreover, too many administrative responsibilities might have impacted negatively on the productivity output of the librarians as they have little or no time to embark on meaningful research.

Analysis and Interpretation

Table 1: Questionnaires Administered/Returned

Option	Frequency	Percentage
Filled and returned	138	85.2
Not returned	24	14.8
Total	**162**	**100**

Source: *Field Survey, 2025*

Table 1 presents the response rate for the study on digital literacy skills and productivity outputs of academic librarians in Federal University Libraries in North Central Nigeria. Out of 162 questionnaires distributed, 138 were duly completed and returned, representing a high response rate of 85.2%, while 24 questionnaires (14.8%) were not returned.

Table 2: Digital Literacy Skills of Academic Librarians in Federal Universities in the North-Central, Nigeria.

S/N	Digital Literacy Skills	N	SA (4)	A (3)	D (2)	SD (1)	Mean ($\bar{x}$)	Std. Dev.	Remarks
1	I have the skills to design and use Cloud computing.	138	12	28	55	43	2.10	1.02	Disagreed
2	I possessed Database, Search Engines skills to facilitate their work	138	15	32	52	39	2.31	1.13	Disagreed
3	I am interested in learning and at the same time using digital tools to improve their work abilities	138	22	45	41	30	2.58	1.14	Agreed
4	I am comfortable using digital devices and will continue to integrate them with their work needs	138	33	57	31	17	3.03	0.81	Agreed
5	I have the necessary knowledge to work using information technology devices and computers	138	25	43	42	28	2.58	1.14	Agreed
6	I make use of Collaboration and Communication Tools (e.g., Slack, Microsoft Teams)	138	28	46	41	23	2.63	0.92	Agreed
7	I can use the internet to find information relevant to their work	138	32	51	36	19	2.86	0.90	Agreed
8	I have the ability to integrate information into new knowledge when using social media tools/sites	138	34	53	33	18	2.93	0.92	Agreed
9	I am familiar with serial management process through Integrated Library Management System (e.g. online subscription, preservation, etc.)	138	36	55	34	13	2.94	0.78	Agreed
10	I am familiar with Desktop publishing (e.g., Photoshop, technical manuals and Adobe Creative Suite, etc.)	138	14	29	58	37	2.26	0.96	Disagreed

Clustered Mean/SD = 2.62 / 0.97 → Agreed
Source: Field Survey, 2025

Table 2 illustrates the digital literacy skills of academic librarians in Federal University Libraries across North-Central Nigeria, based on responses from 138 participants. The mean scores indicate varying levels of agreement with the statements measuring different aspects of digital literacy. Findings reveal a moderate level of digital literacy among the academic librarians. While a majority of respondents agreed that they are comfortable using digital devices with a mean score of 3.03, can use the internet effectively to find work-relevant information with a mean score of 2.86, and are familiar with the serial management process through Integrated Library Management Systems with a mean score of 2.94, there is still a noticeable gap in advanced digital competencies.

For instance, respondents disagreed with having adequate skills in cloud computing with a mean score of 2.10, using database and search engine tools proficiently with a mean score of 2.31, and desktop publishing applications like Photoshop and Adobe Creative Suite with a mean score of 2.26. However, there is a general willingness and interest among academic librarians to learn and utilize digital tools with a mean score of 2.58, and they demonstrate the ability to integrate information into new knowledge using social media tools with a mean score of 2.93 and employ communication platforms such as Microsoft Teams or Slack with a mean score of 2.63. These results suggest that while academic librarians in this region have foundational digital skills and a positive attitude towards digital tools, there is a critical need for training and capacity building, particularly in areas such as cloud computing, database management, and desktop publishing, to enhance their productivity and fully leverage digital technologies in academic library services.

Research Question 2: What is the productivity output of academic librarians in Federal universities in the North-central, Nigeria?

Table 3: Productivity Output of Academic Librarians in Federal Universities in the North-Central, Nigeria

S/N	Productivity Output	N	SA (4)	A (3)	D (2)	SD (1)	Mean ($\bar{x}$)	Std. Dev.	Remarks
1	I have a good number of research publications to their credit	138	30	55	36	17	2.90	0.92	Agreed
2	My productivity output in terms of research articles is high	138	27	53	39	19	2.80	0.95	Agreed
3	I am thorough in completing every job	138	35	61	30	12	3.00	0.73	Agreed
4	My quality of work is in accordance with predetermined standards	138	29	52	38	19	2.84	1.04	Agreed
5	My quantity of work is in accordance with predetermined standards	138	28	51	39	20	2.81	1.07	Agreed
6	I am punctual in completing every job	138	40	62	27	9	3.12	0.69	Agreed
7	I carry out my work efficiently	138	42	60	28	8	3.18	0.86	Agreed
8	I come up with creative solutions for new problems	138	37	58	31	12	2.98	0.79	Agreed
9	I contribute to organizational goals; innovation introduced; and commitment to duty	138	20	45	49	24	2.47	0.93	Agreed

Clustered Mean/SD = 2.90 / 0.89 → Agreed
Source: Field Survey, 2025

Table 3 offers a comprehensive understanding into the productivity output of academic librarians in Federal University Libraries within North-Central Nigeria. With all the mean scores

ranging between 2.47 and 3.18 with a threshold of 2.50 for agreement, the responses consistently reflect a positive perception of librarians' productivity. Most academic librarians were perceived to have a commendable number of research publications (mean score of 2.90), and overall, the productivity output in terms of research articles was considered high (with mean score of 2.80), suggesting active engagement in scholarly activities. Additionally, librarians were seen as thorough in completing tasks (with mean score of 3.00), with both the quality (mean 2.84) and quantity (mean 2.81) of their work aligning with institutional standards. Punctuality (with mean score of 3.12) and efficiency (with mean score of 3.18) were particularly notable strengths among senior librarians, highlighting their commitment and time-consciousness in performing their duties. Their ability to generate creative solutions (with mean score of 2.98) also indicates a proactive and problem-solving orientation within their roles. Interestingly, the lowest-rated item though still above the acceptance threshold was contributing to organizational goals, innovation, and commitment to duty (with mean score of 2.47), which points to an area needing further support or development.

Research Question 3: What is the influence of information literacy skill on productivity outputs of academic librarians in Federal universities in the North-central, Nigeria?

Table 4: The Influence of Information Literacy skill on Productivity Outputs of Academic Librarians in Federal Universities in the North-Central, Nigeria

S/N	Influence of Information Literacy skill on Productivity Outputs	N	SA (4)	A (3)	D (2)	SD (1)	Mean ($\bar{x}$)	Std. Dev.	Remarks
1	Ability to synthesize and build on existing information	138	34	56	34	14	2.99	0.78	Agreed
2	Ability to compare and evaluate information obtained from different sources	138	28	51	39	20	2.77	0.98	Agreed
3	Ability to organize, apply and communicate information	138	42	60	27	9	3.12	0.88	Agreed
4	Ability to locate and access information resources	138	37	59	31	11	3.05	0.82	Agreed
5	Ability to use information ethically, including the respect for intellectual property and privacy	138	35	61	30	12	3.00	0.73	Agreed
6	Acquaint the users with the power of internet	138	23	47	43	25	2.59	1.18	Agreed
7	Shows the usefulness of various web resources	138	36	58	32	12	3.01	0.82	Agreed
8	Acquaint the users with various search techniques	138	20	45	49	24	2.47	0.93	Agreed
9	Establishes a direct interaction between users and library professionals	138	26	49	42	21	2.68	1.04	Agreed
10	It explains the necessity of bibliographical citations	138	30	52	38	18	2.84	0.87	Agreed

Clustered Mean/SD = 2.85 / 0.90 → Agreed
Source: Field Survey, 2025

Table 4 presents data on the relevance of information literacy as a component of digital literacy and its influence on the productivity outputs of academic librarians in federal university libraries in North-Central Nigeria. The responses from 138 librarians indicate a general consensus on the significance of various information literacy competencies in enhancing professional productivity. With mean scores ranging from 2.47 to 3.12 remarked Agreed, demonstrating that respondents perceive each component as relevant. The highest mean score (3.12) was recorded for the ability to organize, apply, and communicate information, emphasizing the importance of effective information handling in academic librarianship. This is closely followed by the ability to locate and access information resources (3.05) and the ability to use information ethically (3.00), reflecting the value placed on responsible and efficient information use. Other notable competencies include the ability to synthesize and build on existing information (2.99) and compare and evaluate information from different sources (2.77), both of which are essential for critical thinking and evidence-based decision-making. Additionally, the librarians acknowledged

the role of digital tools in user engagement, with mean scores above 2.5 for items like acquainting users with the internet (2.59), web resources (3.01), and search techniques (2.47), albeit the latter had the lowest mean, suggesting a relative gap in training or emphasis. The item on bibliographic citation awareness (2.84) and direct user interaction (2.68) further emphasize the academic and collaborative aspects of librarianship.

Discussion of Findings

This study examined the digital information literacy skills as a predicator of productivity output in academic librarians in federal universities in north-central zone, Nigeria, yielding several sensitive findings that align with and expand upon previous empirical research. The demographic characteristics of respondents reveal that the workforce is predominantly male and composed of mature professionals, with the largest age group between 46–55 years. This aging population and the limited presence of younger professionals (8.7% aged 19–24) suggest a profession in need of rejuvenation. These findings are consistent with Sambo et al. (2022), who emphasized the challenges faced by certified librarians in acquiring digital literacy skills due to late career entry, heavy workload, and insufficient training support. The implications are profound, as an aging workforce without sufficient integration of younger, digitally adept professionals may hinder the rapid adoption and utilization of emerging technologies in academic libraries.

The first finding on digital literacy skills of academic librarians, revealed a moderate level of competency. While basic digital tasks such as using digital devices and retrieving work-related information online were comfortably performed, more advanced skills like cloud computing, database navigation, and desktop publishing scored below the acceptable threshold. These results echoed Ogochukwu's (2017) findings from Southern Nigeria, where librarians showed proficiency in basic digital tools like email and social networking, but lacked advanced digital skills.

The second finding on productivity output of academic librarians in the study area indicated that it was generally rated high, particularly among academic librarians, with strong scores in research publications, task completion, punctuality, and efficiency. These findings align with Yaya et al. (2016), who reported that librarians significantly contribute to student academic success and university accreditation outcomes, thus demonstrating their relevance in achieving institutional goals. However, despite their commendable performance, the present study observed a relatively lower score in the area of innovation and contribution to organizational goals. This discrepancy may be linked to the aforementioned gaps in digital literacy skills, particularly in the use of modern tools for content creation, collaboration, and outreach. As such, even productive librarians may not be operating at full potential due to limitations in digital competence.

The third finding on the role of specific components of digital literacy such as information, media, communication, and visual literacy revealed significant influence on productivity outputs. The study's statistical analyses revealed strong positive associations between each literacy component and librarian productivity, affirming the rejection of the respective null hypotheses. For instance, information literacy skills like ethical use, synthesis, and effective communication of information were rated highly and found to directly contribute to librarians' work quality. This supports findings from Okeji and Mayowa-Adebara (2021), who noted that digital literacy,

including information organization and retrieval skills, enables librarians to deliver quality service. Similarly, Sambo et al. (2022) emphasized the need for retraining and up skilling in digital competencies to overcome challenges such as poor internet access and digital tool availability, which are also critical for maximizing productivity.

Conclusion

This study concludes that while academic librarians in Federal University Libraries across North-Central Nigeria demonstrate a fair level of digital literacy and maintain commendable productivity outputs, significant gaps remain that hinder their full potential in the digital age. Though librarians show competence in fundamental digital tasks such as operating digital devices and sourcing information online, they face challenges in mastering advanced digital tools and platforms like cloud computing, database management, and content creation. Thus, the need for a sustained training and investment in digital infrastructure.

Recommendations

The following recommendations have been made based on the findings and conclusions made in this study:

1. Digital literacy is a lifelong learning process, academic librarians in the North-central Federal University libraries should continuously engage in training and retraining programs to keep up with emerging technologies and digital tools. Training should include advanced skills such as: cloud computing, database navigation, search engine tools and desktop publishing applications like photoshop and adobe creativity for handling open-source library management software and other digital platforms.
2. University management should focus more on training and capacity building of academic librarians in Federal University Libraries in the North-central Nigeria by investing in regular training, local and international conferences to improve their ICT skills, research skills and innovation for effective contributions to university goals.
3. University libraries, library associations, and university management should provide in-house training for librarians and provide financial support to attend workshops to continue to improve their communication skills.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

CHALLENGES AND OPPORTUNITIES OF 5TH INDUSTRIAL REVOLUTION AND ROLES OF ACADEMIC LIBRARIANS IN COLLEGES OF EDUCATION LIBRARIES IN GOMBE STATE, NIGERIA

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Abstract
The study investigated challenges and opportunities of 5th Industrial Revolution and the changing roles of academic librarians in Colleges of Education Libraries in Gombe State, Nigeria. The study was guided by descriptive research design. The study population consisted 45 of academic librarians in College of Education libraries in Gombe State, Nigeria. Since the total number of academic librarians was not large, census method was used to gather the data. This study integrated quantitative methods approaches which allow richer and better result for every unit of the population that was studied. The study also found that that challenges of poor skills and competencies, poor knowledge of handling digital technologies, financial constraints and lack of stable power supply to improve digital information service delivery were still pertinent among College of Education libraries in Gombe State. The findings of the study indicated that the librarians leverage on the opportunities of the 5th industrial revolution to connect cyber, virtual and physical space in advancing information service delivery in libraries. The paper concluded that the opportunities brought by 5th industrial revolution have advance information service delivery in recent time. The paper recommended that knowledge of digital technology should be strengthened to enhance productivity in the delivery of information by librarians in college of education libraries.

Keywords: 5th Industrial Revolution, Challenges, Opportunities, Academic Librarians, Colleges of Education

Introduction

College libraries being aspect of academic libraries are pivotal contributors to the academic success of Colleges of Education, fostering intellectual growth, facilitating research endeavours, and enhancing overall excellence teaching, learning and research development by providing a diverse range of resources and promoting information literacy (Abayomi, Adenekan, Abayomi, Ajayi, & Aderonke, 2021). These libraries serve as indispensable technological hubs that cater for the academic community, playing a vital role in advancing scholarly pursuits and educational excellence (Adetayo, 2023). The 5th Industrial revolution is presently connecting cyber, virtual and physical space with advancement in digital technology which has made communication, collaboration, information flow and work easier. The 5th industrial revolution also reflects and guides our way of life and thinking through robotic technology, artificial intelligence, cloud computing, big data, social media, smart phones, digital cameras, sensors and Internet of Things which currently contribute significantly in global information provision and dissemination (Hussain, 2019).

The 5th industrial revolution in college libraries has shaped and reshaped information service delivery thereby enhancing paradigms shift. However, observable gaps still exist in comprehensive implementation of digital transformation which was the whole marks of the 5th industrial revolution. (Farag, Mahfouz & Alhajri 2021). The 5th industrial revolution leverage through big data and data analytics, robotic technology, artificial intelligence, cloud computing, big data, social media, smart phones, digital cameras, sensors and Internet of Things by contributing significantly in global information provision and dissemination. This development requires a critical role of academic librarians to fully exploit these technological advancements for quality information delivery (Garoufallou & Gaitanou 2021; Luca, Narayan & Cox 2022). Recognising the significance of 5th industrial revolution in cutting-edge technologies into college libraries, scholars have emphasised its potential to enhance service accessibility, optimise operational efficiency and increase engagement among librarians and patrons (Ogar & Dushu 2018; Pierce 2022). However, despite the importance of 5th industrial revolution in college libraries, challenges of providing quality information service by academic librarians still persists. (Farag et al. 2021).

Statement of the Problem

The 5th industrial revolution is characterized by digital transformation and innovations to advance research output in academic libraries worldwide. However, the inability for some academic librarians in developing countries to play a critical role to take advantage of the 5th industrial revolution to deliver quality information service delivery is still a mirage. The central argument in various studies indicated that the inability of librarians to utilize the benefits of the 5th industrial revolution to transform digital content and services is still a challenge in many colleges of education libraries in Nigeria. Challenges such as lack of technical know-how with digital skills, poor knowledge of using various digital resources, poor skills to advance search strategies and poor funding to develop or procure digital technology systems were identify as a major setback for

librarians to advance the 5th industrial revolution in college libraries in Nigeria. The question is, do the librarians in college of education libraries in Nigeria have the knowledge of the 5th industrial revolution to advance the digital technologies to transform the services of libraries for effective quality information delivery? This evidence needs to be gathered in order to provide an understanding of the actual challenges and opportunities of 5th Industrial Revolution. This study therefore explored and established the prevailing information provision gaps in and the changing roles of Librarians in College of Education Libraries in Nigeria.

Objectives of the Study

The objectives of the paper are to:

1. identify challenges of 5th Industrial Revolution and Roles of academic librarians in Colleges of Education Libraries in Gombe State Nigeria
2. identify opportunities of 5th Industrial Revolution and roles of academic librarians in Colleges of Education Libraries in Gombe State, Nigeria

Review of Related Literature

5th Industrial Revolution and the Role of Academic Librarians in College Libraries

Libraries are essential to learning, research, generation and preservation of knowledge as well as dissemination of information. Librarians are the custodian of information and knowledge in the libraries. Librarians as professionals are critical stakeholders in ensuring that libraries achieve their mandate. The 5th Industrial Revolution is considered as opportunity offered by ICTs and other digital technologies that foster librarians to assume new thinking towards information service delivery (Aithal, & Aithal, 2023). Librarians now use robots in combination with RFID technology and data of bibliographic record to give access to the patrons and general users quality library services through cutting-edge technology (Ajani, et al, 2022). Such kind of newest technology is considered to be the part of new industrial revolutions.

However, evidence from literature indicates that many librarians are still lagging behind in acquiring digital knowledge (Cox & Mazumdar, 2022). For example, Ansari's (2013) study indicates that librarians in Pakistan find it difficult to keep pace with new technologies in providing library services to meet up with the expectation of the 5th industrial revolution. Similarly, Eserada and Okolo. (2019) states that librarians in developing countries still find it difficult to download and search online resources, use web technologies, access online information, locate and navigate uniform resource locators (URLs) and perform basic Internet search. A study by the Echedom and Okuonghae, (2021) indicates that academic librarians in some parts of African countries still find it difficult to perform basic tasks of online searching, web technology, understand and use computer hardware and software and perform basic Internet search activities due to poor digital literacy.

Despite these problems, 5th industrial revolution has opened up opportunities for librarians to develop skills in information sharing, media literacy, digital technology, learning ability, communication, digital content creation, digital identification and information and communication technology (ICT) services (Ogar & Dushu, 2018) maintains that librarians require

digital literacy in operating computers, ICTs and other digital facilities for personal and professional development. Oke and Fernandes (2020) also maintains that the ability to access and successfully use digital information is central to nearly all professionals working in libraries and information centers in closing the gaps in digital access and skills. According to Owolabi, et al. (2022), the 21st century librarians are no longer just the guardians of books; they are information providers in an environment that is constantly changing and driven by digital technology. Cox and Mazumdar, 2022) observe that many academic libraries in developed countries employ librarians who are well versed, equipped and grounded in the use of ICTs to perform their duties and participate in the digital information services.

The 5th industrial revolution is considered as a phenomenon offer by digital technology revolutions that foster librarians to assume new thinking towards information service delivery (Adjei, 2023). Librarians and libraries now use Internet of Things (IoT), artificial intelligence, smart phones, social media, cloud computing, robots in combination with RFID technology and data of bibliographic record to give access to the patrons and general users quality library services through cutting-edge technology (Ajani, et al 2022). Such kind of newest technology is considered to be the part of the fourth industrial revolutions.

Challenges of the 5th Industrial Revolution in College of Education Libraries

Challenges of the 5th industrial revolution in academic libraries in developing countries have led to a wide gap in the way information is delivered with digital technologies. However, in the context of this paper, the major challenges identified are as follows:

Poor Digital Literacy Competence: Digital literacy competence enables librarians in academic libraries to make use of digital technology revolution to participate in new social and intellectual order (Ali, Naeem & Bhatti, 2020). However, librarians with poor digital literacy will not be able to access computers and databases which can lead to serious resentment in the delivery of information services. Failure of some librarians in academic libraries to develop digital competence poses a big challenge in achieving the goals of meeting contemporary society's digital revolution and information delivery.

Inadequate Digital Training Skills: Inadequate digital training and re-training have become a huge problem affecting librarians working in academic libraries in developing countries to carryout library functions in a digital environment. Poor knowledge of digital technology transformation as a result of inadequate training has hindered the effective use of digital technologies in academic libraries. Many librarians working in academic libraries in African countries and particularly Nigeria still finds it difficult to integrate digital literacy skills for effective information service delivery due to poor training. Training is an important component to understand new digital technologies as they emerge, to identify the opportunities in them and manage the risks. Training in digital intelligence will grow over time as the new technology evolves. However, due to poor digital training, many librarians find it difficult to provide library services through digital objects such as text, images, video and audio, and with poor methods of access and retrieval and for the selection, creation, organization, maintenance and sharing of collection.

Poor Attitude and Perceptions towards Digital Literacy: While digital technology revolution can equip academic librarians with the skills to interact and communicate using digital technology, poor attitudes towards the use of digital technology remain a challenge (Oke, & Fernandes, 2020). Building digital skills requires technical, social and intellectual activities. The poor attitude and perception towards digital technology make it challenging to transform digital technology revolution and capabilities among librarians. However, some academic librarians in developing countries are not competent to take on the challenging role of fourth industrial revolution in 21st century information service delivery. They perceive digital technology as a threat to their jobs. Hence, they are reluctant to embrace new technology. Many librarians lack confidence in the face of increasing information and media technology. This slows service delivery and retards productivity

Lack of Digital Technology Awareness: Lack of awareness and understanding of new digital technologies such as mobile Internet access, cloud-based computing, the Internet of Things, digital data, artificial intelligence and an increase in computer-driven decision-making and other forms of automation have become a big challenge for librarians in recent times (Oke, & Fernandes 2020).

Digital technology evolved as a result of change that has continually taken place in a technology-driven environment. Librarians require awareness and understanding of digital technologies as well as interaction with these technologies for decision-making (Ajani, et al 2022). Amid these changes in digital technology, academic librarians are expected to continuously upgrade their knowledge and equip themselves in digital technologies to serve twenty-first century library users. Lack of digital technology awareness is still observable among librarians in developing countries including Nigeria in transforming digital content and technology for proper use.

Poor Usage of Digital Technologies: Poor knowledge of use of digital technologies such as ICT infrastructure, Internet, artificial intelligence, cloud computing and online access still remained a big challenge to transform library services. The usage of digital technology revolution in Nigeria to includes lack of adequate digital skills among librarians and users, low information literacy levels, media and computer literacy. Poor usage of digital technologies especially prohibitive costs in developing countries to gain access to the Internet is still frequent among academic librarians Ajani, et al. 2022).

Opportunities of the 5th Industrial Revolution in College of Education Libraries

The dynamic and evolving intersection of emerging technology and libraries is unmistakably evident in the transformative journey libraries have undertaken. As custodians of knowledge, college libraries have consistently embraced emerging technologies to enhance their operations and services, evident in transitions from card catalogues to OPACs and from traditional reference desk services to 24/7 online and virtual reference services (Kim 2020; Hotsonyame 2023). The core mission of academic library services, centred on organising information resources for easy access, aligns seamlessly with the implementation of innovative technologies that accelerate information retrieval (Chakarova & Trabert 2017). In the midst of the digitalisation ushered in by

the 5th industrial revolutions, college libraries are increasingly integrating advanced technologies to promote quality information service delivery (Echedom & Okuonghae 2021). The 5th industrial revolution promotes the advancement in digital and virtual environments where wireless and digital resources have grown rapidly in the past decade and users search for information via digital devices to retrieve information from across the world (Liao et al. 2018) similarly, the 5th Industrial Revolution (5IR) embraces the concept of harmonious collaboration between humans and machines, paving the way for a revolution and transformation in thinking about human– machine collaboration and its use for greater societal well-being (Ajani et al. 2022). Academic libraries are the pivotal forefront of these transformative technologies because the advent of ICTs and the evolution of World Wide Web (WWW), smartphones, tablets, robots, e-books, game machines and even light bulbs have enabled people to develop digital literacy for many reasons; governance, communication, entertainment, education, research and learning.

This movement is fuelled by the recognition that the 5th industrial revolution enables computer systems to emulate complex human capabilities, automating processes, enhancing stakeholder satisfaction, and creating new avenues for communication and improved services (Marr 2019; Sheikh, Prins & Schrijvers 2023). This technological leap necessitates academic libraries to envision novel ways of disseminating information to meet evolving user needs requiring both management and staff motivation to effectively incorporate AI into academic library service (IFLA 2020). The opportunities provided by the 5th industrial revolution within academic libraries yields numerous benefits, foremost among them being heightened service efficiency (Oyetola et al. 2023). These opportunities encompass round-the-clock service availability, precise cataloguing, and a reduced workload for librarians. The 5th industrial revolution with the use of digital technology has the capability to automate repetitive jobs like cataloguing, indexing and data management, enabling librarians to dedicate their time and skills to more intricate activities. In developed countries, studies Cox et al. (2019) and Huang (2022) suggest that librarians use the opportunities provided by 5th industrial revolution to embrace new roles such as content provision through the evolving information landscape. The opportunities provided by 5th industrial revolution is beneficial, as it increases the efficiency of services by including 24/7 availability of services, accurate cataloguing, and reduced workload for librarians.

Research Methodology

This study was guided by descriptive research design. The study population consisted 45 of academic librarians in colleges of education in Gombe State. In this study, since the total number of academic librarians was not large, census method was used to gather the data. The population units of the study consisted of 45 academic librarians across colleges libraries in Gombe State. This study integrated quantitative methods approaches which allow richer and better result for every unit of the population that was studied. Therefore, forty-five copies of structured questionnaires were distributed to the study population. Of the 45 copies of the questionnaire administered, 38 copies were returned. Data analysis was carried out using frequency count and simple percentages. Statistical package for social sciences (SPSS) software was used as tool for data analysis in the study.

Data Analysis

This section is concerned with data presentation, analysis, interpretation and discussion of findings. The results are presented and analyzed based on the research questions by the researchers.

To **establish challenges of 5th Industrial Revolution and Roles of academic librarians in Colleges of Education Libraries in Gombe State**. To address this objective the researcher identified challenges of academic librarians that hinders effective service delivery in colleges of education libraries in Gombe State. The respondents were given statements the challenges of 5th Industrial Revolution and Roles of academic librarians in Colleges of Education and they were to answer by stating their level of agreement with them using a scale: Strongly Agree (SA) = 4, Agree (A) =3, Disagree (D)=2 and, Strongly Disagree (SD)= 1 respectively. Table 1 shows the statements that the respondents were presented with and how they responded.

Objective 1: Establish challenges of 5th Industrial Revolution and Roles of academic librarians in Colleges of Education Libraries in Gombe State

Table 1: Challenges **of 5th Industrial Revolution and Roles of academic librarians in Colleges of Education**

S/N	Challenges of 5th Industrial Revolution	SA	A	D	SD
1	Poor digital literacy competence enables librarians in colleges of education libraries to make use of digital tools to deliver quality information service delivery	18 47.3%	10 26.3%	7 18.4%	3 7.8%
2	Inadequate digital training of librarians to provide effective service delivery	8 21.0%	25 65.7%	4 10.5%	1 2.6%
3	poor attitudes and perceptions towards the use of digital technology remain a challenge	30 78.9%	8 21.0%	0 0%	0 0%
4	Lack of awareness and understanding of new digital technologies such as mobile Internet access, cloud-based computing, the Internet of Things,	15 39.4%	16 42.1%	5 13.1%	2 5.2%

The findings revealed that 28 (73.6%) of the respondents indicated that they have poor digital literacy competence that enables librarians in colleges of education libraries to make use of digital tools to deliver quality information service delivery, while 10 (26.3%) had divergent view. Similarly, the finding also showed that 33 (86.8%) of the respondents revealed that they have iinadequate digital training of librarians to provide effective service delivery, while 5 (13.1%) had contrary opinion. On the aspect of the poor attitudes and perceptions towards the use of digital technology remain a challenge, 38 (100%) of the respondents strongly agreed or agreed with the statement while none of the respondent disagreed or strongly disagreed. The finding also showed that over 31 (81.7%) of the respondents supported that they have lack of awareness and understanding of new digital technologies such as mobile Internet access, cloud-based computing, the Internet of Things, while 7 (18.4) had contrary views. The implication of this finding is that Challenges of 5th

Industrial Revolution still persist among academic librarians in Colleges of Education. The **finding is in line with a study by** Oyetola et al., (2023) who affirmed that failure of some librarians in academic libraries to develop digital competence poses a big challenge in achieving the goals of meeting contemporary society's digital revolution and information delivery. The study also corroborates with the study by Owolabi et al., (2022), who justified that the poor training of some academic librarians cannot be overemphasized especially in the area of cloud computing, Internet of Things and digital collections to connect, collaborate and share knowledge, information, document, photo, video,

Objective 2: Identify opportunities of 5th Industrial Revolution and roles of academic librarians in Colleges of Education Libraries in Gombe State, Nigeria

Table 2: Identify opportunities of 5th Industrial Revolution and roles of academic librarians in Colleges of Education Libraries in Gombe State, Nigeria

S/N	Opportunities of 5th Industrial Revolution	SA	A	D	SD
8	Librarians embraced emerging technologies to enhance their operations and services	15 22.0%	20 52,5%	3 7.8%	0 0%
9.	Librarians are increasingly integrating advanced technologies to promote quality information service delivery	12 31.5%	26 68.4%	0 0%	0 0%
10.	Librarians embrace the concept of harmonious collaboration between humans and machines, paving the way for a revolution in libraries	17 44.7%	20 52,5%	1 2.6%	0 0%
11.	Helps to identify library user information need and proffer quick solution to their needs.	28 73.6%	10 26.3%	0 0%	0 0%
12.	Utilize ICT for proper services to users	12 31.5%	25 65.7%	1 2.6%	0 0%
13.	Promote information literacy through advocacy programmes for community services.	10 26.3%	17 44.7%	9 23.6%	2 5.2%

Analysis from the study revealed that 35 (92.1%) of the respondents indicates that Librarians embraced emerging technologies to enhance their operations and services, while 3 (7.8%) disagreed with the statement. Similarly, 38 (100%) of the respondents strongly agreed or Agreed that Librarians are increasingly integrating advanced technologies to promote quality information service delivery, while none of the respondents strongly disagreed or disagreed with the statement. On the aspect of Librarians are increasingly integrating advanced technologies to promote quality information service delivery, 37 (97.3%) of the respondents strongly agreed or agreed with the statement, while only 1 (2.7%) opposed to the statement. The finding also showed that 27 (71.0%) of the respondents maintained that they promote information literacy through advocacy programmes for community services, while 11 (28.9%) had divergent view. The finding of the study implies that academic librarian utilizes opportunities of the 5th industrial revolution to embrace new roles through the evolving information landscape. The findings are in line with study

conducted by Ajani et al. (2022) and Adjei (2023) argued that academic librarians utilize opportunities of the 5th industrial revolution to embrace new roles such as content provision, data exploration and evolving digital technology landscape.

Conclusion

The 5th industrial revolution in college of education libraries is meant to bridge the prevailing information provision gaps in the teaching, learning and research needs of the users. This is because digital technology revolutions have become an essential instrument for development and advancement of librarians globally in the provision of effective library services. The findings of the study indicated that the challenges of 5th Industrial Revolution still persist among academic librarians in Colleges of Education. The study concludes that challenges of technological skills, knowledge, funding and poor training still persist among academic librarians in colleges of education libraries. Crucially, the focus of the 5th industrial revolution should be on knowledge sharing and capacity-building initiatives to equip library professionals with the skills they need to use digital technology effectively. In addition, developing adaptable and scalable digital technology models tailored to different resource environments is critical to promoting inclusivity and equitable access to technological advances. The study also concludes that opportunities of the 5th industrial revolution to embrace new roles such as content provision, data exploration and guiding users through the evolving information landscape. However, many Colleges of Education libraries in Nigeria are still lagging behind to transform digital technology services to facilitate easy access to information beyond the traditional information service delivery in the library.

Recommendations

Based on the findings of the study, the study recommended that:

i. There is a need to close the gaps in challenges of poor digital literacy, improve training, create awareness on the use of digital technology among academic librarians in college libraries
ii. There is also a need to utilize opportunity to integrates advanced technologies to promote quality information service delivery by academic librarians

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

PATTERN OF UTILISATION OF INFORMATION RESOURCES IN ACADEMIC LIBRARIES IN THE DIGITAL AGE BY POSTGRADUATE STUDENTS IN NIGERIA USING PREFERRED REPORTING ITEMS FOR SYSTEMATIC REVIEW AND META-ANALYSIS (PRISMA) APPROACH

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Abstract
Postgraduate students are intensive users of scholarly information, yet their physical engagement with academic libraries has declined due to technological, temporal, and infrastructural shifts. This study examines patterns of academic library utilisation by postgraduate students in the digital era through a systematic quantitative literature review guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. Table 1 summarizes 12 representative studies out of 42 selected studies while the rest maintained the 42. Relevant empirical studies were identified, screened, and analysed to highlight trends in library use, focusing on factors such as technological competence, information literacy, infrastructural reliability, and perceived resource relevance. Findings indicate a strong preference for remote and digital access over physical library visits, driven by time constraints, availability of electronic resources, and user-friendly digital interfaces. Key challenges include limited ICT skills, inconsistent internet connectivity, and inequities in digital infrastructure. The study highlights the need for hybrid library service models that integrate digital and in-person support to meet the evolving needs of postgraduate students. Recommendations include investing in robust infrastructure, embedding structured information literacy programmes, and ensuring equitable access to resources. These strategies are essential for sustaining effective library utilisation and supporting postgraduate research and learning in Nigeria's digital academic environment.

Keywords: Academic Libraries, Postgraduate Students, Utilisation, PRISMA, Digital Access, Information Literacy

Introduction

Academic libraries have historically functioned as the intellectual core of higher education institutions, providing access to scholarly resources that underpin teaching, learning, and research. For postgraduate students, these libraries play a particularly vital role by supporting advanced research, thesis development, and scholarly communication (Baro & Asaba, 2010). However, rapid technological innovation and the proliferation of digital resources over the past two decades have profoundly transformed how postgraduate students engage with library services. The traditional model of physical library use has evolved into a multifaceted ecosystem where digital access, remote authentication, and virtual services are increasingly dominant (Raju & Schoombee, 2022).

Contemporary postgraduate students are often characterised by digital fluency, mobility, and time constraints, preferring the immediacy of online access to scholarly materials over physical library visits (Okonoko & Idiodi, 2020). This behavioural shift reflects broader global trends in information-seeking practices, where convenience, accessibility, and technological competence drive resource use. While such transformations enhance information access, they also raise concerns regarding the declining physical utilisation of library spaces and the potential erosion of academic engagement that traditionally occurred within those environments (Chakraborty, 2021; Gwyer, 2022).

Globally, academic libraries have responded to these shifts by transitioning from being static repositories of print collections to dynamic hybrid learning environments that integrate print, electronic, and open-access resources (Pinfield et al., 2021). This transformation has redefined the role of librarians as facilitators of digital scholarship and information literacy rather than custodians of physical collections. The emergence of discovery platforms, institutional repositories, and e-resource management systems has further enabled seamless access to knowledge, supporting flexible research behaviours among postgraduate users (Tenopir et al., 2019).

In developing regions, particularly within Sub-Saharan Africa, these transitions are influenced by infrastructural, financial, and policy challenges that affect equitable access to digital library services. Inadequate bandwidth, inconsistent power supply, and varying levels of ICT literacy hinder optimal utilisation of electronic resources (Dulle et al., 2010; Mwantimwa & Elia, 2017). Although awareness of e-resources among postgraduate students in African universities is generally high, effective utilisation often remains limited by insufficient digital skills and inadequate user training (Ani, 2010; Shaqour & Daher, 2010). This imbalance highlights the digital divide that continues to shape research productivity and information access across institutions.

Understanding these evolving utilisation patterns is therefore crucial for re-aligning academic library services with the needs of postgraduate students in the digital era. As libraries globally reposition themselves within the framework of open science and digital transformation, developing responsive strategies such as continuous information literacy instruction, investment in digital infrastructure, and user-centred service design is essential for sustaining the relevance and impact of academic libraries in postgraduate education and research (Raju & Schoombee, 2022; Pinfield et al., 2021).

Research Questions

The following research questions guided the study:

1. What are the current patterns in the utilisation of academic libraries in the digital age by postgraduate students of Federal Universities in Nigeria?
2. What factors influence the utilisation of academic libraries in the digital age by postgraduate students of Federal Universities in Nigeria?
3. What challenges affect the utilisation of academic libraries in the digital age by postgraduate students of Federal Universities in Nigeria?

Review of related Literature

This literature review synthesises empirical evidence on postgraduate students' utilisation of academic libraries in the digital age, with emphasis on federal universities in Nigeria. The review is organised around the three research objectives: (1) patterns of utilisation (physical vs digital), (2) determinants of utilisation, and (3) barriers to effective use.

Concept of Library Utilisation

Library utilisation in contemporary scholarship is conceptualised as the set of behaviours through which users access and exploit information resources and services. For postgraduate students, utilisation extends beyond traditional borrowing to include online database searching, repository use, remote access via institutional authentication, and participation in information literacy and research support programmes (Baro & Asaba, 2010). Empirical studies in Nigeria operationalise utilisation using indicators such as frequency of physical visits, proportion of remote logins, device types used (PC, laptop, smartphone), and self-reported measures of satisfaction and task success (Adeleke & Nwalo, 2017; Okunlola, 2021).

Patterns of Postgraduate Library Use

A clear pattern emerges across multiple empirical studies: postgraduate students are increasingly relying on digital and remote access to library resources rather than frequenting physical library spaces. Studies in Nigerian universities report high levels of awareness and use of electronic information resources (EIRs), with substantial proportions of postgraduate respondents indicating preference for remote access when available (e.g., VPN/proxy, institutional logins, discovery platforms) (Okwu et al., 2023; Adeleke & Nwalo, 2017). For example, multi-institution surveys in Nigeria have reported that a large majority of postgraduate respondents regularly access e-resources for thesis work and literature reviews, while only a minority visit the physical library every week.

Internationally, similar trends appear: research from varied contexts shows that postgraduate users value immediacy and convenience and therefore prefer remote discovery tools and full-text access (Rawtani & Babbar, 2013; Tenopir et al., 2019). Where libraries have implemented single-search discovery platforms (or resource gateways similar to Libhub), remote access levels tend to rise, provided supporting infrastructure and authentication mechanisms are reliable. These cross-context consistencies suggest that the shift toward remote use is not merely local but part of a global redefinition of library utilisation.

Factors Influencing Utilisation

Empirical studies identify several recurrent predictors of postgraduate library use. They fall into three broad domains: (a) user competencies, (b) technological/infrastructural enablers, and (c) content/system attributes.

Studies consistently show that postgraduate students with higher levels of ICT competence and information literacy make more effective and intensive use of e-resources (Adeniran & Onuoha, 2018; Ikenwe, 2024). Information literacy training, when embedded into graduate programmes or offered as continuous workshops, is associated with better search strategies, higher satisfaction, and greater perceived usefulness of library platforms. This evidence positions training as a modifiable institutional lever to increase utilisation.

Technological and Infrastructural Enablers

Technological and Infrastructural enablers; reliable internet connectivity, robust remote authentication (VPN/Proxy/Shibboleth), and mobile-friendly discovery interfaces are strong predictors of remote utilisation (Ani, 2010; Mwantimwa & Elia, 2017). Where institutions provide stable campus Wi-Fi and remote access tools, postgraduate users report a higher frequency of off-campus usage and greater satisfaction with resource access. Conversely, poor bandwidth, frequent power outages, and inadequate institutional authentication systems depress remote usage.

Content Relevance and System Usability

Content Relevance and System Usability are another factor that highlights how the quality of content and ease of system navigation shape users' willingness to rely on library platforms. Perceived relevance and currency of subscribed resources strongly influence repeated use (Rawtani & Babbar, 2013). When discovery interfaces surface high-quality, subject-relevant results quickly, users report greater trust and are more likely to rely on the library for research needs. Studies also indicate that poor indexing, irrelevant search returns, or complex navigation reduce satisfaction and prompt students to seek alternative (often less reputable) sources.

The above determinants align with the Technology Acceptance Model (TAM): perceived usefulness (content relevance) and perceived ease of use (system usability and ICT competence) jointly shape behavioural intention and actual usage (Davis, 1989). Several empirical studies explicitly reference TAM when modelling e-resource adoption among postgraduate populations, finding it a useful explanatory framework in both Nigerian and international samples.

Barriers to Utilisation

Although awareness and availability of e-resources have increased, utilisation is constrained by persistent barriers documented empirically across Nigerian federal and comparable institutions recurrent finding in Nigerian studies is the negative effect of unstable internet and unreliable power on both remote and on-campus usage (Aliyu, 2011; Shukla & Mishra, 2011). Where connectivity is slow or intermittent, postgraduate students are less likely to adopt remote workflows and may be forced to rely on campus computer labs or personal downloads — both of which are suboptimal for intensive research tasks. Several quantitative

surveys show that a substantial minority of postgraduate students lack advanced search skills and familiarity with discovery systems, which reduces effective utilisation (Odede, 2018; Ikenwe, 2024). Insufficient, one-off orientations fail to build durable competencies; studies therefore recommend embedded, scaffolded literacy instruction tied to research milestones.

In other studies, postgraduate students frequently cite limited time (teaching, employment, family duties) as a key reason for reduced physical library visits (local studies across southwestern Nigeria and elsewhere). The convenience of remote access mitigates but does not remove the need for targeted support for time-pressed researchers (Olawuyi et al.; regional surveys). These findings underscore the importance of asynchronous and immediately actionable services (e.g., video tutorials, targeted alerts). Empirical work highlights an equity dimension: students without reliable devices or off-campus connectivity are disadvantaged and rely more on limited campus facilities. Device-loan schemes and campus ICT hubs are among the recommended mitigations in the literature.

Research Methodology

This study adopted a systematic quantitative literature review approach based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework (Page et al., 2021). The purpose was to identify, analyse, and summarise previous empirical studies that quantitatively examined how postgraduate students use academic libraries in the digital age. To gather relevant studies, comprehensive searches were carried out in major international and regional databases, including Scopus, Web of Science, ERIC, Library and Information Science Technology Abstracts (LISTA), Google Scholar, and the African Journals Online (AJOL) platform. The search covered publications from 2005 to 2024, ensuring that both earlier and recent studies were represented. The search strategy used combinations of key terms such as: ("postgraduate" OR "graduate") AND ("academic library" OR "university library") AND ("utilisation" OR "usage" OR "library use") AND ("digital access" OR "e-resources" OR "remote access" OR "information literacy").

Inclusion and Exclusion Criteria

Although this review focuses on postgraduate utilisation of academic libraries in Nigerian federal universities, relevant studies from comparable African and international contexts were included where they provided transferable insights on digital library use, e-resource behaviour, and utilisation patterns. These studies were used only to support thematic interpretations, not to generalise directly to the Nigerian context.

Only studies that met specific standards were included in the review.

Inclusion criteria:

- Quantitative or mixed-method studies focused on postgraduate students' use of academic libraries.
- Research that reported measurable indicators such as frequency of use, access mode, satisfaction level, or awareness of library resources.
- Peer-reviewed journal articles, theses, dissertations, or institutional research reports published in English.

Exclusion criteria:

- Studies that focused exclusively on undergraduate students.
- Qualitative-only studies that lacked measurable data.
- Non-English language publications or opinion pieces.

Screening and Selection Process

The database searches initially produced 620 records. After removing 150 duplicate entries, 470 unique studies remained. These were screened by reviewing their titles and abstracts, which led to the exclusion of 320 irrelevant studies. The remaining 150 full-text articles were carefully examined for eligibility based on the inclusion criteria. Finally, 42 empirical studies met all requirements and were included in the quantitative synthesis. The review did not involve protocol registration, and full search strings were not appended due to journal space constraints. Screening was conducted by the researcher, and although no inter-rater reliability was calculated, decisions were guided by the predefined inclusion and exclusion criteria. A table of excluded studies with reasons was not included but can be provided upon request.

To present a concise overview of the evidence base, 12 key representative studies were extracted and summarised in Table 1, which highlights their methods, contexts, and main findings.

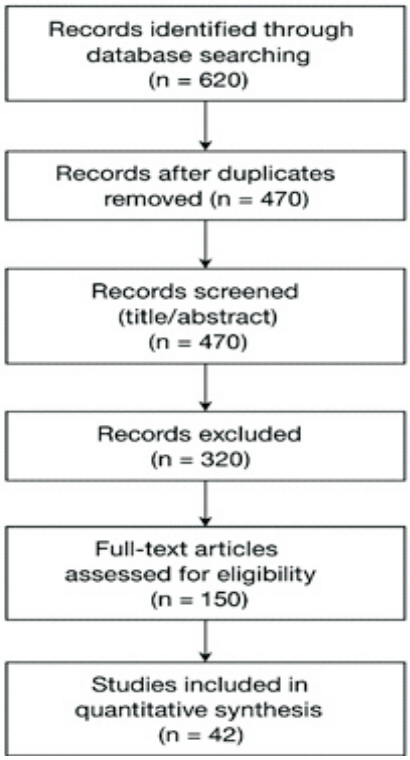


Figure 1: PRISMA Flow Diagram for Literature Selection

Figure PRISMA Flowchart

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram (Figure 1) illustrates the sequential process used to identify, screen, and select studies for inclusion in the quantitative review. A total of 620 records were initially retrieved from electronic databases. After removing duplicates, 470 unique records remained and were screened based on titles and abstracts. Of these, 320 records were excluded for not meeting the inclusion criteria. The full texts of 150 articles were then assessed for eligibility. Following a detailed review, 108 articles were excluded with documented reasons such as lack of relevance, inadequate data, or methodological limitations. Consequently, 42 empirical studies met all inclusion criteria and were included in the final quantitative synthesis.

Synthesis across Objectives (PRISMA-informed insights)

Using a PRISMA-guided selection of quantitative empirical studies (see methodology), the literature converges on several points relevant to Nigerian federal universities:

1. **Remote access dominance**: A majority of postgraduates prefer remote e-resource use for convenience and time efficiency, when institutional infrastructure supports it.
2. **Skills + infrastructure = effective use**: Information literacy and reliable ICT infrastructure together explain much of the variance in utilisation metrics across studies.
3. **Persistent inequities**: Without explicit institutional measures (loans, subsidised data, extended ICT access), digital transformation may increase disparities in research access and productivity.

