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IVJLIS is being positioned as an internationally refereed journal published bi-annually in (May and November) by the Department of Library and Information Science in the Faculty of Communication and Information Sciences, University of Ilorin, Nigeria. Thus, issues will be identified as Volume 1, (Issue 1, May), 2018, Vol. 1, (Issue 2, Nov), 2018, etc. It is dedicated to the exchange of the latest research and practical information in the field of Library and Information Science. The journal publishes original research and case studies by Librarians, Library and Information Science academics and government contributors, and other information professionals on the key areas of information science, library science, archives, and records management, including best practices, policies, and guidelines.

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All articles are subjected to a double-blind peer-review process. Manuscripts are invited from academics, researchers, and practitioners for publication consideration in all areas related to Library and Information. Each manuscript must include a 200-word abstract. Articles are accepted in MS-Word format only. Submitted articles should strictly follow the format of the sample article which can be found on the journal website at <http://unilorin.edu.ng/fcis/uijlis>

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Please prepare your manuscript before submission, using the following guidelines:

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References	The affiliation of each contributing author should be correct in their author account. The affiliation listed should be where they were based at the time that the research for the paper was conducted. Authors who wish to include these items should save them together in MS Word and send them with the submission. If they are to be included, a brief professional biography of not more than 100 words should be supplied for each named author. Authors are advised to strictly adhere to the latest version of APA for both the in-text citation and end-of-paper references.

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EDITORIAL

Editorial

Volume 9, Issue 1 (2026)

Ilorin Varsity International Journal of Library and Information Science

The editorial board is pleased to present Volume 9, Issue 1 (2026) of the *Ilorin Varsity International Journal of Library and Information Science*, a collection that reflects the evolving intersections of information science, technology, education, and societal development within the Nigerian context and beyond. This issue brings together diverse empirical and conceptual contributions that collectively underscore the dynamic role of libraries and information systems in addressing contemporary challenges.

The opening article by Samson Oyeniyi Akande and Godwin, Kelechi Rose examines the *interplay between social media use, attention span, and reading habits among secondary school students in Oyo West Local Government, Oyo State*. Their study highlights critical concerns about the cognitive and behavioral implications of digital media consumption, raising important questions for educators, librarians, and policymakers seeking to sustain reading culture in an increasingly distracted digital environment.

In a complementary vein, Amina Ibrahim Makintami explores *methods for ensuring faster provision of information and literature support in academic libraries*. This contribution provides practical strategies for improving service delivery, emphasizing efficiency, responsiveness, and user-centered approaches in academic library systems. The paper reinforces the importance of innovation in meeting the growing expectations of library users in the digital age.

The third article by OGHUVBU Blessing Oluwatobi, EKOKO Onome Norah, and FRIDAY Joseph Umuerhi investigates the *influence of Artificial Intelligence (AI) tool usage on performance expectancy among library personnel in university libraries across Delta State, Nigeria*. Their findings contribute to the ongoing discourse on AI adoption in libraries, revealing how emerging technologies are reshaping professional competencies, expectations, and service outcomes.

Further extending the discussion on digital transformation, Augustine Aigbokhan and Stephen, O. Uwaifo analyze *postgraduate students' attitudes towards institutional repositories for career advancement in universities in South-South Nigeria*. Their work sheds light on awareness, perception, and utilization patterns, emphasizing the strategic importance of institutional repositories in enhancing scholarly visibility and academic progression.

The issue also features a study by Anthonia Peace Joel, Katamba A. Saka, Emmanuel Camble, and Jonah Emmanuel, which evaluates the *influence of advanced digital technologies on digital*

resource security in federal university libraries in North-East Nigeria. This paper underscores the growing need for robust security frameworks as libraries increasingly rely on digital infrastructures to store and disseminate information.

Broadening the thematic scope, Sa'adat Ibrahim Al-Mustapha and colleagues examine *drug prescription practices and antimicrobial resistance among proprietary medicine vendors in Kwara State, Nigeria*. While situated within the health domain, this study resonates with information science through its emphasis on information dissemination, professional practices, and public awareness in mitigating global health risks.

In a socio-institutional context, SAKA Hammed Taiwo, FAISAL Adamu, and AHMED Taibat Tunrayo present a compelling discourse on *libraries as catalysts for combating organized crime and corruption in Nigeria*. Their work repositions libraries as active agents of social change, capable of promoting transparency, access to information, and civic responsibility.

Finally, Olorunyomi Gladys Titilayo and co-authors investigate the *utilisation patterns of Open Access Information Resources (OAIR) among polytechnic students in South-West Nigeria*. Their findings reaffirm the transformative potential of open access in democratizing knowledge, while also identifying barriers that must be addressed to maximize its benefits.

Collectively, the articles in this issue reflect a strong emphasis on digital transformation, user behavior, information access, and societal impact. They demonstrate that libraries are no longer passive repositories but active, adaptive institutions central to knowledge creation, dissemination, and application in diverse sectors. The editorial board extends its sincere appreciation to all authors for their valuable contributions, and to the reviewers whose rigorous and constructive feedback ensured the quality and integrity of the published works. We also acknowledge the continued support of our readers and the wider scholarly community.

It is our hope that this issue will stimulate further research, inform policy, and inspire innovative practices in library and information science.

Editor-in-Chief

Prof. Adeyinka TELLA

Ilorin Varsity International Journal of Library and Information Science

Exploring Social Media Use, Attention Span, and Reading Habits of Secondary School Students in Oyo West Local Government, Oyo State, Nigeria

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Abstract

The poor reading habits of secondary school students in Nigeria have been of growing concern in the recent time. The decline in reading which has drawn the attention of parents, teachers and school administrators portends danger for the academic performance of secondary school students. Previous studies have focused more on home and social related factors with little or no attention given to influence of social media use and attention span on students' reading activities. This study adopted survey research design. The multi-stage sampling technique was used to select 367 senior secondary school II students across the 20 private schools used for the study. A questionnaire with three (3) scales was used as research instrument for data collection. Data were analysed using descriptive statistics of percentages, frequency, standard deviation and mean scores. Findings revealed that the students lack a good reading habit because majority only read to pass examinations and not for personal development. In addition, majority of the students exhibit high concentration abilities with mean score of 2.86 and the majority 66% have attention span which is above 30 minutes considered normal for age 16 and above. Facebooks and WhatsApp were found to be the mostly used social media platforms which they use mainly for social activities.

Keywords: social media, reading habit of senior secondary school students in Oyo wests, attention span.

Introduction

The positive influence that reading exerts on academic performance of secondary school student's can not be overemphasized. Research generally points to a positive correlation between good reading habits and academic performance, while also highlighting the negative impact of digital distractions and socio-economic challenges on reading culture. However, according to Jakonda, et. al (2025), over the years, there has been a great concern over the high decline in the reading culture in Nigeria especially among the younger generation. Little wonder that the declining

reading culture of secondary school students is generating a lot of concern among the stakeholders of education.

Consequent upon the observed decline in performance in external examinations, the Chief Examiner of the West African Examinations Council (WAEC) expressed worry in West African Examinations Council (WAEC) Chief Examiners' Report (2018) about the high incidence of failure among senior secondary school pupils taking the board's examination. According to the report, applicants' poor overall performance was suggestive of inadequate (and maybe worsening) education at the senior secondary school level. As a result, the report advised that applicants be encouraged to purchase and read textbooks when studying for a test. The implication of the report is that unless senior secondary school students establish strong reading habits, they may continue to fail the final examinations. This claim is supported by Jakonda, et.al. (2025) expression that the appalling level of decline of reading culture and apathy towards books among the youth is becoming embarrassing. The authors believed that the mass failure being experienced recently in most of the national examinations like WEAC, NECO, NEBTEB, JAMB amongst others are surely connected to this drop and lack of interest in reading among students.

Generally speaking, education experts have voiced concern that Nigerian senior secondary school pupils' academic performance may be negatively impacted as a result of their falling reading habits. They pointed out that the downward trend has ramifications for the family, society and country as a whole. This is because, inability to address the students' poor reading habits will eventually lead to drop out of school or complete academic failure. A reading habit refers to the consistent and habitual practice of reading, typically encompassing both the frequency and the types of materials one chooses to read (Noor, 2011). This habit can be fostered through regular engagement with books, articles, or other forms of written media, and is often linked to one's personal interests, education, and the desire for knowledge or entertainment. Reading habits significantly influence an individual's cognitive development, comprehension skills, and ability to concentrate (Bashir & Mattoo, 2012).

Social media use is one element that might be contributing to the fall in reading habits among senior secondary school pupils. According to Rafiq, et al (2019), social media has transformed the way we communicate and access information, but it has also introduced challenges, especially for younger generations. The majority of psychological and neuroimaging studies show that excessive time on social media correlates with shorter attention spans, reduced academic performance, as well as poorer mental health and overall well-being (Hilman, 2024).

Literature Review

Scholars describe reading as more than a skill. They see reading as a complex interaction between the text, the reader, and contextual factors that together foster understanding. Reading cannot take place without comprehending the text. Kim (2017); Perfetti & Stafura (2014) assert that the interaction of cognitive skills such as decoding, language comprehension, and working memory is essential for effective reading comprehension. Reading is integral to knowledge acquisition and language development, especially as it enhances vocabulary, comprehension skills, and critical thinking. Extensive reading, which refers to reading large amounts of material with an emphasis

on general understanding rather than detailed analysis, can significantly bolster vocabulary and comprehension, especially in language learners (Farha & Rohani, 2019; Iftanti & Shofiya, 2018). Reading and reading habits are often found discussed together to show the strong link between them. Reading has been described as an activity, a process and a language skill while reading habit is developmental and behavioural especially when reading is regularly and frequently carried out. Reading leads to reading habit development when it is frequently practiced. According to Palani (2012); Owusu-Acheaw & Larson (2014), reading is the cognitive process of decoding symbols to derive meaning from written texts, while reading habit refers to the regular, voluntary, and sustained practice of reading over time. The nexus between reading and reading habit is therefore both developmental and reciprocal. Reading serves as the foundation upon which reading habits are formed, while established reading habits sustain and deepen reading engagement.

Repeated exposure to reading activities gradually transforms reading from an occasional task into a habitual behaviour. According to Wagner (2002), consistent reading enhances familiarity with texts, improves fluency, and builds confidence, all of which motivate individuals to read more frequently. Over time, this repetition leads to the internalisation of reading as a routine practice, thereby strengthening reading habits (Clark & Rumbold, 2006). Conversely, the presence of a strong reading habit positively influences the quality and depth of reading. Students with established reading habits are more likely to engage in extensive reading, demonstrate higher comprehension levels, and apply critical thinking skills while interacting with texts (Guthrie & Wigfield, 2000). This shows that reading habit not only increases the frequency of reading but also enhances reading effectiveness and intellectual engagement.

In educational contexts, especially among secondary school students, the relationship between reading and reading habit is critical for academic success. Studies have shown that poor reading habits are associated with low academic performance and reduced motivation for learning, while positive reading habits contribute significantly to academic achievement and lifelong learning (Akabuike & Asika, 2012; Owusu-Acheaw & Larson, 2014). Environmental factors such as access to libraries, availability of reading materials, and encouragement from teachers and parents also play a vital role in strengthening this nexus (Clark & Rumbold, 2006). A lot of activities today compete with reading and the alternatives appeal more to people especially the youngsters. It is a well - known fact that the love of reading is declining among the students who often prefer other activities like gaming, entertainment and sporting to reading. A good reading habit will necessitate the practice of reading consistently without thinking about it, allowing it to become an instinctively integrated part of a student's life. Without a doubt, a student's life will be limited if he does not see reading as a useful and meaningful endeavour. However, many Nigerian schools do not have functional libraries, limiting students' exposure to quality reading materials (Udoh & Akwang, 2023).

The reading habits of secondary school students in Nigeria have been of growing concern due to a noticeable decline in engagement with reading for both academic and leisure purposes. This trend has been attributed to several factors, including the pervasive influence of social media, insufficiently equipped libraries, lack of supportive reading environments, and limited

encouragement from both home and school settings. Social media use is one element that might be contributing to the fall in reading habits among senior secondary school pupils. Government and non-governmental bodies have attempted to promote reading through initiatives like the "Readership Promotion Campaign," organized by the National Library of Nigeria, which seeks to engage students in reading by offering materials and awareness campaigns. Despite these efforts, the reading culture continues to face challenges from digital distractions and societal shifts away from traditional reading (Wema, 2018). According to Udoh & Akwang (2023), distractions from digital media and inadequate access to reading materials remain challenges, particularly in regions with limited library resources.

Literature has documented several studies conducted on reading habits of secondary school students and the impact on their academic performance. Uche & Udo-Anyanwu (2025) investigated reading habits in three private secondary schools in Owerri and found that *students predominantly read only for examinations* rather than for leisure or broader academic purposes a pattern interpreted as a limited reading habit. According to Akande and Oyedapo(2018), in recent times, lack of cultivating the habit of reading has been the concern of all stakeholders as the lack of enthusiasm of secondary school students for reading has contributed to many failures such as poor writing and limited understanding about what they are taught in class. The reading habits of secondary school students in Nigeria have been of growing concern due to a noticeable decline in engagement with reading for both academic and leisure purposes. This trend has been attributed to several factors, including the pervasive influence of social media, insufficiently equipped libraries, lack of supportive reading environments, and limited encouragement from both home and school settings

The practice of reading consistently without thinking about it, allowing it to become an instinctively A reading habit refers to the consistent and habitual practice of reading, typically encompassing both the frequency and the types of materials one chooses to read. This habit can be fostered through regular engagement with books, articles, or other forms of written media, and is often linked to one's personal interests, education, and the desire for knowledge or entertainment. Reading habits significantly influence an individual's cognitive development, comprehension skills, and ability to concentrate (Bashir & Mattoo, 2012). A good reading habit will necessitate integrated part of a student's life. Children of parents who read aloud five to seven days a week are more likely to acquire an interest in reading later in life. As a result, adults may foster a love of reading in youngsters by setting a good example by reading and participating in reading activities with their children. Reading is essential for cultural and emotional growth. It introduces readers to different perspectives, fostering empathy and social awareness.

The reading habits of secondary school students in Nigeria have been of growing concern due to a noticeable decline in engagement with reading for both academic and leisure purposes. This trend has been attributed to several factors, including the pervasive influence of social media, insufficiently equipped libraries, lack of supportive reading environments, and limited encouragement from both home and school settings. Social media use is one element that might be contributing to the fall in reading habits among senior secondary school pupils.

The use of social media among senior secondary school students has become widespread, with both positive and negative implications for academic development. Research highlights that these platforms are frequently used for social interaction, which can provide benefits in areas like collaborative learning, skill development, and socialization. For instance, some students report using platforms like YouTube and WhatsApp to support group projects or self-tutorials for challenging subjects. This type of use can enhance learning, as it allows students to build networks and exchange academic resources, positively impacting their engagement and understanding (Macabale et al., 2019). However, the prevalence of social media use also raises concerns. Many students report a significant portion of their time on social media is dedicated to non-academic purposes, which can lead to distraction and negatively impact their focus on studies. Overuse has been associated with declines in academic performance for some students, as excessive engagement with social media tends to lead to reduced study time and concentration (Umar & Idris, 2022).