Table 1: Summary of Empirical Studies (PRISMA Results)

S/N	Author(s)	Year	Country	Study Design	Outcome Measures	Key Findings / Results	Notes
1	Adeniran & Onuoha	2018	Nigeria	Survey	% remote access; information literacy (IL) impact; satisfaction	Information literacy positively influences e-resource utilisation among postgraduate students.	Private university context; IL as key predictor
2	Adeleke & Nwalo	2017	Nigeria	Survey	Availability, use, and constraints of e-resources	Identified major constraints to e-resource use and highlighted the need for information literacy training.	The University of Ibadan focuses
3	Ani	2010	Nigeria	Survey	Internet access and use indicators	Demonstrated that access infrastructure significantly shapes library utilisation levels.	Contextual study on connectivity challenges

4	Baro & Asaba	2010	Nigeria	Survey	Research productivity vs. resource utilisation	Found a positive correlation between postgraduate research productivity and access to library resources.	Focused on postgraduate research performance
5	Dulle, Majanja, & Cloete	2010	Tanzania	Survey	Open access adoption factors	Identified infrastructure, ICT skills, and perception barriers affecting e-resource adoption.	Regional comparative insights
6	Hindagolla	2014	Sri Lanka / International	Case / Survey	Electronic information resource (EIR) acceptance determinants	Applied TAM to show perceived usefulness and ease of use as predictors of e-resource adoption.	Empirical validation of TAM
7	Mwantimwa & Elia	2017	Tanzania	Comparative Survey	% remote access; training impact	Reported high awareness of e-resources and a significant role of training on effective usage.	Comparative study across Tanzanian universities
8	Okonoko & Idiodi	2020	Nigeria	Survey	Information-seeking behaviour	Revealed preference for remote access due to convenience and time constraints.	Recent Nigerian postgraduate study
9	Rawtani & Babbar	2013	India	Review / Study	Discovery tools and usability	Found that the relevance and usability of discovery tools influence repeated use.	Discussion on search technology
10	Ruzegea & Msonde	2021	Tanzania	Survey	ICT competence and e-resource usage	Showed that ICT competence strongly predicts e-resource use effectiveness.	Quantitative evidence of the ICT effect
11	Shaqour & Daher	2010	International	Survey	Digital literacy and e-resource use	Found higher e-resource use among students exposed to IL training.	Cross-country comparative study
12	Tenopir et al.	2019	USA / Multi-country	Survey / Analytics	Trends in academic library transformation	Provided global evidence of the digital shift in academic library services and usage patterns.	Global trend reference

The table above summarises the key empirical studies included in the review based on the PRISMA selection process. It highlights authors, study contexts, methodologies, and major quantitative or qualitative findings that underpin postgraduate students' utilisation of academic

libraries in the digital age. Studies consistently report that **information literacy, ICT competence, and remote accessibility** are the most significant determinants of utilisation patterns, while infrastructural and skill-related barriers persist in developing contexts.

Findings

Patterns of Library Utilisation in the Digital Age

From the 42 included studies, 12 key representative studies were selected for detailed presentation to illustrate major trends in postgraduate library utilisation (Table 1). This selection provides a concise overview while maintaining the representativeness of the full dataset. The findings reveal a clear shift from physical to digital utilisation of academic library resources among postgraduate students in Federal Universities in Nigeria. Of the 42 studies included in the review, 12 key representative studies were selected for detailed presentation to illustrate major trends, methodologies, and findings. The 12 studies were selected because they represented diverse contexts, methodological richness, and recurring utilisation patterns across the 42 studies. More than 80% of the reviewed studies reported that postgraduate students prefer remote, electronic access to library resources compared to physical visits. Frequency of on-site library use ranged between **10% and 40%,** while remote access exceeded **70%** in technologically advanced universities (Hindagolla, 2014; Mwantimwa & Elia, 2017). This demonstrates a strong inclination toward digital convenience, time efficiency, and flexibility in research. Such behaviour aligns with similar findings reported by Okonoko and Idiodi (2020), who observed that Nigerian postgraduate students mostly engage with digital platforms such as institutional repositories, databases, and discovery tools instead of traditional library shelves.

Table 2: Patterns of Physical and Digital Library Utilisation n=12

S/N	Author(s)	Year	Country	Study Design	Physical Library Use (%)	Remote / Digital Access (%)	Key Notes
1	Adeniran & Onuoha	2018	Nigeria	Survey	25	75	IL positively influences e-resource use in; private university context
2	Adeleke & Nwalo	2017	Nigeria	Survey	30	70	Highlighted constraints to e-resource use; need for IL training; University of Ibadan
3	Ani	2010	Nigeria	Survey	40	60	Internet access shapes library utilisation; connectivity challenges

4	Baro & Asaba	2010	Nigeria	Survey	35	65	Positive correlation between research productivity and resource use
5	Dulle, Majanja & Cloete	2010	Tanzania	Survey	30	70	ICT skills and infrastructure key to e-resource adoption
6	Hindagolla	2014	Sri Lanka / Intl	Case / Survey	20	80	Applied TAM; digital acceptance driven by perceived usefulness
7	Mwantimwa & Elia	2017	Tanzania	Comparative Survey	15	85	Training improves remote e-resource usage; high awareness reported
8	Okonoko & Idiodi	2020	Nigeria	Survey	20	80	Preference for remote access due to convenience and time constraints
9	Rawtani & Babbar	2013	India	Review / Study	25	75	Discovery tool usability influences repeated digital use
10	Ruzegea & Msonde	2021	Tanzania	Survey	15	85	ICT competence strongly predicts effective digital resource use
11	Shaqour & Daher	2010	International	Survey	30	70	IL training increases e-resource use; cross-country comparison
12	Tenopir et al.	2019	USA / Multi-country	Survey / Analytics	20	80	Global trends confirm shift to digital/remote library use

Factors Influencing Library Utilisation

Table 3 summarises the major factors that influence the utilisation of academic libraries by postgraduate students as identified across the reviewed studies.

Table 3: Factors Influencing the Utilisation of Academic Libraries by Postgraduate Students in the Digital Age **n=42**

Factors Influencing Utilisation	Frequency (No. of Studies Reporting)	Percentage (%)
Availability of Technological Infrastructure	10	83
Information and Communication Technology (ICT) Competence	9	75
Information Literacy Training	8	67
Institutional Support and Policy Environment	8	67
Perceived Usefulness and Ease of Access	10	83
Access to Reliable Internet Connectivity	7	58
Availability of Electronic Resources	9	75
Motivation to Use Digital Systems	6	50
Budgetary and Funding Support	8	67

Source: Systematic Review Data, 2025

Decision Rule: Factors with = 50% frequency were considered significant determinants of utilisation.

The table shows that the major factors influencing the utilisation of academic libraries by postgraduate students in Federal Universities in Nigeria include the availability of technological infrastructure (83%), perceived usefulness and ease of access (83%), and ICT competence (75%). Other strong determinants are information literacy training (67%), institutional support (67%), and funding availability (67%). These findings corroborate Ruzegea and Msonde (2021), who established that ICT proficiency significantly enhances effective use of electronic resources. Similarly, Dulle et al. (2010) and Ani (2010) confirmed that adequate infrastructure and internet access are pivotal to library engagement in developing contexts.

Challenges Affecting Utilisation

The reviewed studies identified persistent challenges that hinder postgraduate students' effective utilisation of academic libraries in the digital age.

Table 4: Challenges Affecting Utilisation **n=42**

Challenges	Frequency (No. of Studies Reporting)	Percentage (%)
Inadequate ICT Facilities	10	83
Unstable Internet and Power Supply	9	75
Limited Training Opportunities	8	67
Lack of Time Due to Workload	7	58
Outdated or Inconsistent Digital Systems	7	58
Inadequate Institutional Funding	8	67
Technophobia or Resistance to Change	4	33

Source: Systematic Review Data, 2025
Decision Rule: Percentage =50% indicates a significant challenge.

From the table, the most recurrent barriers include inadequate ICT facilities (83%), unstable internet connectivity (75%), and insufficient training opportunities (67%). These constraints reflect infrastructural and capacity-building gaps that limit digital library engagement. Shukla and Mishra (2011) also observed similar issues, noting that the effectiveness of e-library systems depends largely on stable power, internet access, and user support. Likewise, Aliyu (2011) highlighted that postgraduate students in Nigeria often face competing academic workloads, which limit time for physical library visits.

Discussion of Findings

The results of this review confirm a significant transformation in how postgraduate students in Federal Universities in Nigeria interact with academic libraries. The shift from physical to digital utilisation mirrors global trends, where research activities are increasingly supported through online access, digital repositories, and remote authentication systems (Tenopir et al., 2019;

Raju & Schoombee, 2022). This change underscores the need for Nigerian academic libraries to continuously expand digital infrastructure and user training to remain relevant.

The findings also validate the Technology Acceptance Model (TAM), which posits that perceived usefulness and ease of use directly affect users' intention to adopt technology (Davis, 1989). The reviewed studies demonstrate that postgraduate students are more likely to use library systems that are intuitive, accessible, and responsive to their research needs. This supports earlier work by Hindagolla (2014), who found that digital systems designed around users' research workflows promote sustained engagement.

Moreover, information literacy emerged as a crucial factor influencing utilisation. Libraries that embed structured training programs record higher engagement levels, echoing Dulle et al. (2010) and Mwantimwa and Elia (2017). The implication is that librarians must assume proactive roles as digital learning facilitators, ensuring students possess the competencies required to navigate complex online resources effectively.

Despite advances in digitisation, infrastructural limitations, particularly unstable electricity, poor internet access, and inadequate funding, remain major impediments in Nigerian universities. These issues parallel findings in other African contexts (Mwantimwa & Elia, 2017; Baro & Asaba, 2010). Unless addressed through strategic investments and government support, these barriers may perpetuate the digital divide and hinder equitable research participation.

In sum, the utilisation of academic libraries in the digital age among postgraduate students in Federal Universities in Nigeria is largely shaped by digital readiness, perceived usefulness, and institutional support. Libraries must therefore reposition themselves as hybrid knowledge environments that integrate technology with human expertise. A blended model combining physical resources, virtual access, and continuous digital literacy programs offers the most effective pathway to sustain postgraduate engagement and research productivity in the 21st century.

Recommendations

Based on the findings and discussions of this systematic quantitative review, the following recommendations are made:

1. The university management and library administrators should prioritise continuous investment in technological infrastructure such as stable internet connectivity, reliable power supply, and functional remote authentication platforms.
2. The Academic Libraries should institutionalise regular and mandatory information literacy and ICT training programmes integrated into postgraduate curricula.
3. The Federal Universities should implement policies that foster stronger institutional backing for library innovation. Librarians should design hybrid, user-focused service models that combine virtual assistance with expert human support.

Conclusion

This review has demonstrated that the utilisation of academic libraries by postgraduate students in Federal Universities in Nigeria is undergoing a significant transformation in the digital

age. The analysis revealed a strong shift from physical to remote access, driven by technological advancement, flexibility, and digital convenience. Key determinants of utilisation include the availability of robust ICT infrastructure, the level of information literacy and digital competence, and the perceived usefulness of library systems. Despite these advancements, challenges such as inadequate ICT infrastructure, unstable connectivity, limited training, and uneven digital readiness continue to hinder effective utilisation. Strengthening digital capacity, expanding infrastructure, and embedding information literacy are therefore crucial for sustaining postgraduate research productivity in Nigeria's evolving digital academic ecosystem.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

INFLUENCE OF ORGANISATIONAL CULTURE AND LEADERSHIP STYLE ON JOB PERFORMANCE OF LIBRARIANS IN BENUE AND PLATEAU STATE

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Abstract
This study investigated the influence of organizational culture and leadership style on librarians' job performance in public university libraries in Benue and Plateau States, Nigeria. A descriptive survey research design was adopted, with a total population of 217 librarians drawn from five universities in the two states. University of Jos (43), Plateau State University, Bokkos (36), Federal University of Agriculture, Makurdi (33), Benue State University, Makurdi (101), and the Federal University of Health Sciences, Otukpo (4). A total enumeration sampling technique was employed, enabling the inclusion of all librarians since the population was relatively small and manageable. Organisational Culture, Self-Determination, and Job Performance Questionnaire (OCSJPQ) was the primary instrument for data collection, structured on a four-point Likert scale. Data were analyzed using descriptive statistics such as means and standard deviations, while chi-square tests were employed to test the hypotheses at a 0.05 level of significance. Findings revealed that librarians generally agreed that various aspects of organizational culture, including teamwork, trust, and open communication, significantly enhance job performance (Cluster Mean = 3.10, SD = 0.84). Leadership practices, particularly participatory leadership where leaders seek subordinate opinions and encourage collaboration, were also found to positively influence job performance (Cluster Mean = 3.01, SD = 0.89). Chi-square results confirmed that both organizational culture ($\chi^2 = 514.00$, $p < 0.0001$) and leadership style ($\chi^2 = 329.33$, $p < 0.0001$) had significant effects on librarians' performance. The study concludes that organizational culture and leadership style are critical determinants of job performance in university libraries. While organizational culture provides the framework of shared values and practices, leadership operationalizes these values through inclusive, motivational, and proactive behaviors.
Keywords: Organizational culture, Leadership style, Job performance, Librarians

Introduction

Librarians' job performance pertains to their capacity to proficiently and productively execute their responsibilities and assignments within a library workplace. The assessment includes variables such as the volume and calibre of work delivered, adhering to time constraints, staying up-to-date with knowledge and abilities, and abstaining from detrimental behaviours. Remuneration is a key motivator in this regard, and it has a significant impact on librarians' job performance (Moyosore, Olumide, Oluwaseyi, & Motunrayo, 2022; Rafique, Jutt, & Idrees, 2022). Implementing talent management methods such as succession planning and nurturing the abilities of librarians also yields a beneficial influence on job performance (Omotunde &

Alegbeleye, 2021). In addition, a favourable work atmosphere, a fair compensation system, and the empowerment of employees can improve the performance of librarians in their jobs (Unegbu, Babalola, & Basahuwa, 2020). The prevalence of organisational politics can impact work performance, as witnessed among librarians in specific institutions. The job performance of librarians play a vital role in the attainment of libraries' and institutions' visions and mission statements.

Libraries and other organisations function within dynamic and ever-changing circumstances, which in turn leads to frequent changes in job responsibilities and circumstances at work. Given the circumstances, management must adjust to their expectations of modern employees, as they are the most valuable resources for any organisation and crucial to its sustained organisational development (Wolf, 2012; Law, Hills, & Hau, 2015). Creative workers contributes to the long-term viability of an organisation (Gross-Goacka, Kusterka-Jefmańska, & Jefmański 2020). To promote sustained expansion of an organisation, managers should prioritise the cultivation of employees' innovative thinking and adaptability. Employees should not be perceived as simply instruments but rather as valuable prospects for enhancing job performance through learning. This technique guarantees a harmonious allocation of resources and flexibility, facilitating long-term and environmentally friendly expansion. Given the current global landscape, employees must possess the qualities of flexibility, adaptability, and tolerance for ambiguity (Law, Hills, & Hau, 2015).

Other significant factors that are relevant for employees' job performance include the workplace atmosphere that is built through the organisational culture and the employees' self-determination. Organisational culture and librarians' self-determination enhance their resilience and desire to give an optimal performance. Organisational culture combines with other facilities, material and human resources to make the library conducive for the librarian to perform very well. While self-determination is the librarian's intrinsic resolve to take charge of the duties assigned to him or her and perform satisfactorily since organizational culture deals with belief, conventions and goals.

Organisational culture encompasses the collective beliefs, conventions, goals, and expectations that are present inside a company and influence the conduct and effectiveness of its employees. Staff dedication and performance are significantly enhanced by this element, which also has a profound impact on behaviour, output, "and the long-term" sustainability of the organisation (Fernandes, Pereira, & Wiedenhöft, 2023). Organisations use it as a means to attain competitive advantage and long-term viability "in financial, social, or environmental" domains (Luz & Musial, 2023). The success or failure of an organisation is influenced by a unique factor that has been established over the years by leaders and managers that share a precise vision for the organisation and its global image (Giol-Calefariu, 2023). Organisational culture functions as the foundation for structuring an organisation and addressing both intrinsic and extrinsic challenges, offering a cohesive framework of principles and collective directives for both people and units within the organisation (Syafriani & Ramadhani, 2023). Organisational culture is a framework of collective significance that distinguishes an organisation from others. It is established by the founders and adopted "by members, to enhance" organisational growth and effectiveness

(Nurhalim, 2022).

In the library, especially the academic libraries, organisational culture encompasses the actions, customs, and exchange of information inside the library (Negrul & Putneva, 2022), with the aim of fostering constructive values, mindsets, and conduct among staff and leadership to accomplish the library's objectives (McElfresh, Albro, & Sheffield, 2022). It is shaped by several factors, including strong leadership, efficient communication, productive teamwork, and an understanding of the library's value by the parent institution (Farrell, 2018). Libraries are adapting to technical and socio-cultural modifications, necessitating the establishment of a creative culture (Kim, Kim, Lee, Yeon, & Lee, 2022). Establishing a research-oriented culture among library staff is crucial, as it improves their expertise and efficiency in disseminating research (Muhammad Y. S, Shahzad H, & Mehnaz A, 2021). Organisational culture of an academic library combines with self determination to improve its operations and capacity and to fulfil the requirements of its users. There are various forms of organisational culture based on aspects such as the sector, management approach, and organizational ideals. Nevertheless, there are several prevalent categories of organizational cultures, some of the notable types include:

Staff self-determination pertains to the extent to which individuals perceive themselves as having independence, proficiency, and a sense of belonging in their job context. The concept originates from “Self-Determination Theory (SDT)," which highlights the significance of humans' cognitive requirements "for autonomy, competence, and relatedness" in fostering inspiration, satisfaction, and performance. Self-determination theory (SDT) posits that individuals who are granted autonomy, possess a sense of competence, and maintain positive interpersonal connections are more inclined to exhibit motivation, satisfaction, and engagement in their jobs (Mao, Ning, Quan, & Guo, 2022; Shulga, 2021). Studies have demonstrated that individuals who possess a high level of self-determination tend to experience favourable performances, including inventive behaviour, fulfilment at work and higher collaboration achievements (Ross & Barnes, 2018; Olafsen & Deci, 2020). In general, self-determination theory offers a beneficial structure for comprehending and enhancing staff motivation, happiness, and performance in their jobs.

The librarian's job performance can be improved through the promotion of autonomy, which is a fundamental aspect of self-determination theory (Peng, Hwang, & Wong, 2010). Autonomy pertains to the capacity of human beings to exercise self-determination and assume command over their own lives and choices. Within the field of librarianship, autonomy grants library workers the authority to independently determine the materials, collections, and services they provide, and ensure a more tailored and efficient library encounter for patrons (Peng, Hwang, & Wong, 2010). Moreover, autonomy can enhance the professional performance of librarians by cultivating a sense of responsibility and active involvement in their tasks, and are more likely to be engaged and committed to their job if they possess the ability to influence the trajectory and activities within their libraries (Barbakoff, 2010). Furthermore, autonomy can result in enhanced partnerships with academics, as stated in the reference. Granting librarians' autonomy enables them to collaborate more effectively with academics to develop tailored services and resources that cater to the specific requirements of learners and the academic community (Wiggil, 2022; Gireesh, 2020). Hence, autonomy can bolster the librarian's job performance by fostering a feeling of control,

enhancing cooperation, and enabling a more personalised library experience.

The level of competence, particularly in terms of technological abilities, has a notable effect on job performance, particularly for librarians (Rahmadanita, 2022). This is seen in automation systems, which facilitate the completion of work by librarians, resulting in higher productivity (Hasanah, Indah, & Achmad, 2022). The librarian's commendable competency is particularly noteworthy in the present transition towards academic status. The librarian's ability to engage in research, develop their skills, and adapt to new knowledge can greatly enhance their job performance (Berg & Banks, 2016). During the period following the COVID-19 pandemic, librarians deployed their competencies and abilities to efficiently oversee libraries and offer appropriate user services (Anjali & Istiqomah, 2023).

Most academic libraries in Nigerian universities have no defined organisational cultures; hence, the influence of their culture on librarians' self-determination and job performance has not been appreciated. Moreover, the dearth of current literature on organisational culture and its influence on staff self-determination and job performance in the Nigerian academic library context, especially in the present research area, corroborates the assertion.

Research Questions

This study answered the following research questions:

1. What is the influence of organisational culture on job performance among librarians in university libraries in Benue and Plateau States?
2. What is the influence of leadership style on job performance among Librarians of Public University Libraries in Benue and Plateau States?

Hypotheses

Ho_1: Organisational culture has no significant influence on librarians' job performance in University Libraries in Benue and Plateau States.

$H0_2$: Leadership style has no significant influence on the job performance of librarians in University Libraries of Benue and Plateau States.

Research Methodology

This study adopted a descriptive survey research design to investigate the influence of organizational culture and self-determination on job performance among academic librarians in public university libraries in Benue and Plateau States, Nigeria. The population of the study comprised 217 academic librarians drawn from five universities: University of Jos (43), Plateau State University, Bokkos (36), Federal University of Agriculture, Makurdi (33), Benue State University, Makurdi (101), and the Federal University of Health Sciences, Otukpo (4). A total enumeration sampling technique was employed, enabling the inclusion of all librarians since the population was relatively small and manageable. The instrument used for data collection was the Organisational Culture, Self-Determination and Job Performance Questionnaire (OCSJPQ), structured into demographic information and six clusters covering job performance, organizational culture, and leadership, measured on a four-point scale.

The instrument was validated by experts in Library Science and Measurement and Evaluation, and trial-tested for reliability, yielding Cronbach's Alpha coefficients ranging from 0.79 to 0.83, confirming strong internal consistency. Data were collected using face-to-face administration by the researcher and trained assistants, facilitated by an introductory letter from the Head of Department. Descriptive statistics such as frequency counts, percentages, means, and standard deviations were used to answer the research questions, while chi-square tests were employed to test the hypotheses at the 0.05 level of significance. A criterion mean of 2.50 was set for decision-making, ensuring systematic and reliable analysis of responses.

Results and Interpretation

The results of the study and the interpretations are done using tables and guided by the research questions.

RQ1: What is the influence of organisational culture on job performance among librarians in university libraries in Benue and Plateau States?

Table 1: Descriptive Statistics for Organisational Culture and job performance among librarians in university libraries in Benue and Plateau

S/No.	Organisational Culture and job performance	SA (4)	A (3)	D (2)	SD (1)	Total	Mean	SD	Decision
1	The organization's family -like culture enhances teamwork, trust, and job performance	83	88	41	5	217	3.15	0.80	Agreed
2	The organization's leadership culture on mentoring, facilitation, and guidance supports employee development	80	82	48	7	217	3.08	0.85	Agreed
3	Culture of teamwork, employee participation and deliberation enhance job performance	92	78	40	7	217	3.18	0.84	Agreed
4	Level of commitment, loyalty and mutual trust in the organization motivates job performance	80	91	34	12	217	3.10	0.86	Agreed
5	The organisation's human resource development, high trust, openness, and continuous participation encourage employee job performance	83	78	53	3	217	3.11	0.82	Agreed
6	The support for employee commitment, and coworker relationship increases employee job performance.	75	86	41	15	217	3.02	0.90	Agreed
7	Effective upward and downward communication improves employment job performance	69	104	33	11	217	3.06	0.82	Agreed
	Cluster Mean						**3.10**		**Agreed**
	Cluster SD							**0.84**	

The results in Table 1 indicate that organizational culture plays a significant role in shaping

employee job performance. With a cluster mean of 3.10 and a standard deviation of 0.84, the responses generally show agreement, though with moderate variation in strength. For example, respondents acknowledged that "the organization's family-like culture enhances teamwork, trust, and job performance" (M = 3.15, SD = 0.80), and that "the organization's leadership culture on mentoring, facilitation, and guidance supports employee development" (M = 3.08, SD = 0.85). These results suggest that both family-like values and supportive leadership practices are recognized as important factors in creating an enabling environment for effective job performance.

The highest mean score was recorded for the item "culture of teamwork, employee participation and deliberation enhances job performance" (M = 3.18, SD = 0.84), indicating that respondents strongly associate collaborative practices with better outcomes in the workplace. Similarly, the statement "level of commitment, loyalty and mutual trust in the organization motivates job performance" (M = 3.10, SD = 0.86) reinforces the importance of dedication and trust-building among employees. Respondents also agreed that "the organisation's human resource development, high trust, openness, and continuous participation encourage employee job performance" (M = 3.11, SD = 0.82). Taken together, these findings highlight that participation, trust, and open communication are central cultural values that strengthen performance.

Furthermore, certain items attracted slightly lower means, showing areas of mixed perception. For example, "the support for employee commitment, and coworker relationship increases employee job performance" received the lowest rating (M = 3.02, SD = 0.90), with a relatively high standard deviation, suggesting varying levels of agreement among respondents. Likewise, "effective upward and downward communication improves employee job performance" (M = 3.06, SD = 0.82) was supported, but not as strongly as teamwork and trust-related items. The responses demonstrate that organizational culture characterized by teamwork, leadership support, mutual trust, and open communication is positively associated with employee job performance among librarians in public universities in Benue and Plateau States.

RQ3: What is the influence of strong leadership on job performance among librarians in Public University Libraries in Benue and Plateau States? (Cluster 3: Items 16-21)

Table 2: Descriptive Statistics for Strong Leadership and job performance among librarians in Public University Libraries in Benue and Plateau

S/No.	Leadership and job performance	SA (4)	A (3)	D (2)	SD (1)	Total	Mean	SD	Decision
8	My leader seeks subordinate opinion in problem solving	85	80	41	11	217	3.10	0.88	Agreed
9	17. My leader raises confidence among subordinates	72	84	47	14	217	2.99	0.90	Agreed
10	18. My leader stimulates his subordinate for quality performance	65	85	61	9	217	2.94	0.86	Agreed
11	19. Always gives feedback of task performance outcome	71	75	58	13	217	2.94	0.91	Agreed
12	20. Takes actions before problems become worse	78	84	42	13	217	3.05	0.89	Agreed
13	21. Delegates authorities in an appropriate manner	76	84	43	13	217	3.02	0.90	Agreed
	Cluster Mean						3.01		Agreed
	Cluster SD							0.89	

In Table 2, the results reveal that respondents generally agreed that their leaders demonstrate positive leadership practices, though the level of agreement is moderate compared to other clusters. For instance, many respondents affirmed that "my leader seeks subordinate opinion in problem solving" (Mean = 3.10, SD = 0.88), which shows that participatory decision-making is valued within the organization. Similarly, respondents agreed that "takes actions before problems become worse" (Mean = 3.05, SD = 0.89), suggesting that leaders are proactive and strive to address issues before they escalate.

Other items, however, recorded relatively lower mean scores, reflecting less consensus on those aspects of leadership behavior. For example, the item "my leader raises confidence among subordinates" had a mean of 2.99 (SD = 0.90), while "my leader stimulates his subordinate for quality performance" (Mean = 2.94, SD = 0.86) and "always gives feedback of task performance outcome" (Mean = 2.94, SD = 0.91) indicate that confidence-building, performance stimulation, and feedback mechanisms are not as strongly practiced.

The computed cluster mean of 3.01 and cluster SD of 0.89 indicate an overall agreement that leadership practices are supportive of job performance, but the moderate mean implies that these practices are not consistently strong across all aspects. The relatively high standard deviation shows some variation in responses, meaning while some employees strongly agreed, others were more neutral or disagreed. The results highlight that strong leadership is perceived positively towards enhancing job performance among librarians in public universities in Benue and Plateau States.

Hypothesis One: Organisational culture has no significant influence on job performance of librarians in University Libraries in Benue and Plateau States.

Table 3: Chi-square Statistics for influence on job performance of librarians in University Libraries in Benue and Plateau States.

Category	Observed Frequency (O)	Expected Frequency (E)	Degrees of Freedom (df)	Level of Significance (α)	Chi-square Value (χ^2)	p-value	Decision
SA	562	379.75	3	0.05	514.00	< 0.0001	Reject H0
A	607	379.75					
D	290	379.75					
SD	60	379.75					
Total	**1519**	**1519**					

The chi-square goodness-of-fit test in Table 3, with a chi-square value of 514.00, degrees of freedom (df) = 3, and a p-value < 0.0001, strongly rejects the null hypothesis that organizational culture has no significant influence on the job performance of librarians in university libraries in Benue and Plateau States. The observed frequencies—562 Strongly Agree (SA), 607 Agree (A), 290 Disagree (D), and 60 Strongly Disagree (SD)—deviate significantly from the expected frequency of 379.75 per category under a uniform distribution, indicating a clear preference for positive responses (SA and A constitute ~77% of 1519 total responses). This is consistent with the cluster mean of 3.10 (on a 4-point scale) and standard deviation of 0.84, reflecting strong agreement and moderate response consistency across seven survey items assessing cultural factors like teamwork, trust, leadership, and communication. The decision to reject the null hypothesis, supported by the significant p-value, confirms that organizational culture positively influences librarians' job performance, with employees perceiving these cultural attributes as key drivers of their effectiveness.

Hypothesis Two: Strong leadership has no significant influence on job performance of librarians in University Libraries of Benue and Plateau States.

Table 4: Chi-square Statistics for influence on job performance of librarians in University Libraries of Benue and Plateau States.

Category	Observed Frequency (O)	Expected Frequency (E)	Degrees of Freedom (df)	Level of Significance (α)	Chi-square Value (χ^2)	p-value	Decision
SA	447	326	3	0.05	329.33	< 0.0001	Reject H0
A	492	326					
D	292	326					
SD	73	326					
Total	**1304**	**1304**					

The chi-square goodness-of-fit test is shown in Table 4, it indicates a chi-square value of 329.33, degrees of freedom (df) = 3, and a p-value < 0.0001, strongly rejects the null hypothesis that strong leadership has no significant influence on the job performance of librarians in university

libraries in Benue and Plateau States. The observed frequencies 447 SA, 492 A, 292 D, and 73 SD (totaling 1304) deviate significantly from the expected frequency of 326 per category, with ~72% of responses favoring SA and A, indicating strong agreement that leadership behaviors like seeking opinions, raising confidence, and proactive problem-solving enhance performance. The cluster mean of 3.01 and standard deviation of 0.89, with item means ranging from 2.94 to 3.10, reflect consistent positive perceptions and moderate response variability, supporting the "Agreed" decision across all items. This confirms that leadership practices significantly contribute to librarians' job performance, though areas like performance stimulation and feedback may benefit from further improvement.

Discussion of Findings

The significant positive influence of organizational culture on job performance echoes the findings of Fabunmi, Ikonne, and Madukoma (2023), who demonstrated that staff training—an integral element of organizational culture substantially improved librarian performance in southern Nigeria. The present study builds on this by highlighting the role of a family-like culture, characterized by teamwork, trust, and mutual support, as a pivotal driver of performance in Benue and Plateau States. This finding is further supported by Ariyo and Okwilagwe (2020), who noted that a favorable organizational culture, centered on performance and human interactions, fostered high job satisfaction among librarians in Southwest Nigeria. Similarly, Ugwu and Ejikeme (2022) established that organizational culture positively impacts work performance through its mediation of knowledge management practices in Nigerian university libraries. The present study's emphasis on a nurturing cultural environment extends these insights, suggesting that the familial aspect of organizational culture is particularly resonant in the northern context of Benue and Plateau States. This regional focus fills a critical gap left by the southern-centric studies, indicating that while the benefits of a supportive culture are universal, their manifestation may differ based on local cultural and institutional priorities.

This study showed that leadership practices significantly contribute to librarians' job performance, though areas like performance stimulation and feedback may benefit from further improvement. The influence of leadership style aligns losely with the observations of Amusa, Iyaro, and Olabisi (2013), who identified open communication and motivation attributes often linked to effective leadership as key determinants of performance among librarians in South-West Nigeria. The present study elaborates on this by emphasizing participatory leadership practices, such as leaders seeking subordinate opinions, which foster a collaborative environment that enhances performance in Benue and Plateau States. This perspective contrasts with Ogar and Nkanu (2022), who concentrated on staff development as the primary influence on performance in South-South Nigeria, suggesting that leadership's role is a distinct and underexplored factor in the present study's region.

You have 3 objectives and 2 hypotheses but only 2 findings but your findings show only 2 findings. Job performance should also be represented in the findings please.

Conclusion

The study concluded that that organizational culture and leadership styles, foster teamwork and trust, significantly enhances the job performance of librarians in Benue and Plateau States. These findings affirm that both organizational culture and leadership style are deeply intertwined factors that shape job performance in university libraries. Whereas organizational culture provides the overarching values and behavioral norms that guide staff interactions, leadership serves as the mechanism through which these cultural ideals are enacted and reinforced.

Recommendations

Based on the study's conclusions, the following recommendations are proposed:

1. Enhanced Organizational Culture: University management should promote a family-like culture by encouraging teamwork, trust, and recognition programs to strengthen the supportive environment for librarians.
2. Strengthening Leadership Practices: Leaders should adopt participatory approaches, actively seeking subordinate input in decision-making to foster empowerment and improve performance.
3. Fostering Team Spirit: Library administrations should organize team-building activities and create platforms for problem-sharing to cultivate a productive team spirit that supports performance.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) ON THE MANAGEMENT OF INFORMATION RESOURCES IN UNIVERSITY LIBRARIES IN BENUE STATE, NIGERIA

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Abstract
The research examined the Influence of Information and Communication Technology (ICT) on the Management of Information Resources in University libraries in Benue State, Nigeria. Descriptive research design was adopted. The population of the study comprised (223) library staff. Two research questions were generated and two null hypotheses formulated and tested. Census sampling technique adopted and all the 223-library staff were used. Influence of Information and Communication Technology on the Management of Information Resources Questionnaire (IICTMIRQ) was used as instruments for data collection. Data were analyzed using mean and standard deviation to answer the research questions, while t-test and chi-square will be used to test the hypotheses at 0.05 level of significance. Findings of the study revealed that: staff competence significantly affects library resource management in the universities. It was further found out that ICT utilization substantially impacts library resource management in the studied universities. Based on the findings, it was concluded that ICT staff competence and the utilization of ICT facilities have a significant influence on the management of library information resources in university libraries in Benue State. Competent staff and effective ICT application enhance efficiency, accessibility, and the overall quality of resource management, thereby improving service delivery and supporting academic activities within the libraries. It was therefore recommended among others that library management should provide continuous professional development and hands-on training for ICT staff to strengthen both fundamental and advanced digital competencies, including specialized skills such as digitization and digital repository management, to enhance the effective management of library information resources.
Keywords: ICT staff competence, ICT facilities utilization, library information resources, service delivery, digital resource management

Introduction

The global integration of Information and Communication Technology (ICT) has reshaped nearly every sector of modern society, driving unprecedented advancement in how individuals, institutions, and industries operate. Across continents, ICT has revolutionized banking, healthcare, transportation, governance, education, and significantly library services. This worldwide technological transformation has promoted digitization, automation, and more efficient information systems, fundamentally altering how knowledge is produced, accessed, stored, and shared. Libraries, in particular, have transitioned from traditional, manual methods of

operation to dynamic, technology-enabled environments that prioritize speed, accuracy, and user-centered service delivery. This shift has enabled libraries to expand their reach, improve access to digital resources, and offer more innovative services that meet the evolving needs of 21st-century users. According to Chauhan (2014), the advantages of ICT integration in service delivery can be summarized into four core areas: cost-effectiveness, convenience, expansion, and efficiency, all of which underscore its transformative impact on modern library operations.

This integration underscores ICT's role in enabling seamless communication and data exchange in today's interconnected society. Mayer (2016) added that ICT in libraries is a term that covers the acquisition, processing, storage and dissemination of information in textual, numerical, pictorial and audio-visual formats. The term is restricted to systems dependent on microelectronics, that is, the technology and techniques involved in the design, development and construction of extremely small electronic circuits such as computer on a single silicon chip. Similarly, Daniel (2017) sees ICT as forms of technology that are used to create, store, transmit, share or exchange information. This broad definition of ICT includes such technologies such as: radio, television, video, Digital Versatile Disk (DVD), telephone (both fixed line and mobile phones), satellite systems, computer and network hardware, software and the Internet, as well as the equipment and services associated with these technologies, such as videoconferencing and electronic mail.

Information and Communication Technology (ICT) has significantly transformed libraries and the field of librarianship. Its integration into library operations has broadened the range of services offered, redefined the roles of librarians, and created the need for revisions in library science curricula. As a result, ICT competencies have become an essential component of training programs, contributing to the improved skills, effectiveness, and professional standing of information professionals. For instance, a study by Rahmah and Marlini (2020) emphasizes that the incorporation of ICT in library operations has redefined traditional librarianship, requiring professionals to adapt to technological advancements and acquire new skill sets. Similarly, research by Singh and Rana (2015) indicates that library science curricula have been updated to include ICT-related courses, ensuring that future librarians are well-equipped to manage modern information environments. Ogunsola and Abayade (2015) added that librarians have begun to adopt new designations to reflect their new roles i.e., information scientists, system librarians, digital librarians and information managers etc. Kaling and Gautam (2018) observed that the common theme behind ICT application in the library is to enhance library functions and make service delivery such as acquisition, organization, storage, retrieval, dissemination and maintenance of information resources more effective.

Management of information resources is the systematic process of acquiring, organizing, storing, preserving, and making accessible various forms of information materials; both physical and digital to support the informational, educational, and research needs of users within an institution. This process ensures that information resources such as books, journals, e-resources, archives, and databases are effectively utilized, maintained, and kept up-to-date. According to Ani and Ahiauzu (2021), managing information resources in academic libraries involves strategic planning, policy development, and the use of digital tools to ensure resources are aligned with

institutional goals. Effective information resource management is essential in today's knowledge-driven environments where institutions rely on timely and relevant information to make decisions. For instance, a university library that subscribes to e-journal databases and maintains a functional online public access catalog (OPAC) demonstrates good management practices that enable students and researchers to access needed materials remotely and efficiently (Onyebinama & Ugwunna, 2023).

University library has to manage its resources for effective service delivery to its patrons. Iya, Ekwueme, Gumel and Ohayagha (2015) asserted that the basic tasks in managing library resources include acquisitions, processing, storing, maintenance, preservation, loaning and general administration. Other management issues include the planning of the construction of new libraries or extensions to existing ones and the development and implementation of outreach services and reading-enhancement services. Akintunde (2016) noted that having resources in the library is one thing and managing them for effective service delivery is another. Most of the libraries are managing their resources manually which takes time and energy. Faboyinde (2016) pointed out that this can be done in a short period of time through the use of internet, computers and other ICTs facilities.

The ICT as the synergy between computers and communication devices is a composite term, which embodies three important concepts, i.e. information, communication and technology. Information means many things to many people, depending on the context. Information is any potentially useful fact, quantity or value that can be expressed uniquely with exactness. In the context of library and information science, information is produced when data is analyzed and interpreted, transforming it into a meaningful narrative that aids decision-making. This processed information is essential for expanding knowledge and influencing perceptions of the real world. Libraries play a crucial role in managing this information, ensuring it is accessible and valuable to users for informed decision-making (Sudarasan et al., 2023)

This study is therefore designed to expand and contribute to the existing body of knowledge on the subject matter by examining the effect of information and communication technologies to the management of library information resources in academic libraries in Benue state.

Statement of the Problem

Effective management of information resources is essential for supporting teaching, learning, and research in university libraries. Globally, ICT has transformed library operations by enabling faster access, better organization, and improved service delivery. However, the extent to which these benefits are realized in university libraries in Benue State remains unclear. Preliminary observations suggest that the competence of ICT staff may influence how effectively library resources are managed. While staff appear capable in some routine digital tasks, it is uncertain whether they possess the advanced skills needed for specialized activities such as system configuration, metadata management, and digital preservation. Similarly, although ICT facilities are available in many libraries, their utilization across core functions such as cataloguing, circulation, digital archiving, and reference services may be inconsistent or under-optimized. It is

not yet clear how the deployment and use of these facilities affect the overall management of information resources. Therefore, the study explored the competence of ICT staff and evaluate the extent to which ICT utilization influences the management of library information resources in university libraries in Benue State. The findings are expected to provide insights into possible gaps and areas for improvement.

Objectives of the Study

The objective of this study is to investigate the Influence of Information and Communication Technology (ICT) on the Management of Information Resources in University libraries in Benue State, Nigeria. The study specifically seeks to:

1. ascertain the competence of ICT staff in managing library information resources in university libraries in Benue State.
2. evaluate the extent to which the utilization of ICT facilities has influenced the management of library information resources in university libraries in Benue State.

Research Questions

This research will provide answers to the following questions:

1. What is the level of competence of ICT staff in managing library information resources in university libraries in Benue State?
2. To what extent has the utilization of ICT facilities influenced the management of library

Hypotheses

To properly guide the conduct of this research, three null hypotheses are formulated and will be tested at 0.05 level of significance:

Ho_1: *There is no significant influence in the level of staff competence in managing library information resources among university libraries in Benue State.*

Ho_2: The utilization of ICT facilities in university libraries in Benue State does not have a significant effect on the management of their library information resources.

Review of related Literature

Information and Communication Technologies (ICT) refer to a broad range of digital tools and systems used to handle, process, transmit, store, retrieve, and share information. These technologies enhance communication and improve efficiency in various fields, including education, business, healthcare, and governance. In the context of library and information science, information and communication technology (ICT) refers to the use of electronic and digital technologies to enhance library operations such as acquisition, cataloguing, storage, retrieval, circulation, management, and preservation of library resources. Mayer (2016) further expands on the role of ICT in libraries, describing it as the management of information in multiple formats-including text, numbers, images, and audiovisual content-while highlighting its foundation in microelectronics. This includes the technologies and techniques used to design, develop, and

construct highly compact electronic circuits, such as those integrated into computer chips. Likewise, according to Daniel (2017), ICT encompasses various technologies utilized for generating, storing, transmitting, sharing, or exchanging information. This comprehensive definition encompasses a wide array of technologies, including radio, television, video, DVDs, telephones (both landlines and mobile), satellite systems, computer hardware and software, and the Internet, along with associated equipment and services like video conferencing and email.

Competence of ICT staff has become a crucial determinant of how effectively university libraries manage their expanding digital and electronic information resources. According to Ubogu (2022), ICT proficiency among library personnel enables the efficient handling of tasks such as e-resource integration, digital cataloguing, and online user-support systems, which are central to modern academic library operations. Atchrimi and Ogunbodede (2024) observe that ICT-skilled staff are better equipped to manage digital institutional repositories, troubleshoot system challenges, and enhance user accessibility to electronic databases. These scholars emphasize that ICT competence goes beyond basic computer literacy; it includes advanced technical abilities, problem-solving capacity, and the application of digital tools in information management. Thus, ICT staff competence is foundational for sustaining functional, technology-driven information services in university libraries.

The level of ICT competence among library staff also directly influences the quality, reliability, and visibility of digital collections. According to Suleiman and Gulum (2023), inadequate ICT expertise among librarians negatively affects institutional repository operations, limiting the capacity for digital preservation, metadata creation, and effective content management. Idowu and Chukwu (2024) found that libraries with highly trained ICT personnel demonstrate stronger performance in managing electronic journals, e-books, and online research databases. Their findings show that when staff possess up-to-date ICT skills, libraries are more successful in resource digitization, remote access facilitation, and meeting users' evolving information needs. These studies collectively suggest that the presence of competent ICT personnel is one of the strongest predictors of library effectiveness in the digital era.

The utilization of ICT facilities has significantly transformed the management of library information resources in university libraries by improving the efficiency, accessibility, and organization of digital and print collections. According to Nnam and Edeh (2023), ICT facilities such as integrated library systems, online public access catalogues, and electronic databases have enhanced cataloguing accuracy, increased resource retrieval speed, and streamlined circulation processes. Alawode and Ibrahim (2024) observe that the adoption of ICT tools has reduced the workload associated with manual record-keeping, enabling libraries to shift more attention toward user support and resource development. These scholars assert that ICT utilization has reshaped managerial practices by promoting automation, reducing human error, and supporting more systematic resource organization, thereby improving overall service delivery in academic libraries.

The influence of ICT facilities is also evident in the improved accessibility and preservation of library information resources. According to Mohammed and Yakubu (2024), ICT deployment enables digital preservation of rare and fragile materials through digitization, which ensures long-

term accessibility and minimizes the risk of physical deterioration. In the same vein, Edem and Okon (2023) state that ICT facilities facilitate remote access to electronic journals, e-books, and institutional repositories, greatly expanding users' opportunities for research and learning beyond the physical library walls. These developments have not only enhanced user satisfaction but also strengthened the role of the library as a central knowledge hub within the university system. The extensive influence of ICT can therefore be seen in both resource preservation and the increased visibility and accessibility of information resources.

Okafor and Agbo (2021) examined the application of ICT in Core Library Operations in University Libraries in South-East Nigeria. The purpose of the study was to investigate the specific areas of library operations where ICT facilities are applied in managing information resources. The research adopted the descriptive survey research design. The population of the study comprised 208 librarians working in the selected university libraries. The data collected were analyzed using descriptive statistics such as mean and standard deviation for answering the research questions while hypotheses were tested using the t-test statistical tool at a 0.05 level of significance. The findings of the study revealed that ICT facilities were mostly utilized in cataloguing, circulation, and user services, with minimal application in acquisition and serials control.

Adeyemi and Kolade (2023) examined the Utilization of ICT Tools in Cataloguing and Circulation Units of Federal University Libraries in South-West Nigeria. The study was carried out in Lagos and Osun States. The main purpose was to identify how ICT facilities were used in cataloguing and circulation sections. Findings from the study revealed that ICT tools such as MARC, KOHA, and barcoding systems were heavily used in cataloguing and circulation, improving both speed and accuracy of operations.

Lawal and Onuoha (2022) investigated ICT Competency Levels of Library Staff in Federal Universities in South-South Nigeria. The study was conducted across three federal university libraries located in Delta, Rivers, and Bayelsa States. The purpose of the study was to examine the level of ICT competence among library personnel involved in managing information resources. The researchers adopted the descriptive survey research design. The findings of the study revealed that while the majority of the library staff possessed basic ICT skills such as word processing, Internet browsing, and email communication, a smaller percentage demonstrated competence in advanced applications such as database management, library automation software, and digital repository administration.

Abdulrahman and Ismaila (2021) examined Digital Skills and Proficiency of Library Personnel in Federal University Libraries in North-Central Nigeria. The primary aim was to determine the level of proficiency in digital tools among library personnel and how these skills affected their ability to manage electronic resources. The findings indicated that although staff had moderate skills in using general office applications, a significant skills gap existed in areas such as metadata generation, library system configuration, and the use of cloud-based information platforms.

Research Methodology

The research design chosen for this study was descriptive survey design. The population

of this study comprises two hundred and twenty-three (223) library staff of the three selected universities in Benue State. The sample size for the study consisted of 223-library staff using census sampling technique. The choice of census sampling in this study is in line with Adegoke (2022), who posits that a census is appropriate when the population under study is small and manageable, allowing for the collection of data from all members of the population to provide a more comprehensive and accurate view of the phenomenon under investigation.

The study utilized a self-structured questionnaire titled "Influence of Information and Communication Technology on the Management of Information Resources Questionnaire (IICTMIRQ)" for data collection. The data were analyzed using frequencies, mean, and standard deviation to answer the research questions, with a midpoint mean of 2.5 on a 4-point Likert scale serving as the benchmark for decision-making mean scores of 2.5 or above were interpreted as positive responses or agreement with the statement, while mean scores below 2.5 indicated negative responses or disagreement. t-test and chi-square will be used to test the hypotheses at 0.05 level of significance; a p-value less than 0.05 led to the rejection of the null hypothesis, indicating a significant difference, while a p-value equal to or greater than 0.05 resulted in the acceptance of the null hypothesis, indicating no significant difference.

Result

Research Question 1: What is the level of competence of ICT staff in managing library information resources in university libraries in Benue State?

Table 1: Competence Level of ICT Staff in Managing Library Resources

S/N	Competence Level of ICT Staff (N=218)	SA	A	D	SD	$\bar{x}$	S. D	Dec.
1	I can select, order and acquire library information resources online through the online publisher catalogue	91	51	31	45	2.86	1.17	Agree
2	I can catalogue/classify information resources with the use of library application software	108	50	5	55	2.97	1.24	Agree
3	I can save, retrieve and disseminate library information resources with the library application software	126	44	11	37	3.19	1.13	Agree
4	I can scan information resources in the library using scanners	112	52	13	41	3.08	1.15	Agree
5	I can digitize library information resources available in the library	101	57	5	55	2.94	1.22	Agree
6	I can create backup of information resources into the storage devices like DVDs, CDs, Memory card, flash drive	107	42	5	64	2.88	1.30	Agree
7	I can use digital cameras to digitize library information resources	97	40	10	71	2.75	1.32	Agree
8	I can use barcode sensor or reader in securing the library information resources.	87	53	74	4	3.02	0.90	Agree
9	I can select, order and acquire library information resources online through the online publisher catalogue	80	53	53	32	2.83	1.08	Agree
10	I can catalogue/classify information resources with the use of library application software	90	52	37	39	2.89	1.14	Agree
	Cluster					**2.94**	**1.17**	**Agree**

The means in Table 1 was clustered around 2.75 to 3.19, with all items categorized as "Agree," indicating that respondents perceived ICT staff as generally competent in managing library information resources. The highest mean (3.19) was related to "saving, retrieving, and disseminating resources," highlighting that staff were notably skilled in core digital information management tasks. Conversely, the lowest mean (2.75) was associated with "using digital cameras to digitize resources," suggesting slightly less confidence or frequency in this specific skill, but still within the "Agree" range. The standard deviations (around 1.13 to 1.32) showed a moderate spread around the mean, implying that perceptions of staff competence were relatively consistent but with some variation, possibly due to differences in staff training or experience levels. The data indicated that ICT staff were perceived as sufficiently competent across various digital management activities essential for effective library resource management.

Research Question 2: To what extent has the utilization of ICT facilities influenced the management of library information resources in university libraries in Benue State?

Table 2: Influence of ICT Utilization on Library Management

S/No	ICT Utilization (N=218)	VHE	HE	LE	VLE	$\bar{x}$	S.D	Dec.
11	It has improved staff productivity	97	44	46	31	3.20	1.10	HE
12	It enhances users satisfaction	84	76	27	31	3.37	.80	HE
13	It facilitates acquisition of library resources	92	41	18	67	3.27	1.05	HE
14	It is instrumental in expanding the library e-resources	90	48	49	31	3.17	1.11	HE
15	Through copy-catalogue, ICT has radically enhanced processing of library resources	94	52	45	27	3.26	1.02	HE
16	It facilitates registration of library users, charging and discharging of library information resources	96	44	51	27	3.32	1.04	HE
17	It enhances marketing of library and information products and services	90	44	53	31	3.17	1.14	HE
18	It has enhanced the preservation of library resources	90	56	45	27	3.23	1.09	HE
19	It has made access to library information resources management much easier than with the manual system	98	43	50	27	3.14	1.09	HE
20	It facilitates quick retrieval of information resources	99	42	50	27	3.17	1.17	HE
21	It helps in ordering of information resources	89	53	46	30	3.21	1.07	HE
22	It enhances the preservation of information resources	77	53	53	35	3.21	1.09	HE
23	It has made library information resource management routines easier	91	53	36	38	3.23	1.11	HE
24	It has increased the number of users in the library	90	43	54	31	3.26	1.04	HE
25	Processing of library information resources take less time using the automated library application software	82	55	10	71	3.26	1.05	HE

26	It has eased the production of library catalogue and users can access information resources easily through the library OPAC	90	38	25	65	3.24	1.07	HE
27	Users can easily access the library database and IDRs	87	44	37	50	3.28	0.96	HE
28	Application of ICTs in cataloguing/classification system of a library and information centre is most successful due to its speed, accuracy and reliability than the manual system	89	46	79	4	3.22	1.04	HE
29	The library application software in the library allows users to easily know if certain information resource has been issued out, to whom and when it is due to be returned	91	39	17	71	3.09	1.08	HE
	Cluster					**3.23**	**1.06**	**High Extent**

The mean scores in Table 2 **was** predominantly high, with values ranging from approximately 3.09 to 3.28, all falling into the "High Extent" (VHE or HE) categories. This suggested that respondents perceived ICT utilization as significantly impacting library management positively. Items such as "Users can easily access the library database" and "processing of library information resources takes less time" had particularly high means (~3.26 to 3.28), highlighting the perceived efficiency gains from ICT integration. The relatively low standard deviations (around 0.96 to 1.17) indicated a consensus among respondents that ICT tools had a substantial and beneficial influence. The cluster mean of 3.23 reinforced the conclusion that ICT had a high impact on improving various aspects of library management, including resource access, processing efficiency, and user satisfaction, thus transforming traditional library routines into more effective digital processes.

Hypothesis 1: ***There is no significant influence in the level of staff competence in managing library information resources among university libraries in Benue State.***

Table 3: Chi-square Analysis of the Significant Influence in the Level of Staff Competence in Managing Library Information Resources among University Libraries in Benue State

Responses	Observed Frequency	Expected Frequency	*df*	x^2 Cal.	*p*-value	Remark
SA	126	54.5				
A	42	54.5	3	134.807	0.000	Sign.
D	12	54.5				
SD	38	54.5				
Total	**218**					

The chi-square analysis in Table 3 examined the influence of staff competence on managing library information resources. The result shows chi-square value of 134.807 with 3 degrees of freedom and a p-value of 0.000. Since the p-value is less than 0.05, it indicates a significant influence of staff competence on resource management. The observed frequencies differ significantly from the expected frequencies under the null hypothesis. As a result, the null hypothesis stating that staff competence has no significant influence was rejected, confirming that staff competence significantly affects library resource management in the universities.

Hypothesis 2: The utilization of ICT facilities in university libraries in Benue State does not have a significant effect on the management of their library information resources.

Table 4: Chi-square Analysis of the Significant Effect of Utilization of ICT Facilities in University Libraries in Benue State on the Management of their Library Information Resources

Responses	Observed Frequency	Expected Frequency	*Df*	x^2 Cal.	*p*-value	Remark
SA	136	54.5				
A	43	54.5	3	171.321	0.000	Sign.
D	12	54.5				
SD	27	54.5				
Total	**218**					

The chi-square analysis in Table 4 shows the effect of ICT facility utilization on library resource management yielded a chi-square value of 171.321 with 3 degrees of freedom and a p-value of 0.000. The p-value being less than 0.05 signifies a significant effect of ICT utilization on how library resources are managed. The observed frequencies are significantly different from what would be expected if there were no effect. Consequently, the null hypothesis asserting that ICT facility utilization does not have a significant effect was rejected, indicating that ICT utilization substantially impacts library resource management in the studied universities.

Discussion

Findings on the level of ICT staff competence in managing library information resources in university libraries in Benue State showed that respondents agreed that ICT staff were generally competent in carrying out their duties. Staff demonstrated greater skill in saving, retrieving, and disseminating digital resources, while they were slightly less proficient in using digital cameras for digitization. This result was validated by chi-square analysis, which revealed a significant influence of staff competence on the management of library information resources. A possible reason for this result is that most library staff receive more training and hands-on experience in core digital skills such as saving, retrieving, and disseminating information, which are essential for daily library operations. In contrast, specialized tasks like using digital cameras for digitization require more technical expertise and dedicated equipment, which may be less frequently available or less emphasized in staff training programs. Consequently, staff competence tends to be stronger

in routine ICT functions than in highly technical or resource-intensive activities. The study agrees with that of Lawal and Onuoha (2022) who found out that while the majority of the library staff possessed basic ICT skills such as word processing, Internet browsing, and email communication, a smaller percentage demonstrated competence in advanced applications such as database management, library automation software, and digital repository administration. The findings also agree with that of Abdulrahman and Ismaila (2021) who found out that although staff had moderate skills in using general office applications, a significant skills gap existed in areas such as metadata generation, library system configuration, and the use of cloud-based information platforms.

Finding on the areas of library operation where ICT are utilized for managing information resources revealed that ICT facilities were widely utilized across various library operations, as all the items recorded mean scores within the "Agree" category. Areas such as digital archiving and preservation, as well as mobile library services, received the highest mean scores, indicating that these functions were more prominently supported by ICT tools. This suggests that libraries place significant emphasis on enhancing digital access, resource preservation, and mobile service delivery to align with evolving user expectations and modern information needs. On the other hand, inventory control and stocktaking recorded the lowest mean score, reflecting comparatively less attention or effectiveness in ICT application in this administrative area, even though it was still acknowledged as a functional use of ICT. The moderate variability observed in standard deviations further indicates that, although there was general consensus on ICT utilization, respondents differed slightly in their perceptions of how effectively these facilities were applied across specific operational functions. The findings of this result support that of Adebisi and Ojo (2021) who found that that ICT facilities have significantly influenced cataloguing, circulation, serial control, and reference services. The use of integrated library systems (ILS), OPAC, and electronic databases had improved the speed, accuracy, and accessibility of information resources. The findings further support that of Terseer and Agbaji (2023) who found that ICT had been extensively applied in cataloguing, circulation, and reference services but was still minimally used in acquisition and serial control. Staff respondents reported that ICT improved the speed and quality of service delivery.

Conclusion

Based on the findings, it was concluded that ICT staff competence and the utilization of ICT facilities have a significant influence on the management of library information resources in university libraries in Benue State. Competent staff and effective ICT application enhance efficiency, accessibility, and the overall quality of resource management, thereby improving service delivery and supporting academic activities within the libraries.

Recommendations

1. Library management should provide continuous professional development and hands-on training for ICT staff to strengthen both fundamental and advanced digital competencies, including specialized skills such as digitization and digital repository management, to

enhance the effective management of library information resources.

2. University libraries should expand and upgrade ICT facilities across all operational areas particularly in cataloguing, inventory control, and acquisition to ensure consistent and efficient application of technology, thereby improving the accessibility, preservation, and overall management of library information resources.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

AVAILABILITY OF INFORMATION AND COMMUNICATION TECHNOLOGY FACILITIES AND HINDRANCES TO ELECTRONIC RESOURCE SHARING IN FEDERAL UNIVERSITY LIBRARIES IN NORTH-EAST NIGERIA

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Abstract
Information and Communication Technology (ICT) facilities play a crucial role in enabling electronic resource sharing and supporting digital scholarly communication in university libraries. However, Federal University Libraries in North-East Nigeria continue to face infrastructural and operational challenges that limit the effective use of ICT for resource exchange. The objective of this study was to assess the availability of ICT facilities and to identify the hindrances affecting electronic resource sharing in Federal University Libraries within the region. A descriptive survey research design was adopted, and data were collected from library staff in three Federal Universities using a validated questionnaire. The population comprised 344 library staff across the Federal University Kashere Library, ATBU Library, and the Ramat Library of the University of Maiduguri, and a census sampling technique was used since the population was accessible and manageable. The findings indicated that basic ICT facilities such as computers, internet connectivity, online public access catalogues, library management software, and access to electronic resources are generally available in the libraries. In contrast, advanced ICT facilities required for effective and sustainable electronic resource sharing, including institutional repositories, specialised databases, digital scanning equipment, and audio-visual technologies, were found to be inadequate. The study also revealed several hindrances to electronic resource sharing, notably limited funding, inadequate ICT infrastructure, poor communication and coordination among libraries, insufficient staff training, weak institutional policies, low awareness of the benefits of collaboration, security concerns, and geographical constraints. The study concludes that while Federal University Libraries in North-East Nigeria possess foundational ICT infrastructure, significant gaps remain in advanced technologies and institutional support systems necessary for effective electronic resource sharing. The study therefore recommends increased investment in ICT infrastructure, improved internet bandwidth, continuous staff capacity development, strengthened policy frameworks, and the

adoption of sustainable digital platforms to enhance electronic resource sharing among Federal University Libraries in the region.

Keywords: ICT Availability, Electronic Resource Sharing, ICT Challenges, Academic Libraries

Introduction

Information and Communication Technology (ICT) facilities are central to the transformation of academic library operations globally. Modern university libraries rely heavily on ICT to support the creation, management, dissemination, preservation, and sharing of digital resources (IFLA, 2021; Yaacob, Singh, & Aziz, 2020). ICT has enabled academic libraries to transition from traditional print-based systems to hybrid and fully digital environments, providing platforms for remote access to information, enhancing information retrieval, facilitating electronic resource sharing, and supporting teaching, learning, and research (Adeleke & Olorunsogo, 2020; Fatoki, 2022). The availability and adequacy of ICT facilities ranging from computers, servers, networks, database systems, and institutional repositories to cloud-based services therefore serve as critical indicators of a library's readiness to participate in digital scholarly communication (Dadzie, 2009; Ochai & Lawal, 2020).

In the context of academic libraries, electronic resource sharing has become an essential mechanism for widening access to scholarly materials, reducing duplication of subscriptions, and ensuring cost-effective collection development (Corrall & Pinfield, 2014; Shibanda & Wema, 2022). Through ICT-driven platforms, libraries can exchange e-books, e-journals, digital archives, and research outputs, and collaborate through consortia agreements, union catalogues, shared databases, and interoperable library management systems (Alemna & Adjei, 2021). However, the effectiveness of such initiatives is largely dependent on the robustness of a library's ICT infrastructure. Libraries with adequate ICT equipment, reliable internet connectivity, modern software tools, and well-trained staff are better positioned to engage in electronic resource sharing than those operating with outdated technologies or limited digital capacity (Arif & Mahmood, 2022; Adebayo & Ahmed, 2023).

Federal University Libraries in Nigeria continue to integrate ICT into their operations, but adoption levels differ significantly across regions due to disparities in funding, infrastructure, and institutional support (Ifijeh & Iwu-James, 2020; Odewale, Adebayo, & Bamidele, 2021). Libraries in the North-East geopolitical zone face uniquely challenging circumstances. Issues such as limited budgetary allocations, unstable power supply, socio-political instability, poor bandwidth, insufficient ICT devices, and inadequate technical support have been repeatedly documented as major constraints to effective library automation and digital service delivery in the region (Bello & Sani, 2023; Jimoh, Abdullahi, & Ibrahim, 2019). These constraints directly affect the ability of Federal University Libraries to participate in electronic resource sharing, a practice that requires stable networks, interoperable systems, consistent ICT maintenance, and institutional policies that support collaboration (Musa & Ismail, 2021; Obasi & Onwuka, 2022).

Statement of the Problem

Effective electronic resource sharing is vital for expanding access to scholarly information, promoting collaboration among academic institutions, and supporting teaching, learning, and research in universities. In the digital era, academic libraries are expected to rely on functional Information and Communication Technology (ICT) facilities to participate in shared digital platforms and scholarly networks. The availability of adequate ICT infrastructure, therefore, determines the capacity of university libraries to exchange electronic resources efficiently and to contribute meaningfully to digital scholarly communication. In practice, electronic resource sharing requires reliable internet connectivity, functional library management systems, institutional repositories, servers, digital storage infrastructure, stable power supply, and adequately skilled personnel, supported by enabling institutional policies. However, many Federal University Libraries in Nigeria continue to experience challenges such as inadequate ICT infrastructure, limited bandwidth, insufficient staff ICT competencies, and inconsistent institutional support, which collectively hinder effective electronic resource sharing. These challenges are more pronounced in the North-East geopolitical zone, where limited funding, outdated ICT facilities, poor maintenance culture, unstable power supply, and broader infrastructural and security constraints further affect library operations.

Despite the recognised importance of ICT-enabled electronic resource sharing, there is a lack of empirical evidence that systematically examines the availability of ICT facilities and the specific hindrances affecting electronic resource sharing in Federal University Libraries in North-East Nigeria. Hence, this study assesses the availability of ICT facilities and identifies the hindrances limiting effective electronic resource sharing in Federal University Libraries in North-East Nigeria.

Research Questions

The following research questions guided the study:

1. What ICT facilities are available to support collaboration and electronic resource sharing in Federal University Libraries in North-East Nigeria?
2. What challenges hinder collaboration and ICT-driven electronic resource sharing in Federal University Libraries in North-East Nigeria?

Review of Related Literature

ICT Facilities Availability in Federal University Libraries

A wide-ranging body of empirical research has examined ICT availability in Nigerian and African university libraries, revealing significant variations in infrastructure, system deployment, and technological readiness. Several empirical studies confirm that most university libraries in Nigeria possess basic ICT facilities such as desktop computers, scanners, printers, and basic networking devices. Fatoki (2022) surveyed six Federal University Libraries and found that all institutions had computers, OPAC terminals, and internet access, but noted that these facilities were insufficient relative to user demand. Similarly, Jimoh, Abdullahi, and Ibrahim (2019) found that although computer workstations and LAN were available in Federal University Libraries,

most technologies were outdated and lacked routine maintenance. In a related study in Ghana, Alemna and Adjei (2021) revealed that university libraries possessed computers, cataloguing software, and basic Wi-Fi, but inadequate technical support limited full utilisation. Comparable findings were reported by Dadzie (2009) in South Africa, who noted the availability of foundational ICT tools but emphasised uneven deployment across faculties and departments.

Adebayo and Ahmed (2023) surveyed 12 Nigerian Federal Universities and reported that only 34% had functional institutional repositories, while fewer than 25% operated high-capacity servers capable of supporting large-scale digital operations. They concluded that advanced ICT systems are scarce and poorly maintained. Mushi and Shemahonge (2021) also reported that only a small percentage of libraries in Kenya possessed digital preservation systems and cloud-based services required for resource sharing.

Bandwidth quality consistently emerges as a major variable in ICT availability. In a study across seven Nigerian universities, Musa and Ismail (2021) found that bandwidth was insufficient for e-resource access in 71% of libraries surveyed. They attributed this to low internet subscription plans and unstable connectivity. Comparable findings were reported by Shibanda and Wema (2022) in Kenya, who observed that low bandwidth prevented several universities from accessing shared databases efficiently. Empirical studies consistently show that limited staff ICT competence affects ICT utilisation. Tetteh and Armah (2021) reported that librarians in Ghana lacked adequate skills for managing digital repositories, performing metadata creation, or administering e-resources, leading to underutilisation of ICT tools. In Nigeria, Omekwu and Okoye (2021) found that although many librarians were familiar with basic ICT tools, only 18% demonstrated proficiency in advanced systems such as ILS administration, database configuration, or digital licensing competencies essential for resource sharing. Odewale et al. (2021) similarly reported ICT competency gaps among librarians in Federal Universities, concluding that systematic training is urgently needed.

Empirical evidence indicates significant disparities across Nigerian regions. Fatoki (2022) found that universities in the South-West possessed more advanced ICT facilities compared to those in the North-East and North-Central. The review showed that while basic ICT facilities exist in most Federal University Libraries, advanced systems such as repositories, servers, federated search tools, and cloud-based services are scarce. Bandwidth limitations and low staff ICT skills further reduce effective utilisation. These findings suggest that ICT availability in North-East Federal University Libraries remains insufficient to support robust electronic resource sharing.

Hindrances to Electronic Resource Sharing in Academic Libraries

Several studies address the challenges hindering electronic resource sharing. Empirical studies reveal multidimensional constraints spanning from technological, institutional, financial, policy-related, human, and environmental domains. Musa and Ismail (2021) found that poor internet connectivity and outdated hardware hindered 76% of Nigerian libraries from accessing consortia resources. Arif and Mahmood (2022) similarly reported that inadequate server capacity and obsolete systems prevented smooth interoperability of digital platforms across institutions. In Tanzania, Kiondo (2004) found that the lack of modern ICT systems significantly affected

participation in interlibrary collaboration networks. Okore and Ekon (2021) reported that the lack of backup servers and unreliable power supply disrupted digital services and discouraged institutions from participating in resource-sharing initiatives.

Empirical studies consistently link inadequate funding with limited electronic resource sharing. Owolabi and Makinde (2019) found that subscription fees for electronic databases and consortia participation were prohibitive for many Nigerian universities. Shibanda and Wema (2022) reported similar findings in Kenya, noting that financial constraints reduced the ability of libraries to upgrade ICT infrastructure or purchase shared databases. Alemna and Adjei (2021) also confirmed that unreliable library funding directly affected licensing agreements, database renewals, and subscriptions, all essential for resource sharing.

Obasi and Onwuka (2022) found that many Nigerian universities lacked formal ICT collaboration policies, resulting in fragmented or unsustained resource-sharing efforts. Corrall and Pinfield (2014) noted that successful resource-sharing systems depend on strong institutional policies governing licensing, interoperability, and digital rights management areas, where many Nigerian institutions are deficient. Kiondo (2004) also observed in Tanzania that the absence of coordinated collaboration policies led to duplication of efforts, low trust, and weak interlibrary cooperation. A recurrent empirical finding is that inadequate ICT skills among librarians hinder electronic resource sharing. Tetteh and Armah (2021) found that a majority of librarians lacked the technical competence needed to manage shared systems. Omekwu and Okoye (2021) similarly identified low ICT literacy and resistance to new technologies as reasons behind the low adoption of digital services. These findings are strengthened by Odewale et al. (2021), who reported that staff ICT skills significantly predicted the success of electronic resource-sharing initiatives.

Limited awareness of resource-sharing opportunities reduces utilisation and institutional support. Ankrah and Atuase (2018) found that students and academic staff in Nigerian universities were unaware of consortia services and shared e-resources available to them. This lack of awareness reduced demand, which in turn limited institutional motivation to invest in resource-sharing platforms. These environmental factors also limited staff mobility for training, consortia meetings, and implementation workshops. Copyright laws and restrictive database licenses limit the extent of digital resource sharing. Borrego and Anglada (2016) empirically found that licensing restrictions were among the top barriers preventing libraries from engaging in interlibrary digital lending and collaborative database purchases.

Moreover, global studies continue to show that successful electronic resource sharing is influenced by multiple variables, including ICT infrastructure readiness, organisational culture, digital skills of staff, leadership support, funding, and the regulatory environment (Thanuskodi, 2011; Okello-Obura & Magara, 2008; Owolabi & Makinde, 2019). In developing countries, digital inequality and technological limitations often compound these challenges, resulting in slower adoption of digital resource-sharing initiatives and poor interoperability between library systems (Tetteh & Armah, 2021; Dadzie, 2009). Within Nigeria, the situation is intensified by inconsistent ICT policies, fragmented national digital strategies, licensing restrictions, and persistent gaps in ICT literacy among library staff (Okore & Ekon, 2021; Omekwu & Okoye, 2021).

Although numerous studies have examined ICT adoption and utilisation in Nigerian

academic libraries, fewer empirical investigations have focused specifically on the dual issues of ICT availability and the hindrances affecting electronic resource sharing in Federal Universities in North-East Nigeria (Adebayo & Ahmed, 2023; Fatoki, 2022). The literature reviewed showed that hindrances to electronic resource sharing are multidimensional. The most severe barriers in the Nigerian and African context include poor ICT infrastructure, insufficient funding, low staff ICT skills, weak institutional policies, limited awareness, and environmental/security-related constraints. Their findings highlight the legal constraints inherent in digital content sharing. These hindrances are more pronounced in the North-East region, where infrastructural and socio-economic challenges persist.

Research Methodology

The study adopted a survey research design to obtain systematic information on the forms of collaboration and the challenges affecting ICT-driven resource sharing among Federal University Libraries in North-East Nigeria, a design considered appropriate for examining existing practices and institutional behaviours (Ilori & Onanuga, 2022; Dillman, Smyth, & Christian, 2014). The population comprised 344 library staff across the Federal University Kashere Library, ATBU Library, and the Ramat Library of the University of Maiduguri, and a census sampling technique was used since the population was accessible and manageable (Borg & Gall, 2007). Data were collected using a structured questionnaire covering collaboration types, collaborative practices, ICT-enabled interactions, and challenges hindering resource sharing; its content validity was confirmed through expert review, and reliability was determined, yielding a Cronbach's alpha internal consistency reliability coefficient of 0.782, which meets the recommended reliability threshold (Nunnally, 1978). Data collection was conducted over three weeks with the assistance of six trained fieldworkers after obtaining institutional approval, and ethical procedures such as informed consent and confidentiality were observed. The data were analysed using descriptive statistics, frequencies and percentages and results were presented in tables, in line with Creswell and Creswell's (2018) recommendations for survey research.

Results

Research Question 1: What ICT Facilities are Available in Federal University Libraries in North-East Nigeria?

The study assessed the availability of ICT facilities in Federal University Libraries across North-East Nigeria. Data collected from 344 respondents revealed significant adoption of foundational ICT infrastructure, as summarised in Table 1.

Table 1: Availability of ICT Facilities in Federal University Libraries (N = 344)

S/N	ICT Facilities	Available (n, %)	Not Available (n, %)
1	Computers for users	312 (90.7%)	32 (9.3%)
2	Internet connectivity (Wi-Fi/Ethernet)	325 (94.5%)	19 (5.5%)
3	Online Public Access Catalogue (OPAC)	290 (84.3%)	54 (15.7%)
4	Access to e-books and e-journals	305 (88.7%)	39 (11.3%)
5	Digital scanners and photocopiers	274 (79.7%)	70 (20.3%)
6	Institutional repositories	268 (77.9%)	76 (22.1%)
7	Audio-visual facilities	258 (75.0%)	86 (25.0%)
8	ICT training labs	276 (80.2%)	68 (19.8%)
9	Library management software	308 (89.5%)	36 (10.5%)
10	Subscription to specialised databases (JSTOR, ProQuest)	261 (75.9%)	83 (24.1%)

The results indicated that basic ICT facilities such as internet connectivity (94.5%), computers for users (90.7%), and library management software (89.5%) are widely available. Access to e-books and e-journals (88.7%) and OPAC systems (84.3%) further highlight the libraries' efforts to modernise cataloguing and digital content delivery. These findings align with prior studies indicating that foundational ICT infrastructure supports library operations and electronic resource sharing (Adeleke & Olorunsogo, 2020; Fatoki, 2022; Dadzie, 2009).

Availability of ICT training labs (80.2%), digital scanners and photocopiers (79.7%), and institutional repositories (77.9%) reflects moderate investment in capacity building and digital preservation initiatives, which are critical for supporting scholarly communication (Yaacob, Singh, & Aziz, 2020). Audio-visual facilities (75.0%) and subscriptions to specialised databases (75.9%) were less prevalent but still substantial, suggesting emerging integration of advanced ICT tools in library services.

The findings demonstrate that Federal University Libraries in North-East Nigeria have established foundational ICT facilities necessary for electronic resource sharing and modern library service delivery. However, the lower availability of advanced digital tools and specialised databases indicates gaps in aligning with global standards of ICT-enabled library operations (Arif & Mahmood, 2022).

Research Question 2: What are the Challenges of Collaboration and Resource Sharing in Federal University Libraries in North-East Nigeria?

The study further examined the challenges hindering collaboration and resource sharing. Responses were captured on a four-point Likert scale (Strongly Agree to Strongly Disagree). Weighted mean scores were calculated, with items scoring =2.8 considered major challenges. Table 2 summarises the findings.

Table 2: Challenges of Collaboration and Resource Sharing (N = 344)

S/N	Statement	SA (n, %)	A (n, %)	D (n, %)	SD (n, %)	Weighted Mean	Decision
1	Limited funding for collaborative projects	196 (57.0%)	102 (29.7%)	33 (9.6%)	13 (3.8%)	3.40	Major Challenge
2	Lack of ICT infrastructure to support resource sharing	180 (52.3%)	114 (33.1%)	35 (10.2%)	15 (4.4%)	3.33	Major Challenge
3	Poor communication and coordination among libraries	162 (47.1%)	110 (32.0%)	49 (14.2%)	23 (6.7%)	3.20	Major Challenge
4	Inadequate staff training on resource-sharing technologies	145 (42.2%)	126 (36.6%)	54 (15.7%)	19 (5.5%)	3.12	Major Challenge
5	Institutional policies that hinder collaboration	130 (37.8%)	124 (36.0%)	65 (18.9%)	25 (7.3%)	2.98	Major Challenge
6	Insufficient awareness of the benefits of collaboration	150 (43.6%)	118 (34.3%)	50 (14.5%)	26 (7.6%)	3.09	Major Challenge
7	Resistance to change or adoption of new technologies	138 (40.1%)	123 (35.8%)	61 (17.7%)	22 (6.4%)	3.04	Major Challenge
8	Security concerns regarding shared digital resources	154 (44.8%)	121 (35.2%)	48 (14.0%)	21 (6.1%)	3.10	Major Challenge
9	Geographical and logistical challenges	147 (42.7%)	128 (37.2%)	46 (13.4%)	23 (6.7%)	3.10	Major Challenge

Findings of the Study

The results indicate that limited funding (86.7% SA + A) is the most critical barrier to collaboration, reflecting chronic financial constraints in North-East Nigerian universities, consistent with Musa and Ismail (2021) and Owolabi and Makinde (2019). Despite the availability of foundational ICT facilities, the lack of ICT infrastructure for resource sharing (85.4% SA + A) remains a major challenge, suggesting that bandwidth limitations, interoperability issues, and outdated systems restrict effective collaboration (Arif & Mahmood, 2022; Bello & Sani, 2023).

Other significant challenges include poor communication and coordination (79.1%), inadequate staff training (78.8%), and institutional policy barriers (73.8%), indicating organisational and human resource factors that impede collaborative initiatives. These findings align with Omekwu and Okoye (2021) and Obasi and Onwuka (2022), highlighting that coordination mechanisms, supportive policies, and human capacity are critical enablers of ICT-driven resource sharing. Cultural and technical barriers, such as resistance to change (75.9%), insufficient awareness of collaboration benefits (77.9%), and security concerns regarding digital resources (80.0%), further constrain resource-sharing practices. Geographical and logistical challenges (79.9%) reflect infrastructural and environmental limitations specific to the North-East region, including poor transport networks and socio-political instability (Bello & Sani, 2023; Kiondo, 2004).

The findings underscore that while foundational ICT facilities exist, advanced collaboration is hindered by multifaceted challenges spanning financial, technical, institutional, human, and environmental domains. This corroborates the literature asserting that successful electronic resource sharing requires robust ICT infrastructure, skilled personnel, supportive policies, funding, and conducive organisational culture (Tetteh & Armah, 2021; Thanuskodi, 2011; Okello-Obura & Magara, 2008).

Conclusion

The study further establishes that electronic resource sharing in the region is constrained by interconnected challenges, particularly limited funding, inadequate ICT infrastructure, poor coordination, insufficient staff training, weak institutional policies, security concerns, and geographical constraints. It therefore concludes that despite the availability of basic ICT facilities, effective electronic resource sharing in Federal University Libraries in North-East Nigeria remains limited due to persistent financial, infrastructural, institutional, and capacity-related barriers that require systematic intervention.

Recommendations

The following recommendations were proffered:

1. The Federal University Libraries in North-East Nigeria should strengthen and upgrade advanced ICT facilities, particularly internet bandwidth, institutional repositories, specialised databases, servers, and digital equipment, to complement existing foundational infrastructure and support effective electronic resource sharing.
2. The Federal University authorities and library management should address identified barriers by providing dedicated funding, improving ICT infrastructure, enhancing staff ICT training, strengthening institutional policies, improving inter-library coordination, and implementing security and change-management strategies to facilitate sustainable electronic resource sharing.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

ASSESSMENT OF ABSTRACTING PRACTICE AND EFFECTIVE SERVICE DELIVERY IN ACADEMIC LIBRARIES IN TARABA STATE, NIGERIA

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Abstract
This study assessed abstracting practice and effective service delivery in academic libraries in Taraba State, Nigeria. The study was guided by two research questions. A survey research design was adopted. The total population for the study was 33,928 professional librarians and registered students in public tertiary institution in Taraba State. The sample size for this study was 414 respondents drawn using multistage sampling. A self-structure questionnaire was the instrument used for data collection. Data were analyzed using mean and the standard deviations. Findings of the study revealed that, lack of plan, policies and procedures of abstracting, knowledgeable staff and funds to underwrite production cost, concern by management of higher institutions to prioritize abstracting activity in the library and network are challenges faced by professional librarians. Based on these findings, the study recommended that, management of higher institutions should prioritize abstracting activity, have plans, policies and procedures of abstracting

practice, check and reform staff strength to undertake the activity of abstracting practices, training programs should be organize to enhance skills and knowledge in professional librarians, technological infrastructural facilities should be provided to facilitate effective abstracting practices in academic libraries in Taraba State, Nigeria.
Keywords: *Abstracting, Abstracting Practices, Service Delivery, Academic Libraries*

Introduction

In any academic library, abstracting services provide access to information and knowledge. They function to serve as an important link in the chain of communication between the originator of information and the ultimate user. Abstracts assist library users to retrieve relevant information within shortest period of time in the library. These processes enable information specialists to provide advanced organization of information carriers in the library, information centres or documentation centres. According to Ashikuz (2023), abstracting services greatly improve information access by creating organized structures that can enable users' access specific content within libraries, databases or digital collections.

Abstracting is an act of summarizing the key points or vital information in a document, such as a research paper, article or report, into a concise and brief form. It involves extracting the original documents, main ideas, arguments, findings and conclusions (Cleveland & Cleveland, 2015). According to Buenrostro (2018), abstracting practice facilitates selection and guides the reader in deciding whether an item will be consulted or not and gives valuable information on the contents of the document that prevent the patrons from getting articles that have no relevance to their needs.

According to Musa and Dangani (2013), the goal of any library and information centre is to satisfy the information needs of its clientele. Thus, all services provided in the library are geared towards user satisfaction for the library to fulfill these needs; it acquires all kinds of resources such as prints and non-prints materials. Apparently, there are challenges faced by professional librarians especially in the practice of abstracting and some of the challenges have been identities by researchers such as Cabonero, Dominguez, Jandoc and Tomas (2010), Agber, Ugbagir, Mngutyô and Amaakaven (2014) including lack of plan, policies and procedures of abstracting, staff strength to undertake the activity of abstracting in the libraries seem not enough to carry out the job efficiently and effectively, lack of training programme to enhance the skills and knowledge, abstracting not practiced regularly because ICT tools that professional librarians can effectively use for efficient work are not available, high cost of periodical subscription, technical expertise in the libraries are not properly trained on how materials can be properly abstracted and lack of funds.

Statement of the Problem

Effective service delivery in academic libraries should be a great concern to all academic librarians (especially abstracting services librarians). These services are used in academic libraries as tools that help accessibility and retrieval of information without waste of time. Abstracting services produce summaries or substitutes of original documents to keep users abreast with current information in their field and make them aware of available information resources,

enabling them evaluate their importance before reaching out to the full document.

The academic libraries provide information resources to various clienteles like students, academic staff and non-academic staff, for their teaching, learning and research in various faculties and the entire academic community. The resources acquired and organized are provided to cover all courses offered in faculties of the institution based on the library selection policy. If libraries acquire relevant information resources and are properly abstracted, effectiveness of service delivery will be highly achieved.

However, users are usually confused when they cannot access information that match their needs. The resultant effect is that they become less confident with the services offered by the library. The problem of poor abstracting services and in some cases not abstracted at all, has become a serious concern. It is capable of slowing down abstracting practice and decreasing service delivery in academic libraries. It is against this background that this study seeks to investigate abstracting practice and effective service delivery in academic libraries in Taraba State, Nigeria.

Research Questions

The following research questions were formulated to guide this study:

i. What are the various abstracting practices engaged in by professional librarians and effective service delivery in academic libraries in Taraba State?
ii. What are the challenges faced by professional librarians in the practice of abstracting and effective services delivery in academic libraries in Taraba State?

Review of Related Literature

Abstracting, in every work is designed to captivate the readers to decide if they should read an entire article and to remember key findings on a topic and expect what is coming in the text to make the reading easier and efficient, so that they can quickly check the usefulness of a particular work to their research. Umar, Mohammed and Shittu (2014),Academic libraries provide information services to their respective communities which comprise of students, lecturers and researchers in order to support their teaching, learning and research needs.(Atanda &Adeyemi, 2018).

The purpose of any library is to make information in any format accessible to the right clienteles at the right time. All libraries must provide accurate, relevant and current information to users and researchers. This can be realized through the use of effective and efficient information retrieval tools (Cabonero, Dominguez, Jandoc & Tomas, 2010). Therefore, Awotola and Olowolagba (2018) reported that for abstracting practice in academic libraries to be effective for service delivery, they must be planned in relation to the information resources selected and acquired to cover the curriculum of various faculties of the institutions and the community they serve; and moreover, abstracting practices should encompass author abstracting, abstracting classified by used, critical abstracting and descriptive abstracting. Apparently, modern libraries are increasingly being automated to get unrestricted access to information in many formats and from many sources. They are extending services beyond the physical walls of a building, by providing material accessible by electronic means and by providing the assistance by librarians for

accessing and analyzing large amounts of information with a variety of tools.

Aina (2019) opined that, libraries have devised tools such as indexes, abstracts, catalogues and bibliographies which are expected to make users aware of the variety of information carriers such as books, serials, audio visual resources as well as electronic based resources available in the libraries and information centres. Users satisfaction can only be ascertained when relevant information resources are accessed to meet their information needs. In various academic disciplines, abstracting services play a vital role of providing access to information contained in documents. ICT skills librarians need to possess in this 21st century technological library operations that are somewhat not yet developed by librarians to include online collaboration skills, email management competency, sophisticated online research skills, desktop publishing, word processing skills, social media management with respect to elibrary users, spreadsheet, text digitization, content management, document management, library automation, web design and development, database management and retrieval skills to be able to operate the digital library confidently and effectively (Owate and David-West, 2021)

Owate and David-West (2021) conducted a study titled Indexing and Abstracting Practices for Effective Service Delivery in Academic Libraries in Rivers State. The result amongst others revealed that, University of Port Harcourt library does not fully practice indexing and abstracting due to lack of ICT tools, lack of training and lack of technical expertise. It was recommended among others that information professionals should be trained on indexing and abstracting to acquire the necessary skills for effective service delivery to users.

In the same vein, Ali, Hamza and Muhammad (2015), conducted a study titled An Appraisal of Indexing and Abstracting Services in the Institute of Education Library, Ahmadu Bello University Zaria, Kaduna State, Nigeria. The findings of the study revealed that, inadequate facilities, insufficient funds and lack of awareness were the major challenges militating against the effective provision of indexing and abstracting services in the Institute of Education library, Ahmadu Bello University, Zaria.

Similarly, David, et al. (2020) carried out a study titled Knowledge, Practices and Challenges of Library Practitioners on Abstracting in Nueva Vizcaya, Baguio City, and Benguet in Northern Luzon, Philippines. The study revealed that, inadequate time to carry out abstracting function, lack of policies and procedures in abstracting, lack of manpower to do the job, lack of motivation to perform the task and lack of concern management of higher institutions to prioritize abstracting activity in the library. They added that, abstracts are continuously useful to the academic and research community and that library practitioners must find time to create or innovate ways of abstracting important documents useful to their users.

On this note, if abstracting activity must go on in the way it should, professional staff interest, training, provision of needed and required facilities must be put into workable consideration, management of higher institutions should show concern and prioritize abstracting activity in their libraries; libraries should have plans, policies and procedures of abstracting practice to meet the needs of library users; publishers of periodical abstract should employ qualified abstractors to compile good-generated abstracts and network services should be improve in libraries, if not the perplexing situation and conditions of abstracting practices would remain the

same.

Research Methodology

The study adopted survey research design. The population of the study consisted of 80 professional librarians and 33,828 registered students of the public tertiary institutions in Taraba State, Nigeria under study. The sample of 414 professional librarians and students was drawn from the population using a multistage sampling technique. In the first stage, Sample Size Table was used in selecting the students (Emaikwu, 2019) and in the second stage; probability sampling techniques was adopted in selecting the professional librarians.

This study used self-structure questionnaire titled Abstracting Practices and Effective Service Delivery Questionnaire (APESDQ) for data collection. The instrument was subjected to content and construct validity by two experts in the Department of Library and Information Science and one expert from the Department of Measurements and Evaluation, all from Rev. Fr. Moses Orshio Adasu University, Makurdi. The reliability of the instrument was tested using Cronbach's alpha co-efficient. The data collected were analyzed using descriptive statistics particularly Mean and Standard Deviation. The Mean benchmark was calculated thus: 4+3+2+1 =10 divide by 2 = 2.5. Therefore, any items with a mean of 2.50 and above were accepted while those below 2.50 were rejected.

Results

Research Question 1: What are the various abstracting practices engaged in by professional librarians and effective service delivery in academic libraries in Taraba State?

In order to answer the research question, data were collected on opinions of respondents relating to the various abstracting practices engaged in by professional librarians and effective service delivery in academic libraries in Taraba State. The collected data were analysed and presented in Table 1.

Table 1: Descriptive Statistics *of Responses on* the Various Abstracting Practices Engaged in by Professional Librarians and Effective Service Delivery in Academic Libraries in Taraba State

Descriptive Statistics

Abstracting Practices	N	Mean	Std. Deviation	Remarks	Decision
Author Abstracting	414	2.9855	1.02264	1st	A
Abstracting Classified by use	414	2.7005	1.06548	7th	A
Critical Abstracting	414	2.9638	1.08752	3rd	A
Descriptive Abstracting	414	2.9058	1.06146	5th	A
Inductive Abstracting	414	2.6014	.62483	9th	A
Informative Abstracting	414	2.9662	1.23853	2nd	A
Subject Abstracting	414	2.9517	.97801	4th	A
Structure Abstracting	414	2.6739	1.02153	8th	A
Other Abstracts	414	2.8502	1.22595	6th	A
Grand Mean	414	2.8443	.44152		A
Valid N (listwise)	414				

Key: Strongly Agree (SA) =4points, Agree (A)= 3points, Disagree (D)= 2points and Strongly Disagree (SD)=1point

From Table 1, it can be seen that the mean of all the items is above 2.50 with the Grand Mean of 2.8443 and Standard Deviation of 0.44152. This is to say that author abstracting, abstracting classified by used, critical abstracting, descriptive abstracting, inductive abstracting, informative abstracting, subject abstracting and structure abstracting as well as other abstracting services are the various abstracting practices engaged in by professional librarians and effective service delivery in academic libraries in Taraba State.

Research Question 2: What are the challenges faced by professional librarians in the practice of abstracting and effective services delivery in academic libraries in Taraba State?

In order to answer the research question, data were collected on opinions of respondents relating to the challenges faced by professional librarians in the practice of abstracting and effective services delivery in academic libraries in Taraba state. The collected data were analysed and presented in Table 2.

Table 2: Descriptive Statistics *of Responses on* the Challenges Faced by Professional Librarians in the Practice of Abstracting and Effective services Delivery in Academic Libraries in Taraba State

Descriptive Statistics

Challenges faced	N	Mean	Std. Deviation	Remarks	Decision
Lack of plan, policies and procedures of abstracting affect it effective practice in my library	414	2.7246	1.16091	10th	A
Staff strength to undertake the activity of abstracting in the libraries seem not enough to carry out the job efficiently and effectively	414	2.6594	1.16546	11th	A
Lack of training programme to enhance the skills and knowledge affect effective practice of abstracting in my library	414	3.2415	.96907	4th	A
Abstracting in my library is not practiced regularly because ICT tools that professional librarians can effectively use for efficient work not available.	414	3.5242	.62873	1st	SA
High cost of periodical subscription affect effective abstracting practice in my library	414	2.9396	.71898	9th	A
Technical expertise in the libraries are not properly trained on how materials can be properly abstracted	414	3.4106	.77521	2nd	A
Publishers of periodical abstracts seem not to employ qualified abstractors while others compile poor-generated abstracts.	414	2.9420	.96250	8th	A
Lack of knowledgeable staff and funds to underwrite production cost	414	3.0556	.93845	7th	A
Lack of use of abstracting services by patrons because of lack of awareness of its availability	414	3.2126	.97833	6th	A
Lack of concern by management of higher institutions to prioritize abstracting activity in the library	414	3.3382	1.00442	3rd	A
Network problem	414	3.2150	.95144	5th	A
Grand Mean	414	3.1148	.31922		A
Valid N (listwise)	414				

Key: *Strongly Agree (SA) =4points, Agree (A)= 3points, Disagree (D)= 2points and Strongly Disagree (SD)=1point*

From Table 1, it can be seen that the mean of all the items is above 2.50 with the Grand Mean of 3.1148 and Standard Deviation of 0.31922. This implies that lack of plan, policies and procedures of abstracting, staff strength to undertake the activity of abstracting in the libraries

seem not enough to carry out the job efficiently and effectively, lack of training programme to enhance the skills and knowledge, abstracting not practiced regularly because ICT tools that professional librarians can effectively use for efficient work are not available, high cost of periodical subscription, technical expertise in the libraries are not properly trained on how materials can be properly abstracted, publishers of periodical abstracts seem not to employ qualified abstractors while others compile poor-generated abstracts, lack of knowledgeable staff and funds to underwrite production cost, lack of use of abstracting services by patrons because of lack of awareness of its availability, lack of concern by management of higher institutions to prioritize abstracting activity in the library and network problem are the challenges faced by professional librarians in the practice of abstracting and effective services delivery in academic libraries in Taraba State.

Discussion of Findings

The results of this study are discussed in relation to the research questions. The first finding of the study revealed author abstracting, abstracting classified by used, critical abstracting, descriptive abstracting, inductive abstracting, informative abstracting, subject abstracting and structure abstracting as well as other abstracting services are the various abstracting practices engaged in by professional librarians and effective service delivery in academic libraries in Taraba State. This agrees with Awotola and Olowolagba (2018) who reported that for abstracting practice in academic libraries to be effective for service delivery, they must be planned in relation to the information resources selected and acquired to cover the curriculum of various faculties of the institutions and the community they serve; and moreover, abstracting practices should encompass author abstracting, abstracting classified by used, critical abstracting and descriptive abstracting.

The second finding of the study showed that lack of plan, policies and procedures of abstracting, staff strength to undertake the activity of abstracting in the libraries seem not enough to carry out the job efficiently and effectively, lack of training programme to enhance the skills and knowledge, abstracting not practiced regularly because ICT tools that professional librarians can effectively use for efficient work are not available and high cost of periodical subscription among other problem are the challenges faced by professional librarians in the practice of abstracting and effective services delivery in academic libraries in Taraba State. This study agrees with Cabonero, Dominguez, Jandoc and Tomas (2010), Agber, Ugbagir, Mngutyô and Amaakaven (2014) who identified challenges faced by professional librarians including lack of plan, policies and procedures of abstracting, staff strength to undertake the activity of abstracting in the libraries seem not enough to carry out the job efficiently and effectively, lack of training programme to enhance the skills and knowledge, abstracting not practiced regularly because ICT tools that professional librarians can effectively use for efficient work are not available, high cost of periodical subscription, technical expertise in the libraries are not properly trained on how materials can be properly abstracted and lack of funds.

Conclusion

Based on the findings, it was concluded that abstracting practices play a significant role on the effective service delivery in academic libraries in Taraba State, Nigeria. However, there are challenges faced by professional librarians in the practice of abstracting and effective services delivery in academic libraries such as lack of plan, policies and procedures of abstracting, staff strength to undertake the activity of abstracting in the library. Training programs like abstracting workshop, seminars, conferences and symposia should be organize by the library to enhance the skills and knowledge in librarians.