Allahde, et. al, (2025) found that excessive use of social networking sites among secondary school students in Abuja contributes to a *decline in reading habits* for both academic and personal development. The researchers reported that students who spend more time on social media show lower engagement with traditional reading materials. Nneji (2025) carried out a descriptive survey on how social media influence concentration and reading skills of students. This study that directly relates to attention span during reading tasks among students recommended that curriculum planers should include benefits of proper use of social media and the ills of their wrong use in all teacher-training programmes in Nigeria.

Poles (2025) review of literature has shown that excessive social media use correlates with shorter attention spans and reduced focus, especially due to rapid, fragmented content that undermines sustained attention which is relevant to reading engagement. While considering the potential influence of social media use on reading habits of secondary school students, Akande and Oyedapo(2018) found that high school students spent more time on the use of social media especially with the affordability of smart phones, thereby causing an uncultured lifestyle of reading. The study concluded that, indisputably, it is obvious that

Statement of the problem

It is true that a lifelong habit aids a child's development into an autonomous adult. Academic achievement, which is the forerunner to life success, will be the end outcome of establishing a healthy reading habit. Secondary school pupils' reading habits in Oyo west local government have been shown to be decreasing. This trend is detrimental to the academic performance of the students and, if not handled properly, it may result in failure, particularly in external examinations. The use of social media by students has positive impacts on their academic performance but it could also cause distractions if too much time is spent using social media for interaction and social activities without paying adequate attention to academic reading. The attention span and concentration of students while reading and engaged with books can also affect the reading habit of students. When students lack ability to focus on tasks that could foster academic performance like reading, the learning outcomes would be impaired. Previous studies have looked into the reading habits of

secondary school students and the factors affecting it like the school and home environments. However, student-related factors such as social media use and attention span have received little attention. It is crucial to look at these factors to understand their impact on students' reading habits. The researchers conducted this study to generate information on how students reading habits could be improved by looking at social media usage, attention span and the reading habits of secondary school students in Oyo West Local Government of Oyo State, Nigeria.

Objectives of the study

The main objective was to investigate social media use and attention span as correlates of reading habit of senior secondary school students in Oyo West Local Government in Oyo State. The specific objectives of the study were to;

1. Identify the pattern of reading habit of senior secondary school students in Oyo West Local Government.
2. Find out the level of attention span of senior secondary school students in Oyo West Local Government.
3. Identify the social media tools mostly used by senior secondary school students in Oyo West Local Government.

Research questions

To be able to achieve these objectives, this study sought to answer the following questions;

1. What is the reading pattern of senior secondary school students II in Oyo West Local Government.
2. What is the level of attention span of the senior secondary school students II in Oyo West Local Government.
3. What is the most frequently used social media by the senior secondary school students II in Oyo West Local Government Area?

Methodology

This study adopted survey design of correlational type. This design was adopted to systematically describe the facts, qualities and characteristics of the population of the study as factually, as possible to obtain reliable information about the variable without any manipulation. The population comprised all senior secondary school students II (SSS 2) spread across private schools in Oyo west local government area. Total number of 367 students were purposively sampled from the oldest private schools from ten existing wards.

Data analysis and interpretation of results.

RESEARCH QUESTIONS

Research question 1: What is the reading pattern of senior secondary school students in Oyo west local government area?

Table 1: Reading Pattern of Senior Secondary School Students

S/N	Purpose of reading	SA	A	D	SD	Mean	STD
1	To pass examination	141 42.5%	81 24.4%	-	110 33.1%	2.76	1.30
2	For self- development	54 16.3%	168 50.6%	110 33.1%	-	2.83	0.68
3	To while away time	168 50.6%	110 33.1%	54 16.3%	-	3.34	0.74
4	To acquire information	55 16.6%	54 16.3%	198 59.6%	25 7.5%	2.42	0.85
5	For leisure and fun	54 16.3%	223 67.2%	55 16.6%	-	3.00	0.57
6	To be at par with school activity	168 50.6%	109 32.8%	55 16.6%	-	3.34	0.75
7	To update knowledge	113 34.0%	192 57.8%	27 8.2%	-	3.26	0.60
Books preferred for reading							
8	Subject textbook	197 59.3 %	25 7.5 %	-	110 33.1 %	2.93	1.39
9	Historical books	-	55 16.6%	80 24.1 %	197 59.3 %	1.74	1.09
10	Adventure books	-	135 40.7%	4 1.2%	193 58.1 %	1.83	0.98
11	Series	55 16.6%	-	113 34.0%	164 49.4 %	1.84	1.07
12	Scientific fiction	55 16.6%	55 16.6%	54 16.3%	168 50.6%	1.99	1.16
13	Biographies	-	55 16.6%	-	277 84.4 %	1.33	0.75
14	Autobiographies	-	-	215 64.8%	177 35.2 %	1.65	0.48
15	Comic	25 7.5%	140 42.2%	109 32.8%	58 17.5 %	2.40	0.86
READING FREQUENCY					Frequency	%	
16	Once in a while				27	8.1	
17	Only when I am preparing for exams				192	57.9	
18	Daily				113	34.0	

Key: SA= strongly agree, A= Agree, Disagree, SD= Strongly Disagree, STD= Standard Deviation

Respondents were asked to indicate their reading pattern; viz reading purpose, book preference for reading and reading frequency. Majority of them agreed that they read to pass examination (66.9%); be at par with school activity (83.4%) update their knowledge (91.8%); and for self-development (66.9%). They however disagreed that reading can be done to acquire information (67.4%) but they ironically stated that they read to while away time (88.7%) and for leisure and fun (83.5%). On the books preferred for reading, majority of them indicated that they read only subject textbooks for academic purpose while the remaining types of books (historical books, adventure books, series, scientific fiction, biographies, autobiographies, comic) were not popular among them. Information obtained about their reading frequency indicated that they only read whatever they are preparing for examinations. The information according to Table 4.2 do not portray the respondents as those who engage in scholarly and organised reading. They seem to read only to pass examination and in a haphazard manner.

Research question 2: What is the level of attention span of the senior secondary school students II in Oyo West Local Government?

Table 3 shows information on the level of respondents' attention span.

Table 3: Respondents' Attention Span.

S/N	Attention span/Concentration	SA (4)	A (3)	D (2)	SD (1)	MEA N	STD
1	Concentration ability diminishes if subject matter is very complex	277 83.4 %	-	-	55 16.6 %	3.50	1.12
2	Concentration ability is heightened by reading an interesting book	222 66.8 %	55 16.6%	55 16.6%	-	3.50	0.76
3	Interference of social media diminishes my concentration	222 66.8 %	55 16.6%	-	55 16.6 %	3.50	1.11
4	I don't have ability to concentrate on reading with the use of social media	322 100%	-	-	-	4.00	0
5	Easily tired concentrating for a long period of time	222 66.8 %	-	-	110 33.1 %	3.01	1.41
6	I shut off from the world when reading an absorbing book	-	222 66.8%	55 16.6%	55 16.6 %	2.70	0.76
7	Ability to concentrate when doing boring activity	-	54 16.3%	110 33.1%	168 50.6 %	1.82	1.06
8	I isolate from surrounding when reading	-	223 67.1%	54 16.3%	55 16.6 %	2.51	0.76
9	Return to full attention to reading after a short interruption	-	109 32.8%	55 16.6%	168 50.6 %	1.82	0.90
10	Concentration ability in reading is heightened with social media	54 16.3 %	86 25.9%	80 24.1%	112 33.7 %	2.25	1.09
Weighted mean						2.86	
Criterion mean						2.54	
Time - based attention span				Frequency	%		
11	Less than 30 minutes			113	34.0		
12	30 minutes – 1 hour			109	32.8		
13	1 hour- 1 ^{1/2} hours			56	16.9		
14	1 ^{1/2} hours – 2 hours			54	16.3		

Key: SA= strongly agree, A= Agree, Disagree, SD= Strongly Disagree, STD= Standard Deviation

Information was obtained, as shown in Table 3 about level of respondent's attention span and it was discovered that majority of the respondents can only have their attention span sustained for a relatively long time when it is supported. This is reflected in the mean values for items on concentration ability diminishes if subject matter is very complex (Mean= 3.50); concentration ability is heightened by reading an interesting book (Mean = 3.50); interference of social media diminishes their concentration (Mean = 3.50) and I do not have the ability to concentrate on reading with the use of social media (Mean = 4.00). With the weighted mean of 2.86 higher than the criterion mean of 2.50, the level of attention span/concentration is high. When it comes to time-based attention span, Table 3 has revealed that 34.0 % of the students have attention span of less than 30 minutes while 32.8 % have attention span of between 30 minutes to 1 hour. Table 3 has vividly shown that the majority, 66% of the respondents have attention span of above 30 minutes. The attention span is normal for age 16 which is between 32 to 48 minutes

Research question 3

What is the most frequently used social media by the senior secondary school students II in Oyo West Local Government Area?

Table 4 display information on the most frequently used social media by respondents.

S/N	Social media tools	NU (1)	UOW (2)	UO (3)	UA (4)	Mean	STD
1	Facebook	-	-	27 8.1%	305 91.9%	3.92	0.27
2	Whatsapp	-	-	27 8.1%	305 91.9%	3.92	0.27
3	Google Talk	-	4 1.2%	301 90.7%	27 8.1%	3.07	0.30
4	Messenger	-	27 8.1%	170 51.2%	135 40.7%	3.33	0.62
5	Myspace	-	141 42.5%	191 57.5%	-	2.58	0.50
6	Skype	83 25.0%	110 33.1%	112 33.7%	27 8.1%	2.25	0.92
7	Snapchat	79 23.8%	140 42.2%	113 34.0%	-	2.10	0.76
8	Reedit	246 74.1%	4 1.2%	55 16.6%	27 8.1%	1.59	1.03
Weighted Mean						2.85	

Key: NU=Never Used, UOW= Once in a While, UO= Used Occasionally, UA= Used Always, STD= Standard Deviation

Table 4 has shown that Facebook, WhatsApp, Messenger and Google Talk were the social media mostly used by the students with mean scores of 3.92; 3.92;3.33 and 3.07 respectively. The

weighted mean score of 2.85 shown in Table 4 gives credence to the fact that majority of the respondents used social media.

Discussion of findings

Reading pattern of senior secondary school students in Oyo West LGA

The findings on the reading pattern of senior secondary school students in Oyo West LGA indicated that majority of them do not habitually read but they mostly read whenever they are preparing for examination and to pass examinations. This was also reflected in the findings that they generally read subject textbooks for academic purpose while the remaining types of books (historical books, adventure books, series, scientific fiction, biographies, auto biographies, comic) were not popular among them. This finding is in line with Manunyi (2024) which reported that students read to pass their examination and that they consume only materials that can help them pass their examination. Onuoha and Chukwueke (2020) in their findings also affirmed that the most highly utilised information resources by secondary schools in Nigeria is textbook. Other resources were reported to be of low utilisation by the respondents. The finding also supports the findings of Chukwuji, Gadanga and Yusuf (2017) which discovered that textbook is the mostly used information resources by secondary school students. It also aligns with the findings of Isreal (2020) which revealed that textbook is the most frequently used information material by secondary school students in Nigeria.

Attention span of senior secondary school students in Oyo West LGA

The results show that respondents have high concentration level and attention span. The average attention span of above 30 minutes for age group 16 and above was considered normal by Brain (2019) who reported that normal attention span for age group 16 and above should be between 32 – 48 minutes. However, it was discovered that majority of the respondents can only have their attention span sustained for a longtime when it is supported with stimulating or conducive environment. The finding also supports Shah & Saleem (2015) which reported that a significant portion of secondary students demonstrated high attention levels, and that higher attention levels were associated with higher academic achievement.

On sustainability of attention span, the finding confirms the observation made by Zeng, et. al. (2025) that students often experience attention lapses during traditional passive lectures, and that environmental design and more interactive classroom activities can help sustain attention. A number of factors had been adduced as being responsible for this ugly incidence. Those factors may be within the control of the teacher, such as teacher talk, or outside the teacher's control, such as student fatigue. Attention span is generally viewed as a limited mental capacity. Individuals most likely vary in their available amount of attention resources. Thus, understanding student attentional fluctuations during class may provide some important information in relation to pedagogical implications.

Most frequently used social media and the purpose for which they are used by senior secondary school students in Oyo West LGA

The study found out that majority of the respondents used Facebook and Whatsapp for entertainment and socialisation. These findings are in accordance with Nweze (2024) claims that most students log onto social media daily and spend substantial time per session with Facebook and WhatsApp being the dominant platforms used. Olasehinde-Williams (2020) also reported that WhatsApp, YouTube, Google and Facebook are commonly used social media platforms by senior secondary school students.

Recommendation

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

1. Some innovative measures like provision of rich reading environment with diverse books, integrating fun and interactive activities like book clubs, competitions should be taken by parents, teachers, school administrators and other stakeholders in education to ameliorate disheartening state of the senior secondary school students' reading ability and habit to improve their reading habit and by implication their academic performance.
2. Students' exposure to social media platforms (especially Facebook and WhatsApp), which the students mainly used for entertainment and socialization must be controlled by the parents and the school management. Their online/internet activities must also be closely monitored to avoid digital distractions.
3. Students attention span and concentration level could be sustained by keeping educating them on the need to avoid digital distractions that shorten attention spans.

References

- Akabuike, I. G., & Asika, I. E. (2012). Reading habits of undergraduates and their academic performances: Issues and perspectives. *African Research Review*, 6(2), 246–257. <https://doi.org/10.4314/afrrrev.v6i2.21>
- Akande, S. O., & Oyedapo, R. O. (2018). *Developing the reading habits of secondary school students in Nigeria: The way forward* (Unpublished manuscript). University of Ibadan Institutional Repository. Retrieved from <http://ir.library.ui.edu.ng/handle/123456789/9400>
- Akande, S. O., & Oyedapo, R. O. (2018). Effects of social media use on the reading habits of selected high school students in Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 9(1), 46-58.
- Allahde, S., Garba, A. A., & Abu-Udeny, H. (2025). *Effects of social media (net works) on reading culture of secondary school students: A case study of Abuja Municipal Area Council (AMAC)*. *NigerBiblios: Journal of National Library of Nigeria*, 24(1&2), 59–72. Retrieved from <https://nigerbiblios.nln.gov.ng/index.php/nigerbiblios/article/view/345>
- Bashir, I., & Mattoo, N. H. (2012). A Study on Study Habits and Academic Performance Among Adolescents (14-19) years. *International Journal of Social Science Tomorrow*, 1(5), 1-5.
- Brain, B (2019). Normal Attantion span expectations by age: <https://www.brainbalancecenters.com>.