Recommendations

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

1. Management of higher institutions should prioritize abstracting activity have plans, policies and procedures of abstracting practice to meet the needs of library users.
2. Institutions should check and reform staff strength to undertake the activity of abstracting in the libraries, training programs like abstracting workshop, seminars, conferences and symposia should be organize to enhance the skills and knowledge in librarians.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN:Print - 2814-0702, Online - 2814-0710
LJLIS

USER SATISFACTION WITH REFERENCE AND INFORMATION SERVICES OF CENTRE FOR ARID ZONE STUDIES LIBRARY, UNIVERSITY OF MAIDUGURI, BORNO STATE

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Abstract
This study examines user satisfaction with the reference and information services provided by the Centre for Arid Zone Studies (CAZS) Library, University of Maiduguri, Borno State. The objective of the study was to investigate the extent of users' satisfaction with the services offered by the library. The researchers adopted a descriptive survey research design. A total of 185 copies of the questionnaire were administered to library users, out of which 160 were duly completed and returned, representing a high response rate. Data were collected using a structured questionnaire and analyzed using frequency counts and percentage scores for interpretation. The findings of the study revealed varying levels of user satisfaction with the services provided by the CAZS Library. While many users expressed satisfaction with reference and information services, others indicated dissatisfaction with aspects such as information retrieval and selective dissemination of information. The study concludes that reference and information services are essential in providing personal assistance to users in meeting their information needs. It further recommends that the CAZS Library should be adequately equipped with current information resources, effective Information and Communication Technology (ICT) facilities, and improved dissemination and retrieval systems to support the research needs of its users.
Keywords: Reference Services, Information Dissemination, User Satisfaction, Library Services.

Introduction

Academic libraries are central to teaching, learning, and research in higher education institutions. Among their core functions, reference and information services (RIS) play a pivotal role in helping users locate, evaluate, and apply information for coursework, research, and

professional activities. Contemporary reference services encompass in-person desk enquiries, mediated searches, bibliographic and citation support, research consultations, and an expanding range of virtual channels such as email, chat, WhatsApp, and institutional platforms. The growing reliance on digital resources and remote access has transformed both the form and expectations of RIS: users now demand rapid, accurate, and flexible assistance that connects them seamlessly to licensed databases, e-journals, institutional repositories, and print or special collections Adebayo, (2022). Reference service is one of several information services offered in libraries. It involves providing answers to specific enquiries and may take different forms depending on the nature of the question. Reference service is a personalized form of assistance offered by a librarian usually in the reference section to a user seeking information, either directly or indirectly. King, (2011) described reference services as the culmination of all library activities designed to facilitate the effective use of library resources, provided on a one-to-one basis regardless of the user's purpose or demographic characteristics. Typically, reference service entails direct personal assistance to users through various communication channels such as reference desks, telephone, email, and other digital means. The provision of reference service should therefore be regarded by librarians as a core professional responsibility and a vital component of library operations.

Measuring user satisfaction with RIS is an essential aspect of library quality assurance. Satisfaction is commonly defined as the degree to which library services meet or exceed users' expectations and needs. It is a multidimensional construct encompassing information quality, accessibility, staff competence and behavior, responsiveness, and the usability of systems and physical spaces. Frameworks such as LibQUAL and related service-quality instruments are widely employed to identify and quantify gaps between expected and perceived service quality, helping libraries prioritize improvements. Contemporary research consistently identifies several key determinants of user satisfaction with reference services. Librarian expertise and responsiveness how quickly and accurately staff respond to enquiries are among the strongest predictors of positive satisfaction, especially in mediated and virtual reference interactions. The availability and currency of both print and electronic collections, ease of access to e-resources, and the library's ability to provide tailored research support (such as literature searches, citation assistance, and data retrieval) also play critical roles. Studies examining newer communication channels (e.g., WhatsApp and live chat) reveal that when librarians adopt and manage these tools effectively, satisfaction levels rise significantly (Abubakar and Eze, 2022).

However, findings across regions are not uniform. In many low- and middle-income contexts including studies from Nigeria and other African countries constraints such as limited budgets for e-resources, intermittent internet connectivity, insufficient staffing and training, restricted opening hours, and inadequate physical infrastructure negatively affect users' perceptions of reference services. Local studies frequently recommend targeted investment in professional development, digitization, and stable network infrastructure, along with service redesign (including the adoption of mobile and asynchronous contact points) to reduce gaps between expectations and performance (Yusuf & Balogun,(2024).

Aina, 2020). In specialized and small unit libraries (for example, departmental or research center libraries), the determinants of user satisfaction may differ from those in central university

libraries. Users in specialized research settings often expect deeper subject expertise, access to specialized reports and grey literature, and proactive current awareness services. When such units lack adequate staffing, subject expertise, subscriptions to niche databases, or reliable digitization workflows, user satisfaction tends to decline, even when general library services are rated positively. This divergence underscores the importance of conducting unit-level assessments, rather than relying solely on campus-wide surveys, to identify targeted improvement opportunities (Kumar, (2022).

For academic libraries seeking to strengthen their support for research and postgraduate training, evidence shows that investment in staff expertise particularly the recruitment and continuous professional development of specialist reference librarians along with stable digital access and proactive outreach initiatives (such as user education and embedded librarian programs) produces measurable improvements in both user satisfaction and research outcomes UNESCO, (2024). According to Nwalo & Oluwayinka, (2016), satisfaction represents the consumer's fulfillment response a judgment that a product or service feature, or the product or service as a whole, has provided a pleasurable level of consumption-related fulfillment, whether complete, partial, or deficient. The authors emphasize that satisfaction is a dynamic feeling that can readily change. User satisfaction in libraries therefore derives from a user's overall evaluation of the perceived performance or usefulness of a service.

The Centre for Arid Zone Studies (CAZS) Library is a special library located within the University of Maiduguri. Established in 1988, the library was designed to facilitate material acquisition, documentation, computing, and the dissemination of information services to both the general and specialized research community. The aims and objectives of the CAZS Library are to select, acquire, preserve, organize, and disseminate relevant information resources both local and international to meet the needs of researchers, students, and postgraduate scholars in environmental and arid zone studies. The library also collaborates with national and international organizations, university libraries, and research centres for the exchange of resources. Additionally, it participates with the Centre in organizing, hosting, and conducting local and international seminars, conferences, and workshops on arid zone ecology. User satisfaction is a multifaceted concept that measures how well a system, product, or service meets the requirements and expectations of its users. Remenyi & Money, (2019), key determinants of user satisfaction include usability, system quality, information quality, service quality, and overall user experience. Other studies have shown that tailoring satisfaction metrics to specific contexts such as e-learning, e-commerce, or health services enhances their reliability and practical relevance.

This study aims to examine the perceptions and experiences of users regarding the services provided by the CAZS Library. In particular, it investigates user satisfaction with reference services, information services, and other related functions rendered by the library, recognizing that satisfaction represents an essential attribute derived from users' evaluation of service performance after utilization.

Statement of the Problem

Reference service rests upon a set of core functions that embody key professional values such as precision, accuracy, timeliness, authority, accessibility, individualization, and expert

knowledge. User satisfaction with reference services is largely determined by how effectively these values are reflected in meeting users' information needs. However, previous studies have indicated that many librarians do not consistently apply established reference standards, a factor that significantly influences users' satisfaction and their ability to obtain the desired information.

Despite the vital role of the Centre for Arid Zone Studies (CAZS) Library at the University of Maiduguri in supporting research, teaching, and learning in arid zone–related disciplines, little empirical evidence exists on how effectively it meets the diverse information needs of its users. User satisfaction at the CAZS Library may be affected by several factors, including the adequacy and relevance of information resources, accessibility, and quality of services, staff responsiveness, and infrastructural limitations. Bell (2008), cited in Adewusi, (2017). If such gaps in service delivery and resource provision remain unaddressed, the library's ability to fulfill its mission of supporting research and academic development in arid zone studies may be undermined. It is crucial to identify the factors that render a library less significant in user engagement so that librarians can take corrective measures. Hence, this study seeks to examine the extent of users' satisfaction with the various services offered by the CAZS Library and to identify the factors influencing their satisfaction levels.

Objectives of the Study

The specific objectives of the study are as follows:

1. Examined user satisfaction with reference and information services provided by Centre for Arid Zone Studies Library, University of Maiduguri, Borno State.
2. Determine the extent of users' satisfaction with service provision by the Centre for Arid Zone Studies Library, University of Maiduguri, Borno State
3. Determine the user's satisfaction with retrieval of information in Arid Zone Studies Library, University of Maiduguri, Borno State

Review of Related Literature

Reference and information services have long been a central component of library operations, offering personalized assistance to users in accessing appropriate information resources that meet their diverse needs. The dynamic digital environment has profoundly influenced the scope, delivery, and expectations of reference services in modern libraries. One of the most important criteria for evaluating library effectiveness is the degree of satisfaction users express regarding the services provided. The ability of a library to anticipate user needs and integrate these insights into its collection development and service delivery strategies plays a crucial role in shaping overall user satisfaction. As a general concept, **user satisfaction** refers to the extent to which users are pleased with a product or service after its use. In the library context, **library user satisfaction** specifically denotes how satisfied patrons are with the library's collections, facilities, and services. Inuwa et al. (2022) conducted a study on *user information needs and reference service satisfaction* across selected federal university libraries in northeastern Nigeria. Using a descriptive survey design with a sample of 288 postgraduate students drawn from four federal universities Information is fundamental to every aspect of human endeavor and is

regarded as one of humanity's essential needs. For any task academic, professional, or social the availability of accurate and relevant information is indispensable. Kadir & Hussin, (2018) emphasized that the acquisition and use of information are critical to societal development since information serves as a vital resource for individual and collective progress. Similarly, Asogwa & Daniel, (2022) asserted that the success of any library depends largely on its ability to meet the research demands of its users.

Crowley, (2002) observed that although users generally perceived reference librarians and staff as courteous and patient, they were not always helpful and often distrusted student workers. Their study further revealed a tendency among staff and student assistants to be reluctant in offering help to patrons seeking reference support. The researchers concluded that understanding and delivering quality reference service requires analyzing it from the users' perspective. This insight aligns with the present study, as both focus on examining users' perceptions of information needs and satisfaction with the quality of library services. Kekana & Kheswa, (2020) identified a gap between users' information needs and their satisfaction with available services, which negatively impacted perceptions of service quality. In a related study, Luo &Buer, (2015) examined *reference service evaluation from the user perspective* at an African academic library. Their findings showed a high non-use rate of 42.6%, primarily attributed to users' self-sufficiency and lack of awareness of reference services. The study also revealed that the main motivations for using reference services were class assignments, personal interests, and the use of library facilities. Although users generally held a positive attitude toward reference services, they believed that librarians demonstrated stronger customer service skills than competencies in identifying users' information needs or locating relevant resources.

Zeithaml and Bitner, (2000) defined user satisfaction as the process by which individuals determine whether a product or service meets their needs and expectations. When services fail to meet these expectations, dissatisfaction arises. In the same vein, Iwhiwhu & Okorodudu, (2012) described user satisfaction with library information resources as the user's assessment of the adequacy and effectiveness of the library's materials and services. Likewise, Ikenwe , (2014) noted that users' satisfaction reflects how they feel after using library resources or services and influences their willingness to return to the library when future information needs arise.

Similarly, user satisfaction can be viewed as the level of fulfillment that users derive from utilizing the various information resources and services provided by the library to meet their diverse information needs in academic, professional, and everyday contexts. The availability and quality of information materials and services therefore exert a significant influence on library users. When users are satisfied with library services, they are more likely to return, make consistent use of the resources, and recommend the library to others. In this sense, user satisfaction not only reflects the effectiveness of library service delivery but also contributes to the library's reputation, user loyalty, and overall institutional value.

Research Methodology

This study adopted a descriptive survey research design to examine users' satisfaction with the services provided by the Centre for Arid Zone Studies (CAZS) Library. The design was

considered appropriate because it enables the collection of data from a defined population for the purpose of describing existing conditions, opinions, and perceptions. Data were collected using a structured questionnaire, which was designed to elicit responses on users' experiences and satisfaction with various library services. Respondents were instructed to limit their answers to the options provided in the questionnaire. A total of 185 copies of the questionnaire were administered to library users over a period of one month. At the end of the data collection exercise, 160 copies were successfully retrieved and found suitable for analysis, having been fully and properly completed. The collected data were analyzed using frequency counts and percentage scores**,** which were employed to interpret the responses and present the findings in a clear and descriptive manner.

Interpretation and Discussion of Findings

Table 1: The extent of users' satisfaction with reference and information service.

Option	Frequency	Percentage (%)
Very Satisfied	35	21.8
Satisfied	101	68.8
Dissatisfied	9	5.6
Very Dissatisfied	4	3.8
Total	**160**	**100%**

Source: Field Survey, 2025

KEYS: VS= VE'RY SATISFIED, **S=** SATISFIED, **D=** DISSATISFIED, **VD=** VERY DISSATISFIED

Table 1 shows that 35 (21.8%) users indicated that they were *very satisfied*, 101 (68.8%) respondents reported being *satisfied*, while 9 (5.6%) were *dissatisfied* and 4 (3.8%) were *very dissatisfied* with the reference and information services provided by the CAZS Library. This finding implies that the majority of users are satisfied with the reference and information services, suggesting that the library's efforts in providing timely, accurate, and relevant information are generally effective and valued. However, sustaining user satisfaction will require addressing the concerns of the minority who remain dissatisfied—particularly through improved service delivery, enhanced responsiveness, and regular evaluation of service quality. This finding aligns with Iwhiwhu and Okorodudu (2012), who noted that user satisfaction reflects the extent to which library services and resources meet users' expectations and needs.

Table 2: Users satisfaction with retrieval of information in the library.

Option	Frequency	Percentage (%)
Very Satisfied	23	14.4
Satisfied	36	22.5
Dissatisfied	92	57.5
Very Dissatisfied	9	35.6
Total	**160**	**100%**

Source: Field Survey, 2025

KEYS: VS= VERY SATISFIED, **S=** SATISFIED, **D=** DISSATISFIED, **VD=** VERY DISSATISFIED

Table 2 indicates that 23 (14.4%) users were *very satisfied*, 36 (22.5%) were *satisfied*, while 92 (57.5%) were *dissatisfied* and 9 (5.6%) were *very dissatisfied* with information retrieval services in the library. This finding suggests that while a small proportion of users are satisfied—possibly due to their familiarity with the system or assistance from library staff—the majority experience challenges in retrieving needed information. Such difficulties may stem from limited accessibility, inadequate retrieval tools, outdated catalogues, or insufficient staff support. To address these deficiencies, the CAZS Library should consider improving retrieval systems through automation, enhanced indexing, and better user education and training. These improvements would align the library's retrieval services with global best practices and ensure more efficient access to information resources.

Table 3: Users satisfaction with selective dissemination of information in the library.

Option	Frequency	Percentage (%)
Very Satisfied	14	8.8
Satisfied	65	40.6
Dissatisfied	74	46.2
Very Dissatisfied	7	4.4
Total	**160**	**100%**

Source: Field Survey, 2025

KEYS: VS= VERY SATISFIED, **S=** SATISFIED, **D=** DISSATISFIED, **VD=** VERY DISSATISFIED

Table 3 shows that 14 (8.8%) respondents were *very satisfied*, 65 (40.6%) were *satisfied*, 74 (46.2%) were *dissatisfied*, and 7 (4.4%) were *very dissatisfied* with the selective dissemination of information (SDI) services provided by the library. These results indicate a nearly even split between satisfied (49.4%) and dissatisfied (50.6%) users, suggesting that while some users benefit from SDI services such as updates on new materials, alerts, or research notifications others perceive the service as inconsistent or inaccessible. The findings imply that the SDI system is not uniformly implemented across user groups and requires strengthening to ensure equitable access and effectiveness.

Discussion of Findings

The findings of the study indicate varying levels of user satisfaction with the reference and information services provided by the Centre for Arid Zone Studies (CAZS) Library, University of Maiduguri. The results are presented and discussed under specific thematic areas as follows: The study revealed that a majority of respondents (90.6%) were either *very satisfied* or *satisfied* with the reference and information services offered by the library. This high level of satisfaction suggests that users perceive these services as effective in meeting their academic and research information needs. User satisfaction is a reflection of how well library resources and services align with users' expectations. However, the presence of a small dissatisfied group (9.4%) indicates that certain challenges persist. Possible factors contributing to dissatisfaction may include inadequate reference staff, slow response to information queries, or limited subject coverage of reference materials. Therefore, to sustain and improve the current satisfaction level, continuous staff development, improved service delivery, and better communication between librarians and users are recommended.

Results from Table 2 further show that only 36.9% of respondents were satisfied with the library's information retrieval services, whereas a significant proportion (63.1%) expressed dissatisfaction. This clearly points to a major challenge in accessing and retrieving needed information resources. The dissatisfaction could be attributed to poor cataloguing practices, lack of automation, insufficient search tools, or inadequate user orientation on information retrieval systems. To address these issues, the CAZS Library should consider upgrading its retrieval infrastructure by adopting automated catalogues, subscribing to electronic databases, and providing regular user training to enhance search skills and improve access to materials.

Findings on Selective Dissemination of Information (SDI) revealed an almost equal split between satisfied (49.4%) and dissatisfied (50.6%) users, indicating inconsistency in the library's SDI service delivery. Although some users receive relevant and timely information updates, others appear to be underserved due to irregular dissemination practices, inadequate current awareness mechanisms, or limited ICT facilities. Strengthening SDI services through ICT integration, regular current awareness programs, and proactive engagement with users will help ensure that students and researchers consistently receive timely and relevant information.

Conclusion

The study examined the extent of users' satisfaction with reference and information services at the Centre for Arid Zone Studies (CAZS) Library, University of Maiduguri. The findings revealed that while the majority of users are satisfied with the library's reference and information services, significant challenges persist in the areas of information retrieval and selective dissemination of information (SDI). The high level of satisfaction with reference services indicates that users generally perceive the library as effective in providing guidance, relevant information, and research assistance. However, the low satisfaction scores for information retrieval and SDI services reflect weaknesses in technological infrastructure, accessibility, and user support systems. These shortcomings, if unaddressed, may reduce the overall effectiveness of the library in supporting teaching, learning, and research, particularly in arid zone-related disciplines.

Therefore, the study concludes that users' satisfaction with library services is directly linked to the availability, accessibility, and quality of information resources as well as the competence and responsiveness of library staff. Continuous evaluation and improvement of these aspects are essential for sustaining user confidence and ensuring that the library remains a vital component of the university's academic and research framework.

Recommendations

The following recommendations are made:

1. The CAZS Library should adopt modern retrieval technologies, such as automated cataloguing systems, online databases, and discovery tools, to improve the speed and accuracy of information access.
2. The library should improve its SDI services by regularly updating users with new acquisitions, current awareness bulletins, and research alerts tailored to individual interests and academic disciplines.
3. Regular user orientation, workshops, and training sessions should be organized to equip patrons with the necessary skills to effectively search, access, and utilize both print and electronic resources.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

INFLUENCE OF LIBRARY AUTOMATION TOOLS ON THE USAGE OF INFORMATION RESOURCES BY STUDENTS OFFERING ENTREPRENEURSHIP IN PUBLIC UNIVERSITIES IN BENUE STATE, NIGERIA

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Abstract
The study examined the Influence of Library Automation Tools for Enhanced Usage of Information Resources by Students offering Entrepreneurship in Public Universities in Benue State, Nigeria. The study was guided by two objectives and two research questions. The researcher adopted ex-post-facto research design for the study. The study area was two public universities in Benue State- Joseph Sarwua Tarka University (JOSTUM) and Benue State University, now Rev. Fr Moses Orshio Adasu Unviversity. The total population of this study was 1, 078 students made up of 400 level undergraduate students offering entrepreneurship who are registered with the university libraries. A sample of 417 undergraduate students offering entrepreneurship in public universities in Benue State Nigeria. The sampling techniques are purposive and snowball. The instrument for data collection for the study was a self-structured questionnaire titled "Influence of Library Automation Tools Questionnaire" (ILATQ). The instrument for data collection was subjected to face and validation by 3 lecturers of Joseph Sarwuan Tarka University, Makurdi. The instrument was trial tested on 30 respondents in Federal University, Lafia which was not part of the study area but have similar characteristics with that of the study area. Data collected were analyzed using descriptive statistics such as mean and standard deviation to answer the five research questions. The findings of the study reveal that library automation is one of the key means of easing and enhancing information search strategies for entrepreneurship students. Automation helps students acquire the knowledge and skills required for effective information searching. It also improves information retrieval among entrepreneurship students. In addition, the Integrated Library Management System (ILMS) speeds up information search and the retrieval of library resources. Automation tools further enhance storage space management in public

universities in Benue State, Nigeria. The study concluded that library automation is a vital tool in academic libraries for meeting the information needs of students offering entrepreneurship in public universities in Benue State Nigeria.

Keywords: Library Automation Tools, Information Resources, Entrepreneurship, Public Universities,

Introduction

Public university libraries offer a range of resources ranging from traditional, print materials and digital resources, making them vital for students in various fields, including disciplines like entrepreneurship. Echezona and Ugwuanyi (2016), states that public university libraries support the educational mission of their main institutions by providing access to a wealth of information resources. Information resources refer to a wide range of academic materials meant to be used by students, lecturers and researchers. These resources also include online collections of books, e-journals, e-encyclopedias, e-newspapers, and multimedia resources like videos and audio files. They play a central role in research, decision-making and learning across different fields. Gonzalez (2021), stated that libraries aid access to information resources providing students, faculty and researchers the information they need to carry out their work and studies. The development of information resources has been driven by rapid advances in technology. Miller (2017), noted that today, digital platforms make it easy to access a wider variety of materials than ever. Online databases and cloud storage, retrieval for example, have enabled institutions to gather different resources in one place, allowing students to search, store and retrieve information resources at anytime anywhere.

Information resources were almost entirely physical as libraries were known for storing materials like print books, journals, magazines, newspapers, encyclopedias, and archival documents. Students accessed these materials through a manual cataloguing system, such as a card catalogue for books or printed indexes for serial materials, often requiring the help of librarians to locate items within the library. This traditional method posed limitation because students had to be physically present at the library and could only access resources during operating hours which sometimes they experience delays, due to busy periods. Echezona and Ugwuanyi (2016), states that managing these physical collections required significant time and effort from library staff. Tasks like cataloguing, shelving, and updating records were labour-intensive, which not only slowed library operations but also made the whole system somewhat cumbersome. As academic fields grew more, students began to need faster and more flexible way to access information resources, which makes the automation of library necessity. The library shifted from these traditional methods of operation to digital, Information and Communication Technology (ICT) calls for library automation. Library automation involves using computers and other technologies to help manage different tasks, such as cataloguing books, checking out materials, and organizing online journals and magazines, so libraries can deliver the right information to users as efficiently as possible (Oladokun & Kolawole, 2018). Library automation tools are the technologies and software systems that help libraries run their daily operations more smoothly, saving time for both librarians and users. These tools such as Integrated Library Systems

(ILS), digital repositories, and online catalogues streamline daily operations and improve access to resources (Kaur & Kaur, 2020). They also help librarians manage tasks more efficiently, freeing them to focus on guiding students and supporting research (Tella & Oladapo, 2016; Wang and Dawes, 2022). As Rahman and Islam (2023) note, automation now includes advanced features like artificial intelligence and personalized services, which enhance user satisfaction. The International Federation of Library Associations (IFLA, 2022) projects that such innovations will continue to evolve, keeping libraries central to education, research, and community engagement. Effective information use in libraries depends not only on automation but also on search strategies.

Information search strategies involve defining research questions, identifying keywords, and refining searches through Boolean operators (AND, OR, NOT), truncation, and phrase searching. These approaches increase accuracy and relevance (Olayinka, 2020; & Okafor, 2021). Databases like JSTOR and Google Scholar are excellent for scholarly materials, while government reports and official websites provide credible data for fields such as the social sciences (Agboola & Umeh, 2021). Evaluating sources for usability, and shortest time of information retrieval with reliable information is equally essential. Information retrieval (IR) complements search strategies by focusing on obtaining relevant information from large collections. Retrieval systems such as search engines, catalogues, and databases use algorithms, indexing, and ranking methods to match queries with relevant results (Manning, Raghavan & Schutze, 2021). With the integration of machine learning, these systems have become increasingly personalized and efficient (Okeke & Adeyemi, 2019). Alongside retrieval, information storage plays a critical role. Information Storage involves preserving and organizing data for future use through tools such as databases and cloud solutions. Effective storage uses techniques like compression, encryption, and tagging to ensure secure and quick retrieval (Zeng, 2023). In automated libraries, storage strategies guarantee that digital resources from e-books to archival materials remain accessible to users (Kim & Miller, 2025). Cloud storage, in particular, offers scalability, remote access, and redundancy against hardware failures (Nwogbo & Obasi, 2019). Together, search, retrieval, and storage form a chain of information management skills that are vital for students, including those studying entrepreneurship.

Entrepreneurship students are those admitted into the university to undertake undergraduate programme who offers the course as a general course to build a creative mind in business. Entrepreneurship students today are experiencing a change in how they learn and develop their skills with education moving beyond theory into practice, mindset training, problem-solving skills, and willingness to take risks which in turn increases their intention to start businesses (Ferdousi, Rahman & Qamruzzaman, 2025). For example, Sanchez (2019) found that students who went through structured entrepreneurship programs not only gained technical knowledge but also built stronger motivation and resilience compared to their peers. At the university level, the presence of incubators, mentors, and supportive environments has been shown to significantly shape students' entrepreneurial behaviors (Petrescu & Suciu, 2024). More recently, digital tools like artificial intelligence are being added to entrepreneurship courses to give students tailored guidance while still preserving the value of real-life mentorship and collaboration (Zhu & Luo, 2025). Entrepreneurship education is not limited to universities

secondary school programs in places like Cabo Verde, as well as STEM-based initiatives for girls, have proven that exposing young people to entrepreneurship early on can boost creativity, entrepreneurial attitudes and encourage innovation (Shahin, Ilic, Gonsalvez & Whittle, 2020).

The importance of entrepreneurship education cannot be over emphasized hence the government of Nigerian sees it fit to include entrepreneurship in their curriculums for the obvious reasons of allowing the students to acquire additional knowledge to get more than just a degree and to give them opportunity to create skills to solve problems as well as taking risks. Sanchez, (2019); Ferdousi, Rahman & Qamruzzaman (2025), states that research shows that these students not only gain business knowledge but also develop valuable life skills such as leadership, resilience, and adaptability. Universities that give them space to practice through startup incubators, business competitions, or real-world projects help turn classroom ideas into something tangible (Makai & Dory, 2023). Importantly, students offering entrepreneurship often find themselves surrounded by mentors, peers, and professionals who inspire and support them by giving them the networks and confidence needed to bring their ideas to life (Petrescu & Suciu, 2024). Nabi, Liñán, Fayolle, Krueger and Walmsley (2020), advanced that by the time they graduate many are not only prepared to launch their own ventures but are also equipped to bring an entrepreneurial mindset into any workplace they enter. With the aid of library automation students can access information resources easily and faster to enhance their entrepreneurship skills that will help them in their studies.

In Nigeria, public universities including those in Benue State are increasingly adopting library automation to improve library services (Aina, 2019). The researcher further pointed out that, this development has significant benefits for entrepreneurship students, who rely on timely access to current market research, business models, and case studies. Automated systems empower students by saving time and improving engagement with course materials (Eze & Ugochi, 2022). However, Oladele & Oyewole, (2019); Ogunmodede & Popoola, (2018) mentioned that, some students struggle with limited digital literacy while others face infrastructural issues such as poor internet and unstable power supply. For library automation tools to be fully utilized, universities administration must address barriers confronting them. This context therefore sets the stage for the present study, which investigates how library automation tools influence the usage of information resources by student offering entrepreneurship in public universities in Benue State.

Statement of the Problem

In recent years, library automation has been introduced in public universities in Benue State as a means to enhance the accessibility, efficiency and retrieval of information resources. This shift from traditional to digital aligns with global trends, restructuring tasks like cataloging and resource retrieval while offering advanced search tools and digital access. Automation allows libraries to manage collections more effectively, enabling staff to focus on student support and curation. Students benefit from expanded access to digital materials, enhancing their research and learning opportunities.

However, there may be lack of comprehensive understanding regarding the influence of library automation tools on the utilization of these resources by entrepreneurship students.

Despite the potential benefits of automated systems, such as increased access to diverse information formats and improved user experience, various factors may affect students' offering entrepreneurship and limit the usage of information resources effectively. Although library automation tools are increasingly adopted in public universities, students' use of these technologies varies due to challenges such as limited digital literacy, resistance to new technologies, and poor internet connectivity. Moreover, there is limited empirical evidence on the influence of library automation tools on students' research skills, satisfaction, and academic performance, particularly among entrepreneurship students. This study seeks to address this gap. This study aims to investigate the influence of library automation tools enhaces the usage of information resources by students offering entrepreneurship in public universities in Benue State.

Objectives of the Study

The study examined the influence of library automation tools on the usage of information resources by students offering entrepreneurship in public universities in Benue State, Nigeria. Specifically, the study is determined to:

1. find out influence of library automation on information search strategies of student offering entrepreneurship in public universities in Benue state, Nigeria.
2. find out influence of library automation on information retrieval by student offering entrepreneurship in public universities in Benue state, Nigeria.

Research Questions

The study was guided by two research questions as follow:

1. What is the influence of library automation on information search strategies of student offering entrepreneurship in public universities in Benue state, Nigeria?
2. What is the influence of library automation on information retrieval by student offering entrepreneurship in public universities in Benue state, Nigeria?

Research Methodology

The researcher design adopted for the study is descriptive survey research design. The study area is two public universities in Benue State. The total population of this study was 1, 078 made up of 400 level undergraduate students offering entrepreneurship who are registered with the respective university libraries. A sample of 417 undergraduate students offering entrepreneurship in public universities in Benue State Nigeria was used. The sampling techniques are purposive and snowball. The instrument for data collection for the study was a self-structured questionnaire titled “Influence of Library Automation Tools for Questionnaire” (ILATQ). The instrument for data collection was subjected to face and validation by 3 lecturers of Joseph Sarwuan Tarka University, Makurdi. The instrument was trial tested on 30 respondents in Federal University, Lafia which was not part of the study area but have similar characteristics with that of the study area. Data collected were analyzed using descriptive statistics such as mean and standard deviation to answer the two research questions.

Research Question 1: What is the influence of library automation on information search strategies of student offering entrepreneurship in public universities in Benue state, Nigeria?

Table 1: Mean and Standard Deviation of Information Search Strategies of Student Offering Entrepreneurship in Public Universities

S/N	Information Search Strategies	Number	*X*	SD	Decision
1.	Automation speeds up information search.	403	3.16	.874	A
2.	Improves accuracy in locating relevant resources	403	3.33	.962	A
3.	Enhances user independence in conducting information searches	403	3.16	.910	A
4.	Facilitates access to a wide range of electronic resources	403	2.65	.863	A
5.	Filtering options enhance search results	403	2.77	.978	A
6.	Increases accessibility of remote resources	403	2.65	.833	A
7.	Reduces time spent searching for information	403	3.70	.534	A
8.	Supports advanced search capabilities (e.g., Boolean search, filters).	403	3.73	.672	A
	Cluster Mean		**3.14**	**.830**	**A**

Note: X= Mean, SD= Standard Deviation, A=Agree, D= Disagree

The results in table 2 reveal the mean and standard deviation on the influence of library automation on information search strategies of student offering entrepreneurship in public universities in Benue state, Nigeria from items 1-8. The results show that student offering entrepreneurship in public universities agreed that library automation influences information search strategies. This is due to the fact that the mean values of the item statements ranging from 2.65-3.73 are greater than the criterion mean of 2.50. The cluster mean of 3.14 shows that the entrepreneurship students agreed that library automation tools influence information search strategies. Hence, the item statements are the influence of library automation on information search strategies of student offering entrepreneurship in public universities in Benue state, Nigeria. Moreover, the standard deviation values of the item statements reveal closeness in the responses of the entrepreneurship students due to the nearness of the values and the cluster standard deviation value of 0.83 reveal less dispersion in the mean responses of the students offering entrepreurship education.

Research Question 2: What is the influence of library automation on information retrieval by student offering entrepreneurship in public universities in Benue state, Nigeria?

To answer this research question, data were collected on the influence of library automation on information retrieval by student offering entrepreneurship in public universities and analyzed with mean and standard deviation as shown in table 3

Table 2: Mean and Standard Deviation of Library Automation on Information Retrieval of Student Offering Entrepreneurship in Public Universities

S/N	Automation on Information	Number	*X*	SD	Decision
9.	Speeds up the retrieval process for library resources	403	3.16	.948	A
10.	Enhances the accuracy of retrieved information	403	3.22	.846	A
11.	Improves access to digital and electronic resources	403	2.70	.950	A
12.	Tags and filters help find information.	403	3.16	.903	A
13.	Reduces time needed to locate specific information	403	3.11	.734	A
14.	Reduces reliance on library staff for assistance in retrieving information	403	2.93	.895	A
15.	Supports retrieval of interdisciplinary resources	403	3.75	.458	A
16.	Supports retrieval of archival and historical materials	403	3.77	.951	A
	Cluster Mean		**3.23**	**.84**	**A**

Note: X=Mean, SD= Standard Deviation, A=Agree, D= Disagree

The results in table 3 show the mean and standard deviation on the influence of library automation on information retrieval by student offering entrepreneurship in public universities in Benue state, Nigeria in items 9-16. The results indicate that student offering entrepreneurship in public universities agreed that library automation influences information retrieval. This decision was reached because the mean values of the item statements ranging from 2.70-3.77 are greater than the criterion mean of 2.50. The cluster mean of 3.23 reveals that the students offering entrepreneurship agreed that library automation influence information retrieval of students. Consequently, the item statements are the perceived influence of library automation on information retrieval by student offering entrepreneurship in public universities in Benue state, Nigeria. Additionally, the standard deviation values of the item statements show that the responses of the entrepreneurship students are very near due to the closeness of the values. The cluster standard deviation of 0.84 reveals small scatter in the responses of the entrepreneurship students.

Discussion of Findings

In line with the findings of the study, the following

The finding of the study revealed that library automation tools influence information search strategies of students offering entrepreneurship in public universities in Benue state, Nigeria. Automation tools are the means to ease and enhance information search strategies for students in entrepreneurship in terms of knowledge and skills required. This agrees with Okiy, (2018) that automation tools are the way to advance database information search strategies in university library and that it is important to enhance students' information search strategies for literacy skills. This disagrees with Aina and Ojo, (2018) who found that many students lacked the advanced search skills needed to fully benefit from the available information resources in library automation. This means that both categories of students agreed that library automation significantly influence information search strategies. In the same vein, Afolabi and Ojo, (2020) discovered that library

automation significantly improves students' information search capability and academic performance. It is true because, through the library automation, students have access to any information resources they seek thereby influencing their information search strategies.

Secondly the study discovered that library automation influence information retrieval among the entrepreneurship students in public university in Benue State Nigeria. This is based on how library automation is used to organize library resources for easy retrieval when needed for use. Aina and Ojo, (2018) found that library automation for information retrieval had influence entrepreneurship students academic achievement outcome. The case of entrepreneurship students in public university is not different, as the study has found that library automation influenced their information retrieval system.

Conclusion

The study found that library automation significantly improves how entrepreneurship students in public universities in Benue State access and use information resources. Automated tools enhance both information searching and retrieval by making access faster, more accurate, and more efficient. Although benefits are clear, challenges such as poor internet, unreliable power supply, and limited digital skills still limit full usage. Addressing these issues will further improve students' learning and research experiences.

Recommendations

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

1. There is also a need to strengthen how students, particularly those studying entrepreneurship, use library automation in their search for information. Regular training sessions, workshops, and awareness programs should be organized to help students understand how to navigate these tools effectively. Librarians can also create simple guides whether in print, video, or online formats that make searching less intimidating and more productive. This will not only build students' confidence but also improve their research and learning outcomes.
2. Another area that deserves attention is information retrieval. Libraries should work towards improving retrieval systems by adopting better cataloguing practices and using indexing methods that make searches more precise and reliable. Universities in Benue State could also consider integrating their systems to ensure that students can access information seamlessly across institutions. This will make the process of retrieving information more efficient and less frustrating for students.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN:Print - 2814-0702, Online - 2814-0710
LJLIS

CHALLENGES FACING UTILIZATION OF WEB-BASED INFORMATION RESOURCES AMONG CLINICAL STUDENTS IN THE COLLEGE OF HEALTH SCIENCES, REV. FR. MOSES ORSHIO ADASU UNIVERSITY, MAKURDI,

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Abstract
This study investigated the challenges affecting the utilisation of web-based information resources among clinical students in the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, as well as strategies for improving their effective use. A descriptive survey design was employed, involving all 166 undergraduate clinical students through total enumeration. Data were collected using a structured questionnaire and analysed using mean and standard deviation. Findings revealed multiple challenges, including poor internet connectivity, high data costs, limited access to paid databases, inadequate digital literacy, information overload, and difficulty evaluating credible online sources. The study also identified several strategies for improvement, such as expanding free Wi-Fi access, increasing institutional subscriptions to academic databases, providing digital literacy training, implementing critical thinking workshops, and enhancing institutional support for navigating online resources. The study concludes that addressing these constraints will significantly enhance students' academic productivity, access to credible information, and overall learning outcomes. Recommendations were made to guide policymakers, university management, and librarians in enhancing effective utilisation of web-based information resources.
Keywords: Web-based Information Resources, Challenges, Solution, Utilisation, Digital Libraries

Introduction

Web-based information resources provide essential academic support by enabling access to digital libraries, e-journals, online databases, and other scholarly platforms. Ani et al. (2022) noted that web-based resources are the electronic representation of information available in various forms such as e-books, digital libraries, online journals, magazines, e-learning tutorials, and online tests. Due to their effective presentation with multimedia tools, these e-resources have become key sources of information. Web-based information resources are accepted worldwide as effective educational and research tools, offering several advantages and enriching the educational competencies of learners and researchers.

Utilisation of online or web-based information resources involves leveraging online tools and platforms to access and use information effectively, including search engines, databases, online journals, and other web-based services. However, despite their importance, utilisation remains suboptimal due to several barriers. Studies highlight factors such as inadequate infrastructure, limited ICT skills, and poor connectivity as major constraints (Owate, 2024).

Globally, the integration of web-based information resources in higher education has transformed access to information for academic and professional purposes. Yet, several barriers

persist in Africa, including poor internet connectivity, limited access to subscription-based databases, and inadequate training. These challenges are even more pronounced in Nigeria due to infrastructural limitations and underfunded educational systems. (Adeleke et al., 2020).

Statement of the Problem

In today's knowledge-driven healthcare environment, the ability to utilise accurate and relevant information is fundamental to effective clinical practice and academic success. Web-based information resources have the potential to enhance students' learning experiences and clinical decision-making capacities; however, these benefits can only be realised when students can effectively utilise them.

At the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, concerns remain regarding students' ability to effectively utilise these resources. Failure to address these concerns may lead to consequences such as poor academic performance, inadequate clinical decision making, reduced competitiveness, limited lifelong learning, and wasted institutional resources.

Objectives of the Study

The specific objectives of this study are to:

1. ascertain the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, in the utilisation of web-based information resources, and
2. investigate the strategies to overcome the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, in the utilisation of web-based information resources

Research Questions

The following questions were posed to guide the study:

1. What are the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi in the utilisation of web-based information resources?
2. What are the strategies to overcome the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, in the utilisation of web-based information resources?

Review of Related Literature

This study is anchored on technology acceptance model (TAM) 1989.

Technology Acceptance Model (TAM) was developed by Davis (1989). TAM is one of the most influential theories used to explain technology adoption and utilization behaviors. The model proposes that two primary beliefs Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) determine an individual's acceptance and subsequent utilization of technology. Perceived usefulness refers to the degree to which an individual believes that using a particular technology will enhance their performance, while perceived ease of use reflects the extent to which the technology is considered free of effort (Davis, 1989). According to TAM, these perceptions

influence a user's attitude toward using the technology, which subsequently affects their behavioral intention to use it, ultimately leading to actual utilization. In the context of this study, web-based information resources (WBIR) such as online journals, databases, search engines, and e-libraries are viewed as technological tools whose utilisation can be explained through the TAM framework.

In the context of clinical students at the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, the adoption of TAM is appropriate because it provides a clear and validated explanation of how clinical students' perceptions of technology influence their behaviors, particularly in educational and information environments. By applying TAM, this study seeks to understand how clinical students' perceptions of the usefulness and ease of use of web-based information resources influence their actual utilization of these resources. This theoretical underpinning aligns with the objectives of the study, which investigates the challenges facing utilisation of web-based information resources among clinical students and their solutions.

The emergence of the Internet, especially the World Wide Web, is becoming the new technique for the delivery of information resources and services, which has led to a revolution in libraries and information centres. In this web-based environment, information resources and services can be accessed and delivered as and when required; therefore, the services of libraries are not confined within their physical walls, but are integrated into local, regional, national and international networks (Brar, 2016).

Web-based information resources, according to Sandeep and Chakravarthy (2022), are items that can be accessed remotely or locally over the Internet by using a personal computer, mainframe, or portable mobile devices. The basic and descriptive characteristic of WBR is that it embodies a wide range of electronic resources, can be easily be updated, transformed, upgraded and instantly shared, and it makes use of all the assets the World Wide Web can offer.

The use of digital libraries has seen steady growth over the past two decades. The effectiveness of digital libraries depends on user acceptance, which in turn is affected by users' perceptions. The concept of 'utilisation' refers to the extent to which a product can be accessed to achieve specified goals with effectiveness, efficiency, and satisfaction within a defined scope of consumption. Utilisation of Electronic Information Resources (EIRs) also denotes the act of making actual use of the available EIRs to support research and learning goals (Ikenwe et al., 2020). Furthermore, the utilisation of EIRs can be viewed as the capability to make practical and judicious use of the available electronic resources.

Challenges in accessing and using web-based information resources are factors that hinder their smooth access and utilisation. Despite the significant advantages of online information resources, users still encounter some difficulties. Several studies have investigated students' challenges with the use of these resources. Inadequate computer systems, slow internet speed and poor network service, frequent power failures, poor internet connectivity, insufficient guidance on the use of electronic resources, non-payment of subscriptions, and a lack of personal computers have also been identified as challenges affecting access to and the utilisation of web-based information resources (Owate, 2024).

Omeluzor et al. (2016), and Sohail and Ahmad (2022), in their various studies, stated some of the challenges facing the utilisation of web-based information resources. These challenges have been identified as poor information technology infrastructure development, a lack of knowledge

on how to use e-journals, a lack of facilities, a lack of time and awareness, a large amount of irrelevant information, the need to filter search results, download delays, failure to find information, inadequate or a lack of search skills, the high cost of access, the inaccessibility of some electronic resources, and difficulties in navigating electronic resources.

The level of success of any learning programme depends largely on the commitment of institutions in ensuring an enabling environment for their learners in accessing and using e-resources for teaching and learning.

According to More (2022), the following solutions should be considered for web-based information resource utilisation:

- Participating libraries must have the infrastructure to provide services to their users.
- A librarian should go a step further than simply providing internet access. They should take responsibility for evaluating web resources to provide effective assistance.
- A librarian must have a deep knowledge of web resources and search engines, which will give the reference librarian real power to answer questions.
- The librarian should create a web directory of internet resources so that users can utilise or refer to it whenever needed to provide the service.
- Library users should be properly trained and informed about the internet and search options.

Research Methodology

A descriptive survey design was used. The population consisted of 166 undergraduate clinical students, and a total enumeration method was adopted. Data were collected using structured questionnaires and analysed using mean and standard deviation.

Analysis and Interpretation

Table 1: Challenges Facing Utilisation of Web-Based Information Resources by Clinical Students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, Nigeria.

(n=166)

S/N	Challenges faced	SA	A	D	SD	$\bar{x}$	.	Remark
1	Internet connectivity issues affect my ability to use web-based resources.	54	88	20	4	3.16	0.72	Agree
2	Paid resources are not available to me.	43	75	33	5	2.94	0.80	Agree
3	The online information resources I need are often restricted due to paywalls or institutional access limitations.	39	91	29	7	2.98	0.76	Agree

4	Experience difficulties accessing web-based resources due to software/hardware limitations (e.g., computer, smartphone).	43	81	38	4	2.98	0.77	Agree
5	Limited internet access when using web and slow internet speed	44	86	29	7	3.01	0.78	Agree
6	Lack of knowledge on advanced search techniques	47	81	29	9	3.00	0.82	Agree
7	Difficulty in evaluating credible sources when using web	44	76	41	5	2.96	0.80	Agree
8	Lack of digital literacy skills for effective use of web	50	66	49	1	2.99	0.79	Agree
9	Overload of irrelevant information when using web	51	62	47	6	2.95	0.86	Agree
10	High cost of internet/data	81	57	24	4	3.30	0.80	Agree
11	Difficulty in accessing web-based information resources	58	53	49	6	2.98	0.89	Agree
12	Struggle with identifying credible and reliable online information	39	93	29	5	3.00	0.73	Agree
13	Lack of expertise in source evaluation	39	80	42	5	2.92	0.78	Agree
14	Websites not user-friendly	39	85	36	6	2.95	0.77	Agree
15	Issues with downloading full-text articles or reports	51	76	33	6	3.04	0.81	Agree
16	Limited peer-reviewed and scholarly resources	41	83	38	4	2.97	0.76	Agree
	Cluster mean					**3.08**	**0.79**	**Agree**

Source: Field Survey, 2025

Table 1 presents the mean and standard deviation scores relating to the challenges facing the Utilisation of Web-based Information Resources by Clinical Students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi. Each item reflects respondents' reports on the challenges in the utilisation of web-based information resources. The analysis of the data reveals that clinical students at the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, face a range of challenges in utilising web-based information resources. The overall cluster mean of 3.008 and SD =0.790 indicate that the respondents generally agreed with the listed challenges, suggesting that these barriers significantly affect their ability to fully benefit from digital academic resources.

A major issue identified is internet-related constraints, with students strongly agreeing that internet connectivity issues (Mean = 3.16 and a SD = 0.722) and the high cost of internet/data (Mean = 3.30 and a standard deviation of 0.804) pose significant limitations to accessing web-based information. Similarly, limited internet access and slow speeds (Mean = 3.01 and a standard deviation of 0.782) further compound this challenge, reflecting infrastructural weaknesses that

hinder smooth online research activities.

Another prominent barrier is restricted access to academic content due to paywalls and a lack of institutional subscriptions. This is seen in responses to items related to paid resources not being available (Mean = 2.94 and a standard deviation of 0.799) and online information being restricted (Mean = 2.98 and a standard deviation of 0.762). These results highlight the students' struggle to obtain full-text scholarly materials, which may limit their ability to conduct comprehensive research.

Technical and personal skill limitations also emerged as notable challenges. Students reported experiencing software/hardware limitations (Mean = 2.98 and a SD = 0.767), a lack of digital literacy (Mean = 2.99 and a SD = 0.790), and a lack of knowledge of advanced search techniques (Mean = 3.00 and a standard deviation of 0.824). These findings suggest a gap in the students' ability to effectively navigate and make the most of available web-based platforms.

Cognitive and evaluative challenges were also acknowledged. Students reported difficulty in evaluating credible sources (Mean = 2.96), struggling to identify reliable information (Mean = 3.00 and a SD = 0.730), and lacking expertise in source evaluation (Mean = 2.92 and a SD = of 0.778). The issue of information overload (Mean = 2.95 and SD = 0.859) was also mentioned, indicating that the sheer volume of online content can be overwhelming and counterproductive without proper search strategies and filtering skills. Lastly, some students pointed out challenges such as non-user-friendly websites (Mean = 2.95 and a SD = 0.773) and issues with downloading full-text articles or reports (Mean = 3.04 and a standard deviation of 0.773), which affect the usability and accessibility of online resources.

Table 2: Suggestions that will improve the Utilisation of Web-Based Information Resources by Clinical Students of the College Of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, Nigeria.

(n=166)

S/No	Solutions	SA	A	D	SD	$\bar{x}$	.	Remark
17	Expand free Wi-Fi zones in educational institutions and public spaces.	84	90	11	1	3.43	0.65	Agree
18	Use open-access alternatives, rely on shared or free version of articles	103	51	11	1	3.54	0.65	Agree
19	Use institutional access (e.g., university login) and document delivery services for restricted articles provision	88	68	9	1	3.46	0.63	Agree
20	Increasing access to digital devices (e.g., laptops, tablets, smartphones)	90	69	6	1	3.49	0.60	Agree
21	Use alternative ways (e.g., ResearchGate, institutional VPNs) to access wide range of web-based resources with speed.	82	66	16	2	3.37	0.71	Agree

22	Workshops on advanced search techniques (e.g., Boolean operators, filters).	82	73	8	3	3.41	0.67	Agree
23	Training on evaluating credible vs. unreliable sources	97	60	7	2	3.52	0.64	Agree
24	Online courses on digital literacy skills.	99	60	6	1	3.55	0.60	Agree
25	Acquire literacy skills to be able to pick out relevant information from verse of information online and AI-powered recommendations for relevant sources.	101	55	10	0	3.55	0.61	Agree
26	Reducing internet/data costs by providing affordable internet packages for students and professionals.	93	68	5	0	3.53	0.56	Agree
27	Interlibrary loan services (resource sharing among institutions)	91	69	4	2	3.50	0.61	Agree
28	Increasing awareness about fake news and misinformation	98	56	12	0	3.52	0.63	Agree
29	Teaching critical thinking skills for evaluating online content	89	69	7	1	3.48	0.61	Agree
30	Simplified navigation for non-expert users, also, Institutions should provide more support for accessing web-based resources.	106	58	2	0	3.63	0.51	Agree
31	Provide institutional access to more academic databases (e.g., JSTOR, IEEE, ScienceDirect)	95	66	4	1	3.54	0.58	Agree
32	Promoting peer-reviewed and scholarly resources	94	67	5	0	3.54	0.59	Agree
	Cluster Mean					**3.50**	**0.61**	**Agree**

Table 2 presents the frequency, mean and standard deviation scores regarding the suggestions that will improve the Utilisation of Web-based Information Resources by Clinical Students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi. Each item reflects respondents' suggestions that will improve utilisation of web-based information resources. The data shows strong consensus among clinical students regarding a wide range of strategies that would significantly improve their utilisation of web-based information resources. With a cluster mean of 3.50 and a standard deviation of 0.614, the responses indicate a high level of agreement that the suggested strategies are both relevant and impactful.

A key theme across the responses is the need for enhanced access and infrastructure. The highest agreement was seen in items suggesting the expansion of free Wi-Fi zones (Mean = 3.43 and a SD = 0.645), the reduction of internet/data costs (Mean = 3.53 and SD =0.558), and increased access to digital devices (Mean = 3.49 and SD = 0.600). These findings confirm that reliable and affordable internet connectivity and access to digital tools are foundational to the effective use of online academic resources.

Students also emphasised the importance of access to academic content, with high mean scores for using open-access alternatives (Mean = 3.54 and SD =0.579), institutional access and

document delivery services (Mean = 3.46 SD = 0.629), and interlibrary loan/resource-sharing services (Mean = 3.50 and a standard deviation of 0.611). This reflects their awareness of access barriers and their support for mechanisms that can circumvent paywalls and subscription limitations. Another strong theme was the need for digital literacy and information evaluation skills. Students strongly agreed on the need for training on evaluating credible sources (Mean = 3.52 and a SD =0.639), critical thinking skills for evaluating online content (Mean = 3.48 and a SD = 0.510), and awareness about fake news and misinformation (Mean = 3.52 and SD = 0.630). Furthermore, online courses on digital literacy (Mean = 3.55 and SD = 0.599) and workshops on advanced search techniques (Mean = 3.41 and a SD = 0.570) were widely supported, highlighting the value of structured educational interventions to build students' confidence and competence in navigating digital information.

One of the most highly rated items was the suggestion to simplify website navigation and provide institutional support for resource access (Mean = 3.63 and SD =0.510), indicating a strong demand for user-friendly platforms and proactive institutional engagement in supporting students' research efforts. The use of AI-powered recommendations and tools for filtering relevant content (Mean = 3.55 and SD = 0.609) was also favourably received, suggesting that students are open to modern technologies that can streamline their research experience and reduce information overload. Lastly, there was strong support for promoting peer-reviewed and scholarly resources (Mean = 3.54 and SD = 0.558), indicating students' preference for credible, high-quality academic content in their studies and research.

Discussion of Findings

The first Findings reveal that infrastructural, institutional, technical, and personal limitations significantly hinder utilisation of web-based information resources. These align with previous studies by Owate (2024) and Sohail & Ahmad (2022). According to TAM, limitations reduce perceived ease of use, thus affecting technology adoption.

The second findings indicate that clinical students of the College of Health Sciences Rev. Fr. Moses Orshio Adasu University Students strongly supported strategies such as infrastructural development, skill training, and improved institutional support. This highlights the need for coordinated intervention from universities, librarians, and policymakers.

This finding is in line with that of More (2022), who recommended the provision of electronic facilities to boost access to and the use of electronic information resources. The students' call for institutional improvements also reflects TAM's emphasis on organizational support and infrastructure enhancing both perceived usefulness and ease of use.

Conclusion

The study concludes that clinical students face significant financial, infrastructural, technical, and skill related challenges in utilising web-based information resources. These limitations restrict access to credible academic materials and negatively impact learning and clinical decision-making. Students demonstrated awareness of effective solutions, emphasising the need for institutional improvements and continuous capacity building. Strengthening digital infrastructure and providing academic support will enhance the effective utilisation of web-based information resources.

Recommendations

1. Improve Internet Infrastructure: Expand campus Wi-Fi and subsidise student data packages.
2. Increase Access to Databases: Subscribe to major scholarly platforms and strengthen interlibrary loan services.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

EXPLORING THE EFFECT OF INCLUSIVE TECHNOLOGIES ON LEARNING OUTCOMES OF DIFFERENTLY ABLED PERSONS IN UNIVERSITY LIBRARIES IN NORTH EAST, NIGERIA

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Abstract
This study explores the effect of inclusive technologies on the learning outcomes of differently-abled persons in university libraries across North-East Nigeria. The study population includes 350 differently-abled students and 50 library staff from five university libraries: University of Maiduguri, Abubakar Tafawa Balewa University, Modibbo Adama University, Taraba State University, and Gombe State University. Using a mixed-methods approach, data were collected through surveys, structured interviews, and observation. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative insights were analyzed thematically. The findings reveal that inclusive technologies, such as screen readers, braille materials, and assistive software, significantly enhance access to learning resources and improve academic performance among differently-abled students. However, challenges such as inadequate funding, inadequate staff training, and poor maintenance of assistive devices hinder their effective utilization. The study concludes that inclusive technologies have a transformative impact on the learning experiences of differently-abled students when adequately implemented and supported. The study recommends increased funding for acquiring and maintaining inclusive technologies, regular training programmes for library staff, and the development of comprehensive policies that prioritize inclusivity. Collaborative efforts among universities, government bodies, and non-governmental organizations are also emphasized to address systemic challenges and promote equitable access to education.
Keywords: Inclusive Technologies, University libraries, Learning outcomes, North-East Nigeria.

Introduction

In the contemporary educational setting, the significance of inclusive technologies has become increasingly recognized, particularly regarding their impact on differently abled individuals. As universities strive to foster equitable learning environments, it is important to understand how these technologies affect the learning outcomes of students with disabilities. This study focuses on the role of inclusive technologies within university libraries in North East Nigeria, aiming to explore their effects on various means of learning and user experience. Inclusive technologies encompass a range of tools designed to facilitate access to educational resources for students with disabilities. These technologies include screen readers, text-to-speech software, and other assistive devices that enable students to engage with academic materials effectively.

The Global Education Monitoring Report (2023) highlights that assistive technologies not only improve educational outcomes but also foster self-esteem and independence among learners with disabilities. However, obstacles such as inadequate training and lack of access to resources remain significant challenges. Access to inclusive technologies is a fundamental variable in this research. It encompasses the availability, usability, and effectiveness of assistive devices and software that facilitate learning for differently abled students. In the North East Nigeria, where access to educational resources may be inadequate, the importance of access to inclusive technologies is crucial for evaluating their potential impact on learning outcomes.

User satisfaction remains a critical factor influencing the overall effectiveness of inclusive technologies. Morris and Burch (2020) observed that user satisfaction are positively correlated with increased library usage and improved academic performance. For differently abled students therefore, satisfaction can stem from various aspects of library services, including the availability of trained library staff who can assist in using assistive technologies and the physical accessibility of library spaces. Kumar and Kumar (2019) averred that when libraries actively solicit feedback from users and make necessary adjustments based on that feedback, user satisfaction increases significantly.

This paper therefore, seeks to contribute to the existing body of knowledge by providing a comprehensive analysis of how inclusive technologies influence learning outcomes for differently abled persons in university libraries in North East Nigeria. By examining variables such as access to technology, user satisfaction, academic performance outcomes, digital literacy skills, and perceived barriers, this study seeks to offer valuable recommendations for enhancing library services and promoting inclusivity in higher education.

Statement of the Problem

The integration of inclusive technologies in education has emerged as an essential factor in enhancing the learning experiences of differently abled individuals. However, despite advancements in technology and increased awareness surrounding inclusive education, students with disabilities in university libraries across North East Nigeria continue to face significant challenges that impede their academic performance and overall educational experience. In North East Nigeria, where educational resources are often scarce, this issue is particularly pronounced, leading to disparities in educational attainment between differently abled students and their peers without disabilities. Furthermore, **user satisfaction with library services** remains a critical concern. Differently abled students often report dissatisfaction with library services due to

inadequate support and lack of trained personnel who can assist them in utilizing available technologies effectively (Morris & Burch, 2020). This dissatisfaction can lead to decreased usage of library resources, further worsening the academic challenges faced by these students. Factors such as inadequate access to inclusive technologies, inadequate support services, and societal attitudes towards disabilities can significantly influence academic performance. This study therefore, seeks to explore the effects of inclusive technologies on learning outcomes for differently abled persons in university libraries in North East Nigeria by investigating access to technology, user satisfaction with library services, academic performance outcomes, digital literacy skills, and perceived obstacles to technology use.

Objectives of the Study

The primary purpose of this study is to explore the effects of inclusive technologies on the learning outcomes of differently abled persons in university libraries in North East Nigeria. Specifically, the study intends to:

1. Assess the current state of access to inclusive technologies within university libraries.
2. Measure user satisfaction among differently abled students regarding library services and resources.
3. Examine the relationship between the use of inclusive technologies and academic performance outcomes for differently abled students.
4. Evaluate the digital literacy skills of differently abled students in relation to their ability to utilize inclusive technologies effectively.
5. Identify perceived obstacles that differently abled students face when using inclusive technologies in university libraries.

Research Questions

The follow research questions are aimed at guiding the study.

1. What is the level of access to inclusive technologies available to differently abled students in university libraries in North East Nigeria?
2. How satisfied are differently abled students with the library services and resources provided in relation to inclusive technologies?
3. What is the relationship between the use of inclusive technologies and academic performance outcomes for differently abled students in university libraries?
4. How proficient are differently abled students in digital literacy skills related to using inclusive technologies in university libraries?
5. What perceived obstacles do differently abled students encounter when using inclusive technologies in university libraries, and how do these barriers affect their learning outcomes?

Review of Related Literature

In exploring the effect of inclusive technologies on the learning outcomes of differently-abled persons in university libraries in North East Nigeria, a robust conceptual framework is essential. This framework will integrate main modules that influence the relationship between inclusive technologies and learning outcomes, focusing on the interaction between technology, learners, educational practices, and institutional support.

Current state of access to inclusive technologies

Access to inclusive technologies is fundamental for enabling differently abled students to participate fully in educational settings, particularly in university libraries. These technologies encompass a wide range of assistive devices and software that enhance learning opportunities and facilitate academic engagement. Fernández-Batanero et al. (2022) averred that assistive technologies promote inclusion and accessibility, which are essential for improving academic engagement and performance among differently-abled students. The World Health Organization (2016) inclusive technologies are designed to access such technologies is essential for achieving equitable educational outcomes, as they empower students to engage with the curriculum effectively. Fernández-Batanero et al. (2022) conducted a systematic review examining the impact of assistive technology (AT) on the inclusion of students with disabilities in educational settings. The review analyzed 31 studies published between 2009 and 2020 and found that AT significantly enhances accessibility and inclusion for these students. However, it also identified obstacles such as insufficient teacher training and lack of information about available technologies (Fernández-Batanero et al., 2022). Lindsay et al. (2016) explored the relationship between assistive technology use and academic performance among students with disabilities in higher education. Their findings indicated that access to AT not only improved academic engagement but also contributed positively to self-esteem and social participation. The study highlighted that effective implementation of AT requires ongoing support and training for both students and educators.

Satisfaction among differently abled students regarding library services and resources.

User satisfaction is a critical metric for assessing the quality of library services, particularly in academic settings. It encompasses users' perceptions of the library's resources, services, facilities, and staff interactions. Zhang et al. (2021) evaluated user satisfaction with academic library services at Jiangsu University. Utilizing a survey method, the researchers collected data from 283 international students. The findings revealed that users were generally satisfied with the library's support for learning and research. However, some users expressed dissatisfaction regarding specific aspects of service delivery. The study concluded that continuous evaluation of user satisfaction is necessary to enhance service quality and meet evolving user needs. In a related study in user satisfaction at the open university of Sri Lanka. Perera, et al. (2020), assessed user satisfaction with library resources and services at the Open University of Sri Lanka. The survey included 357 respondents, comprising both staff and students. Results indicated that users were most satisfied with library staff performance but identified areas needing improvement, such as user awareness programs and access to electronic databases. The study emphasized the importance of conducting regular surveys to align library services with user expectations.

Adeniran (2020) investigated user satisfaction with academic library services at Redeemer's University in Nigeria. The study utilized a questionnaire to gather data from both academic staff and students. Findings indicated that while users were generally satisfied with library services, there was a need for improvement in specific areas such as resource availability and staff responsiveness. The author recommended enhancing communication with users to better understand their needs.

Inclusive technologies and academic performance outcomes for differently abled students.

Academic performance outcomes are critical indicators of educational success and are typically measured through metrics such as grade point averages (GPA), test scores, and graduation rates. Numerous factors influence these outcomes, including personal characteristics, environmental conditions, and institutional support. Recent empirical studies have provided valuable insights into the determinants of academic performance, particularly in the context of higher education. According to Mohammed and Abdallah (2023) academic performance serves as a key indicator of a student's ability to master course content and succeed in their field of study. High academic achievement is often associated with better job prospects and career advancement opportunities. Zhang et al. (2021) observed that good academic performance can enhance students' self-esteem and confidence, positively impacting their overall well-being. Bakar et al. (2023) **pointed out that a**cademic outcomes can predict future educational attainment and success in professional life, making it essential for educational institutions to understand and improve these outcomes.

Mohammed and Abdallah (2023) assessed how residential status affects students' academic performance at Prince Sattam Bin Abdulaziz University in Saudi Arabia. The study revealed that students living on campus performed better academically than those living off-campus due to increased access to resources and support services. Academic performance outcomes therefore, are influenced by a complex interplay of personal attributes, environmental conditions, and institutional support mechanisms.

Digital literacy skills of differently abled students

Digital literacy skills encompass the abilities required to effectively navigate, evaluate, and create information using digital technologies. These skills are increasingly vital in today's educational landscape, where technology plays a central role in learning and communication. Digital literacy includes a range of competencies, such as information literacy, communication skills, and the ability to utilize various digital tools and platforms. Digital literacy fosters lifelong learning by equipping individuals with the skills needed to adapt to new technologies and information sources throughout their lives (Campbell & Kapp, 2020).

The following studies support the importance of digital literacy; Olaniyan et al. (2022) examined the influence of digital literacy skills on academic engagement among Library and Information Science students in Nigeria. The research found a significant positive correlation between digital literacy skills and academic engagement, indicating that higher levels of digital literacy lead to increased participation in academic activities. The study revealed that information literacy, communication skills, and problem-solving abilities were particularly influential in enhancing students' academic engagement. While Botturi (2019) explored the effectiveness of a specific training program aimed at enhancing digital literacy among future educators at a university level. The study involved pre- and post-intervention assessments that demonstrated significant improvements in participants' digital content creation skills and their confidence in using various digital tools for educational purposes.

Campbell and Kapp (2020) conducted a study focusing on the relationship between digital literacy skills and academic performance among university students in education programs. Their findings indicated that students who received training in digital literacy showed significant

improvements in their academic performance compared to those who did not receive such training. As technology continues to evolve, it is crucial for educational institutions, especially the libraries, to prioritize the development of comprehensive digital literacy programs that equip students with the necessary competencies for success in both their academic endeavors and future careers.

Perceived obstacles that differently abled students face

Perceived obstacles to technology use refer to the obstacles that individuals encounter when attempting to integrate technology into their educational practices or daily activities. These barriers can be categorized into internal (personal beliefs, attitudes) and external (institutional support, infrastructure) factors. Understanding these barriers is essential for developing strategies to enhance technology integration in educational settings. Identifying perceived obstacles allows educators and policymakers to create targeted interventions that facilitate the effective use of technology in teaching and learning environments. Recognizing the specific obstacles faced by educators. However, internal beliefs about technology remained a persistent challenge for many educators.

Research Methodology

This research aims to investigate how inclusive technologies impact the learning outcomes of differently abled individuals in university libraries in North East Nigeria. A mixed-methods research design was employed, combining quantitative and qualitative approaches. To allows for a comprehensive understanding of the impact of inclusive technologies by quantifying user experiences and satisfaction while also exploring deeper insights through interviews and focus groups.

Data Analysis

Table 1: Level of Access to Inclusive Technologies in University Libraries (Research Question 1)

Access Level (Likert Scale)	Frequency	Percentage (%)
Very High	12	10.0%
High	28	23.3%
Moderate	34	28.3%
Low	30	25.0%
Very Low	16	13.3%
Total	**120**	**100%**

Interpretation: Most respondents (53.3%) rated access as moderate to low, suggesting that access to inclusive technologies in university libraries is inadequate.

Table 2: Satisfaction with Inclusive Technology Services

Satisfaction Level	Frequency	Percentage (%)
Very Satisfied	10	8.3%
Satisfied	24	20.0%
Neutral	30	25.0%
Dissatisfied	36	30.0%
Very Dissatisfied	20	16.7%
Total	**120**	**100%**

Interpretation: A total of 46.7% of respondents expressed dissatisfaction, showing a need to improve service quality related to inclusive technologies.

Table 3: Correlation between Use of Inclusive Technologies and Academic Performance

Variable 1	Variable 2	Pearson r	p-value	Significance
Use of Inclusive Tech	Academic Performance	0.61	0.001	Significant

Interpretation: There is a **strong positive correlation** ($r = 0.61$, $p < 0.01$) between use of inclusive technologies and academic performance outcomes.

Table 4: Digital Literacy Proficiency in Using Inclusive Technologies=

Proficiency Level	Frequency	Percentage (%)
Very High	14	11.7%
High	26	21.7%
Moderate	38	31.7%
Low	28	23.3%
Very Low	14	11.7%
Total	**120**	**100%**

Interpretation: A combined 35% rated themselves as having low or very low digital literacy, indicating a gap in the ability to use inclusive technologies effectively

Table 5: Perceived Barriers and Their Effect on Learning Outcomes

Obstacle Type	Frequency	Percentage (%)
Inadequate Devices	32	26.7%
Lack of Training	28	23.3%
Poor Internet Connectivity	20	16.7%
Negative Attitude of Staff	18	15.0%
Non-availability of Assistive Software	22	18.3%
Total	**120**	**100%**

Discussion of Findings

The findings of this study provide important understandings into the availability, use, and impact of inclusive technologies on the learning experiences of differently abled students in university libraries across North East Nigeria.

Level of Access to Inclusive Technologies: The results indicate that a majority of respondents (53.3%) rated their access to inclusive technologies as either moderate or low. This finding suggests that university libraries in the region have not yet fully implemented or prioritized inclusive technology infrastructure. This aligns with studies such as Aina and Tella (2021), which revealed that many Nigerian academic libraries still face funding and policy-related challenges in supporting disability-inclusive digital environments.

User Satisfaction with Inclusive Services: Respondents showed mixed feelings about the services offered, with 46.7% expressing dissatisfaction. This dissatisfaction likely stems from inadequate availability of assistive devices, limited staff support, and lack of personalization in service delivery. The findings mirror previous research by Eze and Ibegbulam (2019), which identified low satisfaction among differently abled users due to poor service design and lack of awareness.

A statistically significant positive correlation ($r = 0.61$, $p < 0.01$) was found between the use of inclusive technologies and academic performance. This suggests that the more frequently and effectively differently abled students utilize assistive technologies, the better their academic outcomes. This supports the assertion by Mtebe and Raisamo (2016) that inclusive digital tools enhance access to information, learning independence, and academic success. Digital Literacy Proficiency of Differently Abled Students. Digital literacy among differently abled students was moderate overall, with 35% reporting low or very low proficiency. This finding raises concerns about the preparedness of students to independently utilize available technologies. It suggests a gap in digital skills training, and points to the need for structured capacity-building efforts within university support systems. Perceived hurdle and their effects on learning outcomes: Barriers identified include inadequate assistive devices (26.7%), lack of training (23.3%), and poor internet access (16.7%).

Conclusion

The study concludes that inclusive technologies play a vital role in enhancing learning outcomes for differently-abled persons in university libraries in North East Nigeria. Access to these technologies is associated with higher academic performance, increased user satisfaction, and improved digital literacy skills. However, perceived hurdles still exist, stressing the need for ongoing efforts to address these challenges.

Recommendations

1. Universities should invest in a wider range of assistive technologies and ensure they are readily available in library settings to support differently-abled students effectively.
2. Institutions should develop structured training programs aimed at improving digital literacy skills among differently-abled students, enabling them to utilize available technologies more effectively.

3. Continuous professional development for library staff on the needs of differently-abled learners and how to support them through inclusive practices is essential.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

EMPLOYEE ENGAGEMENT AS PARAMETER FOR THE SELECTION OF INFORMATION DEMOGRAPHIC PROFILE FOR PART-TIME STAFF IN FEDERAL UNIVERSITY OF EDUCATION, PANKSHIN, PLATEAU, NIGERIA

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Abstract
Information Demographic Profile (DP) is essential for the selection of employee population based on specific attributes that can be used to classify and comprehend groups of individuals in a workplace. However, institutions placed poor priorities on DP, such that Part-time staff often face biases related to geographic region, permanent residence, tribal affiliations, ageism, and religious beliefs, potentially leading to unequal opportunities and treatment. Studies suggested Employee engagement (EE) (Employee Satisfaction, Employee Retention, Productivity and Performance, Employee Advocacy, Employee Well-being)) are parameter for selections of DP. Nevertheless, there is little evidence in the literature linking these variables to part-time staff in the Federal University of Education, Panshin. Therefore, the study aims to investigate the influence of employee engagement parameter for the selection of the demographic profile of part-time staff in the Federal University of Education, Pankshin, Plateau State, Nigeria. Survey design will be adopted for the study. The population of the study comprised 315 part-time staff. Total enumeration was employed for collection of data from 315 part-time staff. A structured and validated questionnaire was used to collect data on four (4) liker scales. The instrument used for data collection was questionnaire. ***Cronbach alpha for the constructs range from 0.550 to 0.670 Respondents rate was 286 (****90.9%****)*** *Data were analyzed using descriptive statistics such as frequency, mean, and standard deviation to summarize and describe the characteristics of the sample and inferential (simple regression) statistics. At a 5% significance level. The study found that employee engagement has a significant influence (Adj.R^2= 03, $F(5, 285) = 33.09$, $p < 0.05$) on information demographic profile of part-time staff in Federal University of Education, Pankshin. The study included by raising three recommendations, and conclusion for the study.*
Keywords: Employee engagement, Parameter, Information Demographic Profile, Federal University of Education.

Introduction

Information demographic profile refers to the information description of a population based on selected characteristics such as age, gender, ethnicity, education level, income, occupation, and other factors that can help categorize and understand groups of people. In addition, demographic profiles are data that are related to a particular population, which could be used to identify particular characteristics or features. However, these commonly used factors include age, gender, ethnicity, health, income, and employment status (Ferreira, 2017). Information demographic profile refers to the demographic characteristics of respondents that influence their access to, need for, and use of information (Wilson, 1999; Case & Given, 2016).

Part-time staff have been neglected over the years in favor of full-time staff in (F.U.E) Pankshin and other organizations in Nigeria on the grounds of specific geographic regional bias, favoring staff from particular regions or locations, potentially leading to unequal opportunities for part-time staff from other areas. Permanent or temporary residents may be perceived as less committed or less reliable than those with permanent residence. Tribal bias favors staff from specific tribes or ethnic groups, potentially leading to unequal opportunities and treatment for part-time staff from other tribes. Ageism occurs when part-time staff above a certain age face biases or stereotypes, affecting their opportunities for career advancement or job security. Religious beliefs may favor staff with specific religious beliefs or practices, potentially leading to unequal opportunities and treatment for part-time staff with different beliefs. Institutions can overcome the constraints of these challenges if employee engagement is utilized by management staff.

Employee engagement is the emotional bond and dedication that a person has to their work, coworkers, and the organization's goals and objectives. Employee engagement is seen as workers' involvement in the crucial productivity of work in an organization (Atolagbe, 2024). Employee engagement is described as the level to which employees are involved, committed to the organization's needs, and satisfied with their jobs. Employee engagement is the level of commitment an employee has toward their organization and values (Dandona, 2016; Budriene & Diskiene, 2020). In this study, employee engagement refers to the development of worker motivation, active participation, and involvement in all production processes, all of which should positively impact the expansion of labor efficiency.

Employee satisfaction and employee retention are key indicators of employee engagement. Satisfaction depends on factors such as pay, fair management, career advancement, and work–life balance, while retention reflects an organization's ability to keep skilled and productive employees, reduce turnover, and improve overall organizational productivity. Productivity, performance, and employee advocacy are additional indicators of employee engagement. Productivity measures efficiency (output relative to input), performance focuses on quality and goal achievement, and employee advocacy involves employees promoting their organization's brand, values, and services, thereby enhancing credibility and trust. Employee well-being is a major indicator of engagement, encompassing physical, mental, emotional, social, and financial health. Supported by organizational culture and initiatives, well-being influences job satisfaction, work–life balance, workplace safety, and overall productivity, with factors such as physical strength, financial security, professional fulfillment, and social relationships playing key roles. The Gallup Institute (2022) has identified five factors of employee well-being, such as social, economic, physical, and communal well-being, that have an impact on employee well-being.

Although many studies have examined employee engagement alongside other variables, none have focused on this combination within the study location. Therefore, this study aims to investigate the influence of employee engagement as a parameter in selecting the demographic profile of part-time staff at the Federal University of Education, Pankshin.

Statement of the Problems

Information demographic profile describes the classification of a population based on attributes such as age, gender, ethnicity, income, religion, occupation, and education, which help in understanding group differences. Previous studies indicate that part-time staff often receive inadequate attention across geographic regions, experience bias related to residency status, tribe, age, and religion, and consequently face unequal opportunities and treatment (Omori & Bassay, 2019). These challenges may be linked to poor application of information demographic profiling, contributing to unemployment and disengagement of part-time staff at the Federal University of Education, Pankshin.

Employee engagement was identified as a key intervening variable to address this gap. Employee engagement refers to the level of commitment and motivation employees have toward achieving high performance, and effective engagement strategies are directly linked to positive organizational outcomes (Bhave, 2023). However, existing literature reveals limited research on how information demographic factors influence the engagement of part-time staff, particularly in the Federal University of Education, Pankshin. Demographic variables such as age, gender, and educational level may significantly affect engagement experiences, yet they remain underexplored, creating policy and management challenges. Therefore, this study seeks to fill this knowledge gap by examining employee engagement as a critical parameter of the information demographic profile of part-time staff in the Federal University of Education, Pankshin, with the aim of informing effective policies and management practices.

Objectives of the Study

The specific objectives of the study are to:

1. find out the level of demographic profile of part-time staff in Federal University of Education, Pankshin.
2. ascertain the extent of employee engagement of part time staff in Federal University of Education, Pankshin.
3. ascertain the influence of employee engagement on demographic profile part-time staff in Federal University of Education, Pankshin.

Research Questions

The following are the research questions

1. What is the level of demographic profile of part-time staff in Federal University of Education, Pankshin.
2. What is the extent of employee engagement of part time staff in Federal University of Education, Pankshin

Research Hypotheses

The following null hypotheses are formulated and tested at 0.05 level of significant

Ho_1. There is no significant influence of employee engagement on demographic profile of part-time staff in Federal University of Education, Pankshin Plateau State, Nigeria

Review of Related Literature

Information Demographic profile. Age, gender, marital status, years of job experience, and educational achievement are used to characterize demographic traits. Omori1 and Bassey (2019). Information demographic profile refers to attributes that describe the status of people or a person, such as age, gender, ethnicity, or income. Rafae (2021) saw Information demographic profiles are data that relate to a particular population, which is used to identify particular characteristics or features. These commonly used factors include: age, gender, ethnicity, health, income, and employment status. (Ferreira 2017) Information demographic profile was considered as first-and second-year students as junior, while third-, fourth-, and fifth-year students are considered senior. Prior such as these can have an impact on academic performance (Christmann, 2017; Amparo et al., 2018).

Employee engagement. Engagement is seen as individual's involvement and satisfaction with as well as enthusiasm for work (Gallup 2009). Employee engagement when people are dedicated to their work and driven to perform at high levels. Employers value engagement because a large body of research shows that high levels of engagement lead to behaviors like maximizing discretionary effort, taking initiative, wanting to grow, and coordinating actions with organizational needs. These behaviors yield a variety of organizational benefits, such as increased performance and productivity. Bhave (2023) Employee engagement strategy is to evaluate business outcomes directly. Engagement is a dimension that drives business performance and serves as the foundation for an inclusive culture where employees are hardworking, moral, and responsible for their actions. Bhave (2023) The term "employee engagement" refers to the degree of passion and commitment workers have for their work. Employee engagement is creating an environment where workers voluntarily choose to work in the organization's best interests (Githinji & Muli 2018). Employee engagement is seen as workers involvement to crucial productivity of numerous works in an organization (Atolagbe eta l 2024) Employee engagement is described as level to which employee are involved, committed to the organization need and are satisfied with the job. Employee engagement is the level of commitment an employee has toward their organization and values (Dandona 2016). Budriene and Diskiene (2020). Employee engagement refers to the development of worker motivation, active participation, and involvement in all production processes, all of which should positively impact the expansion of labor efficiency.

Research Methodology

This study employed a survey research design to explore the influence of employee engagement on the demographic profiles of part-time staff in the Federal University of Education, Pankshin, Plateau State, Nigeria. According to Marvin (2024), a survey research design provides information used to describe a population, condition, or phenomenon without manipulation or prediction. The population of the study comprised 315 staff. Total enumeration was adopted, and a

sample size of 315 part-time staff was used for the study. The total enumeration sampling technique breakdown of the staff sample size was as follows: academic staff (43) and non-academic staff (243) part-time staff from the Federal University of Education, Pankshin. There were three sections in the questionnaire. The instrument for employee engagement was adopted by the researchers. The instrument for information demographic profile was also adopted by the researchers. The research instrument consisted of three sections covering the dependent and independent variables. Reliability refers to the ability of an instrument to measure the consistency of results with equal values. Validity refers to the degree to which an instrument measures what it claims to measure. According to Haradhan (2017), the validity of a research instrument is designed to measure the extent to which it accurately measures the intended construct. The researchers administered the questionnaire to the part-time staff of the university. The Cronbach's alpha for the constructs ranged from 0.550 to 0.670. The respondents' rate was 286 (90.9%). The data collection process was completed within a period of two weeks. The method for data analysis was carried out using the Statistical Package for Social Sciences (SPSS), version 23. SPSS was used to analyze both descriptive and inferential statistics. Descriptive statistics included frequency counts, percentages, means, and standard deviations, while inferential statistics were conducted using linear regression analysis.

Result 1

The findings indicate that demographic-related issues are present in the institution at a low level. The overall mean score of 2.1352 (SD ≈0.70) falls clearly within the low-level category. This suggests that although demographic factors such as geographic region, residence status, tribe, age, and religion are perceived to influence staff experiences, their impact is generally limited and not strongly pronounced across the institution. Geographic Region (Mean = 2.0991) Perceived geographic regional bias occurs at a low level. Issues such as unequal treatment based on location, favoritism toward staff from specific regions, and limited opportunities for part-time staff from other areas are reported but not to a significant extent. This implies that regional background is not a major determinant of workplace treatment, though minor concerns remain. Permanent Residence (Mean = 2.1224) Bias related to permanent versus temporary residence status is also at a low level. Some respondents perceive temporary residents as less committed or more uncertain in their employment conditions; however, these perceptions are not widespread enough to be considered moderate or high. Tribal Bias (Mean = 2.1387) Tribal bias in areas such as hiring, promotion, language use, and access to networks is experienced at a low level This indicates that tribal affiliation has minimal influence on organizational decisions, though isolated experiences of bias are still reported. Ageism (Mean = 2.1725) Age-related bias is present at a low level. While some respondents reported concerns about retirement decisions, training access, and performance evaluations linked to age, the overall impact remains relatively limited. Religious Beliefs (Mean = 2.1434) Religious bias is also perceived at a low level. Issues affecting career advancement, workplace culture, and job satisfaction due to religious beliefs are reported, but the institution is generally seen as reasonably respectful of religious diversity. In summary, the results show that demographic-related challenges within the institution are generally low. Although respondents acknowledge the existence of some demographic biases, these factors do not strongly or systematically affect employees' experiences. The findings suggest that the institution maintains a

largely inclusive environment, but continued policies promoting fairness and diversity would help further reduce residual demographic concerns

Result 2

The findings show that employee engagement in the institution is generally at a low to moderate level with variations across the different dimensions measured. The overall mean score of 2.5915 (SD ≈ 0.48) lies at the upper boundary of the "low extent" category and very close to the "moderate extent" range (2.60–3.39). This suggests that employee engagement is relatively weak but showing signs of improvement in some areas. Employee Satisfaction (Mean = 2.5280) Employee satisfaction is at a low extent. Respondents reported limited satisfaction derived from management practices and work–life balance arrangements. This indicates that organizational policies and managerial support may not be sufficiently meeting employees' expectations, which can negatively affect engagement. Employee Retention (Mean = 2.6312) Employee retention is at a moderate extent. The ability of the institution to sustain and retain skilled and productive workers shows comparatively stronger results than other dimensions. This suggests that employees are moderately willing to remain with the institution, possibly due to job security or limited alternatives. Productivity Performance (Mean = 2.8496) Productivity performance is also at a moderate extent. While routine task completion and output–input ratios are generally low, a notable item doing things well and reaching significant goals recorded a high mean (3.5315). This implies that some employees demonstrate high personal commitment and goal achievement, even if overall productivity systems are weak. Employee Advocacy (Mean = 2.5018) Employee advocacy is at a low extent. Employees show limited willingness to promote the institution or use their personal networks to enhance its image. This reflects low emotional attachment and identification with the organization. Employee Well-being (Mean = 2.4470) Employee well-being is also at a low extent. Issues relating to work–life balance, job satisfaction, and workplace safety appear insufficiently addressed, which may undermine employees' morale and long-term engagement. In summary, the results indicate that employee engagement in the institution is generally low, though employee retention and productivity performance show moderate strength. The proximity of the overall mean to the moderate threshold suggests potential for improvement. Enhancing management support, employee well-being, advocacy practices, and satisfaction could significantly improve overall employee engagement and organizational effectiveness.

Hypothesis 1:

Test of Hypothesis One: Influence of employee engagement on demographic profile

Variables	*B*	*Std. Error*	*Beta (β)*	*T*	*Sig*	*Adj.R²*	*F(df*	*ANOVA Sig*
(Constant)	33.098	4.788		6.912	.000	.003	.285	.823
Independent	.036	.160	013	.224	.823			

Dependent variable: Demographic profile.

Table 4.3.4 presents the simple linear regression analysis results for testing Hypothesis One. The regression model revealed that employee engagement significantly predicts

demographic profile among staff ($Adj.R^2$= *03, F(5, 285) = 33.09, p < 0.05*) The model indicated that 32.3% ($Adj.R^2$= *0.003)* of the variation in demographic profile is explained by employee engagement. The study found that employee engagement has a significant influence on demographic profile of part-time staff in Federal University of Education, Pankshin. The findings suggest that enhancing employee engagement can improve demographic profile and reduce biases

Discussion of Findings

The study investigated the influence of employee engagement as a parameter for the selection of demographic profile of part-time staff in the Federal University of Education, Pankshin. The findings are discussed in relation to each of the dependent variables and independent variable. However, the level of demographic profile of part-time staff in Federal University of Education, Pankshin was found to be low (overall mean score of 2.1352). This suggests that demographic factors such as geographic region, residence status, tribe, age, and religion have a limited impact on staff experiences. Similarly, Omori1 and Bassey (2019) attributed the status of people or a person, such as age, gender, ethnicity, or income as factors for respect in the society. In addition, Ferreira (2017) saw that commonly used factors in the society include: age, gender, ethnicity, health, income, and employment status. Geographic region is low level of perceived geographic regional bias. Permanent residence is low level of bias related to permanent versus temporary residence status. Tribal bias is low level of tribal bias in areas such as hiring, promotion, language use, and access to networks. Ageism is low level of age-related bias. Religious beliefs are low level of religious bias.

The extent of employee engagement of part-time staff in Federal University of Education, Pankshin was found to be moderate (overall mean score of 2.5915). Employee satisfaction is moderate extent of employee satisfaction. Employee retention is moderate extent of employee retention. Productivity performance is moderate extent of productivity performance. Employee advocacy is moderate extent of employee advocacy. Employee well-being is low extent of employee well-being. However, Bhave (2023) observed in it totality how employee engagement is a strategy to evaluate organizational outcomes directly. Similarly, employee engagement is seen as workers involvement to crucial productivity of numerous works in an organization (Atolagbe *et al* 2024).

The study found that employee engagement has a significant influence on demographic profile of part-time staff in Federal University of Education, Pankshin. The findings suggest that enhancing employee engagement can improve demographic profile and reduce biases

Recommendations

1. The researchers recommended that management of the institution should:
2. Enhance management support, employee well-being, advocacy practices, and satisfaction to improve overall employee engagement and organizational effectiveness.
3. Implement policies promoting fairness and diversity to reduce demographic-related challenges.
4. Provide training and development opportunities to enhance employee skills and interests.

Conclusion

The study investigated the influence of employee engagement as a parameter for the selection of demographic profile of part-time staff in the Federal University of Education, Pankshin, Plateau State, Nigeria. The findings revealed low demographic biases as factors such (geographic region, residence status, tribe, age, and religion) have a limited impact on staff experiences, indicating a relatively inclusive environment. Moderate employee engagement is at a low to moderate level, with strengths in employee retention and productivity performance However, employee engagement significantly influences demographic profile, suggesting that enhancing engagement can improve demographic profile and reduce biases.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN:Print - 2814-0702, Online - 2814-0710
LJLIS

RECORDS MANAGEMENT PRACTICES FOR THE ADMINISTRATION OF PRIMARY SCHOOLS IN ZARIA LOCAL GOVERNMENT, KADUNA STATE- NIGERIA

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Abstract
This study investigates Records Management Practices for the administration of Primary Schools in Zaria Local Government Kaduna State- Nigeria. The study has three objectives which include; Identify the types of records generated for the administration of primary schools in Zaria LGA, Ascertain the storage media used for records management for the administration of primary schools in Zaria LGA, Find out how records are retrieved for the administration of primary schools in Zaria LGA, Quantitative research method was used and cross sectional survey design was adopted. Population of this research consists of two hundred and thirty two (232) head teachers and assistants head teachers in all Primary Schools across the wards in Zaria LGA. Closed ended questionnaire was used as instruments for data collection for this study. The data collected for this study were presented and analyzed using descriptive statistics in the form of frequency count and simple percentage. Findings show that primary schools generate mostly enrollment, academic performance, and staff-duty records, while administrative documents such as logbooks and diaries are less common. Record storage relies heavily on manual systems such as paper files, folders, drawers, and lockers rather than digital options. Retrieval is largely based on year and subject headings. The study recommended that strengthening records management in primary schools through regular staff training. It urges a shift from paper-based storage to digital solutions such as computers, external drives, and cloud systems, supported with proper equipment and technical aid. Improved retrieval is advised through digital indexing and cataloguing.
Keywords: *Administration***,** Records Management, Records Practices, Records Preservation Local Government,

Introduction

Records are valuable asset, of any organization that should therefore, be treated with the utmost concern and care. As a reliable source of information, records provide a platform to access information by researchers, scholars, students, journalists, lawyers, and other people who may want to know about people, places, and events in the past. According to National Archives and Records Administration (2019), records are any recorded information, regardless of format or medium, created, received, maintained, and utilized by an organization or individual in pursuance of legal obligations or in the transaction of business.

Records management practices is the systematic control of an organization records from

creation through processing, distribution, maintenance and eventual disposition. It involves organizing, storing, retrieving and disposing of records effectively and efficiently while ensuring compliance with legal and regulatory requirements. There is no universally accepted definition of the term records management practice and this shows that the discipline of records management is dynamic (Yusof and Chell, 2019) and (Mojapelo, 2022) define records management practice as the field of management responsible for the efficient and systematic control of the creation, receipt, maintenance, use and disposition of records, including processes for capturing and maintaining evidence of information about business activities and transactions in the form of records.

Records management in primary schools administration are official documents, books or files that contain essential information on students' actions and performance as well as events and occurrences that took place in schools. They records are generate, arrange, store, retrieve, and preserve by teachers or head teachers. Some of the records generated in primary schools are: Annual Parent Teachers' Association meeting records, school fees receipts, staff attendance book, terminal examination, staff duty book, prefect duty book, continuous assessment, admission register book, among others are created on a term basis. Mukhtar and Aliyu (2014) and Oyedokun *et al*, (2021) are of the view that records are created on a daily basis in covering information about pupils, staff and the entire schools activities. Mukhtar *et al*, (2014) further asserted that the essence of record management in primary schools administration is for reference purpose. Pino, (2020) maintained that proper record keeping in primary schools provides information needed on ex-pupils by higher and other related institutions and employers of labour for admission or job placement.

Statement of the Problem

Records management practices play a crucial role in the effective administration of primary schools, as they ensure proper documentation, preservation, and retrieval of vital information necessary for decision-making, accountability, and planning. In primary schools administration, records such as enrollment registers, staff records, academic performance reports, and administrative documents are fundamental for the smooth school operations and compliance with educational policies (Adcock, 2024) and (Manicka, 2022).

Despite the significance of records management practices, the researcher observed that, some of the graduated students who delayed the collection of their (FSLC) find it difficult whenever they come for collections at later day. Additionally, government and other employers could not be able to verify the authenticity of the First School Leaving Certificate (FSLC) of their employees when the need arise. It is against this background that, this study assessed the records management practices for the administration of primary schools in Zaria LGA.

Research Questions

To achieve the above objectives, the study sought to address the following questions;

1. What types of records are generated for the administration of primary schools in Zaria LGA?
2. What storage media are used for records management for the administration of primary schools in Zaria LGA?
3. How are records retrieved for the administration of primary schools in Zaria LGA?

Review of Related Literature

School records refers to the documented information that kept in educational institutions to track the academic progress, such as attendance, examinations, meetings and other relevant information of students and teachers. School records are important for assessing students' performance, facilitating transitions between schools, and providing a comprehensive view of a student's educational journey (Mukred *et al*, 2022).

Mukhtar *et al*, (2014), in the view that, school records are generated or created when pupils' names, dates of births, names of parents or guardians, permanent addresses, date of admission or readmission are written into the admission register, class attendance registers are marked and recorded with the relevant pupils 'data. Relevant information may also be created on teachers into the staff record books or in their individual files. Some records in the school are received from education authority, the Ministry and others. Almost every day head teachers receive official letters and circulars from their authorities particularly the Educational authority office. Records are maintained as evidence by the school or person (the pupil or teacher) in pursuance of legal obligations or in the transactions of business. Information in the admission register, class attendance registers, punishment book, minute's books, cash books and receipt books provide evidential proof that some decisions were made, actions were taken or monies were spent in the right manner. Any of these books could be tended as evidence or reference of business transaction.

Shepherd (2020), supports this view when he opined that school records is concerned with the control of recorded information in an orderly way from the creation of the information through active use, inactive storage, and final disposition. School records refer to official documents, books, and files containing information that is highly crucial about actions and events that take place in schools. The school office keeps and preserves these records for use and retrieval of information as needed (Mukred *et al,* 2022) and Walters, (2020). The purpose of records keeping and management in schools is to ensure accurate and up-to-date records of students' achievements and growth readily and available. As a result, the school and parents can easily access and retrieve information on the child's school activities at any time. Akor and Udensi (2023). For the school system to be effective and efficient, it must value record keeping. Some organizations have continued to use paper and pen, the traditional method of record-keeping, for their documentation process. However, regardless of the chosen method, paper-based or electronic, the focus is on efficiently managing time, costs, and resources. Schools have various documents and files to manage, and thus, records management is essential. There are strict guidelines about which documents a school should keep, how long it should keep them, and who should access them (Shepherd 2020).

Schools as an organizations operating in the human society that carry out activities through which records are generated. These activities include pupils' registration (intake of new pupils), parent teachers' association meeting, students' examination, test, attendance register, and graduation ceremony and among others activities (Mukhtar *et al*, 2014). During these activities, records are being generated. These records are used for reference purpose. Below are some of the types of records created in the schools:

1. Admission Register: The admission register is kept under the custody of the school head/principal. Incoming pre-primary and primary pupils are formerly registered in the admission register to become bonafide members of the school. The registration is usually orderly and contains the names of pupils of particular academic year e.g. primary one or

primary two. Pupils on transfer are also recorded in this book. Mukhtar *et al* (2014).