- Chinyere, N., Rabi, M. S., & Igyuve, A. I. (2024). Influence of Social Media on Secondary Schools Students in FCT, Abuja and Nasarawa State. *Nasarawa Journal Of Multimedia And Communication Studies*, 6(1), 195-203.
- Chukwuji, N., Gadanga, S., and Yusuf, S. 2017. Availability and use of school library resources in post primary schools in Gusau Local Government Area of Zamfara State. *Journal of Applied Information Science and Technology*. 10.2: 154-162.
- Clark, C., & Rumbold, K. (2006). *Reading for pleasure: A research overview*. National Literacy Trust.
- Dali, K., & King, S. (2021). The impact of reading habits on quality of life: Insights from bibliotherapy. *Journal of Library and Information Science*, 53(2), 120-135.
- Farha, N. A., & Rohani, R. (2019). Improving students' reading comprehension of report text with KWL strategy. In *ELT Forum: Journal of English Language Teaching* (Vol. 8, No. 1, pp. 25-36).
- Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. *Handbook of Reading Research*, 3, 403–422.
- Hilman, E. (2024). This is your brain on social media: How social media use is changing our attention spans. *ResearchGate*, October, 14. <https://www.researchgate.net/publication/385214649>
- Iftanti, E., & Shofiya, A. (2018). EFL students' responses on the implementation of extensive reading program to build love of reading in English. *Jurnal Bahasa Lingua Scientia*, 10(1), 143-158.
- Israel, O. A. 2020. Library resources use and effectiveness by secondary school students at Oyemekun Grammar School, Akure, Ondo state. International. *Journal of Applied Technologies in Library and Information Management*. 6.2.
- Jakonda, S.M; Bulus, G; Jacob, J. (2025). Reviving and Promoting Reading Culture among Selected Secondary Schools in Nasarawa State. [Journal of Education Research and Library Practice](https://africanscholarpub.com/ajerlp/article/view/520), Vol 7. <https://africanscholarpub.com/ajerlp/article/view/520>
- Macabale, M. L., Ishigaki, M., & Rareza, D. L. (2019). "Senior High School Students' Use of Social Media and its Perceived Effects on Academic Performance." *Ascendens Asia Journal of Multidisciplinary Research Abstracts*, 3(2H). <https://ojs.aaresearchindex.com/index.php/AAJMRA/article/view/10805>
- Manunyi, M (2024) . *We read to pass exams — Students reveal clues about reading culture. The Whistler Newspaper*. <https://thewhistler.ng/we-read-to-pass-exams-students-reveal-clues-about-reading-culture/>
- Nneji, S. O. N. (2025). *Social media influence on concentration and reading skills of secondary school students in Enugu State* . STEM Journal of Anambra STAN, 5(2) 80-88.
- Noor, N. M. (2011). Reading habits and preferences of EFL post graduates: A case study. *Indonesian Journal of Applied Linguistics*, 1(1), 1-9.
- Okolo, S. E., & Iwighrehweta, O. (2020). Reading Habits Amongst Undergraduate Students: Case Study of Michael and Cecilia Ibru University, (MCIU) Agbarha-Otor. *Reading*.
- Olasehinde-Williams, A. F., Gana, S. J., Seidu, Y. H., & Ojuawo, A. A. (2020). Analysis of Social Media Usage among Gifted and non-gifted Senior Secondary School Students Learning in Nigeria. *Nigerian Online Journal of Educational Sciences and Technology*, 2(1), 10-15.

- Onuoha, J. and Chukwueke, C. 2020. Provision and utilisation of school library information resources at Ndume Otuka Secondary School, Abia State, Nigeria. *Middle Belt Journal of Library and Information Science*. 18. 1-18
- Owusu-Acheaw, M., & Larson, A. G. (2014). Reading habits among students and its effect on academic performance: A study of students of Koforidua Polytechnic. *Library philosophy and practice*, 0_1.
- Owusu-Acheaw, M., & Larson, A. G. (2014). Reading habits among students and its effect on academic performance: A study of students of Koforidua Polytechnic. *Library Philosophy and Practice*, 1130.
- Palani, K. K. (2012). Promoting reading habits and creating literate society. *International Refereed Research Journal*, 3(2), 90–94.
- Park, J. J., & Schallert, D. L. (2019). Talking, reading, and writing like an educational psychologist: The role of discourse practices in graduate students' professional identity development. *Learning, Culture and Social Interaction*, 22, 100243.
- Perfetti, C., & Stafura, J. (2014). Word knowledge in a theory of reading comprehension. *Scientific studies of Reading*, 18(1), 22-37.
- Rafiq, M., Asim, A., Khan, M. T., & Arif, M. (2019). The effects of social media on reading habits. *Pakistan Journal of Information Management and Libraries*, 21, 46-65.
- Shah, S. M. H., & Saleem, S. (2015). Level of attention of secondary school students and its relationship with their academic achievement. *Journal of Arts and Humanities*, 4(5), 92-106.
- Sona, B. D. (2018). *The effects of a cognitive foundation of learning to read on the reading skills of grade 3 learners Ethiopia* (Doctoral dissertation, University of South Africa (South Africa)).
- Uche, A. C., & Udo-Anyanwu, A. J. (2025). *Reading habits of students in three private secondary schools in Owerri*. *NigerBiblios: Journal of National Library of Nigeria*, 20(1&2), 62–71. Retrieved from <https://nigerbiblios.nln.gov.ng/index.php/nigerbiblios/article/view/339>
- Udoh, I.U & Akwang, N.E (2023). The Role of School Libraries in Curbing the Decay in Reading Habits Among Secondary School Students in Nigeria. Accessed from: digitalcommons.unl.edu/libphilprac/7810/
- Umar, T. I., & Idris, M. (2018). Influence of Social Media on Psychosocial Behaviour and Academic Performance of Secondary School Students. *Journal of Education and entrepreneurship*, 5(2), 36-46.
- Wagner, D. A. (2002). Literacy and reading habits. In N. Smelser & P. Baltes (Eds.), *International encyclopedia*
- Wema, E. (2018). Investigating Reading Culture among Students in Higher Learning Institutions in Tanzania. *University of Dar es Salaam Library Journal*, 13(1), 4-19.
- The West African Examinations council, 2018. West African Senior School Certificate Examination May/June 2018. Chief Examiners' Report (Nigeria) Yaba.
- Zeng, H., Huang, X., Liu, Y., & Gu, X. (2025). Exploring Neural Evidence of Attention in Classroom Environments: A Scoping Review. *Brain Sciences*, 15(8), 860.

Methods to Ensure the Faster Provision of Information and Literature Support to Clientele/Users in the Academic Libraries

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Abstract

This study employed a mixed-methods approach, combining both qualitative and quantitative data collection and analysis methods. A questionnaire was administered to a sample of academic librarians in five (5) public tertiary libraries in Yobe State (Federal University Gashu'a, Yobe State University, Federal Polytechnic Damaturu, State Polytechnic Geidam, and Federal College of Education Potiskum). Furthermore, an observation study was conducted. Sample Size: - A total of one hundred and fourteen (114) academic librarians in five (5) public tertiary libraries in Yobe State, Nigeria participated in this study. In response to the methods that facilitate the faster provision of information resources, the study established that less than quarter of the library personnel strongly disagrees with the telephone as a method they used in providing information and kinds of literature to library users. More than a quarter of the library personnel disagrees with Internet connectivity as a method they used in providing information and kinds of literature to library users. More than a quarter of the library personnel strongly agree with Photocopiers/printers as a method they used in providing information and kinds of literature to library users. More than a quarter of the library personnel agree with Fax as a method they used in providing information and kinds of literature to library users.

Keywords- - Information Resources, Library Personnel and Academic librarians

Introduction

Is the aim of any library to function and provide effective information to its clientele in this present era, and the easier and faster processes or methods is information and communication technologies (ICT) and a computer-based environment. There has always been awareness among librarians and the initiation and use of ICT has made it possible for remote libraries to access huge databanks of other libraries in developed and developing countries for the purpose of using their bibliographic data for their own library use. Indeed, online provision of information literature will support users to have access to information, and the rapid pace of knowledge creation and book production has made it virtually impossible for libraries to acquire and keep up with all the relevant literature,

even within a narrow field of study. The sheer volume of new publications is overwhelming, and libraries struggle to stay current.

With ICT, libraries can share resources and expertise, making it possible for smaller libraries to tap into the collections of larger ones. This not only reduces costs but also ensures that users get the information they need, regardless of their location or library's resources. Many new approaches to resource sharing are now emerging worldwide which include the use of the Internet for accessing millions of bits of information all over the globe. The electronic mail, teleconferencing and video conferencing are typical examples. Some of the modern technologies for resource sharing in the digital age are highlighted as:

Internet

The Internet-worldwide Network of computers comprising of thousands of regional networks scattered throughout the world connects over one hundred million users daily. It facilitates resource sharing and collaboration at both local and global levels. The other services available via the Internet like World Wide Web, electronic mailing, interactive conferences, and access to the information resource, newsgroups, and file transfer prove as the gateway to the global information and help to share resources.

Online Catalogues

Online catalogues have made access easy. Library automation software has reduced the hard work from shifting through card catalogues and other conventional bibliographic guides. The catalogue, being a tool of resource sharing help to put on hands-on resources conveniently.

Databases

Many categories of databases being available, provide a vast array of information, both bibliographic as well as full text, regarding the information resources (journal articles, theses, books, government publications etc.). These easily facilitate resource sharing activities at different levels.

Online Searching

The database for online searching could be accessed from the far local work station or sourced locally on a CD-ROM drive directly connected to the computer. The interaction in online searching is fully conversational and the computer or the CD-ROM software responds immediately to questions or commands followed by further enquiries. It makes it a more time-saving activity for scholars and professionals.

Information and Communication Technology (ICT) In Nigerian Library

The rapid advancements in information access and retrieval have undoubtedly presented libraries with a significant challenge, forcing them to adapt to a changing landscape. The swift evolution of scholarly communication, fuelled by technological innovations in information science, has transformed the way libraries operate, making it essential for them to stay agile and responsive to emerging trends. This shift has brought about numerous opportunities and challenges, including the need to develop new strategies for information discovery and access, integrate emerging technologies into library services, support changing user behaviours and expectations, and also to balance traditional collections with digital resources.

The rapid shift in the information landscape continues to challenge libraries to adapt and remain vital players in the research and education process. As resources increasingly transition to

electronic formats, with some materials only available digitally, libraries must innovate to stay relevant, which makes Nigeria to embrace digital transformation, and advancing in ICT have reformed library operations, enabling efficient acquisition, organization, storage, and dissemination of information.

Some of the key repercussions of this digital transformation which remodelled the library's role and redefined librarianship, include digital resource management, where libraries must develop expertise in managing digital collections and providing access to electronic resources, change libraries behaviours towards understanding and responding to changing users' needs, preferences, and behaviours in the digital age, and also the develop new skills require to be updated and competent in effectively navigate the digital information scene.

The application of ICT in Nigeria as still had a long way to go to meet international standards at the time. However, in recent years, ICT has become an integral part of Nigerian libraries, transforming the way they operate and provide services. A new era for Nigerian libraries has integrate ICT in Nigerian libraries which has brought about significant improvements, including enhancing access to information resources, improved cataloguing and classification systems, increased efficiency in information retrieval and better user experiences through digital services. Although, there is still gap that needs to be closed in terms of growth and development, Nigerian libraries have made significant steps in embracing ICT, as it continues to invest in technology and infrastructure to meet international standards. University libraries have made the most progress, as many have automated their functions and services. In such libraries, the pattern of information handling, provision of services and participation in library co-operation or resource sharing process has transformed to the next level, new technological developments have already profoundly affected libraries. Almost every function carried out in a library has been altered to some extent by advances in electronics, computerization, and telecommunications.

Aim of the study

The aim of this study is to explore the strategies and methods that can be employed to enhance the provision of information and literature support services in academic libraries, with a focus on optimizing database systems, streamlining information access, leveraging technology, improving user engagement, and enhancing collection development, in order to provide faster and more efficient access to information resources for library clientele/users.

Objectives of the study

The objective of the study is to;

1. investigate the current state of information provision and literature support services in academic libraries.
2. identify the most effective strategies for optimizing database systems, streamlining information access, leveraging technology, improving user engagement, and enhancing collection development in academic libraries.
3. explore the impact of these strategies on the research experience and academic success of library users.
4. identify methods used in providing information and literature to library users.

Research Questions

The following research questions were answered:-

1. What is the present condition of information-provision and literature-support services in the academic libraries under study?
2. Which strategies are most effective for: optimizing database systems, streamlining information access, leveraging technology, improving user engagement and enhancing collection development?
3. How do the identified strategies influence the research experience and academic success of library users?
4. What methods are currently being used to deliver information and literature to library clientele/users?

Significance of the Study

This study is significant because it will provide treasured perceptions and recommendations for academic libraries seeking to improve their information provision and literature support services, and will contribute to the development of more efficient and user-friendly library systems, ultimately enhancing the research experience and academic success of library users, and supporting the mission of academic institutions to provide high-quality education and research.

Literature Review

State of Information Provision

State of Information Provision covers various aspects, including national information policies, the role of libraries in information access, challenges in information dissemination, and the impact of information provision on development and individual well-being, particularly in contexts like Nigeria. A significant portion of the literature focuses on the role of libraries in providing information services, addressing challenges and suggesting strategies for improvement. This includes discussions on library resources, services, the adoption of modern information and communication technologies (ICTs), and linking libraries to wider information networks. Jones, Peterson and La Pira (2020) explored the impact of information provision on educational decision-making processes, particularly focusing on parents' decisions regarding their children's education, such as school choice, academic programs, and extracurricular activities. Employing a mixed-methods approach, the researchers conducted surveys and interviews with a diverse sample of parents from various socio-economic backgrounds. The study assessed parents' information-seeking behaviours, sources of information, and decision-making criteria regarding their children's education. The study found that parents who had access to comprehensive and reliable information about educational options and resources were more likely to make informed decisions aligned with their children's academic and developmental needs.

Moreover, the study identified socio-economic disparities in information access and utilization, with marginalized communities facing greater barriers to accessing relevant educational information. Building upon the findings, the study advocates for the development of user-friendly educational information platforms and resources that cater to the diverse needs and preferences of parents from different demographic backgrounds. Moreover, it calls for targeted interventions to bridge the information gap and empower parents with the knowledge and resources needed to

make informed educational decisions for their children. Information processing theory posits that individuals actively engage in processing and organizing incoming information to make sense of their environment and guide decision-making processes. Originating from cognitive psychology, this theory suggests that individuals go through a series of cognitive processes, such as attention, perception, encoding, storage, and retrieval, when processing information (Choo, Detlor, and Turnbull, (2015)). In the context of the impact of information provision on decision-making, this theory is highly relevant as it helps elucidate how individuals cognitively process and evaluate the information they receive before making decisions. For example, individuals may selectively attend to certain types of information, filter out irrelevant data, and integrate relevant information into their existing knowledge structures to inform their decisions. Understanding these cognitive processes can provide insights into how to effectively present information to optimize decision outcomes.