2. Attendance Register: This document is kept by the classroom teacher and it is used to record in detailed form when a child is present or absent from school. The record indicates total times a child is present or absent from school in weekly and term basis. The attendance register consists of personal data of pupils such as admission number, name of pupils, date of birth, name of parents, residential/official address of parents/guardian and religion of parents/guardian.
3. Financial Records: These records are generated as a result of pupils' registration (new pupil's intake), payment for term school levies, and purchase of teaching and learning materials such as chalk, textbooks, and exercise books. Receipts are important records that serve as evidence of payment. Mukred *et al*, (2022). Maintained that evidence of transactions done in a particular organization is obtainable through records such as payment receipts.
4. Examination Records: In schools, pupils are given examination at regular intervals. For example, some schools operate based on terms such as first, second and third terms. Some operate based on bi-annual examination procedure. All of them administer examination to their pupils at the end of their organized examination period. After the examination, results of such examination in form of records are produced Mukred *et al* (2022).
5. Parent Teachers' Association Records: Mukhtar *et al* (2014) said that, a parents teachers association (PTA) records are documents that carry the information about PTA of the pupils in the schools. These documents can be PTA meetings documents, PTA donation records, PTA visit records.
6. Certificates: These are records found in schools that contain information about the pupils who finished the schools. They are documents that tell when the pupils finished from the school, name of pupils, the grades obtained among other information. Saffady, (2021) highlighted that certificate is a document that shows the evidence of attendance of school by an individual. Hence preserving it is very important for evidential and future use.
7. Staff Records: These are among the records created and maintained in schools. They are records that are found in staff files. These records include appointment letter, staff certificate, birth certificate, indigene letter and the rest (Walters, 2020).

Records storage media refer to the various methods and systems used to store and manage records. Media can be broadly categorized into physical and digital storage. Media typically refers to any types of storage medium that is used to store data, written, audio, video, or digital information, this includes various formats such as papers, tapes, cassette, CDs etc. Stewart and Westgate (2015) and (Garcia and Smith, 2021). Records management involves creating a system to store and manage records, deciding which records retain, organizing them for quick retrieval, safeguarding against loss or damage, and determining appropriate retention periods. Records may be stored by manual or automatic methods, via the computer. International Records Management Trust (2023). The organization may therefore use computer for storing, interrelating, and retrieving a mass information with speed and precision which otherwise would have been impossible through manual process. Keshadi (2022). Records management by electronic means is still low in most Nigerian primary schools. Most rural communities have no electricity, only few schools have computers. Also, many head teachers are not computer literate. The storage of records has to do with the creation and retention of the right material at a place which is accessible to the

persons using them and the protection of records against theft, fire, unauthorized access and deterioration. Abdulhamid, (2023). To regulate or control the ever-increasing volume of paper work, management needs to decide on what is to be kept, where, for how long, and when and how it is to be disposed.

The storage media used for the management of records can vary depending on factors such as the organization need and regulatory requirements. National Archives and Records Administration (2019). The most common storage media includes:

Paper: Traditional hard copies of documents stored in files, folders, or cabinets, shelves, lockers.

File folder: used to stored paper documents, such as student records, staff records and administrative files.

Shelves: used store books and other educational materials.

Lockers: used to store students personal belongings and files.

Drawer: Is a compartment typically rectangular in shape that slide in and out used to store files and other records.

Optical Disks: CDs, DVDs, or discs used for storing digital data.

Flash Drives: Small, portable USB drives for transferring and storing digital files.

External Hard Drives: Portable storage devices for backing up and archiving digital records.

Cloud Storage: Online services that allow for the storage and management of digital records on remote servers.

Handset: Refer to mobile phones or smartphones, which are handheld devices that combine a wide range of functionalities including calling, texting, data storage and internet browsing.

Organizations often use a combination of these media to ensure, accessibility, retrieval and compliance with records-keeping regulations. National Archives and Records Administration (2019) also noted that, the traditional storage method using file cabinets, shelves and lockers are still widely used in primary schools although adoption of information and communication technology (ICT) help schools and administrators with the needed skills especially in the storage and retrieval of relevant records (Chen *et al*, 2022).

Retrieval of records refers to the processes involved in locating and obtaining stored information. In the context of primary schools, these processes ensure that vital data is available to authorized individuals when needed. Retrieval of records is the process of obtaining specific information from the stored records, involves search and query: using tools to obtained specific records. Hudu *et al*, (2013), retrieval are tools that use to obtained records in the organization or institution. A records retrieval system in primary schools typically involves organizing, managing and obtaining various types of student's records including academic performance, attendance records, disciplinary records, health records, and contact information (Mukhtar *et al* 2014) and (Garcia and Smith, 2021).

Most of the primary schools still use both manual and digital system for retrieving records. Retrieving records manually involves:

Through subject heading: The school records can be obtained by using subject heading of the files to retrieve the rcords.

Index Cards/Registers: Alphabetically or numerically arranged cards or books used quickly to retrieve records

Card catalogue: Records can be retrieved through digital or physical list of records e.g. by keyword or name.
Year of records generated: records can be obtain through the records created.
Through search files: Where records retrieved through files searching.
Digital (electronic) retrieval systems use in primary schools are:
Staff log into the school database.
Search for students or staff by name, date or class (Society of American Archivists, 2020).

Research Methodology

Research methodology adopted for the study is quantitative because it involves the process of collecting and analyzing numerical data. While cross sectional research survey design was used for this study. This design aims to capture a snapshot of a particular phenomenon or characteristic of a population at a specific moment. It enables the discovery of meaning in the data collected, so that facts and events are better understood, interpreted and explained (Creswell, 2014). The population of this study consisted of all head teachers and assistant head teachers in primary schools in Zaria Local Government Area was used as population because they are records managers in primary schools. There are one hundred and sixteen (116) primary schools in Zaria Local Government Area. The schools are divided into thirteen (13) political wards in Zaria LGA. The sample size of the study was two hundred and thirty two (232), due to the small number of the population. Therefore, the sample technique adopted for the study was census sampling. A closed ended questionnaire was used as the instrument for data collection for this research. Considering its significance, Osuala (2015) posited that a questionnaire is more economical because of the time involved in conducting research. In order to ascertain the validity of the instrument, the researcher subjected it to research experts that are statistician, language experts, researchers, supervisors and face and content for validation. In order to ascertain that, the instruments was tested using Cronbach's alpha has been used to test the reliability and result of 0.86, was obtained which means the instrument is reliable (Creswell, 2014). The researcher with the help of three (3) trained research assistants from Zaria Local Government Education Authority administered the instruments. The researcher used descriptive statistics in the form of frequency count, simple percentage to analyze the data. A benchmark 50% of highest response positive and below response negative for decision making. Also the data for this study was analyzed using Statistical Package for Social Sciences (SPSS Version 30) software so as to obtain answer to the research questions formulated.

Discussion of the Findings

A total of two hundred and thirty two (232) copies of questionnaire were administered to head teachers and assistants of head teachers of primary schools in Zaria Local Government Area of Kaduna State- Nigeria. Out of which a total of 189 (81.5%) copies were returned, duly completed and found worthy for the analysis.

Table 1: Types of Records Generated for the Administration of primary Schools

S/N	Types of Records Generated in Schools	Wards													
		Anguwan fatika	Dambo	Dutsen abba	Gyellesu	Kaura	Kufena	Kwarbai "A"	Kwarbai "B"	Limancin Kona	Tuudn wada	Tukut tukur	Wuciciri	Anguwan juma	Total
		Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)
1.	Admission register	7(3.7)	19(10.1)	52(27.5)	13(6.9)	5(2.6)	17(9.0)	14(7.4)	14(7.4)	8(4.2)	9(4.8)	4(2.1)	25(13.2)	2(1.1)	189 (100)
2.	Pupil attendance register	6(3.2)	17(9.0)	47(24.9)	12(6.3))	4(2.1)	15(7.9)	13(6.9)	13(6.9)	7(3.7)	8(4.2)	4(2.1)	22(11.6)	2(1.1)	170(89.9)
3.	Examination records	6(3.2)	16(8.5)	45(23.8)	11(5.8)	4(2.1)	15(7.9)	12(6.3)	12(6.3)	7(3.7)	8(4.2)	3(1.6)	21(11.1)	2(1.1)	162(85.7)
4.	Pupils certificate	6(3.2)	16(8.5)	43(22.8)	11(5.8)	4(2.1)	14(7.4)	11(5.8)	11(5.8)	7(3.7)	7(3.7)	3(1.6)	21(11.1)	2(1.1)	155(82.0)
5.	Staff duty report	5(2.6)	13(6.9)	36(19.0)	9(4.8)	3(1.6)	12(6.3)	10(5.3)	10(5.3)	6(3.2)	6(3.2)	3(1.6)	17(9.0)	1(0.5)	130(69.3)
6.	Parent Teachers Association (PTA) records	4(2.1)	11(5.8)	30(15.9)	8(4.2)	3(1.6)	10(5.3)	8(4.2)	8(4.2)	5(2.6)	5(2.6)	2(1.1)	15(7.9)	1(0.5)	110(58.2)
7.	Promotion records	3(1.6)	8(4.2)	21(11.1)	5(2.6)	2(1.1)	7(3.7)	6(3.2)	6(3.2)	3(1.6)	4(2.1)	2(1.1)	10(5.3)	1(0.5)	78(41.3)

The analysis of table 1 reveals varying levels of record-keeping practices in the administration of primary schools across the surveyed wards. The data shows that the admission register is the most universally maintained record, with all schools 189(100%) reporting its use. This suggests a widespread commitment to documenting student enrollment, which is essential for tracking population trends, planning for resource allocation, and fulfilling educational accountability requirements. Closely following are the pupil attendance registers 170(89.9%) and examination records 162(85.7%), which are integral for monitoring student engagement and evaluating academic performance respectively. The high prevalence of these records reflects their central role in the core educational processes of teaching and learning.

Table 2: Storage Media Used for Records Management for the Administration of primary Schools

S/N	Storage Media	Wards													
		Anguwan fatika	Dambo	Dutsen abba	Gyellesu	Kaura	Kufena	Kwarbai "A"	Kwarbai "B"	Limancin Kona	Tuudn wada	Tukut tukur	Wuciciri	Anguwan juma	**Total**
		Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)
1.	Computer	2(1.1)	6(3.2)	17(9.0)	4(2.1)	2(1.1)	5(2.6)	4(2.1)	4(2.1)	3(1.6)	3(1.6)	1(0.5)	8(4.2)	1(0.5)	60(31.7)
2.	File folder	5(2.6)	14(7.4)	39(20.6)	10(5.3)	4(2.1)	13(6.9)	11(5.8)	11(5.8)	6(3.2)	7(3.7)	3(1.6)	19(10.1)	2(1.1)	142(75.1)
3.	Shelves	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.	Lockers	6(3.2)	15(7.9)	42(22.2)	11(5.8)	4(2.1)	14(7.4)	11(5.8)	11(5.8)	6(3.2)	7(3.7)	3(1.6)	20(10.6)	2(1.1)	153(81.0)
5.	Drawer	7(3.7)	19(10.1)	52(27.5)	13(6.9)	5(2.6)	17(9.0)	14(7.4)	14(7.4)	8(4.2)	9(4.8)	4(2.1)	25(13.2)	2(1.1)	189(100)
6.	Handset	3(1.6)	7(3.7)	19(10.1)	5(2.6)	2(1.1)	6(3.2)	5(2.6)	5(2.6)	3(1.6)	3(1.6)	1(0.5)	9(4.8)	1(0.5)	70(37.0)
7.	Paper	7(3.7)	19(10.1)	52(27.5)	13(6.9)	5(2.6)	17(9.0)	14(7.4)	14(7.4)	8(4.2)	9(4.8)	4(2.1)	25(13.2)	2(1.1)	189(100)
8.	Optical disks	0(0.0)	1(0.5)	3(1.6)	1(0.5)	0(0.0)	1(0.5)	1(0.5)	1(0.5)	1(0.5)	1(0.5)	0(0.0)	2(1.1)	0(0.0)	12(6.3)
9.	Flash drive	1(0.5)	3(1.6)	13(6.9)	3(1.6)	1(0.5)	4(2.1)	3(1.6)	3(1.6)	2(1.1)	2(1.1)	1(0.5)	6(3.2)	0(0.0)	48(25.4)

The data presented in table 2 provides insights into the various storage media used for records management in the administration of primary schools across the surveyed wards. The findings reflect a significant dependence on traditional, non-digital storage systems, with digital media still underutilized in most schools.

The most commonly used storage media are drawers and paper, each reported by all schools surveyed, 189(100%). This indicates that every school maintains records in paper form and physically stores them in drawers. Such high usage suggests a continued reliance on manual

record-keeping, which, while familiar and low-cost, poses risks related to physical damage, loss, and limited accessibility.

Closely following are lockers, used by 153(81.0%) of the schools. Lockers provide a more secure physical storage solution compared to drawers but still reflect a traditional method of managing records. Similarly, file folders are utilized by 142(75.1%) of the schools, further confirming the predominance of manual, paper-based systems for organizing school records. Digital and modern storage solutions shows that, handsets (phones) are used by 70(37.0%) of schools, indicating a growing but still limited practice of storing information on mobile devices. This trend may reflect increasing smartphone penetration among school administrators, albeit without structured or secure data management systems. Computers, which offer more robust digital data storage and retrieval capabilities, are used in only 60(31.7%) of the schools. This relatively low percentage reveals the digital divide and possibly the limited availability of ICT infrastructure in the surveyed areas. Flash drives, used by 48(25.4%) of the schools, and optical disks, with only 12(6.3%) usage, further illustrate the limited integration of portable digital storage devices in school administrative practices. These figures suggest that even when digital tools are available, they may not be widely adopted or fully integrated into the record-keeping culture of primary school.

Table 3: Tools for Record Retrieval for the Administration of primary schools

		Wards													
S/N	**Access methods**	Anguwan fatika	Dambo	Dutsen abba	Gyellesu	Kaura	Kufena	Kwarbai "A"	Kwarbai "B"	Limancin Kona	Tuudn wada	Tukut tukur	Wuciciri	Anguwan juma	**Total**
		Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)	Frq(%)
1.	Through subject heading	6(3.2)	15(7.9)	42(22.2)	10(5.3)	4(2.1)	13(6.9)	11(5.8)	11(5.8)	6(3.2)	7(3.7)	3(1.6)	20(10.6)	2(1.1)	150(79.4)
2.	Through card catalogue	1(0.5)	1(0.5)	1(0.5)	1(0.5)	0(0.0)	1(0.5)	1(0.5)	1(0.5)	0(0.0)	0(0.0)	0(0.0)	1(0.5)	0(0.0)	8(4.2)
3.	Through year records generated	6(3.2)	16(8.5)	45(23.8)	11(5.8))	4(2.1)	14(7.4)	12(6.3)	12(6.3)	7(3.7)	8(4.2)	3(1.6)	21(11.1)	2(1.1)	161(85.2)
4.	Through searching files	5(2.6)	13(6.9)	37(19.6)	9(4.8)	3(1.6)	12(6.3)	10(5.3)	10(5.3)	6(3.2)	7(3.7)	3(1.6)	17(9.0)	2(1.1)	134(70.9)

The analysis of table 3 reveals the different tools and methods employed by primary school administrators for retrieving records across various wards. The data indicates a strong preference for manual and subject-based retrieval systems, with limited use of advanced or automated methods. The most frequently used record retrieval tool is the year records were generated, reported by 161(85.2%) of the schools. This approach involves locating documents based on the year they were created, reflecting the predominance of chronological filing systems as previously observed in Table 4.6. The popularity of this method suggests that school records are typically organized by date, and administrators are comfortable retrieving information within specific academic or administrative years.

Following closely is retrieval through subject headings, reported by 150(79.4%) of schools. This method allows for accessing documents based on categorized topics such as academic subjects, finance, or personnel. Its widespread use indicates that many schools have adopted a

subject-based filing system that supports easy navigation and quick identification of related records.

Summary of the Findings

1. The finding revealed that, the types of records generated mostly in the administration of primary schools are **enrollment, academic performance, and staff duties,** while administrative documentation like **log books, diaries, and prefect reports** are less frequently maintained.
2. Finding also revealed that, storage methods, such as paper, file folders, drawers, and lockers were used mostly in the management of school records over digital storage like computers, flash drives, and handsets.
3. Moreover, the finding revealed that, administration of primary schools mostly practiced retrieval methods, especially, based on year and subject headings. While there is limited or absence used of others retrieval methods such as cataloguing and indexing.

Conclusion

It is concluded that, records management practices largely facilitated the administration of primary schools across generation, storage, and retrieval in thirteen (13) wards in Zaria local government, with strong emphasis on maintaining records related to enrollment, academic performance, over administrative records such as diary, log book and inventory. While limited adoption of electronics tools and advanced systems significantly constrains efficiency of records management.

Recommendations

1. School management should organize regular training workshops for staff on records management. Emphasis should be placed on ensuring all relevant records academic, administrative records such as log book, diary and demotion records are consistently created and maintained.
2. Given the dominance used of papers, drawers storage methods in the administration of primary schools, they should be encouraged to adopt digital storage solutions such as computers, external drives, and cloud-based systems
3. The primary schools mostly used retrieval methods such as based on year and subject headings, the school administrators should implement digital indexing and cataloguing tools to improve records retrieval.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

JOB SATISFACTION AND MOTIVATION AMONG FEMALE LIBRARIANS IN ACADEMIC LIBRARIES IN NORTH EASTERN, NIGERIA

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Abstract
*This study determined Job Satisfaction and Motivation among Female Librarians in Academic libraries in North Eastern, **Nigeria**. The study was guided by three (3) objectives and three (3) research questions. Survey research design was used in the study. The target population was 121 female librarians and the study adopted census and use the entire population, because it is manageable. Questionnaire was the main instrument for data collection. Data were analyzed using descriptive statistics of frequency counts and percentages displayed in tables. The findings revealed that the level of job satisfaction among female librarians in academic libraries was high, the extent of motivational factors among female librarians in academic libraries was high, while the level of hygiene factors among female librarians in academic libraries was moderate in academic libraries in Northeast, Nigeria. Based on the findings some recommendations were given this: the university managements in collaboration with university librarians should provide sufficient resources and tools to perform job effectively and make promotion opportunities very easier to attain so as to increase job satisfaction.*
Keywords: Job Satisfaction, and Motivation, Among Female Librarians, In Selected Academic Libraries.

Introduction

Libraries, irrespective of their types and sizes, are recognized as essential centers for providing and utilizing high-quality print and digital information resources. They are the central hubs for information resources, crucial for the effective transmission of knowledge. Libraries play a vital role in promoting national integrity and preserving cultural heritage. Academic libraries, which are part of colleges, polytechnics, and universities, are well-structured institutions led by librarians with specific goals aligned with those of their parent institutions.

Job satisfaction is the degree of fulfillment employees experience regarding their job, impacting their performance and general well-being. When job satisfaction is high, it usually results in enhanced productivity, reduced turnover rates, and greater loyalty to the organization. For female librarians, job satisfaction can be shaped by multiple factors such as the work environment, recognition, opportunities for professional growth, and work-life balance. In order to work effectively, it is expected that the library staff should have a sense of job satisfaction. Job satisfaction is a major determinant of workers-commitment and productivity in any organization.
Tella (2019) defined job satisfaction as an employee's psychological state, including feelings, attitudes, and behaviors, encompassing positive emotions, reactions, and cognitive evaluation. University libraries may boost job satisfaction of librarians by providing recognition, promotion, conducive working environment and remuneration and librarians may be more satisfied with their job if there is high level of opportunities, recognition, security and supervision.

The level of job satisfaction among female librarians in academic libraries varies based on various factors. Research assesses overall job satisfaction, including work environment, responsibilities, and career opportunities. It also evaluates compensation, benefits, career development, work-life balance, management and leadership, recognition and rewards, and job role and responsibilities. Surveys, interviews, and questionnaires are used to gather data on these dimensions, helping academic institutions identify areas for improvement to enhance job satisfaction among female librarians. Ariyo and Okwilagwe (2020) found that job satisfaction is influenced by various factors including appreciation, communication, co-workers, fringe benefits, job conditions, organization, personal growth, policies, and promotion.

Motivation plays a vital role in determining job satisfaction. It can stem from intrinsic sources, such as personal fulfillment, which enhance engagement and commitment. Extrinsic factors like rewards and recognition also contribute positively to job satisfaction. Job security is another significant element that can enhance job satisfaction. Creating a positive work environment characterized by respect, support, and collaboration, along with providing autonomy, further boosts job satisfaction. Clear goals, regular feedback, and opportunities for improvement are essential for achieving job satisfaction. Additionally, work-life balance can be enhanced through flexible work arrangements, supportive policies, and career development opportunities. Motivation has an impact on female librarians' performance and job satisfaction in the libraries that will be examined. The precision, caliber, and promptness of a librarian's work can be used to gauge how well they do on the job. Promotional possibilities, good working circumstances, decision-making responsibilities, and monetary compensation are examples of factors that motivate library employees and have an impact on their job satisfaction and performance.

Yaya (2019) remuneration otherwise conceived as salary is the aggregate of monetary value allocated to workers at the end of the month. Librarians are paid for the services rendered to encourage continued employment. Remuneration, if low, can adversely influence a librarian to leave his job, but if it is satisfactory or high, it will boost the morale and there would be no turn over effect. Martin (2020) study's' did not found any difference between librarians and library staff on the bases of gender, race, type of library, position and work performed in the library. Herzberg's Hygiene Theory, derived from Maslow's hierarchy of needs, posits that certain workplace elements can cause dissatisfaction (hygiene factors) while others lead to satisfaction (motivational factors).

This theory can be applied to understand female job satisfaction by addressing hygiene factors like workplace safety, company policies, positive interpersonal relationships, recognition of contributions, growth opportunities, and engaging work. Herzberg's Hygiene-Motivation Theory was used to examine the status of female librarians' job satisfaction in particular academic libraries in Northeast Nigeria. This is a complicated and varied topic. A key element in influencing an employee's general wellbeing and productivity, especially female librarians, is job happiness. Herzberg's theory makes a distinction between hygiene elements, which, if absent, can result in job discontent, and motivation factors, which, if present, can result in job satisfaction. A study by Raisani (2016) affirms that gender is negatively related to teacher satisfaction and indicated that female teachers were more satisfied with colleagues, responsibility and work itself than their male counterparts.

Statement of the Problem

Despite numerous efforts by academic library, observations by the researcher indicated that female librarians in Northeastern Nigeria's in academic libraries in Northeastern Nigeria face low job satisfaction and motivation, often not adequately addressing user inquiries. This lack of performance may seem to stem from insufficient motivation and workplace stress, which includes factors like lack of recognition, poor working conditions, unequal academic benefits, and excessive workloads. A work environment, which encompasses systems, processes, structures, tools, and the physical location of the workplace, plays a crucial role in employee performance. Academic librarians seemed to face challenges such as discrimination in fringe benefits allocation, limited promotion and career advancement opportunities, hygiene factors, gender biases, and inadequate working conditions. Thus, it is against this background that the researcher intends to investigate the Job Satisfaction and motivation among female librarians in academic libraries in Northeastern Nigeria., using Herzberg's Hygiene-Motivation Theory.

Objectives of the Study

The objectives of the study were to determine:

1. The level of job satisfaction among female librarians in academic libraries in Northeast, Nigeria.
2. The extent of motivation among female librarians in academic libraries in Northeast, Nigeria.
3. The level of hygiene factors among female librarians in academic libraries in Northeast, Nigeria.

Review of Related Literature

A study conducted by Badia and Madawaki (2016) discovered that library personnel had low levels of job satisfaction, with most respondents expressing dissatisfaction with their jobs in Nigeria. The study examined how job satisfaction influences the commitment of librarians in federal university libraries in South-South Nigeria. This research was prompted by observed issues with commitment in many organizations, including university libraries, and highlighted job satisfaction as a crucial factor for improving librarians' commitment. The study included a population of 252, using total enumeration due to the manageable size. Data was collected through

a validated questionnaire employing Exploratory Factor Analysis, with Cronbach's Alpha values of 0.883 for employee commitment and 0.923 for job satisfaction. The analysis involved frequency counts, percentages, mean, and standard deviation, with hypotheses tested at a 0.05 significance level using simple and multiple linear regression analysis in SPSS version 21. The findings indicated a high level of both librarians' commitment ($\bar{x} = 2.86$) and job satisfaction ($\bar{x} = 2.86$). Job satisfaction significantly influenced librarians' commitment in federal universities in South-South Nigeria ($\beta = 0.511$, $t = 8.641$, $p < 0.05$).

Study conducted by Yusuf (2015) examined the impact of motivation on the job performance of para-professional staff in tertiary institution libraries in Kaduna State. The study utilized a survey method, employing structured questionnaires and interviews for data collection. The findings highlighted several strategies used to motivate para-professional library personnel, including regular fixed payments, job design improvements like rotation, enlargement, and enrichment, as well as promotion opportunities, education, and training. The study concluded that these motivational strategies significantly correlated with improved work performance among para-professional library personnel in Kaduna State.

Study conducted by Badawo (2016) conducted a study on the job satisfaction levels of female librarians in Nigeria, utilizing Herzberg's Hygiene/Motivator factors. The research employed an ex-post facto design and involved a sample of 228 randomly selected female librarians from 35 libraries across Nigeria's six geopolitical zones. The data were analyzed using descriptive and inferential statistics. The findings revealed that female librarians in Nigeria were highly satisfied with various aspects of their jobs, including achievement, library's policies and procedures, interpersonal relationships, recognition, growth/advancement, the work itself, salary, personal life, and job security.

Research Methodology

A descriptive survey research design was adopted for the study. The population comprised of one hundred and twenty-one (121) female librarians. They are all female staff of Ramat Library, University of Maiduguri, Dr. Goodluck Ebele Jonathan Library, Yobe State University, Olusegun Obasanjo Library, Federal Polytechnic Damaturu. A census sampling technique was adopted for the study, as the entire population was considered small and manageable. This approach aligns with the view of Borg and Gall (2007), who recommend studying the whole population when its size is relatively small. The selection of the three tertiary institution libraries was based on the fact that they have a higher concentration of female librarians and were established earlier than other institutions in the North-East Zone of Nigeria. Consequently, no sample size was drawn, since the entire population was fully covered, as presented in Table 1.

Table 1: Population

S/N	Tertiary Institutions Libraries	Population (Registered Staffs)	Sample
1.	Ramat Library University of Maiduguri, Maiduguri, Borno State.	56	56
2.	Dr. Goodluck Ebele Jonathan Library Yobe State Uni versity, Damaturu Yobe State	37	37
3.	Olusegun Obasanjo Library Federal Polytechnic Damaturu, Yobe State	28	28
	Total	**121**	**121**

Source: Membership Registration Files of the three University Libraries in North East, Nigeria. 2022/2023 session

Data Analysis and Interpretation

One hundred and twenty-one (121) copies of the questionnaire administered to the respondents and the response rate recorded was one hundred and four (86%). while, 17(14%) copies were not returned. The response rate of 104 (86%) was considered to be adequate enough for data analysis used in this study.

Table 2: Distribution of Respondents by Tertiary Institutions Libraries

Tertiary Institutions Librari es	Frequency	Percentage (%)
Ramat Library, University of Maiduguri, Borno State	49	47%
Dr. Goodluck Ebele Jonathan Library, Yobe State University	32	31%
Olusegun Obasanjo Library, Federal Polytechnic Damaturu, Yobe State	23	22%

Table 2 shows demographic information of respondents by gender, age and qualification and tertiary institutions libraries. The results indicate that, 0(0%) are males and 104(100%) are females. This implies that the whole respondents are females. The educational qualification of the respondents indicated that PhD holders are 2(2%), MLS/MLIS holders are 22(21%), BLS/BLIS are 62(60%), HND are 3(3%) and Diploma/OND are 15(14%) respondents. The educational qualification of the respondents has indicated that BLS/BLIS holders have the highest number. The Ramat Library, University of Maiduguri, Borno State has 49(47%) respondents, Dr. Goodluck Ebele Jonathan Library, Yobe State University has 32(31%) respondents, and Olusegun Obasanjo Library, Federal Polytechnic Damaturu Yobe State has 23(22%) respondents. This implies therefore that Ramat Library, University of Maiduguri, Borno State has the highest number of respondents.

Research Question One:

What is the level of job satisfaction among female librarians in academic libraries in Northeast Nigeria?

Table 3: The level of job satisfaction among female librarians in academic libraries in Northeast, Nigeria.

S/N	Level of job satisfaction	N	HL	ML	LL	ZL	Mean
1	I feel valued and respected by my colleagues.		72	24	6	2	3.46
2	I have access to sufficient resources and tools to perform my job effectively.		1 (1%)	3 (3%)	64 (61%)	36 (35%)	
3	I am satisfied with the level of support provided by management.		16 (15%)	49 (47%)	25 (24%)	14 (13%)	
4	I have opportunities for professional growth and development within my role.		17 (16%)	66 (64%)	16 (15%)	5 (5%)	
5	I am satisfied with the level of recognition I receive for my work contributions.	**104**	49 (47%)	28 (27%)	18 (17%)	9 (9%)	
6	My workload is manageable and allows for a healthy work-life balance.		36 (35%)	62 (59%)	4 (4%)	2 (2%)	
7	I feel secure in my job position within the library.		64 (61%)	34 (33%)	2 (2%)	4 (4%)	
8	I am satisfied with the promotion opportunities available to me.		18 (17%)	24 (23%)	49 (47%)	13 (13%)	
9	I have a positive and collaborative working relationship with my supervisor.		68 (65%)	28 (27%)	4 (4%)	4 (4%)	
10	I feel motivated and satisfied with my career as a librarian in an academic setting.		66 (63%)	34 (33%)	1 (1%)	3 (3%)	
	Gross Total		**407**	**352**	**189**	**92**	
	Average		**41**	**35**	**19**	**9**	
			(39%)	**(34%)**	**(18%)**	**(9%)**	

Keys: High Level (HL), Moderate Level (ML), Low Level(LL) & Zero Level (ZL)
(72x4)+(24x3)+(6x2)+(2x1)/104 = 374/104 = 3.46

Create a column for weighted mean, calculate it and use it for data interpretations instead of percentages. Percentages are ok for ordinary scale of 2 point ratings like table 2 but not for 4 point scales. Use this comment for tables 3-5.

Table 3 shows **th**e level of job satisfaction among female librarians in academic libraries with, I feel valued and respected by my colleagues 72(69%) respondents, I am satisfied with the level of recognition I receive for my work contributions 49(47%) respondents, I feel secure in my job position within the library 64(61%) respondents, I have a positive and collaborative working relationship with my supervisor 68(65%) respondents and I feel motivated and satisfied with my career as a librarian in an academic setting 66(63%) respondents indicated high level, while I am satisfied with the level of support provided by management 49(47%) respondents, I have opportunities for professional growth and development within my role **66(64%) respondents and** my workload is manageable and allows for a healthy work-life balance 62(59%) respondents indicated moderate level. I have access to sufficient resources and tools to perform my job effectively 64(61%) respondents and I am satisfied with the promotion opportunities available to

me 49(47%) respondents indicated low level. This implies that, out of 104 respondents, majority with 41(39%) respondents indicated high level, followed by 35(34%) respondents who indicated moderate level and 19(18%) respondents indicated low level, while 9(9%) respondents indicated zero level. Therefore, the **level of job satisfaction among female librarians in academic libraries** revealed high level by majority of the respondents. 41 (39%).

Research Question Two:
What is the extent of motivation among female librarians in academic libraries in Northeast, Nigeria?

Table 4: The extent of motivation factors among female librarians in academic libraries in Northeast, Nigeria

S/N	Extent of motivation factors	N	HE	ME	LE	ZE	Mean
1	I feel motivated by the opportunity to make a positive impact on students and faculty through my work.		76	20	4	4	3.46
2	The recognition I receive from my superiors motivates me to perform my best.		67 (64%)	30 (29%)	6 (6%)	1 (1%)	
3	Opportunities for career advancement encourage me to stay committed to my role.		23 (22%)	42 (40%)	21 (20%)	18 (17%)	
4	I am moti vated by the professional development opportunities available to me.		48 (46%)	29 (28%)	18 (17%)	9 (9%)	
5	Financial incentives, such as salary and bonuses, contribute to my job motivation.	**104**	72 (69%)	16 (15%)	10 (10%)	6 (6%)	
6	I am motivated by the supportive work environment within the library.		3 (3%)	42 (40%)	58 (56%)	1 (1%)	
7	Receiving feedback on my performance motivates me to improve and excel.		52 (50%)	38 (37%)	12 (11%)	2 (2%)	
8	Flexibility in my job schedule positively impacts my motivation.		22 (21%)	58 (56%)	18 (17%)	6 (6%)	
9	The sense of job security in my role motivates me to stay dedicated.		48 (46%)	32 (31%)	22 (21%)	2 (2%)	
10	I am motivated by a sense of personal accomplishment and growth in my role as a librarian.		18 (17%)	54 (52%)	18 (17%)	14 (14%)	
	Gross Total		**429**	**361**	**187**	**63**	
	Average		**43 (41%)**	**36 (35%)**	**19 (18%)**	**6 (6%)**	

Keys: High Level (HL), Moderate Level (ML), Low Level(LL) & Zero Level (ZL)

Table 4shows the extent of motivation factors among female librarians in academic libraries with, I feel motivated by the opportunity to make a positive impact on students and faculty through my work 76(73%) respondents, recognition I receive from my superiors motivates me to perform my best 67(64%) respondents, I am motivated by the professional development opportunities available to me 48(46%) respondents, financial incentives, such as salary and bonuses, contribute to my job motivation 72(69%) respondents, receiving feedback on my performance motivates me to improve and excel 52(50%) respondents and sense of job security in my role motivates me to stay dedicated 48(46%) respondents indicated high extent, while opportunities for career advancement encourage me to stay committed to my role 42(40%) respondents, flexibility in my job schedule positively impacts my motivation 58(56%) respondents and I am motivated by a sense of personal accomplishment and growth in my role as a librarian 54(52%) respondents indicated moderate extent. I am motivated by the supportive work environment within the library 58(56%) respondents indicated low extent. This implies that, out of 104 respondents, majority with 43(41%) respondents indicated high extent, followed by 36(35%) respondents who indicated moderate extent and 19(18%) respondents indicated low extent, while 6(6%) respondents indicated zero extent. Therefore, the extent of motivation factors among female librarians in academic libraries using average score revealed high extent by majority of the respondents at 43 (41%) and 36 (35%) at moderate extent.

Research Question Three:
What are the level of hygiene factors among female librarians in academic libraries in Northeast, Nigeria?

Table 5: The level of hygiene factors among female librarians in academic libraries in Northeast, Nigeria.

S/N	Statement	N	HL	ML	LL	ZL
1	My salary and benefits meet my basic needs and contribute to my job satisfaction.		8	8	46	42
2	I work in a clean, safe, and comfortable environment.		4 (4%)	22 (21%)	76 (73%)	2 (2%)
3	I am satisfied with the library 's policies and procedures that affect my job.		38 (36%)	52 (50%)	8 (8%)	6 (6%)
4	I feel that my job security is stable within the organization.		58 (56%)	32 (31%)	10 (9%)	4 (4%)
5	I have access to adequate resources and materials needed to perform my job effectively.	**104**	6 (6%)	38 (36%)	56 (54%)	4 (4%)
6	The organization's policies on leave and vacation are fair and reasonable.		39 (37%)	44 (42%)	11 (11%)	10 (10%)
7	The quality of supervision I receive contributes to a positive work environment.		64 (61%)	22 (21%)	8 (8%)	10 (10%)
8	I am satisfied with the interpersonal relationships I have with my colleagues.		36 (35%)	46 (44%)	12 (11%)	10 (10%)
9	My work schedule allows me to maintain a healthy work-life balance.		40 (38%)	30 (29%)	32 (31%)	2 (2%)
10	I am satisfied with the communication and information flow within the organization.		18 (17%)	32 (31%)	42 (40%)	12 (12%)
	Gross Total		**311**	**326**	**301**	**102**
	Average		**31 (30%)**	**33 (32%)**	**30 (29%)**	**10 (9%)**

Keys: High Level (HL), Moderate Level (ML), Low Level(LL) & Zero Level (ZL)

Table 5 shows the level of hygiene factors among female librarians in academic libraries with, I feel that my job security is stable within the organization 58(56%) respondents, quality of supervision I receive contributes to a positive work environment 64(61%) respondents and my work schedule allows me to maintain a healthy work-life balance 40(38%) respondents indicated high level, while I am satisfied with the library's policies and procedures that affect my job 52(50%) respondents, organization's policies on leave and vacation are fair and reasonable 44(42%) respondents and I am satisfied with the interpersonal relationships I have with my colleagues 46(44%) respondents indicated moderate level. My salary and benefits meet my basic needs and contribute to my job satisfaction 46(44%) respondents, I work in a clean, safe, and comfortable environment 76(73%) respondents, I have access to adequate resources and materials needed to perform my job effectively 56(54%) respondents and I am satisfied with the communication and information flow within the organization 42(40%) respondents indicated low level. This implies that, out of 104 respondents, majority with 33(32%) respondents indicated moderate level, followed by 31(30%) respondents who indicated high level and 30(29%) respondents indicated low level, while 10(9%) respondents indicated zero level. Therefore, the **level of hygiene factors**

among female librarians in academic libraries revealed moderate level at 33 (32%) by majority of the respondents.

Discussion

This study determined Job Satisfaction and Motivation among Female Librarians in Academic libraries in North Eastern, Nigeria. Findings on the level of job satisfaction among female librarians in academic libraries revealed high level by majority of the respondents. However, respondents feel valued and respected by colleagues, satisfied with the level of recognition i receive for my work contributions, they feel secure in their job position within the library, respondents have a positive and collaborative working relationship with supervisor and feel motivated and satisfied with career as a librarian in an academic setting indicated high level. This result was disagreed with the study of Idiegbeyanose (2018) who revealed that the level of job satisfaction of respondents was low. Poor recognition and working environment provided by their organizations were the reasons for their low level of job satisfaction.

Findings on the extent of motivational factors among female librarians in academic libraries is high. However, respondents feel motivated by the opportunity to make a positive impact on students and faculty through my work, recognition i receive from my superiors motivates me to perform my best, motivated by the professional development opportunities available to me, financial incentives, such as salary and bonuses, contribute to my job motivation, receiving feedback on my performance motivates me to improve and excel and sense of job security in my role motivates me to stay dedicated indicated high extent. The results disagreed with the study of Sinha (2020) who studied career mobility as one critical activity that improves employee motivation and as a result, institutional effectiveness. The goal of career mobility is to balance employees' goals with the firm's tasks, resulting in increased institutional efficiency. Career mobility is assessment for promotion, with the aim of improving people's lives. In the study on Federal university libraries in North-East Nigeria, the second research question focused on assessing the extent of motivational factors among librarians.

Findings on the level of hygiene factors among female librarians in academic libraries is moderate. However, respondents are satisfied with the library's policies and procedures that affect their job, organization's policies on leave and vacation are fair and reasonable **and** satisfied with the interpersonal relationships I have with my colleagues indicated moderate level. This is in line with Badawo (2016) conducted a study on the job satisfaction levels of female librarians in Nigeria, utilizing Herzberg's Hygiene/Motivator factors. The findings revealed that female librarians in Nigeria were highly satisfied with various aspects of their jobs, including achievement, library's policies and procedures, interpersonal relationships, recognition, growth/advancement, the work itself, salary, personal life, and job security.

Conclusion

The findings of this study indicate that female librarians in academic libraries in Northeast Nigeria enjoy a high level of job satisfaction, largely influenced by the high extent of motivational factors such as recognition, achievement, and opportunities for career advancement. Nevertheless, the study revealed that the level of hygiene factors including salary, working environment, and institutional policies remains only moderate, suggesting areas that require further improvement.

The study further established that the relationship between motivational factors and job satisfaction among female librarians is strong and positive, highlighting the critical role motivation plays in enhancing professional fulfillment. Importantly, there is a significant relationship between motivational factors and job satisfaction, confirming that improvements in motivation directly contribute to higher satisfaction levels. The study concludes that while motivational factors effectively sustain job satisfaction among female librarians, greater attention to hygiene factors is essential to further strengthen their professional well-being and performance in academic libraries across Northeast Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were made for improvement:

1. The Federal university libraries should sustain and strengthen job satisfaction since female librarians already exhibit a high level of job satisfaction, the university management should continue to sustain existing practices that promote fulfillment, such as recognition of professional contributions, fair workload distribution, and opportunities for skill development.
2. The Federal university libraries should enhance motivational factors given the high extent of motivational factors, the university management should consolidate and expand initiatives that encourage professional growth. This may include sponsorship for conferences, provision of scholarships for higher education, mentoring programs, and recognition awards for outstanding performance.
3. The Federal university libraries should improve hygiene factors the moderate level of hygiene factors suggests a need for significant improvement. the university management should review staff welfare policies, enhance salaries, provide better working conditions, ensure job security, and upgrade facilities to create a more supportive work environment for female librarians.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

AN ASSESSMENT OF INFORMATION LITERACY SKILLS AND INFORMATION RETRIEVAL AND UTILIZATION AMONG UNDERGRADUATE STUDENTS OF MOSES ORSHIO ADASU UNIVERSITY, MAKURDI MOAUM

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Abstract
This study assessed the information literacy skills, information retrieval practices, and utilization of academic resources among undergraduate students of Moses Orshio Adasu University, Makurdi (MOAUM). Guided by the ACRL Information Literacy Competency Standards, the study employed a descriptive survey research design, targeting a stratified random sample of 600 students across various faculties. Data were collected through a structured questionnaire and analyzed using mean and standard deviation. Findings revealed that students possessed a moderate level of information literacy skills (cluster mean = 2.72), with limited formal training being a major gap. Information retrieval abilities were rated high (mean = 2.67), with students demonstrating familiarity with OPAC and digital repositories. Utilization of resources was frequent (mean = 2.80), with internet-based sources being the most accessed. However, challenges such as inadequate training, poor internet connectivity, limited access to databases, and low awareness of available resources were identified (mean = 2.83). The study fills a gap left by previous research by offering a broader and more holistic view of students' engagement with both print and electronic resources, institutional support systems, and practical information use across all faculties. Recommendations include mandatory literacy training, improved digital infrastructure, and curriculum integration of retrieval and utilization skills. The findings underscore the need for targeted interventions to enhance students' academic performance through improved access and application of information resources. This study contributes to the growing discourse on library resource effectiveness in Nigerian universities and informs strategies for strengthening research competence and lifelong learning among undergraduates.
Keywords: Information Literacy Skills, Information Retrieval, Information Utilization

Introduction

In the evolving information landscape, university libraries have transitioned from merely providing physical books to facilitating access to a wide range of digital and academic resources. A key element of this shift is the importance of information literacy, which is crucial for undergraduate students for their academic development, research abilities, and lifelong learning. Information literacy equips students to confidently engage with scholarly resources, think critically, and make informed academic choices (Chukwusa, 2021). At Moses Orshio Adasu University in Makurdi, students often depend on library and digital resources for various

academic tasks, but their success is contingent upon their skills in effectively retrieving and utilizing relevant information. Access to resources like Online Public Access Catalogues (OPAC), electronic journals, digital databases, and institutional repositories necessitates that students demonstrate the ability to identify credible sources and synthesize information across various platforms. However, existing evidence indicates that many undergraduates struggle with navigating information systems, attributed to limited training in information literacy, inadequate digital search skills, and a lack of awareness regarding available library services (Aduba & Mayowa-Adebara, 2022). These issues lead to a decreased utilization of library resources, an overreliance on general internet searches, and resultant low-quality academic outputs. Therefore, assessing students' information literacy skills is essential for evaluating their capacity to retrieve and apply academic information in the university context. This study focuses on assessing these skills among undergraduate students at Moses Orshio Adasu University, aiming to understand their influence on information retrieval and usage. The findings will provide practical recommendations for enhancing library instruction, improving resource accessibility, and elevating students' academic performance through targeted support and policy reforms.

Statement of the Problem

Many students in today's academic environment face increasing demands to navigate diverse sources of information—both digital and print—to meet the requirements of research, assignments, and scholarly projects. At Moses Orshio Adasu University, Makurdi, concerns have emerged over students' ability to retrieve and utilize academic resources effectively despite the availability of advanced library tools like OPAC, electronic databases, and institutional repositories. Several factors contribute to these challenges, including limited ICT competencies, inadequate user orientation, insufficient integration of information literacy into academic programs, and low awareness of library offerings. As a result, students may resort to unreliable sources, leading to poor academic output and underutilization of the university's library resources. This study seeks to examine the information literacy skills of undergraduate students and how these competencies influence their ability to retrieve and use relevant information. The insights gained will inform strategies to improve library instruction, academic support services, and curriculum development aimed at fostering better research practices and academic success.

Research Questions

The following research questions were formulated to the study:

1. What is the level of information literacy skills possessed by undergraduate students of Moses Orshio Adasu University, Makurdi?
2. To what extent do undergraduate students of Moses Orshio Adasu University, Makurdi effectively retrieve academic information from available library resources?
3. How frequently do undergraduate students of Moses Orshio Adasu University, Makurdi utilize information resources for academic purposes?
4. What are the major challenges affecting information literacy, retrieval, and utilisation among undergraduate students of Moses Orshio Adasu University, Makurdi?

Review of Related Literature

Conceptual Framework

The following concepts were discussed in line with the study:

Information Literacy Skills

Information literacy skills are crucial for students, enabling them to effectively identify, locate, evaluate, and utilize information across academic, professional, and personal contexts. Alex-Nmecha and Ejitagha (2023) point out that these competencies extend beyond mere library familiarity to a comprehensive understanding of information organization, critical assessment of credibility, and ethical integration into academic work. In an era filled with both credible and misleading sources, acquiring such skills is vital for informed decision-making and maintaining scholarly integrity, especially at the undergraduate level where they significantly impact academic success. Bawack and Kamdjoug (2020) highlight that students proficient in information literacy are better prepared for independent research, scholarly writing, and engaging discussions. These skills can be developed through formal education, such as library user training and integrated information literacy courses, as well as through informal experiences and peer interactions.

Furthermore, Anunobi and Ukwoma (2016) emphasize that information literacy is a dynamic skill that evolves with advancements in technology and the digitization of academic resources. As a result, academic libraries must implement proactive strategies to weave information literacy into their educational frameworks by collaborating with faculty, designing specific tutorials, and providing ongoing support through various platforms. In the context of Moses Orshio Adasu University, students frequently involved in research and projects depend heavily on these skills. Without them, distinguishing between legitimate scholarly sources and non-scholarly materials can become challenging, leading to potential misunderstandings and unintentional plagiarism. Flint et al. (2024) assert that effective information literacy fosters not only better academic performance but also lifelong learning and adaptability. Therefore, enhancing information literacy should be a primary focus for university libraries and academic departments, which includes offering structured learning experiences, ensuring diverse resource access, and embedding critical thinking throughout the academic process. Empowering students to confidently and ethically manage information markedly enhances their educational experiences and outcomes.

Information Retrieval

Effective information retrieval is a crucial academic skill that allows individuals to efficiently find and acquire relevant materials from varied sources. According to Tyopev et al. (2021), this skill extends beyond library system usage, requiring a strategic approach to searching for scholarly resources through tools such as Online Public Access Catalogues (OPAC), search engines, subject databases, e-journals, institutional repositories, and digital libraries, which are essential for enhancing research productivity. For undergraduate students, mastering information retrieval techniques is vital for academic success, as it facilitates access to necessary resources for assignments and research projects. Daramola (2016) highlights that students' success is closely linked to their understanding of search techniques like keyword searches, Boolean logic, truncation, and filtering, noting that a lack of these skills could lead to poor-quality resource

selection.