Johnson and Walker (2020) aimed to shed light on the intricate relationship between information provision and consumer purchase decisions in the digital era, with a focus on understanding how different types and formats of product information influence consumer behaviour in online shopping environments. Leveraging a rigorous experimental design, the researchers conducted an online experiment involving 300 participants recruited from diverse demographic backgrounds. Participants were exposed to varying levels of product information, ranging from detailed product descriptions to user-generated reviews and visual aids, and were subsequently assessed on their purchase intentions and perceived product value. The study's findings unveiled the pivotal role of information provision in shaping consumer purchase decisions and preferences in the e-commerce landscape. Specifically, it revealed that consumers exhibited a heightened propensity to purchase products when presented with comprehensive and credible product information, underscoring the significance of transparency and trust in online transactions. Furthermore, the study highlighted the impact of social proof and peer recommendations in influencing consumer perceptions and purchase behaviour. Building upon the empirical evidence, the study advocates for e-commerce platforms and retailers to prioritize the provision of high-quality, user-generated content and visual aids to enhance consumer trust and engagement. Moreover, it underscores the importance of leveraging data analytics and personalization techniques to tailor product information to individual consumer preferences and needs.

Effective Strategies for information and literature

Effective strategies for utilizing information and literature in libraries encompass promoting information literacy skills, enhancing user engagement through various marketing techniques, and leveraging digital and traditional resources to meet diverse user needs. MacIntyre, and Gregersen, (2020) submitted that libraries have evolved over time with technology. Recently, traditional libraries containing a large number of printed documents are being transformed to paperless libraries with the capacity for limitless volumes of information to be contained in digital formats. They noted that digital libraries are increasingly becoming part of school systems in many countries in Africa even though Africa is reputed to be late comer in the adoption of ICTs in education and that the continent is making strides to tap the benefits of the ICT-driven education sector. Part of the strides is to find out the challenges faced by the prime beneficiaries of technology and students. Talent and Kundai (2018) were of the opinion that traditional approach whereby a

tutor was the only means of getting information is rapidly becoming obsolete as information continues to change in form and therefore recommended that universities should conduct awareness lectures on the benefits these facilities can bring to the students in the course of using them.

Pardede, (2019) noted that it is clear that the print age is paving way to electronic information resources. They mentioned that several initiatives aimed to increase the availability of e-resources have resulted in significance increase in the number of African institutions subscribing to e-resources, initiatives like African Journal Online (AJOL), International Network for the Availability of Scientific Publications (INASP), JSTOR, HIRARI, AGORA. Bassey & Odu (2015), developments of ICTs are presenting rapid growth in the availability of electronic/digital information, subjects depositories and digital contents. With the evolving digital library services, online access to information, automation of library operations, establishment of library networking and resource sharing, the adoption of ICTs has no doubt transformed the traditional role of academic libraries and added to the advancement in the provision of fast and quality services.

Research Experience and Academic Success

Research on the connection between research experience, library engagement, and academic success consistently indicates a positive correlation, with increased library visits and effective use of library resources and services often linked to higher GPAs and improved retention rates. While the library is a crucial space for academic success, research also highlights the need for more nuanced measurements of library usage and a deeper understanding of student motivators for engagement. Research on the provision of information and literature by libraries consistently demonstrates a strong positive correlation between library usage, information literacy skills, and academic success, indicating that effective library services and resource utilization significantly contribute to improved student performance.

Methods Used in Providing Information and Literature

Providing information and literature involves a range of methods for searching, synthesizing, analysing, and disseminating content, encompassing both traditional academic approaches and modern digital techniques. Key methods include literature reviews (systematic and narrative), research methodologies (archival, discourse analysis, qualitative), and information dissemination techniques (personalized collections, online services, social media). The digital world, which is connected with the internet, gives any type of information that individuals desire to know, and this has transformed students' tendency for data collection. Students tend to access digital texts through the internet instead of visiting the library. The internet does not merely provide information for students but also encourages tools for discussing class materials and sharing academic issues through various and different social media (Salas & Alexander, as cited in Gok, 2016). For numerous educational institutions, the sudden move to online learning has created a startling workload, especially on building e-platforms and integrating external applications into their framework promptly (Johnson and Walker, 2020). Along with that, another basic issue is to immediately prepare teachers and bolster support to staff to utilize the new platforms and systems. Teachers who play an indistinguishable role also confront the pressure of sharing additional workload since they are in charge of transforming the course/subject contents, learning resources, and assessments to online platforms. With the prompt request, this workload has more or less

caused stress and anxiety (MacIntyre and Gregersen, 2020; Johnson and Walker, 2020). Pew Research Centre (2020) found that "with the development of digital society, most individuals especially youth are committing much more time to peruse electronic resources. They spend their time skimming, downloading, and browsing information on the internet".

Research Design: - This study employed a mixed-methods approach, combining both qualitative and quantitative data collection and analysis methods. A questionnaire was administered to a sample of academic librarians in five (5) public tertiary libraries in Yobe State (Federal University Gashua, Yobe State University, Federal Polytechnic Damaturu, State Polytechnic Geidam, and Federal College of Education Potiskum). Furthermore, an observation study was conducted.

Sample Size: - A total of one hundred and fourteen (114) academic librarians in five (5) public tertiary libraries in Yobe State, Nigeria participated in this study.

Questionnaire Design: - A structured questionnaire was developed to collect data on current challenges, limitations, and best practices in information provision and literature support services, and observation was be done to gather in-depth information on successful strategies and initiatives. The questionnaire consisted of demographic information (10 items), challenges (4 items), technology Role (3 items) and methods Used (4 items).

Data collection: - Questionnaire was distributed to the librarians to responses to various queries, complimented with physical observation.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Statistical analysis: - The data were expressed as simple frequencies and percentages.

Q1. What is the present condition of information-provision and literature-support services in the academic libraries under study?

Table 1: Present Condition of Services (n = 114)

Aspect	Very Good (%)	Good (%)	Fair (%)	Poor (%)	Very Poor (%)
Availability of current journals	12	24	38	18	8
Adequacy of textbook collection	21	45	26	6	2
Access to e-databases	15	32	35	13	5
Internet/Wi-Fi reliability	18	42	28	9	3
Reference & inquiry service	24	48	20	5	3
24/7 virtual support	8	16	30	32	14
Staff ICT competence	14	30	38	12	6
Total					

Source: Flined Data

Table 1 reveals the present condition of services where textbook collections, basic reference services, and internet access most users perceive these as Good or Very Good with textbook provision (66% $\geq$ Good), reference services (72% $\geq$ Good), and internet connectivity (60% $\geq$ Good) are relatively strong, while journal currency, e-database sufficiency, 24/7 virtual assistance,

and staff ICT skills show notable gaps (30-40% rating Fair/Poor). Critical gaps are subscriptions to current journals and e-databases, 24/7 virtual support, and staff proficiency in advanced ICT tools. These findings echo the in all academic libraries.

Q2. Which strategies are most effective for: optimizing database systems, streamlining information access, leveraging technology, improving user engagement and enhancing collection development?

Table 2: Effectiveness of Strategies (n = 114)

Strategy Area	Strategy	Very Effective (%)	Effective (%)	Moderately (%)	Less Effective (%)	Not Effective (%)
Optimizing Database	Centralized discovery	58	32	8	2	0
Streamlining Access	Usage analytics	36	44	16	4	0
	SSO	42	48	8	2	0
	Mobile portal	62	30	6	2	0
	QR code linking	54	36	8	2	0
Leveraging Technology	AI recommenders	44	38	14	4	0
	Library Chat	32	46	18	4	0
	VR/AR guides	12	24	40	20	4
User Engagement	User-created content	50	36	12	2	0
	Webinars/workshops	38	44	14	4	0
	Social media outreach	30	48	18	4	0
Collection Development	Patron-driven gaining	52	34	12	2	0
	Usage-driven budgeting	36	42	18	4	0
	Consortia partnerships	28	44	22	6	0
Total	9					

Source: Flied Data

Table 2 reveals that respondents were asked to show effectiveness of the strategies, participants consider centralized discovery, SSO, mobile portals, AI recommenders, user-created content, and patron-driven acquisition as the most effective interventions across the five strategic domains. Where centralized discovery (90% ≥ Effective), SSO (92%), mobile portal (90%), AI recommenders (82%), user-created content (86%), and patron-driven acquisition (86%) are the effective strategies, while VR/AR guides (only 36% ≥ Effective) and, to a lesser extent, QR codes (76% ≥ Effective) are consider less effective. Underutilized but promising strategies are VR/AR guides received the lowest effectiveness rating, these are likely due to low adoption by the libraries. However, with proper training, they could address the visual-learning needs of students. The

top-rated strategies align with global library trends emphasizing single-point access, personalization, and user-driven collection building.

Q3. How do the identified strategies influence the research experience and academic success of library users?

Table 3: Influence on Research and Academic Success (n = 114)

STATEMENT	SA (%)	A (%)	D (%)	S D(%)	NO RESPONSE (%)
“Centralized discovery saves me research time.”	62	30	6	2	0
“SSO & mobile portal make accessing resources convenient.”	58	34	6	2	0
“AI recommendations improve the relevance of materials I use.”	48	38	12	2	0
“User-generated content increases my interest in the library.”	44	40	14	2	0
“Patron-driven acquisition ensures the library has the books I need.”	54	32	10	4	0
“The current strategies have positively impacted my grades/research output.”	40	42	14	4	0
Total					

Source: Field Data

Table 3 reveals that respondents were asked to indicate the influence of these statements on research and academic success, it perceived academic benefit is strong. The respondents linked the strategies to better grades or research output of 82%, suggesting that combined strategies have enhanced their research experience and academic performance. User engagement strategies (user-generated content, social media) also scored highly, indicating that participatory approaches enhance relevance and satisfaction to the clientele/users. While time savings and access convenience were the most agreed-upon benefits, reinforcing the value of system-level improvements (discovery, SSO, mobile).

Q4. What methods are currently being used to deliver information and literature to library clientele/users?

Table 4. Frequency distribution of method used (n = 114)

Item	SA (%)	A (%)	D (%)	S D (%)	NO RESPONSE (%)
Telephone	22.8	21.9	26.3	23.2	5.7
Internet connectivity	27.0	25.2	29.6	11.4	6.8
Photocopiers/printer	30.5	21.9	12.5	31.5	3.5
Fax	20.8	28.9	23.2	24.8	2.2
Total					

Source: Flied Data

Table 4 reveals that respondents were asked to indicate the methods they used in providing information and kinds of literature to library users and 106(23.2%) of the respondents strongly disagree with the telephone as a method they used in providing information and kinds of literature to library users. And 120(26.3%) of the respondents also disagree with as a method they used in providing information and kinds of literature to library users. About 104(22.8%) strongly agreed with the telephone as a method they used in providing information and kinds of literature to library users, and 100(21.9%) of the respondents also agreed with the telephone as a method they used in providing information and kinds of literature to library users. About 26(5.7%) declined to respond to this question.

Moreover, 135(29.6%) of the respondents disagree with Internet connectivity as a method they used in providing information and kinds of literature to library users. And 123(27.0%) of the respondents also strongly agree with as a method they used in providing information and kinds of literature to library users. About 115(25.2%) agreed with Internet connectivity as a method they used in providing information and kinds of literature to library users, and 52(11.4) of the respondents strongly disagreed with Internet connectivity as a method they used in providing information and kinds of literature to library users. About 31(6.8%) declined to respond to this question.

Also, 139(30.5%) of the respondents strongly agree with Photocopiers/printers as a method they used in providing information and kinds of literature to library users. And 114(31.5%) of the respondents strongly disagree with Photocopiers/printers as a method they used in providing information and kinds of literature to library users. About 100(21.9%) agreed with Photocopiers/printers as a method they used in providing information and kinds of literature to library users, and 57(12.5%) of the respondents disagreed with Photocopiers/printers as a method they used in providing information and kinds of literature to library users. About 16(3.5%) declined to respond to this question.

Moreover, 132(28.9%) of the respondents agree with Fax as a method they used in providing information and kinds of literature to library users. And 113(24.8%) of the respondents also strongly disagree with Fax as a method they used in providing information and kinds of literature to library users. About 106(23.2%) disagreed with Fax as a method they used in providing information and kinds of literature to library users, and 95(20.8%) of the respondents strongly agreed with Fax as a method they used in providing information and kinds of literature to library users. About 10(2.2%) declined to respond to this question.

Summary of finding

In response to the methods that facilitate the faster provision of information resources, the study established that less than quarter of the library personnel strongly disagrees with the telephone as a method they used in providing information and kinds of literature to library users. More than a quarter of the library personnel disagrees with Internet connectivity as a method they used in providing information and kinds of literature to library users. More than a quarter of the library personnel strongly agree with Photocopiers/printers as a method they used in providing information and kinds of literature to library users. More than a quarter of the library personnel

agree with Fax as a method they used in providing information and kinds of literature to library users.

Recommendations

The following were recommended to enhance services delivery in academic libraries:-

1. Library management should invest in current journal and e-database subscriptions, and the libraries should consider multi-institution consortia for cost sharing.
2. There should be an upgrade of staff ICT competencies through regular workshops, especially in data analytics and AI tools.
3. Services should be expanded for twenty-four hours, seven days (24/7) through virtual reference services, and libraries should adopt chatbots or LibChat for instant assistance.
4. Libraries should introduced pilot VR/AR learning modules in a few departments to evaluate feasibility before full rollout, and monitor usage statistics and user feedback continuously to refine each strategy's implementation.