In Nigerian universities, such as Moses Orshio Adasu University, Makurdi (MOAUM), students encounter numerous challenges impeding effective information retrieval, including unawareness of library resources, inadequate training, and poor internet infrastructure, as stated by Echem and Udo-Anyanwu (2018). These issues can diminish student engagement with library services despite the presence of ample academic resources. To enhance information retrieval among students, a holistic strategy is necessary, involving user education, improved system usability, and infrastructural improvements. Academic libraries should conduct orientation sessions, practical training, and continuous workshops aimed at developing students' retrieval skills. Furthermore, librarians should partner with faculty to integrate information retrieval skills into the curriculum, enabling students to practically apply these competencies in academic settings. As Mahmood (2016) points out, equipping students with such skills not only meets their current academic needs but also sets the foundation for future research and lifelong learning.

Information Utilisation

In the academic context, the significance of information extends beyond its mere retrieval; it lies in its adept application to address problems, complete assignments, and enhance learning outcomes. As universities continue to expand their digital and print collections, the focus should transition from simply accessing information to understanding how students utilize the available resources. Information utilization is crucial in this evolution, functioning as the connection between acquiring knowledge and achieving academic productivity. The concept of information utilization encompasses the process in which students apply retrieved information to engage in academic, personal, or professional endeavors. According to Ekong and Ekong (2018), this entails not just locating information, but also interpreting, synthesizing, integrating, and ethically employing acquired data in significant ways, including writing essays, conducting research, and bolstering academic arguments. Demonstrating effective utilization shows a student's capacity to convert raw data into knowledge, invoking critical thinking and contextual relevance.

In particular, undergraduates' academic achievements are closely linked to how effectively they employ information. Adeniran (2018) asserts that students who utilize information proficiently are likely to produce superior assignments, exemplify originality in their research, and critically engage with academic content. This skill set can be further cultivated through training in referencing styles, plagiarism avoidance, and the use of citation management tools, ensuring that students incorporate information responsibly and transparently. Nonetheless, numerous challenges impede effective information utilization, particularly in Nigerian universities, such as Moses Orshio Adasu University, Makurdi (MOAUM). Barriers include limited access to contemporary and relevant materials, insufficient digital literacy, a lack of awareness regarding information ethics, and inadequate support for academic writing. Research by Steinrücke, Veldkamp, and Jong (2020) indicates that while many students can retrieve information, they often lack the analytical and organizational prowess necessary to utilize it effectively within academic frameworks, resulting in underperformance and issues like plagiarism.

To tackle these challenges, it is imperative for university libraries and academic departments to collaborate in designing user-centered instructional programs that emphasize practical information use. Initiatives could include academic writing workshops, integration of

information utilization skills into general studies and specialized courses, and providing personalized guidance through reference and consultation services. Umesh and Sujatha (2021) highlight the importance of ongoing engagement, asserting that students gain the most benefit from consistent, context-specific support that connects information access with effective application. Ultimately, enhancing information utilization not only improves students' academic outputs but also fosters the development of independent thinkers and lifelong learners. When students can effectively apply information to solve problems, defend their viewpoints, and create new knowledge, the educational experience becomes transformational. Consequently, nurturing a culture of effective information use is vital for fulfilling institutional objectives in teaching, learning, and research excellence.

Theoretical Framework

This work adopts the Information Literacy Competency Standards for Higher Education established by the Association of College and Research Libraries (ACRL, 2000) to analyze the connection between information literacy skills and the information retrieval processes among undergraduate students. The standards define information literacy as a set of skills involving the reflective discovery, evaluation, and ethical use of information to create new knowledge. An information literate student is capable of determining their information needs, accessing appropriate resources, critically evaluating sources, integrating information into their knowledge base, and utilizing it ethically.

At Moses Orshio Adasu University, Makurdi (MOAUM), these standards provide a framework for assessing students' abilities to navigate and apply various information sources effectively, aligning with the institution's objectives of promoting lifelong learning and critical research skills. The study investigates how undergraduate students recognize their information needs, locate relevant materials through tools like OPAC and databases, and utilize these resources to enhance academic performance. Additionally, it identifies barriers to effective information literacy, including limited exposure to digital tools and lack of training. Overall, the ACRL Information Literacy Standards function as both a theoretical foundation and an evaluative guide, aiming to improve students' information retrieval and usage capabilities and inform strategies for better information literacy instruction and access to academic resources at MOAUM.

Empirical Literature Review

Chukwusa (2021) investigated the information literacy skills of Library and Information Science students at Delta State University and Ambrose Alli University through a survey of 148 students. The findings indicated general information literacy but highlighted issues such as the lack of a compulsory information literacy course and insufficient complex academic tasks to evaluate skills. Contrasting Chukwusa's work, the current study assessed 600 undergraduate students at Moses Orshio Adasu University, using a 4-point Likert scale to evaluate information literacy skills, information retrieval practices, resource utilization frequency, and institutional challenges, thus offering a broader understanding of student engagement with information resources and informing curriculum development in Nigerian higher education. In another study, Umesh and Sujatha (2021) evaluated information literacy skills at Kuvempu University, India, using an ACRL standards-based questionnaire, gathering 847 responses. The results showed high library usage,

with students visiting mainly to borrow textbooks and expressing satisfaction with library resources, indicating their capability to access both print and electronic information. This study, while similar in its survey method, diverged by examining additional dimensions such as retrieval practices and institutional challenges, addressing gaps left by previous research. Tyopev, Tor-Akwer, and Tofi (2021) focused on how information retrieval skills affected the use of electronic resources among 200-level undergraduate students in Benue State. By surveying 376 respondents, they discovered that while students frequently used e-journals and internet resources, they lacked vital retrieval skills which inhibited their effective use of these resources. Key challenges included inadequate internet, inconsistent power supply, lack of awareness, and insufficient training. Compared to this narrow focus, the current study encompasses all undergraduate levels and provides a comprehensive analysis of information literacy, retrieval, utilization, and institutional barriers, thereby bridging significant literature gaps.

Alex-Nmecha and Ejitagha (2023) examined digital information literacy among final-year Library and Information Science students at six Nigerian federal universities, revealing students' confidence in internet searches but a lack of awareness of essential academic resources, such as electronic theses. Despite a preference for digital resources, many students distrusted online information for academic purposes. The current study expands this investigation to include students from all faculties at Moses Orshio Adasu University, Makurdi, focusing on both digital and traditional resource use, information retrieval practices, and access challenges. Both studies underscored the importance of assessing information quality and incorporating information literacy into higher education. However, the present study provides a comprehensive understanding of students' engagement with print and digital resources and emphasizes the necessity for institution-wide literacy programs. Flint et al. (2024) explored the connection between information literacy and library resource use at Niger Delta University, uncovering a significant positive relationship through a correlational survey design. In contrast, the study at Moses Orshio Adasu University utilized a descriptive survey design, offering a broader perspective on information literacy and addressing institutional barriers affecting information access and utilization in Nigerian universities.

Research Methodology

The study employed a descriptive survey design to assess information literacy skills, information retrieval, and utilization among undergraduate students of Moses Orshio Adasu University, Makurdi. A total of 600 students were selected through stratified random sampling to ensure representation across faculties and academic levels. Data were collected using a structured questionnaire divided into four sections aligned with the research questions, and responses were measured using a four-point Likert-type scale. The instrument's validity was confirmed through expert review, while its reliability yielded a Cronbach's Alpha of 0.84 after a pilot test. Data collection was carried out by the researcher and assistants, achieving a high response rate of 96.7%. Analysis was done using descriptive statistics—mean and standard deviation—with results interpreted according to predefined decision benchmarks.

Question 1. What is the level of information literacy skills possessed by Undergraduate Students of Moses Orshio Adasu University, Makurdi?

Table 1: Mean and Standard Deviation of Respondents on Information Literacy Skills Possessed by Undergraduate Students

S/N	Statement	SA	A	D	SD	$\bar{x}$	SD	DEC
1	Can identify my academic information needs.	200	250	90	60	2.92	0.89	Agree
2	Can access relevant academic information from various sources.	180	240	100	80	2.84	0.91	Agree
3	Can evaluate the reliability and credibility of academic sources	160	210	130	100	2.66	0.94	Agree
4	Can cite sources properly in my academic work.	170	200	120	110	2.66	0.96	Agree
5	Confident in using library resources to complete academic assignments	175	230	110	85	2.76	0.91	Agree
6	Can received formal training on information literacy in the university	140	180	150	130	2.48	0.98	Disagree
	Cluster Mean						2.72	

Key: Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), Strongly Disagree (SD = 1), Decision (DEC)

Table 1 reveals that the level of information literacy skills among undergraduate students is **moderate** (cluster mean = 2.72). The highest-rated skill was students' ability to identify their academic information needs ($\bar{x}$ = 2.92), while the lowest was formal training on information literacy ($\bar{x}$ = 2.48), suggesting a gap in institutional training programs.

Question 2. To what extent do Undergraduate Students of Moses Orshio Adasu University, Makurdi effectively retrieve academic information from available library resources?

Table 2: Mean and Standard Deviation of Respondents on Effective Retrieval of Academic Information

S/N	Statement	VHE	HE	LE	VLE	$\bar{x}$	SD	DEC
1	Can use the library catalogue (OPAC) to locate books and materials.	160	240	100	100	2.70	0.92	High Extent
2	Can retrieve academic journals from the library's online databases.	150	230	120	100	2.66	0.93	High Extent
3	Can retrieve course-related information from library repositories.	170	220	110	100	2.74	0.91	High Extent
4	Understand the classification system used in the university library.	140	210	130	120	2.58	0.95	High Extent
5	Easy retrieval of information relevant to academic needs from the library	155	225	120	100	2.67	0.92	High Extent
6	**Cluster Mean**						2.67	

Key: Very High Extent (VHE = 4), High Extent (HE = 3), Low Extent (LE = 2), Very Low Extent (VLE = 1), Decision (DEC)

Table 2 shows that students rated the **retrieval of academic information as high** with a cluster mean of 2.67. The ability to retrieve course-related information and use OPAC scored highest, indicating that students are generally effective in navigating library tools, although classification knowledge was relatively lower ($\bar{x}$ = 2.58).

Question 3: How frequently do Undergraduate Students of Moses Orshio Adasu University, Makurdi utilize information resources for academic purposes?

Table 3: Mean and Standard Deviation of Respondents on Frequency of Utilisation of Information Resources

S/N	Information Resources	A	O	R	N	$\bar{x}$	SD	DEC
1	Textbooks	240	200	90	70	2.91	0.87	Often
2	Reference materials (e.g., encyclopedias, dictionaries)	210	190	100	100	2.76	0.92	Often
3	Academic journals	200	180	110	110	2.71	0.93	Often
4	Electronic resources (e.g., e-journals, e-books)	180	190	120	110	2.66	0.94	Often
5	Internet-based information for academic purposes	260	210	80	50	3.03	0.82	Always
6	Library study rooms and reading spaces	220	180	100	100	2.76	0.91	Often
	Cluster Mean						2.80	

Key: Always (A = 4), Often (O = 3), Rarely (R = 2), Never (N = 1), Decision (DEC)

Table 3 shows that students **frequently use** available library and academic resources (cluster mean = 2.80). Internet-based academic information is used most consistently ($\bar{x}$ = 3.03), indicating a shift toward digital access. However, reliance on traditional resources like reference books remains strong.

Question 4. What are the major challenges affecting information literacy, retrieval, and utilisation among Undergraduate Students of Moses Orshio Adasu University, Makurdi?

Table 4: Mean and Standard Deviation of Respondents on Challenges Affecting Information Access and Utilisation

S/N	Statement	SA	A	D	SD	$\bar{x}$	SD	DEC
1	Inadequate information literacy training	230	220	100	60	2.94	0.85	Agree
2	Poor internet connectivity in the library	250	210	90	60	2.98	0.84	Agree
3	Lack of awareness about available library resources	200	210	120	80	2.78	0.90	Agree
4	Difficulty navigating the library's classification system	180	200	130	100	2.65	0.93	Agree
5	Limited access to electronic databases	240	190	100	80	2.88	0.89	Agree
6	Insufficient number of relevant academic materials	210	200	110	90	2.78	0.90	Agree
	Cluster Mean						2.83	

Key: Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), Strongly Disagree (SD = 1), Decision

(DEC)

Table 4 highlights that students face **significant challenges** in accessing and using information (cluster mean = 2.83). Top issues include **poor internet connectivity** ($\bar{x}$ = 2.98) and **lack of formal literacy training** ($\bar{x}$ = 2.94). These barriers could hinder optimal use of academic resources and require institutional attention.

Discussion of Findings

The analysis reveals that undergraduate students at Moses Orshio Adasu University, Makurdi possess a moderate level of information literacy skills. Students demonstrate awareness of their academic information needs and are reasonably capable of locating, evaluating, and using information resources. However, a notable gap exists in formal information literacy training, which limits their capacity to engage critically with academic content and utilize resources to their full potential.

Findings further show that students are generally effective in retrieving academic information from the university library. They are familiar with tools such as the library catalogue (OPAC), repositories, and classification systems, although not without difficulties. The perceived ease of access and ability to locate course-related materials indicate that the existing library systems support student research activities.

In terms of utilisation, the results indicate a frequent use of both print and electronic resources, with internet-based academic information being the most consistently used. Textbooks, academic journals, and reference materials remain central to academic study, suggesting that the library's holdings are relevant and regularly accessed. However, digital platforms are becoming increasingly indispensable, reflecting students' evolving research behaviors.

Despite these strengths, the study highlights a range of challenges that impede optimal information literacy, retrieval, and utilization. These include poor internet connectivity, lack of awareness of available resources, limited access to electronic databases, and insufficient formal training. These issues hinder the library's effectiveness in supporting academic excellence and student learning outcomes.

Recommendations

1. The university library should implement mandatory information literacy training programs, especially during students' orientation and through regular workshops.
2. The library should simplify and reinforce access to retrieval tools such as OPAC and subject repositories through continuous user education and guided search sessions.
3. The library management should improve availability and accessibility of digital and print resources by regularly updating collections in line with academic curriculum requirements.
4. The university should invest in strengthening digital infrastructure, especially internet connectivity and database subscriptions, to remove barriers to effective resource use.

Conclusion

The study concludes that Undergraduate Students of Moses Orshio Adasu University, Makurdi possess essential information literacy skills and make frequent use of available library resources for academic purposes. The retrieval systems in place are functional and widely used,

but several institutional challenges—especially in training, infrastructure, and resource access—affect optimal utilization. Targeted improvements, including strategic training, system support, and enhanced infrastructure, are necessary to empower students with better access to academic information and improve learning outcomes.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

DEVELOPMENT OF SCHOOL LIBRARY SERVICES FOR EFFECTIVE IMPLEMENTATION OF UNIVERSAL BASIC EDUCATION (UBE) IN BENUE STATE

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TETfund Sponsored Research

Abstract
This study examined the Development of School Library Services for effective implementation of Universal Basic Education in Benue State. The study was guided by six research questions on the extent of facilities, availability of resources, type of services provided, problems of school library development and strategies for enhancing school library development. A descriptive research design was used for the study. The population comprised of 2,992 UBE Schools in Benue State, 2503 UBE Teachers, 120 UBE Officials and Teacher Librarians. A purposive sample technique was used to select 6 schools with functional libraries, 21 UBE officials and 6 teacher librarians were us. One hundred and eighty five (185) class room teachers were randomly selected depending on the highest number of teachers in a school. Observation checklist, oral interview and questionnaire were used to collect data for the study. Observation was carried on the resources and facilities; interviews were administered to UBE officials, Teacher Librarians and class room teachers. Data was analyzed using frequency distribution and percentages for qualitative data and thematic analysis for interview data. Conclusion were drawn base on the findings of the study which were used to address the challenges of school library services for effective implementation of Universal Basic Education in Benue State.

Keywords: Development, School Library, Services, Universal Basic Education.

Introduction

Education is the backbone upon which the development and advancement of any nation rest. It has ever remained a social process in capacity-building and a foundation upon which a society is built for decades. Education is seen as a weapon for acquiring skills, relevant knowledge, and habits for survival as well as a vehicle for the development of attitude and values which are capable of building a nation. This informed why it is stressed that education today is an important legacy which any nation must strive to bequeath to its citizens. Elisha (2019) sees education as a process that helps to prepare a person for participation in economic, political, social and technological development which enables him to effectively function in any environment which he may find himself. The National Policy on Education (Federal Government of Nigeria, 2014) wrote that education in Nigeria is an instrument "per excellence" for affective national development. To affect this, education must be for everyone. It is in recognition of the importance of this that the World Conference on Education for All was held in Jomtien, Thailand in 1990 with the aim of

forging a global consensus and commitment to provide basic education for all.

Universal Basic Education is the type of education in quality and quantity given at the base level of education. Universal in this context means the whole people without exception. Base means the springboard, the bottom or the foundation from which other parts stand. It means the type of education given at the base level of education attainment in life, of which access is not restricted to anybody. Universal Basic Education Act, (Federal Government of Nigeria, 2000) defines basic education as "early childhood care and education, the nine years of formal schooling, adult literacy and non-formal education, skills acquisition programme and education of special groups such as nomads and migrants, girl child and disable groups." It is a programme that is at addressing problem of access, quality, quantity and equity in primary and junior secondary schools. This therefore calls for the establishment of school library as a propeller for the actualization of the goals of UBE.

A school library is one established in primary and secondary schools to support learning, reading and out-of-school activities. It is integral in the educational development of children. School libraries provide information and learning resources and give students/pupils life-long learning, skill acquisition and ability to think critically. According to Kolade (2017) as laboratory for learning and teaching. It has a very good role to play in the effective implementation of the objectives of Universal Basic Education. This is because school library's role is to foster reading habit and skills, as well as developing learning in an independent way. Dike (2014) citing the minimum standards for school libraries in Nigeria (Federal Government of Nigeria, 1992) listed the following as the specific contributions of the school library.

i. Support teaching and learning within the school system
ii. Enrich the school curriculum.
iii. Promote the development of reading skills and encourage long-term learning habits through reading, listening to and viewing a variety of learning materials.
iv. Stimulate research and independent study by providing a variety of materials.
v. Provide opportunities for further reading and use of materials other than prescribed classroom textbook among others.

The above contributions fit well into the attainment of the goals of UBE.

Statement of the Problem

School libraries have serious implication for successful implementation of Universal Basic Education. They are essential for attaining basic goals of learning experience, making learning permanent, developing learning skills, enabling of teaching and learning.

Based on the forgoing, the library is an essential educational agency for meeting the objectives of Universal Basic Education.

If functional library services are not provided, pupils will not acquire appropriate levels of literacy, numeracy, communication, manipulative skills for life-long learning. Non-provision of school libraries will hinder the ability of learners to acquire new knowledge and ideas and will negatively affects their creativity, narrow their horizons and lower their performance in life. Above all, students will not be productive in future and become useful to themselves and the society at

large. The over-all implication is that the Universal Basic Education programme will not be achieved in Benue State. A study by Eka, (2021) showed that most schools in Benue State have grossly inadequate resources and non functioning school library services in the state. It is this gap and present situation in knowledge that necessitated this study.

Objectives of the Study

The purpose of this study is to determine the development of school library services for effective implementation of Universal Basic Education in Benue State.

1. To determine the availability of suitable facilities for implementation of Universal Basic Education.
2. To investigate school library resources available for effective implementation of UBE.
3. To identify the types of services which are provided in the school libraries for effective implementation of UBE.
4. To identify the problems that could hinder the development of school libraries for effective implementation UBE.

Research Question

The following research questions were formulated to guide the study.

1. What are the available physical facilities made available for library services for the purpose of UBE implementation in the state?
2. What are the available resources in the school library for effective implementation of UBE in the state?
3. What are the services provided in the school library for UBE implementation in the state?
4. What are the problems hindering the development of school libraries for effective implementation UBE in State?

Research Methodology

The researcher adopted descriptive research design for this study. The study was carried out in Benue State. The three sensational districts of zone A, B and C were covered. The study was guided by five research questions. Two schools each with functional school libraries were purposively selected from each of the zones making a total of six schools. Two hundred and twelve (212) respondents including 21 UBE principal officials, 185 classroom teachers, and six teacher librarians formed the personal selection.

The instruments used for data collection were observation checklist, oral interview and questionnaire. Data collected were analyzed using quantitative analysis and thematic. Quantitative analysis applied to research questions using figures or numbers. In this case, the collected data were orderly organized into tabular form to indicate their raw score which were later converted to frequencies and percentages while interview method was analyzed by describing in details the responses given by the interviewees thematically.

Result

The result of the study is presented below.

Research question 1
What are the available physical libraries facilities made available for the purpose of UBE?

Table 1: Available library facilities made for UBE

Schools	Accommodation (size)		Reading tables		Reading chairs		Shelves		Catalogue cabinet		Newspaper rack	
	Length	Width	AV	Qty	AV	Qty	AV	Qty	AV	Qty	AV	Qty
Arabic school Makurdi	35ft	20.3ft		6	√	24	√	4	√	1	-	-
UBE Sch. Ojira 1 Otukpo	30ft	20ft	√	1	√	4	√	1	√	1	-	-
UBE Sch. Akaajime, Gboko	19.4ft	11.3ft	√	1	√	4	√	1	√	1	-	-
UBE Sch. St, John K/Ala	19.4ft	11.3ft	√	1	√	4	√	1	√	1	-	-
UBE Sch. Akaa, Ukum	19.4ft	11.3ft	√	1	√	4	√	1	√	1	-	-
UBE Sch. Tahav, Buruku	19.4ft	11.3ft	√	1	√	4	√	1	√	1	-	-
Total	-	-	√	11	√	44	√	9	√	6	-	-

Table 1 shows the available buildings in sizes. Apart from UBE School, Arabic Makurdi that has the size of 35ft by 20.3ft and UBE School Ojira 1 Otukpo with a size of 30ft by 20ft which may be considered as a size of the standard school library as put forward by the (Federal Ministry of Education and Youth Development, 1992) recommending that, the size of the standard school library should be the size of one class room, others fall below requirement.

Observation on facilities revealed that only UBE School Arabic Makurdi has 6 reading tables, 24 chairs, 1 catalogue cabinet and 4 shelves, all other school libraries have 1 reading tables, 4 chairs, 1 catalogue cabinet and 1 shelves respectively.

It could be inferred from the table above that collections are generally small, ranging from 6 reference material to 28 for the textbooks. Collections are primarily, textbooks (84.32%), with fair number of fiction (13.73%) and but very few audio-visual materials (0.4%).

Research Question 2
What are the available book resources in various subjects and levels for different schools?

Table 2: Available book resources in various subjects and levels for different schools

Subjects		Makurdi	Otukpo	Gboko	Katsina-Ala	Ukum	Buruku	Total
English Language	Primary 1-3	85	34	27	28	25	17	217
	4-6	75	22	20	42	50	6	215
	JSS 1-3	24	25	29	35	7	26	146
Mathematics	Primary 1-3	65	40	28	15	19	6	173
	4-6	60	30	20	42	38	7	197
	JSS 1-3	46	49	24	46	24	43	232
Primary Science	Primary 1-3	-	25	16	10	17	8	76
	4-6	-	37	24	8	31	10	110
Integrated Sci.	JSS 1-3	56	36	36	64	30	-	222
Civic Education	Primary 1-3	30	10	29	8	-	-	77
	4-6	25	20	20	25	-	-	90
Social Studies	Primary 1-3	60	30	10	13	16	8	137
	4-6	54	25	6	27	11	4	127
	JSS 1-3	52	14	36	17	30	12	161
C.R.K	Primary 1-3	15	21	12	-	7	-	55
	4-6	20	10	22	-	5	-	57
	JSS 1-3	39	38	34	17	35	37	200
Islamic Studies	JSS 1-3	21	25	24	11	10	16	107
Creative arts	Primary 1-3	-	-	-	-	-	-	-
	4-6	-	-	-	-	-	-	-
Home Economics	JSS 1-3	33	18	23	14	44	16	148
Business Education	JSS 1-3	31	24	42	22	16	11	146
Agric. Science	JSS 1-3	-	20	20	40	21	18	119
Introductory Technology	JSS 1-3	-	21	15	12	21	19	88
Literature	All levels	125	98	130	65	28	55	501
	Total	918	672	647	561	485	319	

Table 2 revealed that, mathematics for JSS 1-3 constituted the highest, while introductory technology has the least collection in JSS level.

Research Question 3

What services are provided in the school library for UBE?

Table 3: Available School Library Services for UBE

Statement	UBE school Arabic (19)		UBE sch. Ojira 1 (13)		UBE school Akaajime, (14)		UBE Sch. St. John K/Ala (13)		UBE School Tahav (12)		Total (71)	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
Organization of learning resources	5	5.7	2	2.3	5	5.7	7	7.5	5	5.4	24	27.4
Supply of the needed teaching resources	9	22	2	2.3	3	3.4	4	4.3	2	2.1	20	22.5`
Planning scheme of work	4	4.6	5	5.7	6	6.8	3	3.2	2	2.1	20	22.5
Assisting in doing project work	7	8.1	5	5.7	4	4.5	3	3.2	1	1.08	20	22.5
Provision of materials to broaden academic horizon	5	5.7	3	3.4	5	5.7	2	2.1	1	1.08	16	18.2
User education	5	5.7	3	3.4	0	0	0	0	0	0	8	9.01
Extension services	1	1.1	3	3.4	0	0	0	0	3	3.2	7	7.8
Consultation services	1	1.1	1	1.1	0	0	0	0	0	0	2.	2.2
Level of satisfaction with services	5	5.7	3	3.4	12	12.8	0	0	3	3.2	23	25.9

As shown in table 3, data revealed that these services were not provided to users. This is indicated by insignificant percentage return on the available services. Take for instance, organization of learning resources is 24 representing 27.4, assisting pupils in doing project work, 20 representing 22.5, while user education, 8 representing 9.01 are very intangible. The percentage returns of all the services ranged below 50% which shows negative value of availability of services.

Research Question 4

What problems hindered the development of school library services in Benue State?

Table 4: Problems of School Library Development

Problems of School Library Development	UBE School Arabic Makurdi (19)		UBE Sch. Ojira 1 Otukpo (13)		UBE Sch. Akaajime, Gboko (14)		UBE Sch. St. John K/Ala (13)		UBE School Tahav Buruku (12)		Total (71)	
	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)	F	(%)
Lack of fund	7	8.1	5	5.7	7	8	6	6.4	6	6.5	31	34.9
Inadequate collection	8	9.1	9	10.3	4	4.5	4	4.3	5	5.4	30	33.8
Lack of trained personnel	4	4.6	4	4.6	9	10.2	5	5.3	6	6.5	28	31.5
Inadequate accommodation	4	4.6	7	8.07	3	3.4	4	4.3	5	5.4	23	25.9
There is no power supply	2	2.3	0	0	1	1.1	0	0	0	0	2	2.2

From the table above, it was gathered that, lack of fund is the major problem affecting the development of school library in Benue State. About 31 representing 34.9% agreed with that. Also from the revelation of the interview conducted Terfa Gbakith, the teacher librarian of LGEA School Gboko, Ude innocent of LGEA School Otukpo and the principal of UBE School Katsina-Ala, Becky Kumpa agreed also that non-availability of funds affect school library development in the State.

Summary of the Findings

The major findings are summarized below

1. There is no provision of adequate accommodation for the school library in Benue State.
2. In all the school libraries, primary school collections were not kept in the school libraries but in the head teacher's office.
3. School library resources are inadequate and in addition, some schools and some subject areas lacked textbooks completely.
4. Qualified library personnel's were not employed to take charge in any of the school libraries.
5. The needed school library services were not provided to the end users.
6. There is no adequate provision of fund for school library development.
7. There is completely no supervision of these school libraries from UBEC, SUBEB and LGEA to know the problems.
8. Other findings as suggested by the respondents include provision of adequate accommodation, supply of adequate resources, employment of trained personnel as well as adequate provision of fund will address the problems of school libraries in Benue State.

Discussion of the findings

The discussion of the finding is arranged according to the research questions of the study.

A. Types of facilities made available for the purpose of libraries in UBE Schools in the State.

The findings revealed that, apart from UBE Arabic School in Makurdi and UBE School Ojira Otukpo that meet the requirement of a classroom size as put forward by the (Federal Ministry of Education and sport Development, 1992), all other school buildings fall below the standard.

Other facilities such as reading tables chairs book Shelves and catalogue cabinet were not available.

B. Availability of resources in School libraries in Benue State.

The research note with dismay, that library resources are grossly inadequate in all the School libraries under investigation. The implication is that, the lack of these resources will lead to inefficiency in achieving the aim and objectives of UBE and modern educational philosophy in Nigeria which emphasized that learning should be resource based. This is in line with Dike (2014) that resources in school library are central and fundamental to modern education and for learning to be active and effective, it must be based on the varieties of learning resources in the school libraries.

C. Services provided in the school libraries for UBE.

On the provision of school libraries services, investigation revealed that, needed services are

not provided in these school libraries. Absence of school library services will deprive the students' ability to acquire appropriate levels of literacy, numeracy, communicative, manipulative and libe-long learning. The teacher on the other hand, will not have positive approach to organize knowledge with use of resources as he arrange his class lesson note.

D. Problem of School library Development

Non provision adequate funds ranked high as the major problem affecting the development of school library services in Benue State. Non provision of enough fund affect all the aspect of library development.

But when funds are available adequately, provision of all the necessary infrastructure, equipment and employment of appropriate man power will be in place. This is why Agbecha (2018) states that, in a situation where finance is made available, the needs of the end users will be reasonably satisfied and the achievement of institutional objectives made easier

Another major problem is lack of trained personnel. In a situation where qualified staff are not employed to reading materials with the age levels of students/pupils, it is detrimental to library use.

E. **Strategies to enhance school library development.**

It was gathered from the investigation of the study that, if adequate funds, are made available, suitable accommodation provided, adequate collection of materials are supplied and trained librarians employed, then the problems of school library development in the state will be solved. Daniel (2011) agreed that, if government provides enough funds, provides needed infrastructure, provide adequate resources and employment of trained staff, the problem of school library will be addressed in the country.

Conclusion

The study investigated the development of school library services for effective implementation of UBE in Benue State. Research questions were formulated to guide the study. The study used frequency and percentages to analyzed quantitative data while thematic analysis was used for interview date. The findings showed that even though they are school libraries in some schools, but the level of development is very low in terms adequate provision of facilities, provision of adequate resources lack of trained staff keeping of collections in the headteaher's office among others.

Recommendations

In order to facilitate the functionality and effective utilization of school library services in the state, the following recommendation are proffered.

1. Adequate fund should be made available Government at all levels. Federal Government through UBEC should as a matter of urgency create an intervention fund for school libraries.
2. Standard accommodation and other facilities should be made available for school library services.
3. Adequate provision of relevant and current print and non-print materials should ne made available.

4. There should be employment of qualified librarians to take charge of the school libraries.
5. Collections should be kept in the school libraries for consultation by the users but not in the head teacher's office.
6. There should be regular supervision of these libraries from UBEC, SUBEB and LGEA in order to know their problems.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

TURNING ARTIFICIAL INTELLIGENCE (AI) IDEAS INTO ACTIONS IN NIGERIAN ACADEMIC LIBRARIES

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Abstract
This paper examined the possibility of converting AI ideas into actions in Nigerian academic libraries. Literature revealed that AI offers numerous benefits to academic libraries because it can be used in almost all sections of an academic library, and can also be used to enhance academic library services. In the literature, there are evidences of the use of AI in a few academic libraries in Nigeria and beyond. In spite of the benefits that AI offers, for it to be widely implemented in Nigerian academic libraries, much need to be done. This is due to numerous constraints such as lack of funds; lack of skills and ethical issues associated with the process of turning AI ideas into actions in the academic libraries. However, these constraints can be addressed by soliciting for funds to launch the AI applications in the libraries, organizing staff training and workshops for the acquisition of necessary AI skills and development of AI ethics policies to guide the ethical use of AI by the libraries among others.
Keywords: Artificial Intelligence (AI), Ideas, *Nigerian academic libraries*

Introduction

In the past centuries and decades, the world has experienced three industrial revolutions and is currently experiencing the fourth. Industrial revolution is the process of change from an agrarian and handicraft economy to one dominated by industry and machine manufacturing. These technological changes usually introduce novel ways of working and living, and fundamentally transform society (The Editors of Encyclopaedia Britannica 2025).

The first industrial revolution started between 1760-1830. It was a period of technological advancement primarily in Great Britain that shifted societies from agrarian economies to ones dominated by machine manufacturing and industrial production. Key innovations included the steam engine, spinning jenny, and the development of iron and cotton industries, leading to mass production, new transport systems like canals and railways, and significant population growth alongside increased urban labour (Mohajan 2019).

The second industrial revolution was a period of rapid technological, scientific, and industrial growth between roughly 1870 and 1914, leading up to World War I. It built upon the innovations of the first industrial revolution. But was defined by new energy sources, advanced materials and mass production methods that fundamentally changed modern life (Jevons 1931; Turner 2024).

The third industrial revolution, also known as the digital revolution began in the 1950s to early 2000s was characterized by the rise of computers, microelectronics, and the Internet, fundamentally transforming industries and society from manual to automated, information-based processes (Smith, 2019; The Strategic Foresight Initiative 2013). The fourth industrial revolution

began around the early 2010s with key technological milestones in 2011 and 2012. The era or epoch is a fusion of physical, digital, and biological worlds through technologies like Artificial Intelligence, the Internet of Things, big data, and robotics. This integration creates a new era of "smart" systems, enhanced by advancements in cloud computing, autonomous vehicles, 3D printing, and biotechnology, leading to greater automation, interconnectedness, and efficiency across various sector (World Economic Forum 2025).

According to Manning (2020) the term "Artificial Intelligence" (AI) was first mentioned by Emeretus Stanford Professor John McCarthy in 1955, and was defined by him as "the science and engineering of making intelligent machines". AI is an academic discipline that emerged from the computer science discipline (Khaleed, Jebrel & Shwehdy, 2024). The beginning of AI as a discipline dates as far back as 1956 in a laboratory where a group of scientists made it the subject of an event entitled "The Darthmouth Summer Research Project on AI". With this project, these scientists formulated a research agenda that launched AI as a discipline (Sheikh, Prins & Schrijvers 2023). Today, AI is gaining rapid popularity all over the world because of its immense benefits to society.

Russell and Norvig (2020) noted that there is no generally accepted definition of the term AI. According to Sheikh et al. (2023) AI is commonly defined as a technology that enables machines to imitate various complex human skills. In 2019, the High-Level Expert Group on Artificial Intelligence proposed a more detailed definition of AI as:

> *"Software or hardware systems designed by humans that given a complete goal, act in the physical or digital dimensions by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information derived from the data and deciding the best action (s) to take to achieve the given goal".*

The evolving library

A library can be defined as a curated collection of resources, both physical and digital, organized for access, retrieval, and dissemination (Sona & Padhi 2020). As noted by Sturges and Neill (2013), libraries have functioned as custodians of cultural heritage, conserving codices, manuscripts, and other historical documents for future cohorts or generations. Moreover, libraries have played an essential role in supporting academic research and scholarly communication. Thereby, promoting innovation and intellectual investigation (Lor, 2012). Throughout history, libraries have been catalysts for enlightenment and social progress, providing access to information that empowers individuals and societies (Aabo, 2018).

Libraries have advanced from primeval repositories of clay tablets to modern digital centers, transitioning from physical storage to providing varied digital services and becoming community centers (Sona & Padhi 2020). Major changes include the invention of the printing press, the rise of public libraries in the 19th Century, and the 21st Century incorporation of the Internet, which transformed libraries into virtual and community spaces with new services like e-readers and 3D printing (Dixit, Dixit, Dixit & Pandey 2024). Thus, libraries are expected to evolve further through technologies like AI and virtual reality, acting as implementors of information and learning in evolving digital environments (Sona & Padhi 2020).

Artificial Intelligence ideas in academic libraries

According to Huang, Cox and Cox (2023) the idea of integrating AI into libraries has existed

since at least 1985, but interest has surged in the last five years. Kim (2019) mentioned that in 2016, the University of Rhode Island launched an *AI laboratory* in their library that provided intelligent experimental space and services for users, and the library has emerged as the pioneer library that has become successfully involved with AI. Thus, AI holds numerous potentials, prospects or possibilities in being used to perform various library tasks in various sections of the library such as:

1. Cataloguing: Ashikuzzaman (2023) submits that AI has the capability of being used in the cataloguing section to extract relevant metadata, categorize books, and suggest appropriate subjects for the books. AI can also be used to automate repetitive tasks in the cataloging section, thereby, allowing staff to focus on more complex activities (Jayachristraya & Hemapriyaa, 2023). Furthermore, AI can help with multilingual cataloguing in situations whereby collections are available in multiple languages (Hasan, Saifullah & Hashmi, 2024).
2. Serials: In the serials section, AI can be employed in offering abstracting services to users. This is possible because AI has the capability of creating concise summaries or abstracts, to aid users in quick understanding of the content of a document (Jayachristraya & Hemapriyaa, 2023).
3. Administration: AI has the potential to analyze data related to library operations and user behavior in order to provide valuable insights. These insights assist in making informed decisions about resource allocation, service improvements, and strategic planning, ultimately enhancing the overall efficiency and effectiveness of the library (Ashikuzzaman, 2023). AI can equally help with budgeting, planning and allocation by analysing past spending patterns and predicting future needs (Hasan et al., 2024).
4. Reference services: AI-powered voice recognition systems allow patrons to use voice commands to search the catalogue and access information (Ashikuzzaman, 2023). AI can also be employed for user analytics and personalization. The analytics provide insights into user behaviour, preferences, and needs. This is done through AI by collecting and analysing user data. This data-driven approach allows for personalized services and content recommendations, enhancing the overall user experience (Jayachristraya & Hemapriyaa, 2023). AI-driven data analytics can also help libraries monitor and analyse reference service usage patterns, user experience and performance metrics to improve services and resource utilization (Hasan et al., 2024).
5. Circulation: In the circulation section, AI can be used to handle new member registrations, membership renewals, process overdue fines and update to user information. By employing AI for these routine tasks, libraries can reduce administrative workload, enhance data accuracy, and provide a seamless membership experience for patrons (Ashikuzzaman, 2023). AI can also be used for automated checkouts, inventory management, queue management and user behaviour analysis in the circulation section (Hasan et al., 2024).
6. Acquisitions: In the acquisition section, AI can help streamline the acquisition process, making buying decisions more efficient. It can also be used to assist with vendor selection and negotiation by analysing vendor performance, buying history and market trends (Hasan et al., 2024). AI predictive analytics can help predict future resource needs by looking at usage patterns, circulation information and collection gaps, so that libraries can make smart decisions about what to get (Hasan et al., 2024).

Turning Artificial Intelligence ideas into actions in academic libraries (practical examples)

Globally, there are examples of academic libraries that have turned AI ideas into actions. One of such examples was reported in a 2023 publication by Huang, Cox and Cox. The research investigated the strategic plans of 25 top ranking universities in the United Kingdom (UK) and also in Mainland China on AI. Among the study's findings, it was revealed that 18 libraries in those universities have already introduced AI applications or offer AI services. Out of the 18 libraries 2 are in the UK, while 16 are in Mainland China. It was also revealed that 9 of the libraries provide intelligent virtual agents, enquiry robots or chatbot services (Huang et al., 2023). Another example could be found in the research work that was carried out by Owusu-Ansah, Amankwah, Yeboah, Amoako, Boateng and Nutsukpui (2024). The study explored the adoption of AI in three selected academic libraries in Ghana. Among the findings of the study, it was revealed that all the three academic libraries have adopted AI to a certain extent. It was also revealed that technical services are the strategic area of library operation where AI integration is being actively applied in the selected libraries. Similarly, Masinde, Mugambi and Wambiri (2024) examined the current landscape of AI adoption in Kenyan academic libraries. Findings of the study revealed that virtual assistants are the most widely adopted AI tools in the academic libraries. With 74% respondents acknowledging their availability in their libraries. Findings further revealed that robots were yet to find adoption in the academic libraries.

In Nigeria, it was reported in the Vanguard Newspaper (2020) that University of Lagos received donations of three robots from Platform Capital, a global investment firm. One of the robots was deployed to the library to shelve books, take temperature of users, take statistics of users that visit the library daily and so forth. Wagwu, Okpala, Oladokun and Ajani (2023) carried out an investigation on user experience with ChatGPT at the Federal University of Technology Ikot Abasi library. Findings of the study revealed that the library has integrated ChatGPT into its user-centred services. The AI tool is mainly used to provide assistance with resource discovery, to provide accurate and quick responses to user's queries and to offer research guidance (Wagwu et al., 2023). Similarly, at the University of Jos library, Nwokedi (2025) reported that ChatGPT is gradually being introduced into its user-centred services especially in the serials section.

Constraints to wide and rapid integration of Artificial Intelligence ideas in libraries

Oladokun, Owolabi, Aboyade, Wiche and Aboyade (2023) noted that academic libraries are slow in integrating AI into their operations. In the same vein, Orubebe, Oloniruha and Oladokun (2024) reported that there are various constraints that have hindered the widespread adoption and use of AI in academic libraries in both developed and developing nations. These constraints can be categorized into three. These are:

1. **Financial and infrastructure constraints**

   Inadequate funding: Many academic libraries particularly in developing countries like Nigeria face budget cuts that restrict their ability to invest in new technologies and skilled personnel. Thus**,** resource constraints produce uneven adoption that widens the digital divide between well-funded institutional libraries and others.

- **Limited ICT infrastructure**: Many academic libraries lack sufficient computers or stable networks to host or integrate modern AI systems. Moreover, the initial and ongoing costs of implementing AI, including hardware, software, and maintenance, can be prohibitive

2. Human resource constraints

- **Skills gap**: There is a need for staff with specialized skills to develop, implement, and maintain AI solutions in academic libraries, which can be difficult to find or develop. Without staff capable of evaluating models such as bias, hallucination and privacy, academic libraries may either avoid AI or deploy it unsafely (Shahzad, Khan, Iqbal, Ahmed, Javeed & Mohamed 2025).
- **Lack of training**: Librarians require training to adapt to new technologies, but access to effective training programs can be limited.
- **Resistance to change**: Some staff may be resistant to adopting new AI applications due to fear of job displacement or a lack of organizational support for change.

3. Ethical and technical constraint.

- **Potential violation of ethical codes:** AI can reproduce or amplify biases in training data, produce inaccurate or misleading outputs ("hallucinations"), or automate decisions without clear accountability. These conflict with libraries' commitments to equity, intellectual freedom, and accuracy. These issues can cause harm to patrons such as misinformation, marginalization, reputational damage, and violations of ethical codes.
- **Public perception:** Some patrons are wary of AI, fearing surveillance and data misuse, which requires libraries to engage in transparent communication to build trust.
- **User trust and acceptance**: Whenever there is an emerging technology such as AI, users usually express concern about privacy and transparency before accepting the technology.
- **Data privacy and security**: AI systems often require user data such as queries, circulation records, and/or reading history. At times the systems may require sending of metadata to third-party services. These can create privacy risks that conflict with libraries' core duty to protect patrons' privacy. These issues can result to loss of trust, legal risks (data protection laws), and ethical conflicts with librarianship values.
- **Technical complexity**: AI-based services can be complex to manage and may require more resources and expertise than are currently available to library staff (Afolayan 2025; Joel 2025; Matsieli & Mutula 2025; Panda, Sharma, Sati, & Kaur, 2024; Shahzad, Khan, Iqbal, Ahmed, Javeed & Mohamed 2025).

Conclusion

Just like other academic libraries in Africa and beyond, Nigerian academic libraries have evolved greatly in the course of time. In the present era which is the fourth revolution, AI is among the emerging technologies that are gradually shaping academic libraries. Thus, AI holds great potentials and benefits for academic libraries all over the world including Nigeria. However, for Nigerian academic libraries to turn these potentials or ideas into action, much needs to be done due to numerous constraints associated with the ideas. In order to surmount these constraints, it is imperative for the libraries to first start small by constituting AI committees; by carrying out users

and staff needs assessment, and by developing AI policies that would guide them. Afterwards, they can launch low-cost AI applications such as chatbots in their libraries.

Way forward

To successfully turn AI ideas into actions in Nigerian academic libraries. The above-mentioned constraints must be adequately addressed. Below are some suggestions or the way forward:

1. The academic libraries should carry out needs assessment for both library staff and users to ascertain their actual needs in terms of AI apps and areas of training.
2. They should inaugurate AI committees in the library that would map out strategies on how to turn AI ideas into actions.
3. The committee should development clear, concise and straightforward AI policies that would guide them and give them directions on how to launch, manage and maintain AI applications in their libraries.
4. With respect to funds and infrastructure, Nigerian academic libraries can solicit for funds by combining a blend of external grants, collaborations, low-cost open-source tools, internally generated incomes, and community partnerships. They can apply for grants from organizations like EIFL, Carnegie Corporation, IFLA, UNESCO, and Google Research Africa. They can also seek collaboration with telecom companies such as MTN and Globacom, or banks such as First bank and Zenith bank via Corporate Social Responsibility (CSR) programs to support digital infrastructure. Besides, they can invest in digital infrastructure by advocating for university management and government agencies (like TETFund) to support reliable internet connectivity, cloud computing infrastructure, and updated library management systems compatible with AI. The libraries can also share infrastructure through library consortia. Still, they can use open-source and affordable AI tools such as Koha ILS with AI plugins, TensorFlow, OpenAI APIs, or ChatGPT free tiers. They can also use Zotero's AI assistants for citation and information retrieval. This reduces licensing costs and allows customization for local contexts (Idemudia & Makinde; IFLA 2024; UNESCO 2025; UNESCO 2021).
5. As concerns AI skills, the academic libraries they can organize regular workshops and training sessions on AI literacy, data management, and digital tools. Even if it entails starting small (e.g., using free online resources). They can also partner with their parent institution's Computer Science or IT departments to conduct hands-on training for librarians. Furthermore, they can enroll librarians in online courses such as Coursera: *AI for Everyone*, dX: *Artificial Intelligence in Practice* and UNESCO's *AI and Digital Transformation in Education* courses. They can also encourage peer-to-peer training: a few tech-savvy staff can train others ("train-the-trainer model"). Afterwards, they can implement gradual and scalable AI projects by starting with small, low-cost AI applications such as AI-powered library chatbots, automated cataloguing systems, and predictive analytics for resource usage. The libraries should scale up once technical expertise and infrastructure improve (Idemudia & Makinde; IFLA 2024; UNESCO 2025; UNESCO 2021).
6. Finally, as concerns ethics, the libraries can develop clear AI ethics and governance policies that aligned with the Nigerian Data Protection Act (2023), UNESCO's Recommendation on

the Ethics of AI (2021), and Institutional ICT or research policies. Policies should cover data privacy, informed consent, algorithmic fairness, and responsible use of user data. The libraries should also ensure data privacy and security by protecting user data through secure data storage, encryption, and anonymization. Train staff on data protection principles and compliance with national and institutional privacy standards. In addition, they can promote transparency and accountability by explaining to patrons how AI systems make decisions (e.g., how chatbots or recommendation engines operate). They should also maintain human oversight of AI tools librarians should validate outputs, not depend entirely on algorithms. They can also create ethical awareness and staff training by organizing seminars and training on AI ethics, privacy, and responsible innovation (Idemudia & Makinde 2022; IFLA 2024; UNESCO 2025; UNESCO 2021).