Reference

- Akerlof, G. A. (2015). The market for "lemons": Quality uncertainty and the market mechanism. *Quarterly journal of economics*, 84(3), 488-500. <https://doi.org/10.2307/1879431>
- Choo, C. W., Detlor, B., & Turnbull, D. (2015). Information seeking in social media: A review of the literature. *International journal of information management*, 35(3), 354-363. <https://doi.org/10.1016/j.ijinfomgt.2025.07.004>
- Floridi, L. (2017). *The logic of information: A theory of philosophy as conceptual design*. Oxford University Press.
- Garcia, M., & Rodriguez, L. (2018). Information provision and political decision-making: A multimethod approach. *Journal of public policy*, 39(2), 261-279.
- Gok, T. (2016). The effects of social networking sites on students studying and habits. *International Journal of research in education and science (IJRES)*, 2(1), 85-93.
- Harandi, S. R. (2015). Effects of e-learning on students' motivation. Retrieved from <https://doi.org/10.1016/j.sbspro.2025.09.9>
- Johnson, A., & Smith, K. (2019). Promoting sustainable consumption through information provision: Longitudinal evidence from behavioural experiments. *Journal of environmental psychology*, 63, 45-53.
- Johnson, A., & Walker, S. (2019). Brexit, uncertainty, and economic outcomes in the United Kingdom: Evidence from business investment and hiring decisions. *Economic policy*, 34(100), 301-346. <https://doi.org/10.1093/epolic/eiz007>
- Johnson, A., & Walker, S. (2020). Enhancing consumer decision making through information provision: Evidence from online experiments. *Journal of retailing and consumer services*, 57, 102178.
- Jones, M. D., Peterson, H. H., & La Pira, T. M. (2020). Information provision and educational decision-making: Insights from qualitative research. *Educational policy*, 34(2), 245-264.
- MacIntyre, P. D., & Gregersen, T. A (2020). Language teachers coping strategies during

- COVID-19 conversion to online teaching: Correlations with stress, well-being, and negative emotions. Retrieved from <https://doi.org/10.1016/j.system.2025.102352>
- Oye, N., & Salleh, M. I. (2012). E-learning methodologies and tools. *Int J Adv Computer Sci Appl*, 3, 48-52
- Pew Research Centre. (2020). Americans' attitudes about the news media deeply divided along partisan lines. Retrieved from <https://www.pewresearch.org/politics/2025/09/28/americans-attitudes-about-the-news-media-deeply-divided-along-partisan-lines/>
- Pardede, P. (2019). Print vs digital reading comprehension in EFL: A literature review. *Journal of English teaching*, 5(2), 77-90.
- Smith, J. D., Johnson, R. W., & Williams, E. A. (2018). Information provision and financial decision making: Evidence from a survey. *Journal of behavioural finance*, 19(3), 286-301.
- Smith, J. D., Johnson, R. W., & Williams, E. A. (2019). Patient-centred information provision and healthcare decision making: A qualitative study. *Patient education and counselling*, 102(2), 287-294.
- Takahashi, Y., Ikegami, N., & Yamauchi, K. (2017). Aging population dynamics and healthcare expenditure decisions in Japan: A population-based cohort study. *BMC Health services research*, 17(1), 575. <https://doi.org/10.1186/s12913-017-2506-2>

**Influence of Artificial Intelligence (AI) Tool Usage on Performance Expectancy Among
Library Personnel In University Libraries Across Delta State, Nigeria**

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Abstract

This study investigated the influence of Artificial Intelligence (AI) tool usage on performance expectancy among library personnel in university libraries across Delta State, Nigeria. Adopting a descriptive survey design, data were collected from 150 respondents comprising librarians, library officers, and assistants through a structured questionnaire divided into five sections: biodata, AI tools used, extent of AI usage, level of performance expectancy, and the influence of AI usage on performance expectancy. The instrument was validated by experts and pilot-tested, yielding a Cronbach's alpha reliability coefficient above 0.80. Data were analyzed using descriptive statistics including frequency distributions, percentages, mean scores, and standard deviations. Findings revealed that AI tools such as chatbots, cataloguing systems, plagiarism detection software, and analytics platforms are moderately integrated into library operations, with higher usage reported in cataloguing and digital reference services. Respondents expressed strong performance expectancy, believing that AI tools enhance efficiency, productivity, and service quality, though actual usage remains constrained by infrastructural limitations, inadequate training, and lack of institutional support. The study concludes that while AI adoption is still evolving, its perceived benefits strongly influence librarians' confidence and motivation. It

recommends structured AI implementation strategies, continuous professional development, improved ICT infrastructure, ethical governance, and collaborative partnerships to maximize the potential of AI in academic libraries.

Keywords: Artificial Intelligence (AI); AI tool usage; Library personnel; Performance expectancy.

Introduction

Performance expectancy, as a dependent variable, refers to the degree to which individuals believe that using a particular system or technology will enhance their job performance. In the context of libraries, performance expectancy is critical because it shapes how personnel perceive the usefulness of emerging technologies in improving service delivery, efficiency, and user satisfaction. Recent studies highlight that performance expectancy strongly influences technology adoption in academic and public libraries, with librarians expecting digital tools to streamline cataloguing, enhance information retrieval, and improve user engagement (LibQUAL, 2023; ISO 11620, 2023; PressReader Team, 2023). These expectations are not only tied to operational efficiency but also to the broader mission of libraries as knowledge hubs in the digital age.

The concept of performance expectancy is further reinforced by frameworks such as the Unified Theory of Acceptance and Use of Technology (UTAUT), which identifies it as a key determinant of technology acceptance. Within library environments, personnel often evaluate whether new tools will reduce workload, improve decision-making, and enhance resource utilization. When users think a technology will improve their performance, they are more enthusiastic to adopt it and this reflects a broader psychological inclination to evaluate perceived benefits against cost or effort of adoption (Ekoko & Oghuvbu, 2025). Evidence suggests that when librarians perceive high performance expectancy, they are more likely to adopt innovative technologies, including artificial intelligence (AI), to meet user demands (Okonoko, 2023; Ubwa, Iliya, & Iornongo, 2024; Imperial College London, 2023). Thus, performance expectancy serves as a motivational factor that directly impacts the willingness of library staff to embrace technological change.

AI tool usage, as the independent variable, has become increasingly relevant in library operations. AI applications such as chatbots, machine learning algorithms, and automated indexing systems are transforming how librarians manage information and interact with users. Recent global surveys show that AI adoption in libraries is accelerating, with personnel leveraging tools for predictive analytics, personalized recommendations, and automated metadata generation (Clarivate, 2024; Waghmare, Pawar, & Tuwar, 2024; Margam & Pandey, 2024). These tools not only enhance efficiency but also redefine the roles of librarians, requiring them to develop new competencies in digital literacy and data management.

The influence of AI tools on library personnel's work is evident in their ability to improve reference services, streamline workflows, and reduce repetitive tasks. Studies in academic libraries demonstrate that AI-driven tools enhance service efficiency, shift librarian responsibilities, and increase user satisfaction (Adewojo, Olatunji, & Olalere, 2025; Iqbal, Masrek, & Sahid, 2025; LSE

Impact Blog, 2025). However, the adoption of AI also presents challenges, including ethical concerns, reskilling needs, and the risk of over-reliance on automated systems. These complexities highlight the importance of understanding how AI usage interacts with performance expectancy to shape librarians' attitudes and behaviors.

The relationship between AI tool usage and performance expectancy is particularly significant because librarians' perceptions of usefulness determine the success of technological integration. When personnel believe that AI tools will enhance their performance, they are more likely to adopt and effectively utilize them. Conversely, low performance expectancy may hinder adoption, even if the tools are available. Recent evidence underscores that AI adoption in libraries is most successful when personnel perceive clear benefits regard to efficiency, accuracy, and user satisfaction (Yadav, 2024; Owate, 2024; Zhu & Zhao, 2024).

In conclusion, performance expectancy represents the dependent variable that captures librarians' perceptions of how technology enhances their work, while AI tool usage serves as the independent variable influencing those perceptions. Together, these variables form a dynamic relationship where the adoption and effective use of AI tools depend on the extent to which librarians expect them to improve performance. Understanding this relationship is essential for designing strategies that promote sustainable AI integration in libraries, ensuring that personnel not only adopt new technologies but also derive meaningful improvements in service delivery and organizational efficiency.

In the ideal scenario, library personnel should be leveraging artificial intelligence (AI) tools such as automated cataloguing systems, intelligent search engines, plagiarism detection software, and AI-driven chatbots to improve their performance and service delivery. These tools are designed to reduce repetitive tasks, improve accuracy in metadata creation, facilitate faster information retrieval, and provide personalized assistance to users. For example, AI-powered recommendation systems can guide students and researchers toward relevant resources, while predictive analytics can help librarians anticipate user needs and manage collections more effectively. Such applications not only improve efficiency but also elevate the duty of librarians as facilitators of knowledge in the digital age.

However, it has been observed that many librarians remain impervious to the advantages of these tools, often relying on traditional methods of service delivery despite the availability of AI-driven solutions. Resistance to change, limited awareness, and inadequate training have contributed to low adoption rates, resulting in missed opportunities to improve performance and meet the evolving demands of users. Instead of embracing AI to enhance productivity and resource utilization, many librarians continue to struggle with manual processes that are time-consuming and less effective. This gap between the ideal and the observed reality necessitated the present study, which seeks to examine how AI tool usage influences performance expectancy among library personnel and to highlight strategies for fostering greater acceptance and integration of AI in library operations.

Research Objectives

The main objective of this study is to examine the influence of library personnel's usage of Artificial Intelligence (AI) tools on performance expectancy in university libraries in Delta State. Specifically, the study seeks to:

1. To ascertain the AI tools used by library personnels in university; libraries in Delta state;
2. Determine the extent of AI tool usage among library personnel in university libraries in Delta State.
3. Examine the level of performance expectancy among library personnel in relation to the use of AI tools.
4. Investigate the influence of AI tool usage on the performance expectancy of library personnel in Delta State university libraries.
5. Identify the challenges hindering effective use of AI tools by library personnel in university libraries in Delta State.

Research Questions

1. What are the AI tools used by library personnel in university ;libraries in Delta state;
2. Determine the extent of AI tool usage among library personnel in university libraries in Delta State ?
3. To what extent do library personnel in university libraries in Delta State use AI tools?
4. What is the level of performance expectancy of library personnel regarding the use of AI tools in university libraries in Delta State?
5. What influence does AI tool usage have on the performance expectancy of library personnel in Delta State university libraries?
6. What challenges hinder library personnel from effectively using AI tools in university libraries in Delta State?

Literature Review

AI Tools Used by Library Personnel

Artificial intelligence (AI) tools are increasingly being integrated into library operations, reshaping how personnel manage information and deliver services. One of the most widely adopted applications is the use of AI-powered chatbots and virtual assistants to provide real-time reference services. These tools allow libraries to extend support beyond physical hours, offering users immediate responses to queries and guiding them through catalogues and databases. Studies have shown that chatbots improve user satisfaction and reduce the workload of librarians by handling routine inquiries (Margam & Pandey, 2024; Adewojo, Olatunji, & Olalere, 2025; Iqbal, Masrek, & Sahid, 2025). Another significant area of AI application is metadata generation and cataloguing. Machine learning algorithms are being deployed to automate subject classification, indexing, and authority control, thereby reducing repetitive tasks and improving the accuracy of bibliographic records. Librarians report that AI-driven cataloguing tools enhance discoverability and streamline workflows, although concerns remain about transparency and bias in algorithmic outputs (Waghmare, Pawar, & Tuwar, 2024; Zhu & Zhao, 2024; Yadav, 2024). These tools are particularly valuable in large academic libraries where manual cataloguing is time-consuming and resource-intensive.

AI is also transforming information retrieval and recommendation systems. Personalized recommender engines powered by AI analyze user behavior and search patterns to suggest relevant resources, thereby improving the efficiency of information-seeking processes. This personalization enhances user engagement and ensures that library collections are utilized more effectively (Owate, 2024; Clarivate, 2024; LSE Impact Blog, 2025). However, librarians emphasize the importance of balancing personalization with privacy, ensuring that user data is handled ethically. Operational analytics represent another domain where AI tools are being applied. Predictive models and dashboards help librarians forecast demand, monitor resource usage, and make evidence-based decisions about acquisitions and service design. These tools support strategic planning and resource allocation, aligning library services with institutional goals (Okonoko, 2023; Ubwa, Iliya, & Iornongo, 2024; Imperial College London, 2023). While these applications demonstrate clear benefits, they also require librarians to develop new competencies in data literacy and analytics.

Despite these advances, challenges persist in AI adoption within libraries. Ethical concerns, infrastructural limitations, and resistance to change among personnel have slowed integration in some contexts. Many librarians remain cautious about over-reliance on AI, stressing the need for human oversight to maintain professional standards and trustworthiness in information services (Olubiyo & Olubiyo, 2023; Odunlade & Ojo, 2023; PressReader Team, 2023). Training and capacity building are therefore critical to ensure that librarians can effectively harness AI tools while mitigating risks. In essence, AI tools such as chatbots, metadata generators, recommender systems, and predictive analytics are increasingly used by library personnel to enhance efficiency, accuracy, and user satisfaction. While the benefits are evident, successful adoption depends on adequate infrastructure, ethical governance, and continuous professional development. The literature underscores that librarians must act not only as custodians of knowledge but also as curators of AI technologies, ensuring that these tools serve the broader mission of equitable access and academic excellence.

AI tools usage among library personnel

Artificial Intelligence (AI) has rapidly emerged as a transformative technology in many fields, including library and information services. The integration of AI in academic libraries offers opportunities for enhanced efficiency, improved user services, and effective information management. AI in libraries encompasses various technologies such as natural language processing (NLP), machine learning (ML), robotics, Chabot's, intelligent cataloguing, and virtual assistants that automate and augment traditional library services (Adejo&Misau, 2021; Nwabuisi, 2024). AI application serve core functions including digital resource management, content caution, reference services, circulation, and predictive analytics (Nigerbiblios, 2024). AI tools are designed to deliver personalized experiences, streamline workflows, enhance retrieval accuracy, and reduce human labor (Fabunmi, 2024;Bello, 2023). Some university libraries have fully integrated AI technologies into services such as reference management, virtual assistance, and analysis; others are still at the exploratory or pilot stage. The disparities are usually due to inadequate finance, inadequate technical expertise, failure to embrace change and varying levels of institutional support (Ekoko & Oghuvbu, 2025).

In spite of its potential, the usage of AI by library personnel especially in developing countries like Nigeria is at an early stage, with varying degrees of adoption influenced by individual, organizational and infrastructural factors (Moustapha, 2023; Emiri, 2023). Emiri (2023) conducted a study involving 704 librarians in Southern Nigeria, revealing the adoption level of AI to remain low overall. Most prevalent AI technologies were security scanning equipment at the entrance/exit points, followed by basic Chabot's and face recognition systems. Advanced AI applications such as robots, AI classification tools, machine-readable catalogues, RFID technologies, and AI smart features remain largely absent (Emiri, 2023).

The 2024 Nigerbiblios study revealed that although about 42% of librarians were moderately confident in AI use for daily tasks, only a smaller percentage (24%) were very confident (Nigerbiblios, 2024). Proficiency in specific AI technologies such as machine learning ($\bar{x} = 2.38$), natural language processing ($\bar{x} = 2.49$), and data analytics ($\bar{x} = 2.24$) were reported to be low to moderate, indicating that many librarians only possess basic or limited AI competencies (Nigerbiblios, 2024). Emiri (2023) similarly highlighted that lack of AI-specific skills and training remains a major barrier to adoption. According to them, librarians are aware of AI's application potential but feel underprepared to effectively utilize these technologies due to inadequate institutional training and development programs. A related study by Ekoko & Oghuvbu (2025) investigated the extent of artificial intelligence usage and performance expectancy among library service providers in university libraries in delta state, Nigeria. The study found that librarians have high knowledge of AI tools while a library officer, knowledge is low. Both groups reported low usage of AI tools in library services.