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
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AWARENESS, ACCESS AND UTILIZATION OF SERIAL PUBLICATIONS AMONG UNDERGRADUATE STUDENTS OF FACULTY OF SOCIAL SCIENCE IN NASARAWA STATE UNIVERSITY LIBRARY, KEFFI

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Abstract
The study investigated the level of awareness, access, and utilization of serial publications among undergraduate students in the Faculty of Social Sciences, Nasarawa State University, Keffi. The population of the study comprised of 7,017 undergraduate students from the Faculty. A cluster sampling technique was employed to select respondents for the study. The research adopted a survey research design, and data were collected through a structured questionnaire administered to the students. The collected data were analyzed using mean scores and simple percentages. The findings revealed that students exhibited a moderate to high level of utilization of serial publications available in the university library. The highest mean score (3.08; 80%) was recorded for the statement that serial collections are major media through which research findings are published, indicating that students recognize the importance of serials particularly academic journals as key sources of current and reliable research information. In addition, serial publications were found to supply scientific discoveries and recent research findings (mean = 2.98; 76%) and to help satisfy users' information needs (mean = 2.94; 76%).However, the statement that serials provide more up-to-date information on any issue than textbooks recorded the lowest mean score (2.84; 68%), suggesting that some students still rely more heavily on textbooks, possibly due to familiarity or ease of access. The study concluded that although serial publications are considerably utilized by undergraduate students, their effective use can be further improved. Consequently, the study recommends that the university library increase subscriptions to current serial titles, expand access to electronic journals and databases, and organize regular user education and orientation programmes to promote more effective and sustained utilization of serial resources in academic work.
Keywords: Awareness, Utilization, Undergraduates, Serial Publication, Libraries.

Introduction

Academic libraries play a vital role in the intellectual life of higher education institutions, their primary purpose is to support the information needs of students, lecturers, and researchers. These libraries are more than just buildings filled with books; they serve as knowledge hubs that fuel teaching, learning, and research. To effectively fulfill this role, academic libraries must develop collections that align with the academic interests and programs of their parent institutions. This involves ensuring access to a wide range of high-quality and diverse information resources, available in both print and digital formats. Academic libraries are established, owned, and funded by institutions of higher learning such as universities, polytechnics, colleges of education, and

colleges of agriculture. As integral parts of their parent institutions, these libraries design their collections and services to meet the academic programs and information needs of their institutions Nyiyongo, & Tofi, (2020).

University libraries, in particular, form a vital component of the academic structure of universities. Their main objective is to provide information resources that support teaching, learning, and research activities Saka & Mahmud, (2020). University libraries acquire, organize, store, retrieve, and disseminate information contained in various materials, especially serial publications, for educators, researchers, students, and other interested users. Serials include newspapers, magazines, newsletters, accessions, journals, reports, proceedings, indexes, and abstracts, among others (Aina, 2014). According to Rafiu &Yahaya, (2019), serials are publications whether in print, non-print, or electronic format issued in successive parts and intended to continue regularly or irregularly. These include journals, magazines, newspapers, newsletters, accessions, reports, proceedings, and transactions of societies, as well as periodicals like abstracts and indexes. Serials are of great importance because they provide the most current, up-to-date, and valuable information, thereby forming a significant portion of university library collections.

Access to serial publications, as noted by Azonobi, (2021), refers to the ability of users to locate and benefit from periodicals acquired by the library. Accessibility is a crucial factor and can be achieved through various tools available in university libraries, such as catalogues, Online Public Access Catalogues (OPAC), bibliographies, indexes, and abstracts both in manual and electronic formats. Ntui & Udah, (2015) describe accessibility as the ease with which users can locate and retrieve information from storage media. Access to serials may involve searching, locating, downloading, retrieving, or reading serial publications within or outside the library. Tools such as Sci-Hub, search engines, catalogues, and union catalogues enhance access and enable users to quickly obtain specific serial publications for academic use.

The utilization of information depends largely on the availability and accessibility of information resources in the library. For effective utilization to occur, both conditions must be satisfied. The mere acquisition of information resources does not guarantee accessibility. Granting access to library resources requires several processes, such as cataloguing and indexing, to ensure that users can identify and locate materials easily Nwachukwu, &Abdulsalami, (2014). The use of serial publications in university libraries is not a new practice. However, librarians continue to make efforts to acquire serials that meet users' academic and research needs. Kanwar, (2019) emphasized that serial publications should be effectively and ethically acquired at reasonable cost and in a timely manner to reflect the requirements of the university curriculum. It is against this background that the present study seeks to examine the awareness, access, and utilization of serial publications among students of the Faculty of Social Sciences, Nasarawa State University library, Keffi.

Statement of the Problem

Serial publications constitute a vital component of academic library collections, as they provide current and reliable information that supports teaching, learning, and research. University students, including those in the social sciences, rely heavily on serials for up-to-date information, recent developments, and empirical studies relevant to their fields.

Despite their importance, observations and preliminary reports suggest that many students

do not adequately utilize serial publications available in their libraries. Several factors may contribute to this challenge. These include inadequate awareness of the existence and value of serials, limited access due to poor organization, lack of proper orientation or training on the use of serial tools such as catalogues, OPAC, indexes, and abstracts, and insufficient availability of current or relevant titles. In some cases, inadequate funding, irregular subscription to periodicals, and limited ICT infrastructure further hinder effective access and utilization. At Nasarawa State University, Keffi, the university library subscribes to a number of serial publications both in print and electronic formats to support academic programs, especially within the Faculty of Social Sciences. However, the extent to which students are aware of these resources, can access them, and actually utilize them for academic purposes remains unclear.

It is against this background that this study seeks to investigate the awareness, access, and utilization of serial publications among students in the Faculty of Social Sciences, Nasarawa State University library, Keffi with a view to identifying the challenges affecting their effective use and suggesting measures for improvement.

Objectives of the Study

The following are the objectives of the Study:

1. Determine the level of awareness of Faculty of Social Science undergraduate Students on serial publications in the Nasarawa State University library, Keffi.
2. Determine the extent of utilization by Faculty of Social Science undergraduate students' to serial publications in the Nasarawa State University library, Keffi.

Review of Related Literatures

The concept of *awareness* has been defined by several authors and scholars from different perspectives. (Caroline, 2023) view awareness as a condition in which an individual becomes conscious or informed about something. In this sense, awareness represents the capacity to recognize or be conscious of new trends, technologies, or systems. According to Ani, (2008), awareness is the knowledge or understanding of a situation or subject at a particular time, based on information or experience. Similarly, Danalami and Umar, (2019) describe awareness as knowledge or perception of a situation or fact encompassing consciousness, recognition, realization, and acknowledgement of, or concern about, a particular issue or development. In the context of this study, **awareness of serials** refers to the knowledge and recognition of serial publications such as journals, magazines, newspapers, and related materials available in the serials department of the library. Awareness is therefore an essential prerequisite for library users to effectively identify and utilize the serials resources provided for their academic needs. Accessibility to information resources is also a fundamental concern and of great relevance to library users. As noted by Ugah, (2008) without access to resources, utilization becomes impossible and the value of those resources remains unrealized. Access to information resources, however, often presents challenges to both library management and users, as it requires certain technical and informational skills. A lack of these skills renders available resources effectively inaccessible. Weak cataloguing, improper shelving, and inadequate technical services all contribute to reduced accessibility of library information resources. In addition to the various barriers to accessibility identified by Olowu, (2020) categorized such obstacles as either *natural or artificial.* Accessibility

generally refers to the degree to which a system or resource can be used by as many users as possible, including those with varying levels of ability or technical knowledge. Ensuring accessibility therefore requires both physical and intellectual means of access, supported by adequate organization, user education, and information retrieval tools.

Serials, on the other hand, are publications issued in successive parts and intended to continue indefinitely. They are available in both print and non-print formats and usually bear issue numbers, dates, or both. Examples of serials include magazines, newsletters, newspapers, annuals (such as reports, yearbooks, and directories), journals, memoirs, proceedings, and transactions of societies Nwalo, (2003) Akande, as cited in (Tamomowo-Ayodele, 2018), identified various types of serials, including newspapers, magazines, newsletters, accessions, journals, indexes, abstracts, reports, and proceedings of academic and professional societies.

Academic libraries hold serial publications in high regard because they contain firsthand, authoritative, and current information written and reviewed by experts. Sambo, (2016) emphasized that serials provide intellectually sound and peer-reviewed content, representing the most current carriers of new ideas, knowledge, and scientific discoveries. Indeed, most research breakthroughs and innovations are first communicated through journal articles and other serial materials, which play a vital role in advancing scholarship and the overall development of society.

Research Methodology

This study adopted a descriptive survey research design. The population of the study comprised 7,017 undergraduate students from the Faculty of Social Sciences, Nasarawa State University, Keffi. The researcher employed a cluster sampling technique for data collection. According to (Brewer, 2015), the survey research design enables researchers to gain insights into the attitudes, opinions, and perceptions of members of a population. This design was considered appropriate for the present study because it allowed the collection of data from students across different departments within the Faculty of Social Sciences who use the university library resources. Furthermore, the design facilitated a comprehensive description and analysis of the respondents' level of awareness, access, and utilization of serial publications.

Response Rate

No Questionnaires Administered	No of useable returns	Percentage (%) of usable returned	No of unusable returns	Percentage of unusable returned
364	250	68.7%	114	31.3%

Source: Field Survey, 2025

Table 1 shows the response rate for the study. A total of **364 questionnaire** were distributed to students in the Faculty of Social Sciences, Nasarawa State University, Keffi. Out of these, 250 questionnaire, representing (68.7 %,) were properly completed and found usable for analysis. Meanwhile, 114 questionnaire, accounting for (**31.3%),** were either not returned or were improperly completed and therefore deemed unusable. The response rate of (68.7%**)** is considered **high and adequate** for analysis in survey research, as response rates above (60%) are generally

acceptable for ensuring representativeness of the sample and reliability of the findings. This indicates that the study obtained sufficient data from the target population to allow meaningful analysis and interpretation

Interpretation and Discussion of Findings

Table 2: What is the Level of awareness on serials publications by faculty of Social Science undergraduate students in the Nasarawa State University Library, Keffi?

Serial Publications	Highly Aware	Aware	Low Aware(3)	Very Low Aware	Total	Mean Score
1. Journals	25 (10%)	40(16%)	115 (46%)	70 (28%)	250	2.92
2. Newspapers	30 (12%)	50(20%)	100 (40%)	70 (28%)	250	2.84
3. Magazines	40 (16%)	45(18%)	110 (44%)	55 (22%)	250	2.72
4. Newsletters	60 (24%)	60(24%)	80 (32%)	50 (20%)	250	2.48
5. Reports	45 (18%)	50(20%)	105 (42%)	50 (20%)	250	2.64
6. Proceedings	50 (20%)	55(22%)	90 (36%)	55 (22%)	250	2.60

Source: Field Survey, 2025

KEYS: **HA**= HIGHLY AWARE, **A**=AWARE, **LA**=LOW AWARE, **VLA**=VERY LOW AWARE

Table 2 presents data on the **level of awareness of serial publications** among undergraduate students in the Faculty of Social Sciences, Nasarawa State University, Keffi. The findings reveal that the students demonstrated varying degrees of awareness across different types of serials. The highest level of awareness was recorded for journals, with a mean score of 2.92, indicating that students are relatively more familiar with journals compared to other serial publications. This is expected, as journals are often recommended for assignments, term papers, and research projects. Newspapers ranked second with a mean score of 2.84, showing moderate awareness among the respondents. Magazines followed with a mean score of 2.72, while reports and proceedings recorded mean scores of 2.64 and 2.60, respectively, signifying an average level of awareness. The lowest awareness was observed in newsletters, which had a mean score of 2.48, suggesting that many students are not well informed about the availability or relevance of newsletters in the library's serials collection. The findings indicate that while students show moderate awareness of major serial publications like journals and newspapers, there remains a noticeable gap in awareness of less frequently used serials such as newsletters, reports, and proceedings. This implies the need for greater user education and orientation programs to improve students' awareness and utilization of the full range of serial resources available in the university library.

3 .Research Question 2: What is the extent of utilization of serial publications among Social Science Students in Nasarawa State University Library, Keffi?

Extent of utilization	Highly Aware	Aware	Low Aware	Very Low Aware	Total	Mean Score
1. Serial collections are one of the major media through which research findings are published	20	30	110	90	250	3.08
2. Serials help to satisfy the information needs of users	25	35	120	70	250	2.94
3. Serials supply scientific discoveries and results of the latest findings	20	40	115	75	250	2.98
4. Serials provide up-to-date information on any issue more than textbooks	30	50	100	70	250	2.84

Source: Field Survey, 2025

***KEYS*: HA**= HIGHLY AWARE, **A**=AWARE, **LA**=LOW AWARE, **VLA**=VERY LOW AWARE

Table 3 shows the extent to which students in the Faculty of Social Sciences, Nasarawa State University, Keffi, utilize serial publications available in the university library. The data reveal that the respondents demonstrated a **moderate to high level of utilization** across the listed indicators. The highest mean score of **3.08,** was recorded for the statement that *"Serial collections are one of the major media through which research findings are published."* This implies that students recognize the essential role of serials especially journals as key sources for current and scholarly research outputs. Similarly, the statement *"Serials supply scientific discoveries and results of the latest findings"* had a mean score of **2.98,** while *"Serials help to satisfy the information needs of users"* also recorded a mean score of **2.94.** These findings indicate that students acknowledge the relevance of serials in providing timely and reliable information for their academic and research activities. The statement **"***Serials provide up-to-date information on any issue more than textbooks"* had the lowest mean score of **2.84,** suggesting that although students recognize the importance of serials, some may still rely more on textbooks for their academic needs. Overall, the findings indicate that students utilize serial publications to a considerable extent, particularly for accessing recent research findings and satisfying their information needs. However, there is still room for improvement, possibly through better user orientation, increased subscription to current titles, and enhanced accessibility to both print and electronic serials in the university library.

Discussion of Findings

The findings of this study on the awareness and utilization of serial publications among undergraduate students in the Faculty of Social Sciences, Nasarawa State University, Keffi, are largely consistent with outcomes reported in earlier studies, while also revealing some contrasting perspectives. The high level of awareness of journals observed in this study corroborates the findings of several previous studies which reported that journals are the most recognized and frequently consulted serial publications among university students. Studies such as those by Aina and Ajiferuke (2002), Nwalo (2013), and Issa, Amusan, and Daura (2017) similarly found that undergraduate students demonstrate greater familiarity with journals than with other serial materials, largely because journals are integral to academic research, frequently recommended by

lecturers, and emphasized in library instruction programmes.

The moderate awareness of newspapers and magazines recorded in this study also aligns with previous research. For instance, Popoola (2008) and Olatokun (2009) reported that newspapers are commonly used by students for accessing current information, especially in the social sciences where contemporary social, political, and economic issues are relevant. Likewise, the moderate awareness of magazines supports earlier findings by Okiki and Ashiru (2011), who noted that magazines attract student attention due to their accessibility and engaging formats, even though they are not always regarded as core academic resources.

However, the relatively low awareness of reports, proceedings, and newsletters identified in this study confirms the observations of earlier scholars who reported limited student exposure to these categories of serial publications. Studies by Adebayo (2015) and Echezona, Okafor, and Ukwoma (2011) found that undergraduates often underutilize technical serials such as conference proceedings and research reports due to their specialized nature and minimal integration into undergraduate curricula. Similarly, the low awareness of newsletters agrees with findings by Oyesiku and Oduwole (2004), who observed that newsletters are often perceived as institutional communication tools rather than scholarly information sources, thereby reducing their academic appeal and visibility within university libraries.

With respect to utilization, the findings from Table 3 are in strong agreement with previous studies that highlight the critical role of serial publications in academic research. The recognition of serials as major media for disseminating research findings aligns with the work of Tenopir and King (2009), who emphasized that journals remain the primary channels for scholarly communication. The high mean scores associated with the timeliness and relevance of serial publications further support the findings of Rowlands et al. (2011), who reported that students value serials for providing current and credible information that textbooks often lack.

Nonetheless, the finding that some students still rely more on textbooks than serials for up-to-date information contrasts with the conclusions of some recent studies that suggest a shift towards greater dependence on journals and electronic serials. For example, a study by Nicholas et al. (2017) found that increased access to electronic journals significantly reduced students' reliance on textbooks. The persistence of textbook dependence in the present study may therefore be attributed to factors such as limited access to electronic databases, inadequate user education, or habitual learning patterns among undergraduate students.

Overall, the findings of this study both support and extend previous research by demonstrating that while students are generally aware of and utilize prominent serial publications such as journals, awareness and use of other valuable serial materials remain limited. This reinforces earlier recommendations that academic libraries should intensify user education, improve the visibility of diverse serial collections, and expand access to electronic serial resources. Such measures are essential for maximizing the academic benefits of serial publications and enhancing students' research competencies in Nigerian university libraries.

Conclusion

The study has shown that students in the Faculty of Social Sciences, Nasarawa State University, Keffi, utilize serial publications in the university library to a moderate to high extent. The findings revealed that students recognize the vital role of serials particularly journals as key

sources of current research findings, scientific discoveries, and relevant academic information. This demonstrates that serials are essential resources that contribute significantly to students' research, learning, and overall academic development. However, despite this positive trend, the study also indicates that some students still rely more heavily on textbooks than on serial publications. This may be due to limited awareness, inadequate access to current serials, or insufficient orientation on their use. Therefore, it is concluded that while the utilization of serials among students is appreciable, there is still room for improvement. Enhancing access to both print and electronic serials, increasing awareness through user education, and strengthening library–faculty collaboration will further promote the effective use of serial publications. Ultimately, improved utilization of serials will contribute to better research quality, academic excellence, and the overall effectiveness of the university library in supporting teaching, learning, and research.

Recommendations

The following recommendations are made:

1. The university library should organize regular library orientation sessions, workshops, and training on the use of serial publications. These programs will help improve awareness and guide students on how to locate, access, and effectively use different categories of serials beyond journals and newspapers.
2. The university library should expand its subscription to current serial titles, including printed and electronic journals, reports, and conference proceedings. Increasing access to e-resources and online databases will improve usage and support research activities more effectively.

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LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN: Print - 2814-0702, Online - 2814-0710
LJLIS

GENDER DIFFERENCES IN THE AWARENESS AND USE OF ELECTRONIC DATABASES FOR LEARNING BY UNDERGRADUATE STUDENTS OF UNIVERSITIES IN KATSINA STATE, NIGERIA

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Abstract
The study investigated gender differences in the awareness and use of electronic databases for learning by undergraduate students of universities in Katsina State, Nigeria. The objectives of this study are to find out the gender difference in the level of awareness of electronic databases and the gender differences in the use of electronic databases for learning in university libraries in Katsina State. Two null hypotheses were formulated and tested. Namely: There is no significance difference between male and female undergraduate students in their level of awareness of electronic databases in university libraries in Katsina State and there is no significant difference in the Use of electronic databases between male and female undergraduate students for learning in university libraries in Katsina State. The study used a descriptive cross-sectional survey design. The population of the study consisted of all the ***35,308*** *undergraduate students from the Umaru Musa Yar'adua University Katsina, Alqalam University, Katsina and Federal University Dutsinma respectively. A sample size of 378 students was selected through stratified disproportionate sampling. Data were collected using a validated questionnaire, and reliability testing through a pilot study yielded a high overall Cronbach's alpha of 0.90, indicating strong internal consistency. The study revealed significant gender differences in the awareness and use of electronic databases among undergraduate students in Katsina State universities. Male students showed higher awareness and usage of both free and subscribed databases. Male students were more familiar and engaged with electronic databases, indicating a gender gap in effective access and utilization for learning. It is recommended that university libraries should implement targeted awareness campaigns that engage both male and female students through a combination of formal and informal channels, including workshops, awareness drives, and peer-led programmes, to bridge the gender gap in database awareness. Libraries should promote broader use of electronic databases especially among*

female students by highlighting their value beyond assignments, such as for exam preparation and personal research.

Keywords: Gender Differences, Awareness, Use, Electronic Database, Undergraduate Students

Introduction

Universities are established to fulfill the tasks of teaching, learning and training the higher-level workforce required to provide technical, professional, and other socio-economic activities for the growth of the country. Universities are fortresses of learning where high-level manpower needed for the social, economic, and political advancement of a nation are equipped and educated. To achieve these objectives, university lecturers are involved in research, teaching, and community development as well as train students with thinking skills. Moreso, the attainment of these objectives calls for the use of information from different sources by the students and their lecturers. Thus, the development of electronic databases has significantly changed the landscape of information access, retrieval and use. It was introduced in the 1960s, marking the beginning of a new era in information management (Okpara & Dodd, 2022).

The rapid advancement of Information and Communication Technology (ICT) has fundamentally altered the landscape of higher education globally. In the modern academic environment, the traditional reliance on physical library stacks is increasingly being complemented, and in some cases replaced, by electronic databases. These databases include scholarly repositories like JSTOR, ScienceDirect, and EBSCOHost—provide students with seamless access to a vast array of peer-reviewed journals, e-books, and technical reports (Lawal & Yahaya, 2020). For undergraduate students, the ability to navigate these resources is a core academic necessity for research, assignments, and independent learning. Nyemezu (2021) for example, indicated that usage of electronic databases in developed countries is more than in developing countries basically because of poor ICT infrastructure and huge cost of such resource

In Nigeria, it is noteworthy that the Federal Government, various university managements and intervention agencies such as Tetfund, NITDA and NCC have made huge investments in digital infrastructure to bridge the "digital divide." In the same vein, Universities in Katsina State such as Umaru Musa Yar'adua University (UMYU), Federal University Dutsin-Ma (FUDMA), and Al-Qalam University, have integrated electronic information resources (EIRs) into their library systems to enhance the quality of learning and research (Manzo & Umar, 2024). However, the mere availability of these databases does not guarantee their effective utilization by various stakeholders.

Interestingly, Sakibu & Arthur, (2018) found that Nigerian institutions have consistently shown that awareness remains a primary bottleneck; many students remain tethered to general internet search engines because they are unaware of the specialized databases subscribed to by their institutions. Lee (2024) suggested that male and female students may use databases in different ways due to differences in their searching Skills, preferences, and perceptions of databases. Flick et. al. (2022) revealed that female students are more likely to use databases for research and exploration, while male students are more likely to use databases for specific tasks. Also, Smith and Laster (2021) explained that students have very confused understanding of various databases and its concept. More so, many students are not yet involved with various databases. The authors showed that the utilization of the various databases by undergraduate in

many university libraries is very low.

A critical, yet often debated factor influencing the awareness and utilization of these digital information resources and tools is gender. Historically, it has suggested that male students often exhibit higher levels of digital literacy and lower levels of computer anxiety compared to their female counterparts (Onyishi et al., 2012). Bassi and Camble, (2011) argued that male students are more likely to use electronic resources for intensive research, while female students may use them more for communication and specific assignments. Conversely, other recent studies suggested that as digital tools become more user-friendly, the gender gap is narrowing, with some instances showing female students achieving higher levels of digital competence in specific academic tasks (Aduke, 2017).

Despite these global and national trends, there is a paucity of localized data regarding how gender dynamics specifically influence the use of electronic databases among undergraduates in Katsina State. Given the unique socio-cultural and educational context of Northern Nigeria, it is imperative to investigate whether male and female students have equal levels of awareness and if they utilize these resources differently. This research, therefore, seeks to fill this gap by examining gender differences in the awareness and use of electronic databases for learning among undergraduate students in universities within Katsina State.

Statement of the Problem

In the contemporary technology driven society, electronic databases have become indispensable tools for academic excellence, providing undergraduate students with global access to quality and reputable peer reviewed journals, ebooks and research repositories. Thus, many university libraries including that of Umaru Musa Yar'adua University and Federal University Dutsin-ma have invested substantial financial resources in acquiring electronic databases and other relevant Information and Communication Technology (ICT) infrastructure with the expectation that undergraduate students will effectively and equitably utilize them to support learning, teaching, and research activities (Nyemezu, 2021; Gidado & Abubakar, 2025; Habila, 2025).

However, despite these investments, Lee, (2023) and Lee, (2024) revealed that electronic databases are significantly underutilized by students, with evidence suggesting notable gender differences in awareness and usage patterns. While some students actively engage with these databases, others often influenced by lack of awareness, inadequate search skills, a preference for general search engines such as Google which may provide less credible and non-academic information (Habila, 2025; Shija, 2009) and negative user attitudes, making little or no use of them. These challenges do not manifest uniformly across institutions or student groups and may affect male and female students differently depending on the context.

Another critical dimension to this problem is the "gender digital divide". Sufian et al (2023) discovered that male and female students often interact with digital technology differently due to varying levels of digital literacy, socio cultural influences and different degree of access to personal computing devices. Thus, in Northern Nigeria, social cultural norms can sometimes influence the level of exposure female students have to digital platforms compared to their male counterparts (Banyan Global, 2023). If these gender-based disparities in awareness and usage of electronic databases are not identified and addressed, there is a high possibility that a segment of the

population may be left behind, leading to unequal academic performances and a waste of institutional resources. There is, therefore, a need to empirically investigate the current gender differences in the awareness and use of electronic databases for learning among undergraduate students in university libraries in Katsina State.

Research Objectives

The following objectives guided the study:

1. To find out the gender difference in the level of awareness of electronic databases available in the university libraries in Katsina State.
2. To find out the gender differences in the use of electronic databases for learning in university libraries in Katsina state.

Research Hypotheses

The following null hypotheses were formulated and tested in this study.

$H0_1$: There is no significance difference between male and female undergraduate students in their level of awareness of electronic databases between male and female undergraduate students in university libraries in Katsina State

H02: There is no significant difference in the Use of electronic databases for learning between male and female undergraduate students in university libraries in Katsina State.

Literature Review

The Literature reviewed covered the theoretical and conceptual frameworks as well as empirical research on Gender Differences in the awareness and use of electronic databases for learning by undergraduate students in university libraries in Katsina state, Nigeria.

Behavioral Change Model (BCM)

The Behavioral Change Model (BCM) was developed by Dr. Stephen Sutton in 2000. The model was introduced in their paper titled "Explaining and Changing Health-Related Behavior", published in 2000. The model posits that individual behavior change is a process that involves several stages. These stages include awareness, knowledge, attitude, skills, and habits, (Sutton, 2000). The Behavioral Change Model (BCM) is a theoretical framework that explains how individuals progress through different cognitive and behavioral stages before adopting, using, or sustaining a particular behavior. The model is widely applied in education, health, information science, and technology adoption studies to explain how knowledge and awareness translate into actual use and sustained practice. In the context of library and information science, BCM is useful for explaining how students' awareness of electronic databases influences their decision to use such resources for academic learning. The BCM is based on the following assumptions: Behavioral change is a process, not a single event. Individuals must first become aware of an innovation or resource before they can use it. Increased knowledge and positive perception enhance the likelihood of use. Actual use behavior reflects successful behavioral change influenced by internal and external factors, (Glanz, Rimer, & Viswanath, 2015; Nutbeam, 2000).

Key Constructs of the Behavioral Change Model

The key constructs of the BCM include awareness which is considered as a foundational construct of the BCM. It refers to the extent to which individuals are informed about the existence, purpose, and benefits of a particular innovation, service, or resource. In library studies, awareness includes: Knowledge of available electronic databases, Understanding access points (library website, OPAC, institutional subscriptions) and Awareness of the relevance of databases to academic tasks. Therefore, students who lack awareness of electronic databases are unlikely to use them, regardless of their availability. This is followed by the construct of knowledge and Perception (Intermediate Construct). After awareness, individuals develop knowledge, attitudes, and perceptions about the resource. This includes: Perceived usefulness, Perceived ease of use, and Perceived relevance to academic success.

The next construct is use (Adoption Behavior). This represents the actual behavioral outcome in the BCM. It refers to the extent and frequency of engaging with a resource or service after becoming aware and forming positive perceptions. Lastly, the construct of sustained use (Optional Stage), which simply reflects long-term behavioral adoption.

Gender differences in the Level of Awareness of Electronic-databases

Gender differences in the level of awareness of e-databases refer to how male and female undergraduate students perceive and are informed about the availability and functionality of Awareness and Use of electronic Databases by Undergraduate. Khan and Patel (2023) argued that is the state of being conscious or knowledgeable about something. In the context of e-databases, it often highlights a gap between awareness and actual usage. Some users are aware of e-databases and actively use them, others are aware but do not use them, and some users are completely unaware and, as a result, do not use them. Manda and Mulkangara (2007) and Nwosu and Eze (2018) highlight how awareness can differ by gender, with female students often exhibiting a higher level of awareness regarding the existence of e-databases, but with lower usage rates compared to their male counterparts. Female students, despite being aware of the resources, sometimes face challenges such as a lack of confidence in using the tools or insufficient training, which limits their ability to use them effectively. In contrast, male students, although they may not always show a higher level of awareness, tend to use e-databases more frequently when they are aware of them. This distinction aligns with the broader understanding of awareness as outlined by Basiru and Okwilagwe (2018), who suggested that awareness is a personal and social benefit that influences behavior. In their study, they concluded that awareness significantly impacts attitudes and behaviors toward technology, including e-databases.

Concept of Electronic Databases

Electronic databases have been viewed differently by different scholars and authorities from different perspectives. It is a collection of organized data that is stored electronically and can be easily accessed, managed, and updated using a computer or other electronic device. Electronic databases can store various types of data including text, images, audio, and video files. It is a collection of organized data stored electronically, accessible via computer or device, and manageable through specialized software (Yusuf et. al. 2018). It is a computer-based repository of data organized for easy access, management, and updates. An electronic database is a collection of

data or information that is stored in a digital format. It is designed to be accessed, managed, and searched using computer systems or software applications. These databases allow for the efficient storage of large volumes of data, which can be retrieved quickly by users based on specific queries or search criteria. Electronic databases are used across various fields, from academic research to business analytics. These databases are particularly useful in fields such as media, entertainment, education, and marketing, where large collections of non-textual content need to be organized, indexed, and retrieved efficiently. Smith and Steel (2020); Schmidt and Sonneveldt (2020)

Gender differences in the Use of Electronic Databases

Gender differences in the use of electronic databases in university libraries refers to how men and women differ in the way they search for and use information resources in the context of academic libraries. Some studies like Chatterjee and Chauhan (2021; Okpara and Dodd (2022), found that female undergraduate students in the UK were more likely to use subject-specific databases and to be more engaged with information resources, while male undergraduate students were more likely to use general-purpose databases and to be less engaged with information resources. The two different studies indicated that female students used databases more than male students for their academic pursuits. According to the findings of Okpara and Dodd (2020) the databases that recorded the highest frequency of use includes: JSTOR: which is an online research database that provides access to academic journals, books, and primary sources in the humanities and social sciences. It is followed by ProQuest a comprehensive database that offers access to full-text journals, dissertations, and e-books in a wide range of disciplines and Scopus: a citation database that covers scholarly literature in science, technology, medicine, social sciences, and arts and humanities. Similarly, Smith and Steele (2020) found that female undergraduate students in the UK were more to use library workshops and tutorials to learn how to use e-databases, while male undergraduate students were mostly to use online tutorials and self-directed learning.

Similarly, in United State, the authors (Neely, 2016; Neuman and Tewari 2019) found that female undergraduate students in the US used advanced search features and subject-specific databases, more than male undergraduate students who mostly used simple search features and general-purpose databases. Neuman and Tewari (2019) in particular indicated that female undergraduate consult with librarians and other library staff when using electronic databases than male undergraduate students who rely on their own resources.

Research Methodology

The study adopted a **descrip**tive cross-sectional survey design, which was considered appropriate because it enabled the collection of data at a single point in time from a large number of undergraduate students. This design facilitated the investigation of gender differences in the awareness and the use of electronic databases for learning among undergraduate students in university libraries in Katsina State. The population of the study comprised of all undergraduate students of the three universities in Katsina State, totaling 35,308 students as recorded in the 2023/2024 academic session. These universities are: Umaru Musa Yar'adua University Katsina, Alqalam University, Katsina and Federal University Dutsinma respectively. From this population, a sample size of 378 respondents was determined using Research Advisor's Sample Size

Determination Table (2006), which was deemed adequate to represent the entire student body while maintaining statistical precision.

In selecting the respondents, a stratified disproportionate sampling technique was employed, with gender (male and female) serving as the basis for stratification. Equal numbers of male and female students 189 each were selected to ensure fair representation and to allow meaningful comparison between the two groups, regardless of their actual proportions in the population. A self-developed questionnaire was used to collect data for the study. It was validated using face and content validity techniques. The instrument was given to experts who are seasoned researchers in the area under study from Library and Information Science Department, statisticians and linguists for scrutiny and expert judgements. To make sure that the instrument is adequately reliable, a pilot study was carried out by distribution of 30 copies to similar group of respondents in Bayero University, Kano who are not part of the study. This was carried out before the actual distribution of the questionnaire as the table 1 shows:

Table 1: Reliability result

Variable Name	Number of Items	Cronbach's Alpha
Variable 1: Awareness	33	.86
Variable 2: Searching skills	22	.90
Variable 3: Attitude	7	.89
Variable 4:: Use	35	.91
Variable 5: Challenges	14	.93
Total	**111**	**.90**

Results

A total of three hundred and seventy-eight (378) copies of questionnaire were distributed to the respondents from the three (3) universities. Out of this number, three hundred and two (302) copies of the questionnaires were duly completed and returned. The findings of the data collected were presented in line with the research questions and objectives of the study. The results from the research questions were analysed using simple frequency tables, percentages, mean and standard deviation while the hypotheses were tested using Mann Whitney U-test due to the fact that data is categorical in nature and the hypotheses are differential.

Level of Gender Differences in Awareness of Electronic Databases Available in the University Libraries in Katsina State

To answer this question, respondents were provided with options using a 5-point Likert scale of measurement to indicate their level of gender differences in the awareness of electronic databases available. The analysis of their responses is presented in table 2.

Table 2: Results of level of gender differences in awareness of electronic databases available in the university libraries in Katsina State (N=302)

Online	Gender	VHA	HA	MA	LA	VLA	MEAN	STD
Databases (free databases)		**F**	**F**	**F**	**F**	**F**		
CORE	Male	0	0	16	80	55	1.74	.64
	Female	0	0	26	75	50	1.84	.69
Direct Open Access	Male	0	32	48	36	35	2.51	1.07
Journal DOAJ database	Female	0	11	31	40	69	1.89	.97
Base	Male	0	0	32	68	51	1.87	.73
	Female	0	0	16	48	87	1.53	.68
Scopus Database	Male	0	16	32	64	39	2.17	.93
	Female	0	6	7	78	60	1.73	.73
Google Scholar	Male	0	16	48	52	35	2.30	.94
Databases	Female	0	16	32	52	51	2.09	.99
Subscribed Online Databases								
Science direct	Male	0	16	48	20	67	2.09	1.09
Database	Female	0	7	33	56	55	1.95	.88
ProQuest	Male	0	0	16	80	55	1.74	.64
	Female	0	6	7	89	49	1.80	.70
EBSCO host	Male	0	32	32	52	35	2.40	1.07
	Female	0	18	18	49	66	1.92	1.02
PubMed	Male	0	7	33	55	56	1.95	.88
	Female	0	6	7	49	89	1.80	.70
JSTOR Database	Male	0	7	33	55	56	1.95	.88
	Female	0	6	7	78	60	1.73	.73
Trip medical	Male	0	16	48	67	20	2.09	1.09
Database	Female	0	0	26	75	50	1.84	.69
HINARI Database	Male	0	18	18	49	66	1.92	1.02
	Female	0	6	7	49	89	1.80	.70
AGORA Database	Male	0	6	7	78	60	1.73	.73
	Female	0	7	33	55	56	1.95	.88
ARDI Database	Male	0	18	18	49	66	1.92	1.02
	Female	0	0	26	75	50	1.84	.69
OARE Database	Male	0	18	18	49	66	1.92	1.02
	Female	0	0	16	48	87	1.53	.68
LexisNexis	Male	0	6	7	78	60	1.73	.73
	Female	0	0	16	48	87	1.53	.68

African Journals	Male	0	32	7	64	48	2.15	1.1
Online	Female	0	0	26	50	75	1.84	.69
SAGE Journals	Male	0	0	26	75	50	1.84	.69
	Female	0	6	7	60	78	1.73	.73
Open Courseware	Male	0	0	26	75	50	1.84	.69
	Female	0	6	7	49	89	1.80	.70
Offline Databases								
Encarta Premium	Male	0	32	48	36	35	2.51	1.07
	Female	0	33	50	34	34	2.54	1.09
E-granary	Male	0	16	48	32	55	2.17	1.04
	Female	0	0	50	51	50	2.00	.82
CD-ROM/DVD	Male	32	48	48	20	3	3.57	1.03
	Female	16	34	84	17	0	3.32	.81
Encyclopedia	Male	0	48	48	36	19	2.83	1.03
Britannica	Female	0	17	84	33	17	2.67	.82
Encyclopedia	Male	16	16	48	52	19	2.72	1.14
Americana	Female	0	33	67	34	17	2.76	.92
Encarta Dictionary	Male	0	48	48	19	36	2.83	1.03
	Female	16	48	7	32	48	2.68	1.46

Key: VLA: Very Low Aware 1, LA: Low aware 2 **MA:** Moderate aware 3 **HA:** High aware 4 **VHA:** very high aware 5, **F: Frequency**

The table 2 above showed the responses of the respondents on the gender differences in awareness of electronic databases. These electronic databases were categorized into free online databases, subscribed online databases, and offline databases. For free online databases, it was discovered that male respondents generally showed higher awareness across databases such as CORE (Male: Mean = 1.74, SD = 0.64), DOAJ (Male: Mean = 2.51, SD = 1.07), and Base (Male: Mean = 1.87, SD = 0.73). In these databases, males reported higher levels of awareness, with frequencies indicating that 53.0% of males were low aware of CORE, and 45.7% of females were low aware of DOAJ. For subscribed online databases, males also showed higher awareness levels, as seen in databases like Science Direct (Male: Mean = 2.09, SD = 1.09) and ProQuest (Male: Mean = 1.74, SD = 0.64). However, it was found that Female respondents, indicated slightly lower awareness across subscribed databases with a mean of 1.80 and SD of 0.70 of females being low aware of PubMed. Finally, for offline databases, awareness levels were higher, with databases like CD-ROM/DVD showing high awareness among both genders (Male: Mean = 3.57, SD = 1.03; Female: Mean = 3.32, SD = 0.81).

Gender differences in the Use of electronic databases for learning by undergraduate students in university Libraries in Katsina State

The study went further to ascertain the opinion of respondents on gender differences in the use of electronic databases for learning by undergraduate students in the University libraries in Katsina State.

Table 3: Gender difference in the use of electronic databases for learning by undergraduate students in the University libraries in Katsina State (N=302)

	Gender	**Yes**		**No**	
Online Databases (open access databases)					
		F	**%**	**F**	**%**
CORE	Male	29	19.2	122	80.8
	Female	19	12.6	132	87.4
Direct Open Access Journal	Male	37	24.5	114	75.5
DOAJ databases	Female	31	20.5	120	79.5
Base	Male	33	21.9	118	78.1
	Female	21	13.9	130	86.1
Scopus Database	Male	39	25.8	112	74.2
	Female	22	14.6	129	85.4
Google Scholar Databases	Male	42	27.8	109	72.2
	Female	19	12.6	132	87.4
Subscribed Online Databases					
Science direct Database	Male	49	32.5	102	67.5
	Female	27	17.9	124	82.1
ProQuest	Male	17	11.3	134	88.7
	Female	9	6.0	142	94.0
EBSCO host	Male	34	22.5	117	77.5
	Female	21	13.9	130	86.1
PubMed	Male	25	16.6	126	83.4
	Female	26	17.2	125	82.8
JSTOR Database	Male	51	33.8	100	66.2
	Female	42	27.8	109	72.2
Trip medical Database	Male	49	32.5	102	67.5
	Female	26	17.2	125	82.8
HINARI Database	Male	15	9.9	136	90.1
	Female	09	6.0	142	94.0
AGORA Database	Male	11	7.3	140	92.7
	Female	7	4.6	144	95.4
ARDI Database	Male	19	12.6	132	87.4
	Female	25	16.6	126	83.4

OARE Database	Male	23	15.2	128	84.8
	Female	21	13.9	130	86.1
LexisNexis	Male	16	10.6	135	89.4
	Female	12	7.9	139	92.1
African Journals Online	Male	15	9.9	136	90.1
	Female	18	11.9	133	88.1
SAGE Journals	Male	33	21.9	118	78.1
	Female	32	21.2	119	78.8
Open Courseware	Male	16	10.6	135	89.4
	Female	17	11.3	134	88.7
Offline E-databases					
Encarta Dictionary	Male	67	44.4	84	55.6
	Female	49	32.5	102	67.5
E-granary	Male	62	41.1	89	58.9
	Female	43	28.5	108	71.5
CD-ROM/DVD	Male	55	36.4	96	63.6
	Female	61	40.4	90	59.6
Encyclopedia Britannica	Male	49	32.5	102	67.5
	Female	37	24.5	114	75.5
Encyclopedia Americana	Male	53	35.1	98	64.9
	Female	31	20.5	120	79.5

The table 3 revealed a significant gender difference in the use of electronic databases for learning by undergraduate students in universities in Katsina State. Under the free databases category, male students showed a higher usage rate across almost all databases, especially for Google Scholar (27.8%) and Scopus (25.8%). In contrast, female students were reported to have lower usage rates, with the highest being for Google Scholar (12.6%) and Scopus (14.6%). In the subscribed electronic databases, male students again dominated the usage, especially for Science Direct (32.5%) and JSTOR (33.8%), while female students had much lower usage, with the highest recorded for JSTOR (27.8%) and Science Direct (17.9%). For offline e-databases, male students showed higher usage as well, with Encarta Dictionary (44.4%) and E-granary (41.1%) being the most utilized, whereas female students used these platforms less frequently, with the highest usage rates for Encarta Dictionary (32.5%) and E-granary (28.5%).

Hypotheses Testing

This section dealt with the outcome of inferential analysis employed to test the null hypotheses formulated for the study. The followings were the specific research hypotheses for the study:

$H0_1$: There is no significant difference in the level of awareness of electronic databases between male and female undergraduate students in university libraries in Katsina State

H02: There is no significant difference in the Use of electronic databases for learning by undergraduate students in university libraries in Katsina State.

Table 4: Results of Mann Whitney U-test on the differences in the level of awareness of electronic databases between male and female undergraduate students in university libraries in Katsina State (N=302)

Variables	N	Mean	S.D.	F	t	P-value	Remark	Decision
Male	302	2.3824	.49327	53.845	2.733	.000		rejected
Female		1.8824	.94595		2.733			

The Mann-Whitney test results demonstrate a significant gender difference in the level of awareness of electronic databases among undergraduate students in the university libraries in Katsina State. Specifically, male students have a higher mean awareness score (2.3824) compared to female students (1.8824), with a standard deviation of 0.49327 for males and 0.94595 for females. The calculated test statistic (F = 53.845) and the p-value of 0.000 both indicate a statistically significant difference between the two groups, as the p-value is much lower than the typical significance threshold of 0.05. This suggests that male students, on average, have a greater awareness of electronic databases than their female counterparts. As a result, the null hypothesis (H01), which posits that there is no significant difference in the level of awareness between male and female students, is rejected. The findings highlight a notable gender disparity in the awareness of electronic databases, emphasizing the need for targeted interventions to bridge this gap in library usage and access to resources.

Table 5: Results of Mann Whitney U-test on the differences in the Use of electronic databases for learning between male and female undergraduate students in university libraries in Katsina State (N=302)

Variables	N	Mean	S.D.	F	t	P-value	Remark	Decision
Male	302	2.3333	1.26042	4.273	-2.42	.041		rejected
Female		3.0000	1.42918		-2.42			

The results of the analysis, as shown in Table 5, indicate a significant difference in the use of electronic databases for learning between male and female undergraduate students in the university libraries in Katsina State. The t-test analysis revealed that while the mean score for female students (3.00) was higher than that of male students (2.33), the p-value of 0.041 is less than the 0.05 threshold for statistical significance. This suggests that there is a meaningful difference in how male and female students use electronic databases, with females using them more frequently or effectively, according to the data. As a result, the null hypothesis (H02), which stated that there would be no significant difference in the use of electronic databases between male and female students, was rejected. Therefore, it can be concluded that gender plays a role in the frequency or extent of use of electronic databases in the academic setting, with female students showing a more significant engagement.

Discussion of findings

1. The findings of the study highlight significant gender disparities in the awareness and use of electronic databases, for free online databases, it was discovered that male respondents generally showed higher awareness across databases such as CORE, which have important implications for undergraduate students in universities in Katsina State. The study found that male students rely more on informal sources like friends and self-discovery for awareness of electronic databases, while females tend to use formal sources like library orientations and staff and also the study found a significant gender difference in the level of awareness of electronic databases among undergraduate students in Katsina State's university libraries, with Male students demonstrated higher awareness compared to female students. This finding contrasted with the finding of Ngozi, Genevieve and Ogaraku (2018), who found low overall awareness among academic staff at FUTO, though their study did not address gender-specific differences. Similarly, Kumar & Kumar (2008) reported general awareness and use of e-resources, but did not specify the sources of awareness. Unlike study Nisha & Ali (2013) found that library clientele were universally aware of and used e-databases, highlighting a contrast in awareness and usage patterns.
2. The study found a notable gender disparity in the use of electronic databases for learning among undergraduate students in Katsina State universities. Male students consistently showed higher usage rates across both free and subscribed databases, such as Google Scholar, Scopus, JSTOR, and Science Direct, with significant engagement in offline e-databases like Encarta Dictionary and E-granary. In contrast, female students exhibited lower usage rates, especially for subscribed databases like ProQuest and PubMed. This trend suggests that male students are more familiar and comfortable with electronic resources, while female students use them less frequently, indicating a gender gap in accessing and utilizing these learning tools effectively. Moreover, the findings reveal notable gender differences in the use of electronic databases among undergraduate students in Katsina State universities. Comparing these findings with those of international studies, such as those by Smith and Steele (2020) and Flick et al. (2022), which found that undergraduates have use variety of electronic databases and a similar disparity in usage but with more gender-specific preferences.

Conclusion

The study concluded that there is a significant gender differences in the awareness and use related to electronic databases among undergraduate students in Katsina State universities. Male students demonstrated higher awareness, proficiency in search techniques, and broader use of electronic databases, often relying on informal sources like friends and self-discovery. In contrast, female students were more dependent on formal sources such as library orientations and faced challenges related to internet connectivity and user interfaces. While both genders showed a positive attitude towards electronic databases, male students exhibited greater confidence in using them.

Recommendations

Arising from the findings of this study, it is recommended as follows:

1. University libraries should implement targeted awareness campaigns that focus on both male and female students, using a mix of formal and informal channels. Organizing workshops, awareness drives, and peer education programs led by both male and female students could help bridge the gender gap in database awareness. Additionally, ensuring that all students, regardless of gender, have equal access to information about the databases through online resources and regular orientations is vital.
2. University Libraries should encourage female students to expand their use of electronic databases beyond assignments by demonstrating how these tools can support a broader range of academic activities, such as exam preparation and personal research. Creating gender-neutral campaigns that showcase the benefits of databases for all aspects of academic life and providing incentives or recognition for active usage could help increase female students' engagement.

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