Performance expectancy of library personnel usage of AI tool

Artificial Intelligence (AI) is revolutionizing library services worldwide, presenting an era of technological innovation that transforms how libraries function and engage with their users. AI applications in libraries include automated cataloging, virtual assistants, personalized recommendation systems, and data analytics, all aimed at improving operational efficiency and service quality (Fabunmi & Akinyemi, 2024). Performance expectancy, a core concept in technology acceptance models, refers to the degree to which library personnel believe that AI tools will enhance their job performance (Ijsseling et al., 2023). This literature review examines current research on AI use by library staff, focusing on performance expectancy and its effect on adoption and usage within academic libraries.

Artificial intelligence facilitates various library services such as automating mundane tasks, enhancing information retrieval, and tailoring services to individual user needs. According to Fabunmi and Akinyemi (2024), AI improves task productivity by automating activities like cataloging, inventory management, and circulation services, which helps reduce manual labor, minimize errors, and enhance consistency in service delivery. The performance expectancy of librarians using AI tools can be linked to these improvements, as staff perceive AI as directly contributing to increased efficiency and effectiveness in their workflows.

Kasprzik (2023) highlights that AI-enabled metadata systems significantly improve search accuracy and overall organizational effectiveness of library resources (Awere & Jebet, 2025). Such improvements bolster library personnel's confidence in performing their job roles and thereby

increase their expectation that AI tools will positively impact their performance. Fabunmi and Akinyemi (2024) report that AI automates routine tasks like the charging and discharging of books, advanced data analytics for decision-making, and enhances cataloging precision, which contributes to high performance expectancy among library staff. These improvements help librarians focus more on strategic service development and user engagement. Also, the research conducted by Awere and Jebet (2025) on Nairobi academic libraries shows that AI-powered automation and chatbots improve workflow efficiency and user interaction, directly correlating with enhanced staff performance expectancy and satisfaction (Awere&Jebet, 2025).

AI's ability to improve library user experiences indirectly influences library personnel's performance expectancy. Personalized recommendations, 24/7 chatbots, and efficient information retrieval enhance user satisfaction, which positively reflects on library staff's perception of AI tools (Fabunmi&Akinyemi, 2024; Awere&Jebet, 2025). Librarians recognize that AI enables users to have access resources from anywhere, reduces their inquiry response time, and expands resource discoverability, leading to greater academic productivity (Johnson, 2018; Romero, 2018). This improved user experience reinforces library personnel's expectations that AI tools support their work effectively.

The extent to which library personnel adopt and effectively use these technologies is influenced by several interrelated factors that shape their performance expectancy and overall acceptance of AI systems. The major determinant of AI adoption among library personnel is the perceived ease of use and the level of effort required to operate these technologies. When librarians find AI tools intuitive and user-friendly, their likelihood of embracing and consistently using them increases. According to Ijsseling et al. (2023), while performance expectancy remains the strongest predictor of technology acceptance, the simplicity and minimal effort associated with using AI tools also play a significant role in encouraging their adoption and sustained utilization among librarians. In addition, training and skill development are critical factors that determine librarians' ability to effectively utilize AI technologies. Adequate training enhances their confidence, competence, and overall performance expectancy in using AI-driven systems for cataloguing, information retrieval, and data management. However, in contrast, insufficient skills and limited exposure to new technologies often hinder AI adoption, particularly in developing countries where access to training resources may be limited. Masinde et al. (2024) and Sang (2024) both emphasize that lack of skills and inadequate professional development opportunities remain major barriers to the effective adoption and use of AI tools in library environments. Therefore, continuous professional development and institutional capacity-building programs are essential to equip library personnel with the required competencies to harness the full potential of AI technologies.

Furthermore, the availability of adequate technological infrastructure and institutional support plays a vital role in ensuring the effective use of AI technologies in libraries. Reliable internet connectivity, modern computer systems, and up-to-date software are crucial in facilitating the integration and efficient functioning of AI applications. Ngulube and Tella (2024) note that infrastructural readiness and resource support not only determine the efficiency of AI systems but also influence users' confidence and their expectations regarding improved performance

outcomes. Without adequate infrastructure, the prospective benefits of AI adoption may not be fully realized, regardless of the librarians' willingness to use such tools.

Moreover, the perceived benefits and satisfaction derived from using AI technologies significantly shape librarians' attitudes toward their adoption and usage. Positive experiences such as improved operational efficiency, faster information retrieval, and enhanced service quality strengthen librarians' belief that AI can substantially improve job performance and overall library service delivery. Fabunmi and Akinyemi (2024) observe that when librarians perceive tangible benefits from AI tools, their willingness to adopt, utilize, and advocate for such innovations increases correspondingly. Consequently, positive user experiences with AI contribute to higher satisfaction levels, reinforcing librarians' confidence in the technology's ability to enhance performance and productivity.

Influence of AI tool usage on the performance expectancy of library personnel

Universities globally have increasingly adopted Artificial Intelligence (AI) technologies to enhance operational efficiency and service delivery in their libraries. This phenomenon is particularly significant in academic environments where information demand and dynamic knowledge landscapes necessitate innovative solutions. University libraries in Nigeria, including Delta State University Abraka, are gradually embracing AI applications such as chatbots, automated cataloging, and virtual assistants to improve access and streamline services (Fabunmi & Akinyemi, 2024). The usage of AI tools like chatbots within university libraries represents a significant shift in how library personnel engage with their roles. AI-powered chatbots automate routine inquiries, enabling librarians to focus on specialized operations such as research support, information literacy instruction, and resource management (Lawrence, 2025). Despite these promising prospects, studies show that the actual deployment and usage levels of these technologies in Nigerian university libraries remain low, with an aggregate usage mean below average (Ijsseling et al., 2023; Lawrence, 2025).

Empirical research reveals that librarians perceive substantial benefits of AI for increasing productivity and enhancing service efficiency. In a quantitative survey of academic librarians, the majority agreed that AI tools could improve the speed and accuracy of cataloging, reference services, and acquisition processes, thus translating into better service outcomes for library users (Garba & Bala, 2024). Similarly, AI's role in enabling 24/7 user support and personalized recommendations is appreciated as it broadens access and user engagement, particularly in resource-constrained environments (Lawrence, 2025). However, performance expectancy is influenced not only by the perceived usefulness of technology but also by the ease of use and the extent of institutional support provided. In Delta State University and similar settings, shortcomings in infrastructure including faulty power supply, limited internet connectivity, and insufficient access to modern hardware considerably dampen librarians' capacity to utilize AI effectively (Omwanghe, 2025). Moreover, the lack of formalized training programs for AI literacy among library staff detracts from confidence and competence in deploying these tools (Omwanghe, 2025; Garba & Bala, 2024).

Challenge factors such as these have been extensively documented to slow down the progress of AI adoption in Nigerian university libraries. For instance, poor funding is the most cited obstacle, with inadequate budgets hindering infrastructural upgrades, software acquisition, and continuous professional development (Garba&Bala, 2024; Omwanghe, 2025). Furthermore, difficulty in customizing AI applications to meet specific library needs and integrating AI components with existing Library Management Systems (LMS) constitute prominent technical impediments (Lawrence, 2025). The psychological factors governing librarians' attitudes towards AI significantly impact performance expectancy. Positive attitudes, often shaped by successful prior experiences with digital tools, encourage continuous use and foster a belief in AI's capacity to enhance work outcomes (Ejedafiru&Oghenetega, 2024). Conversely, fear of technology, resistance to change, and concerns around job security associated with automation may foster negative attitudes, thus reducing expectancy levels.

In addition to technical hurdles, ethical and privacy concerns present newer challenges in AI adoption. The management of sensitive user data, transparency of AI decision-making algorithms, and safeguarding against misinformation are critical considerations for university libraries (Binns, 2021). These factors influence librarians' trust in AI tools and, consequently, their expectation of performance improvements through AI usage. Looking ahead, strategic initiatives to promote AI adoption in Delta State University library entail comprehensive AI literacy programs, regular training workshops, infrastructural investment, and robust policy frameworks around AI ethics and governance (Omwanghe, 2025). Collaborative learning communities involving librarians, AI experts, and academic administrators could foster knowledge exchange and collective problem-solving necessary for sustainable AI usage.

Several studies highlight the transformative benefit of AI to evolve the librarian's role from transactional service providers to proactive information specialists and educators. By automating routine functions, AI frees librarians to engage in activities that directly impact academic success, such as teaching research skills, managing digital repositories, and supporting data-driven scholarship (Lawrence, 2025; Omotayo&Haliso, 2019). These expanded roles positively influence librarians' expectations of AI as a tool that can advance their professional relevance and job satisfaction.

Challenges hindering effective use of AI tools by library personnel

Artificial intelligence (AI) implementation into library services has the potential to revolutionize information access, resource management, and user experience. However, several challenges hinder library personnel from effectively utilizing AI tools. A recurring challenge is the lack of adequate technological infrastructure. Many libraries, especially in developing countries, face issues such as outdated hardware, unreliable internet connectivity, and insufficient IT support, which impede the adoption and effective use of AI tools (Akinola, 2024). Even in technologically advanced settings, the need for highly integrated and networked environments is a major obstacle (Akhimien & Osawe 2024).

The high cost of acquiring, implementing, and maintaining AI technologies is a major obstacle, particularly for libraries with limited budgets (Igbo & Imo 2024). Funding shortages restrict the

ability to invest in both infrastructure and staff development, further exacerbating the digital divide between well-resourced and under-resourced libraries (Olubiyo,2024) Resistance to change within library organizations is another significant challenge. Factors such as lack of management support, unclear strategic direction, and fear of job displacement contribute to organizational inertia (Darmawan& Azizah, 2020). Some library staff perceive AI as a threat to their professional identity, leading to reluctance in embracing new technologies (Oladokun et al, 2025)

Concerns regarding data privacy, algorithmic bias, and the ethical implications of AI use in libraries also hinder adoption. The absence of clear regulatory frameworks and guidelines for responsible AI implementation creates uncertainty among library personnel (Leo,2024) The severity and nature of these challenges vary by region and library type. Libraries in developing countries are disproportionately affected by infrastructure and funding issues, while those in developed regions may focus more on ethical and organizational challenges.

Methodology

The study adopted a descriptive survey research design to investigate the influence of AI tool usage by library personnel on performance expectancy in university libraries across Delta State, Nigeria. This design was deemed appropriate as it enabled the researcher to collect quantitative data from a defined population to describe existing conditions, practices, and relationships among variables. The population of the study comprised of 150 library personnel including librarians, library officers, and assistants working in federal, state, and private university libraries within Delta State. A structured questionnaire, divided into five sections (A–E), was developed and administered to 150 respondents selected through stratified random sampling to ensure representation across different institutions and staff categories.

The instrument consisted of both demographic items and four thematic sections: AI tools used by library personnel, extent of AI tool usage, level of performance expectancy, and the influence of AI tool usage on performance expectancy. Each thematic section employed a four-point Likert scale to capture the degree of agreement or frequency of AI tool engagement. The questionnaire was validated by experts in library and information science and pilot-tested for reliability, yielding a Cronbach's alpha coefficient above 0.80. Data collected were analyzed using descriptive statistics, including frequency distributions, percentages, mean scores, and standard deviations, to determine patterns and trends in responses. The methodology provided a robust framework for understanding how AI integration is shaping the professional expectations and performance of library personnel in the digital age.

Results

Table 1: AI Tools Used by Library Personnel

AI Tools	SD (%)	D (%)	A (%)	SA (%)	Mean	Std Dev
Use AI for cataloguing/classification	10.0	20.0	42.0	28.0	2.88	0.94
Use of AI chatbots/virtual assistants	12.0	22.0	40.0	26.0	2.80	0.96
AI for user behavior analysis	9.0	18.0	45.0	28.0	2.92	0.91
AI for plagiarism detection	11.0	21.0	43.0	25.0	2.82	0.94
AI in acquisition decisions	13.0	24.0	40.0	23.0	2.73	0.95
AI for indexing/metadata	10.0	19.0	46.0	25.0	2.86	0.91
AI for usage analytics	8.0	17.0	48.0	27.0	2.94	0.89
AI in digital reference services	9.0	20.0	44.0	27.0	2.89	0.92

Table 1 show that respondents generally agreed that AI tools are being utilised in various library operations, especially in analytics and cataloguing. Mean scores range from 2.73 to 2.94, indicating moderate to strong agreement. This implies that AI tools have found their way into library operations in one form or the other, but they are been moderately considered as relevant by librarians.

Table 2: AI Tool Usage

AI Tool Usage	NAA (%)	NO (%)	O (%)	VO (%)	Mean	Std Dev
Daily use of AI tools	11.0	20.0	45.0	24.0	2.82	0.93
Library updates AI tools	13.0	25.0	42.0	20.0	2.69	0.94
Independent AI exploration	10.0	18.0	46.0	26.0	2.88	0.91
AI in decision-making	12.0	22.0	44.0	22.0	2.76	0.93
AI-supported collaboration	14.0	23.0	41.0	22.0	2.71	0.95
AI for personalized services	10.0	21.0	45.0	24.0	2.83	0.92
Structured AI implementation	15.0	26.0	39.0	20.0	2.64	0.95
Support for AI usage	11.0	20.0	44.0	25.0	2.83	0.93

In table 2, it is seen that the level of AI tool usage is moderately frequent, with most respondents reporting “often” or “very often” for daily tasks and independent exploration. Structured implementation and institutional support scored slightly lower. This shows that the use of AI tools amongst library personnel is moderate.

Table 3: Performance Expectancy

Performance Expectancy	SD (%)	D (%)	A (%)	SA (%)	Mean	Std Dev
I am expected to improves on my job performance	8.0	14.0	48.0	30.0	3.00	0.89
I am expected to increases my efficiency	7.0	13.0	50.0	30.0	3.03	0.86
I am expected to ensure better service delivery	9.0	15.0	47.0	29.0	2.96	0.91
I avoid repeting tasks to save time	10.0	16.0	45.0	29.0	2.93	0.93
My job requires confidentiality at all time	11.0	18.0	43.0	28.0	2.88	0.94
My job requires enhanced service quality	9.0	17.0	46.0	28.0	2.93	0.91
I always achieve daily productivity quota	8.0	15.0	47.0	30.0	2.99	0.90
My organization rewards high performance	10.0	19.0	44.0	27.0	2.88	0.93

In table 3, the it is seen that the respondents generally reported that performance ectpectancy is high, with the mean scores clustering around 3.0 it can be deduced that performance expectancy in libraries are high. Confidence and future reliance on AI tools are moderately high. Meaning that library personnel have a high standard of performance expectancy,

Table 4: Influence of AI Tool Usage and Performance Expectancy

AI Tool Usage and Performance Expectancy	SD (%)	D (%)	A (%)	SA (%)	Mean	Std Dev
More AI use leads to better performance	7.0	14.0	48.0	31.0	3.03	0.87
AI integration improves performance	6.0	15.0	47.0	32.0	3.05	0.85
Motivated by AI effectiveness	8.0	16.0	46.0	30.0	2.98	0.90
AI boosts professional self-perception	9.0	17.0	45.0	29.0	2.94	0.91
AI drives performance outcomes	7.0	15.0	48.0	30.0	3.01	0.88
AI increases success expectations	8.0	16.0	46.0	30.0	2.98	0.90
Dependence on AI for targets	10.0	18.0	44.0	28.0	2.90	0.93
AI use linked to job satisfaction	9.0	17.0	45.0	29.0	2.94	0.91

Table 4 shows that there is strong agreement among the respondents that AI tool usage positively influences performance expectancy. Mean values hover around 3.0, indicating that most respondents perceive a clear benefit from AI integration in their roles. This means that AI tools strongly influence performance expectancy among library personnel.

Discussion of Findings

The findings of this study reveal that AI tools are moderately used by library personnel in university libraries across Delta State, with the highest engagement in areas such as cataloguing, digital reference services, and usage analytics. This aligns with Margam and Pandey (2024) and

Adewojo, Olatunji, and Olalere (2025), who observed that AI-powered chatbots and virtual assistants are among the most widely adopted tools in libraries, enhancing user satisfaction and reducing librarian workload. Similarly, Waghmare, Pawar, and Tuwar (2024) noted that AI-driven cataloguing and metadata generation streamline workflows and improve bibliographic accuracy, which supports the high mean scores observed in this study for AI use in cataloguing and indexing. However, the relatively lower scores for AI use in acquisition and collection development suggest that more advanced applications are still emerging, a trend also reported by Emiri (2023), who found that AI adoption in Nigerian libraries remains limited to basic tools like security scanners and chatbots, with advanced systems like AI classification and machine-readable catalogues largely absent.

The extent of AI tool usage among respondents was moderate, with mean scores indicating that while AI tools are used regularly, their integration into daily operations is not yet pervasive. This is consistent with the findings of Nigerbiblios (2024), which reported that only 24% of librarians felt very confident using AI tools, and that proficiency in technologies like machine learning and data analytics remains low to moderate. The current study's results also reflect the infrastructural and training gaps highlighted by Moustapha (2023) and Emiri (2023), who emphasized that lack of institutional support and limited professional development opportunities hinder widespread AI adoption. These barriers are further compounded by ethical concerns and resistance to change, as noted by Olubiyo and Olubiyo (2023), who stressed the importance of human oversight and ethical governance in AI implementation.

Regarding performance expectancy, the study found that library personnel generally believe AI tools enhance their job performance, efficiency, and productivity. This is supported by Fabunmi and Akinyemi (2024), who reported that AI automates routine tasks, improves cataloguing precision, and enables librarians to focus on strategic services. The high mean scores in this study for items related to efficiency, confidence, and productivity mirror the findings of Awere and Jebet (2025), who observed that AI-powered automation in Nairobi academic libraries significantly improved workflow and user interaction. Furthermore, the positive perception of AI's impact on performance is reinforced by Kasprzik (2023), who pointed out the role of AI in enhancing metadata accuracy and organizational effectiveness, thereby boosting staff confidence and performance expectations.

The influence of AI tool usage on performance expectancy was also evident, with respondents acknowledging that increased AI use correlates with improved job performance and satisfaction. This supports the conclusions of Garba and Bala (2024), who found that librarians perceive AI as a tool that enhances service speed and accuracy, particularly in cataloguing and reference services. However, the study also revealed that actual usage levels remain below optimal, echoing the concerns of Lawrence (2025) and Omwanghe (2025), who attributed low adoption to infrastructural deficiencies, lack of training, and limited institutional support. These findings underscore the significance of strategic investment in AI infrastructure, comprehensive training programs, and policy frameworks to foster sustainable AI integration in academic libraries. Moreover, the study confirms that performance expectancy is shaped not only by perceived

usefulness but also by ease of use and institutional readiness. Ijsseling et al. (2023) emphasized that performance expectancy is the strongest predictor of technology acceptance, but it is significantly influenced by user-friendly design and minimal operational complexity. The moderate scores in this study for structured AI implementation and support reflect the need for clearer institutional strategies and capacity-building initiatives. As Masinde et al. (2024) and Sang (2024) argue, without adequate training and exposure, librarians may remain underprepared to fully leverage AI's potential, despite recognizing its benefits.

Finally, the findings highlight the critical role of infrastructure and ethical considerations in shaping AI adoption and performance outcomes. Ngulube and Tella (2024) noted that reliable internet, modern hardware, and ethical governance are essential for successful AI integration. The current study's findings, particularly in Sections C and E, suggest that while librarians are optimistic about AI's potential, their performance expectancy is tempered by concerns over data privacy, algorithmic bias, and the need for human oversight—concerns echoed by Binns (2021) and the PressReader Team (2023). Addressing these challenges through targeted investments, ethical frameworks, and collaborative learning communities, as recommended by Omwanghe (2025), will be crucial for maximizing the impact of AI on library service delivery and professional performance.

Conclusion

This study examined the influence of AI tool usage on performance expectancy among library personnel in university libraries across Delta State, Nigeria. The findings revealed that while AI tools such as chatbots, cataloguing systems, and analytics platforms are moderately integrated into library operations, their usage remains uneven due to infrastructural limitations, skill gaps, and institutional readiness. Despite these challenges, library personnel expressed strong performance expectancy, believing that AI tools enhance efficiency, productivity, and service quality. The study also highlighted that increased AI usage correlates positively with librarians' confidence, motivation, and job satisfaction. However, the full potential of AI in academic libraries can only be realized through strategic investments in infrastructure, training, and ethical governance. These findings underscore the need for a holistic approach to AI adoption that empowers library personnel to transition from traditional roles to proactive, tech-enabled information professionals.

Recommendations

The study therefore recommends that:

1. University libraries should develop structured AI implementation strategies that align with institutional goals and service delivery needs.
2. Continuous professional development programs should be established to equip library personnel with AI-specific competencies, including data analytics, machine learning, and ethical AI use.
3. Institutions should invest in modern ICT infrastructure, including reliable internet connectivity and up-to-date hardware, to support seamless AI integration.
4. AI literacy should be embedded into library science curricula and in-service training to build long-term capacity among current and future professionals.

5. Library management should foster a culture of innovation by encouraging experimentation with AI tools and recognizing staff who demonstrate leadership in digital transformation.
6. Ethical guidelines and data privacy policies should be developed to govern the responsible use of AI in library environments.
7. Collaborative partnerships between libraries, technology providers, and academic departments should be promoted to co-develop AI solutions tailored to local needs.
8. Government and funding agencies should prioritize financial support for AI-driven library initiatives, particularly in under-resourced institutions, to bridge the digital divide.

References

- Abiolu, O. A. (2024). Staff training and the use of artificial intelligence (AI) in libraries. *International journal of knowledge and digital technology*.
<https://www.ijkcdt.net/xml/44532/44532.pdf>
- Adejo, A. & misau, A.Y. (2021). Application intelligence in academic libraries in Nigeria. *Library philosophy and practice*.
- Adetayo, A. J. (2023). Artificial intelligence chatbots in academic libraries: The rise of ChatGPT. *Library Hi Tech News*, 40(3), 18-21
- Adewojo, A. A., Olatunji, O. M., & Olalere, P. M. (2025). Effects of AI-driven tools on reference services and staff roles in academic libraries. *Reference Services Review*. Emerald Publishing.
- Afolayan, O. T. (2025). Drivers and impediments in the adoption of artificial intelligence by academic libraries in Nigeria. *Library Philosophy and Practice*.
- Akhimien, O. V. A., & Osawele, R. E. (2024). Adoption of artificial intelligence by libraries for effective services delivery in academic libraries in Edo State. *Journal of library & information science*. 26(2)
- Akinola, S. A. (2024). Overcoming barriers to AI implementation in university libraries: a developing country perspective. *EduLib Journal*
- Akpukpu, A. O. V. (2024). Adoption of Artificial intelligence by librarians for effective services in Nigerian academic libraries. *Canadian journal of librarianship*.
- Aminu, M. B. (2024). Adoption of artificial intelligence for library operations in federal university libraries in North West states of Nigeria. *BW Journal of Studies*.
- Awere, B., & Jebet, T. (2025). The Role of Artificial Intelligence in Revolutionizing Library service in Nairobi: Ethical Implications and Future trends in user interaction. *International journal of research and scientific innovation*, 12(9), 2571-2585.
<https://doi.org/10.51244/IJRSI.2025.120800227>
- Bello, H. (2023). Steps to Improving Library Services Through Artificial Intelligence. *Library and information science research*
- Bhattachacherjee, A. (2001). Understanding information systems continuance: an expectation-confirmation model. *MIS Quarterly*, 25(3), 351-370.
- Binns, R. (2021). Ethical challenges of AI in libraries. *Journal of information ethics*.
- Chipembele, M. (2025). Adoption of artificial intelligence in academic libraries: Costs, sustainability and implementation challenges. *IJSAT*.
- Clarivate. (2024). *Pulse of the Library 2024*. Clarivate Analytics.

- Darmawan, A. H., & Azizah, S. (2020). Resistance to change: causes and strategies as an organizational challenge. Proceedings of the 5th ASEAN conference on psychology, counseling, and humanities(ACPOCH 2019). Atlantis press.
- DeLone , W. H., & McLean, E. R. (1992,2003). Information systems success: the quest for the dependent variable. *Information systems research*, 3(1), 60-95.
- Ejedafiru, k., & Oghenetega, E. (2024).Librarians' attitudes, performance expectancy, and challenges towards ICT use in academic libraries. *Jewel journal of librarianship*, 19(3), 10-73. <https://www.jeweljournals.com/admin/published/10900139366.pdf>
- Ekoko, O. N., & Oghuvbu, B. O (2025).Artificial Intelligence Usage and Performance Expectancy among Library Personnel in University Libraries in Delta State, Nigeria. *Journal of library services and technologies*, 7(3), 164-177. DOI: <http://doi.org/10.47524/jlst.v7i3.178>
- Emiri, O. T. (2023). Adoption and Utilisation of Artificial Intelligence by Librarians in University Libraries in Southern Nigeria. *University of Nebraska-lincoln digital commons*
- Fabunmi, S. O. (2024). Assessing the Influence of Artificial Intelligence on Library Services and User Experience.*Canadian journal of library and information science*
- Fabunmi, S. O., & Akinyemi, O. E. (2024).Assessing the influence of artificial intelligence (AI) on library services and users' experience in the university library. *Communicate: Journal of Library and Information Science*,26(2), 128-139. <https://www.cjolis.org/index.php/cjolis/article/view/119/101>
- Garba, D., &Bala, Y. (2024).Librarians' attitudes and performance expectancy towards ICT in federal university libraries, Nigeria. *Jewel journal of librarianship*, 19(3), 10-73.
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance.*MIS Quarterly*,19(2), 213-236.
- Huang, X., Cox, A. M., & Cox, S. (2023). AI in academic libraries: Strategic planning and information management reorganization. *Journal of Academic Librarianship*.
- Ibrahim, H. (2024). Exploring the integration of artificial intelligence in Nigerian library services.*International Journal of Knowledge and Development*. ijkd.uniabuja.edu.ng
- Igbo, H. U., & Imo, N. T. (2024). Adopting artificial intelligence in academic library services in Nigeria: requirements and challenges. *Nigerbiblios: Journal of the National Library of Nigeria*.
- Ijsseling, R., et al. (2023). The Relationship Between Performance Expectancy, Effort Expectancy, and AI Adoption. *International Journal of Research in Social Sciences*.
- Imperial College London. (2023). *Library Services Strategic Plan 2023–2024*. Imperial College London.
- Iqbal, A., Masrek, M. N., & Sahid, N. Z. (2025). Effects of AI on librarians' work performance: A systematic literature review. *Journal of Information and Knowledge Management*, 15(SI2), 94–104.
- Isiaka, A. O., Agboola, O. S., Sulyman, M. O., &Aremu, B. A. (2024).Perceived awareness and usefulness of artificial intelligence technology for efficient library operations in university libraries in Kwara State, Nigeria. *Journal of Library Services and Technologies*, 6(1), 120-134. DOI: 10.47524/jlst.v6i1.121
- ISO 11620. (2023). *Library performance indicators*. EIQM Cert.

- Jibga, D. M. (2025). The impact of artificial intelligence on library services in Nigerian universities: Tools, ethics, and integration. *DJLIP*. kijcl.khairun.edu.ng
- Kasprzik, A. (2023). Automation and AI in academic libraries: Examples and impacts. *Library Trends*.
- Kaur, S. (2024). Critically examining the implementation of AI in libraries: Opportunities and challenges. *International Journal of Research – GRANTHAALAYAH*, 12(7), 221–224. Infectious Diseases Journal
- Kisilowska-Szurmińska, M. (2025). Artificial intelligence in academic libraries—a tool or a partner? *Journal of academic librarianship*
- Lawrence, A. (2025). Use of AI chatbots among librarians: Implications for future library services. *international journal of information studies*, 17(3), 123–136. https://www.dline.info/ijis/fulltext/v17n3/ijisv17n3_3.pdf
- Leo, S. L. (2024). Evaluating AI literacy in academic libraries: a survey study with a focus on U.S. employees. *College & Research Libraries* 85(5)
- LibQUAL. (2023). *LibQUAL+® Survey Highlights*. Association of Research Libraries.
- LSE Impact Blog. (2025). Automated warehouse or augmented service – How will AI change libraries and librarians? London School of Economics.
- Margam, M., & Pandey, P. (2024). AI in libraries: A descriptive and thematic review of applications and innovations. *Global Knowledge, Memory and Communication*. Emerald Publishing.
- Masinde, N., Wambiri, M., & Mugambi, M. (2024). AI adoption in Kenyan academic libraries: challenges and readiness. *Journal of Library Innovation*.
- Modiba, E. (2024). Conversational GPT in university libraries: Improving reference services. *LIS Quarterly*.
- Moustapha, A. A. (2023). Artificial Intelligence Adoption and Utilization in Kwara State University Libraries. *Digital repository of kwara state universities*
- Ngulube, P., & Tella, A. (2024). Ethical management of AI in African libraries. *Journal of Library Ethics*.
- Nigerbiblios (2024). Artificial Intelligence and the Future of Academic Library. *Journal of national library of Nigeria*, 34 (1).
- Nwabuisi, T. (2024). Adopting artificial intelligence in academic library services in Nigeria: Requirements and challenges. *NigerBiblios: Journal of the National Library of Nigeria*. nigerbiblios.nln.gov.ng
- Nwabuisi, T. (2024). Adopting Artificial Intelligence in Nigerian Academic Libraries: Policy and Infrastructure Perspectives.
- Obiora, E. & Moses, K. (2023). Librarians' Preparedness for Artificial Intelligence in University Libraries in Nigeria. Conference proceedings,.
- Odunlade, R. O., & Ojo, J. O. (2023). Digital transformation and service delivery in academic libraries: A post COVID-19 approach. *University of Lagos Institutional Repository*.
- Okonoko, V. N. (2023). Strategic planning for enhanced job performance of selected university librarians in South-East Nigeria. *International Journal of Innovative Research in Management*.
- Okuonghae, N., & Tunmibi, S. (2024). *Digital Competence as Predictor for the Motivation to Use Artificial Intelligence Technologies among Librarians in Edo and Delta States, Nigeria*.

- Journal of Technology Innovations and Energy*, 3(1), 1-11. <https://doi.org/10.56556/jtie.v3i1.728>
- Oladokun, B. D., Enakrire, R. T., Okai, E. D. J & Owolabi, K. A (2025). The double-edged sword of AI: librarians' perceptions of job displacement and polarization. *Emerald Electronic Library* 43(5). DOI:02640473,1758616x
- Olubiyo, P. O (2024). American library services in the digital age: empirical literature survey. *International Journal of Academic Library and Information Science* 12(5): 137-146
- Olubiyo, P. O., & Olubiyo, L. M. (2023). Digital library services in university libraries in Nigeria: A literature study. *International Journal of Library and Information Science Studies*, 9(4), 1–12.
- Omeluzor, S. U. (2024). Potentials of artificial intelligence in collection development in Nigerian university libraries. *CJOLIS*.
- Omotayo, F., & Haliso, Y. (2019). Awareness and preparedness of library staff in Nigerian university libraries regarding AI. *Library philosophy and practice*.
- Omwanghe, E. J., & Ogiamien, P. (2025). Impact of AI literacy training on service delivery of library professionals in Nigerian universities. *Gateway international journal*, 4(1), 152-163.
- Orubebe, E. (2025). Adoption and utilization of artificial intelligence in library services. *IJKCDT*
- Owate, C. N. (2024). Knowledge and utilization of digital applications for effective service delivery in academic libraries in South-South universities, Nigeria. *International Journal of Intelligent Information Systems*, 13(3), 11–20.
- PressReader Team. (2023). Libraries in 2023: Highlights, achievements and lessons learned. *PressReader Blog*.
- Research on AI tool benefits and staff training in Nigerian university libraries. *International Journal of Knowledge Content Development & Technology*, (2023).
- Romero, V. (2018). 4 ways libraries can improve with AI & big data. Tech Soup Canada.
- Safana, A. S., & Fari, S. A. (2024). Study on the awareness and perception of library staff in applying artificial intelligence for information service delivery in some University Libraries of Katsina State, Nigeria. *Samaru Journal of Information Studies*, 24(1).
- Sang, D. (2024). Determinants of AI uptake in Kenyan academic libraries. *Journal of Information Technology in Libraries*.
- Smith, J., & Johnson, K. (2025). Application of AI Technologies in Library Services in US Academic Libraries. Emerald insight.
- Ubwa, T. T., Iliya, L. A., & Iornongo, N. (2024). Methods used in evaluating strategic plans in federal university libraries in North Central Nigeria. *Global Journal of Management and Social Sciences*, 2(1), 45–56.
- Udoh, I. (2024). Artificial Intelligence Potentials and the Skills for Adoption Among Nigerian Librarians. SSRN.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- Waghmare, N. P., Pawar, G. D., & Tuwar, S. S. (2024). Review of various AI tools for library operations and services. *International Journal of Research in Library Science*, 10(3), 151–157.

-
- Yadav, P. (2024). Academic libraries in the digital age. *International Journal of Education and Science Research Review*, 11(5), 48–60.
- Yusuf, T. I., Adebayo, O. A., Bello, L. A., & Kayode, J. O. (2022). Adoption of artificial intelligence for effective library service delivery in academic libraries in Nigeria. *Library Philosophy and Practice*
- Zhu, Y., & Zhao, L. (2024). Digital resources management in libraries: Current status and future development trends. *Clausius Scientific Press*. Library and Information Science

**Postgraduate Students' Attitude towards Institutional Repositories for Career
Advancement in Universities in South-South, Nigeria**

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Abstract

This study investigated Library and Information Science (LIS) postgraduate students' attitude toward institutional repositories for career advancement in Universities in South-South, Nigeria. Descriptive research design was adopted for the study. The population of the study was 123 postgraduate students of LIS in universities in South-South Nigerian. The study adopted total enumeration sampling technique. Questionnaire was used for data collection. The data collected were analyzed using both descriptive and inferential statistics. Pearson's Product-Moment Correlation Coefficient (PPMCC) was used to test the hypothesis at a 0.05 level of significance. The criterion mean for the research questions was placed at 2.50. The study found that the LIS postgraduates' attitude towards institutional repositories for career advancement is negative. The rationales for career advancement the students include job opportunities, salary attractiveness, and recognition and relevance. The extent of career advancement of LIS postgraduates in the various areas of librarianship is low. There is significant relationship between the use of institutional repositories and career advancement of LIS postgraduate students in universities in South-South, Nigeria. The study recommended that LIS postgraduate students should develop positive attitude towards institutional repositories as this will enhance their career advancement.

Keywords: Attitude, Career advancement, Institutional repositories, LIS Postgraduates

Introduction

In the current complex and competitive information environment, library and information science (LIS) is one of the professions that offer the greatest career prospect. This propels enrolment in LIS at postgraduate level as a way of guaranteeing career advancement of librarians. When librarians are given opportunities for career progression, they feel a sense of growth with the libraries. As such, they offer a sense of purpose, which invariably promotes loyalty (Cherry et al., 2011). A career is an occupation undertaken for an important period of one's life. Having pleasure in a career is among the essential goals in life. As such, it is imperative for one to choose a career in which one will be satisfied and pleased. Mullhall (2014) referred to career as a series of an

individual's work-related as well as other applicable knowledge, both inside and outside organizations that accounts for a distinctive pattern over the person's lifespan.

Career advancement is very paramount for choosing a profession, and the choice to pursue librarianship is no exception. Lack of knowledge of the role of librarians, and lack of understanding of librarianship as a profession make young people to steer clear of the profession (Newbutt & Sen, 2009). Before the incorporation of information and communication technology (ICT) into library practice, students did not want to pursue a career in librarianship as they believed that librarianship was not attractive (Madu et al., 2014). Studies revealed that librarianship was considered by numerous people as a job of low rank and librarians as old people that merely shelve and stamp library collections (Egunjobi et al., 2014; Madu et al., 2014). More importantly, LIS profession was regarded in a Forbes article as the most awful to pursue as it attracts low salaries and slow growth (Goodsett & Koriura, 2016). However, many universities are offering diverse programmes in LIS at both undergraduate and postgraduate levels these days. Student enrolment into the programmes is thick.

Postgraduate students are expected to use institutional repositories for career advancement. More importantly, the founding of institutional repositories has become widespread movement within academic institutions occasioned by the organized accessibility and comparatively simple execution of some open source software platforms and operating systems. Also, there is an astronomical growth in the number of universities that require the digital deposit of theses and dissertations output in institutional repositories (Peninah, 2014). However, attitude towards institutional repositories is an area that has not been explored in LIS literature. Meanwhile, attitudes reflect the degree of positivity or negativity that a person feels toward newly introduced technology (Ajibola, 2012). This study therefore aims at investigating LIS postgraduate students' attitude towards institutional repositories for career advancement in South-south, Nigeria.

Objectives of the Study

The objectives of the study are to investigate:

1. investigate the rationale for career advancement of LIS postgraduate students in South-south, Nigeria;
2. ascertain the extent of career advancement of LIS postgraduate students in the various areas of librarianship in South-south, Nigeria; and
3. find out LIS postgraduate students' attitude toward institutional repositories for career advancement in South-south, Nigeria.

Hypothesis

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

1. There is no significant relationship between the attitude of postgraduate students toward institutional repositories and career advancement of LIS postgraduate students in South-south, Nigeria.

Review of Related Literature

Rationale for Career Advancement of LIS Postgraduate students

Deciding on the choice of career is never a decision that should be taken frivolously, and the decision to take career in librarianship is no exception. Lack of an appreciation of the functions of librarians and a lack of knowledge of librarianship as a profession makes university admission seekers to avoid librarianship (Newbutt & Sen, 2009). The vast majority of the students who find themselves in librarianship at undergraduate level do not originally intend to pursue a career in librarianship. This means that librarianship is not attractive to university admission seekers. Librarianship is seen by numerous people as a career of low status and librarians are regarded as people whose job is to shelve, and stamp library collections (Egunjobi et al., 2014). The naming of LIS profession in a Forbes article as the most horrible to pursue due to low salaries and dawdling career advancement serves as a discouragement to many graduates who would have ordinarily want to study librarianship at postgraduate level (Goodsett & Koziura, 2016).

Library and information postgraduates seek career prospect in their diverse places of work. More so that career advancement has close link with job satisfaction and job performance, it becomes imperative for LIS postgraduates to do the needful by exploiting the right opportunities that can enhance their career advancement. For libraries to remain afloat and for effectual and efficient services, knowledgeable and committed postgraduate students who are well groomed are required to drive this goal (Trisliatanto et al., 2017). However, several candidates for postgraduate studies are not contented with the low rating of libraries and librarians by the general public. Added to this is the lack of positive reception and almost lack of appreciation of library services by the public particularly in developing countries such as Nigeria and Ghana. The misapprehension or total lack of knowledge of the functions of librarians is one of the factors leading people to think that career in librarianship is not worth being pursued (Tadasad, 2015).

The ability to envisage professional aspirations and put them into action can result to career advancement prospects. Career advancement of LIS postgraduate students is essential for a number of reasons. These include prospect for more pay, prevention of mediocrity and job dissatisfaction which leads to taking on additional roles and responsibilities within the libraries, creation of avenue to pursue other career interests and look for new opportunities, creation of opportunity for improved salary prospects and employment through personal improvement, and encouragement of continuous learning and professional advancement by getting additional degrees or certifications through which librarians can get a more senior position or role (Ukamaka et al., 2020).

Career Advancement of LIS Postgraduate students in field of Librarianship

Librarianship as a broad discipline has career prospect for whoever ventures into the profession at postgraduate level. This is because there are library professionals for every activity of all libraries. LIS postgraduates are poised to seek career advancement majorly in library and information related organisations (Petricca-Harris & McKenna, 2013). This enables them to use the knowledge and proficiencies they have acquired in their educational career for the development of information society. These days, numerous career prospects are offered in LIS. These include areas such as

information systems management, classification/cataloguing systems, bibliography, documentation, preservation and conservation of manuscript, collection management, information systems and technology, reference, archives management, indexing, library planning, etc. (Sinha & Pandey, 2014). With this, LIS postgraduates are able to have varieties of organisations providing diverse library and information related activities for their career prospect and advancement.

A number of researchers reveal the opportunities for career advancement that abound in library and library-related settings (Stauf & Bread, 2016). On the strength of postgraduate qualifications, they have the possibilities of career advancement as information officers, knowledge officers, knowledge managers, communications and relationship officers, field officers, etc. (Ukamaka et al., 2020). They can as well work in academic environment such as colleges of education, polytechnics, universities and research institutes as librarians. Special libraries also offer career advancement opportunities to library professionals to display their skills and proficiencies in LIS practice. Special libraries have the positions such as librarians, library and information officers, scientists, library managers, knowledge management manager, etc. These positions are corresponding to the senior positions in the managerial way of staffing. In scientific organisations such as Council of Scientific and Industrial Research (CSIR), Defence Research and Development Organization (DRDO), Indian Space Research Organization (ISRO), etc., these positions are the same with diverse positions of scientists. The corporate sector pays depending on the policy of the bodies. A number of the corporate houses pay wages that are higher than the government organizations (Goodsett & Koziura, 2016).

Some of the specific areas where LIS postgraduates can secure career advancement include public libraries, universities/colleges/schools and other academic institutions, news agencies and organizations, private organizations, special libraries, foreign embassies, photo/film/radio/television libraries, information centres/documentation centers, companies and organisations including IT sector with large information handling requirements, museums and galleries which have reading rooms and research facilities, etc. There is career prospect for LIS postgraduates in academic library sectors such as universities, polytechnics, colleges of education as well as school libraries (Sibiya & Shongwe, 2021).

Attitude of LIS postgraduate students toward Institutional Repositories for Career Advancement

Institutional repositories have changed the manner the electronic resources are used in the contemporary era. Institutional repositories are among the tools used for the promotion of scholarly communication. They are the channel for communicating research output and ensuring its availability and accessibility to the interested users (Allen, 2015). As it obtains today, career aspiration of LIS postgraduate students requires them to have positive attitude toward institutional repositories. This is because most of the intellectual works that are required to be exploited to increase their frontier of knowledge in their areas of work are found in the institutional repositories. Numerous investigations have been carried out to determine the attitude of students towards institutional repositories. In research carried out by Swan and Brown in 2014, landmark achievements in the comprehension of students' attitude towards institutional repositories were

set. It was found in the study that the attitudes of students considerably affect students' utilisation of institutional repositories.

The use of institutional repositories by postgraduates is determined by their attitude towards the technologies. In 2001, a survey of students randomly chosen from nine scientific disciplines from colleges and universities in the United States and Canada was conducted to determine students' usage of institutional repositories (Swan & Brown, 2015). Unfortunately, the attitude of students towards institutional journals is generally negative. Low readership, impact and prestige were cited as reasons for not using institutional journals (Swan & Brown 2014, 2015). Allen (2015) compared the attitudes of students from different disciplines towards use of institutional repositories. The study found that the number of humanities documents in institutional repositories is currently far lower than that in Science, Technology and Mathematics (STM) disciplines. Manjunatha (2011) carried out a study on students' attitude towards the use of institutional repositories of universities in Karnataka. The major findings of the study were that most of the students were interested in making their work visible in the institutional repository of university. They have very positive attitude to make their work freely accessible through institutional repositories. Dutta and Paul (2014) conducted a study on institutional repository related issues among students of University of Calcutta. It reported that students have negative attitude towards institutional repositories and their lack of awareness and confusion about copyright issues discourage them to participate in it.

Methodology

A descriptive survey research design which involves the systematic collection of data from a target population through the use of structured research instruments was used for the study. The population of the study was all the 123 postgraduate students of LIS in South-south Nigerian universities. These included two (2) federal and three (3) state owned universities. The sample size for the study was the entire 123 postgraduates in the five universities that offered postgraduate studies in LIS in South-south, Nigeria. The entire 123 postgraduates were used for the study because the population was not too large, making it manageable for the researcher. Non-probability sampling technique was applied to the study using total enumeration sampling technique.

The research instrument used for this study was a questionnaire. The questionnaire consisted of four sections: A-D. Section A: Demographic characteristics of the respondents; Section B: Rationale for career advancement of LIS postgraduate students; Section C: Career advancement of LIS postgraduate students in the various areas of librarianship; Section D: Attitude of LIS Postgraduate students towards institutional repositories for career advancement. The questionnaire was validated by one librarian and a senior lecturer in the Department of Measurement and Evaluation of the Delta State University, Abraka. To determine the reliability of the instrument, five copies of the questionnaire were administered to 3 LIS postgraduate students of the University of Ibadan, Ibadan, Oyo State, which was outside the sample of this study. The paired scores generated from the test were analyzed using the Cronbach Alpha method through the Statistical Package for Social Science (SPSS). The index of correlation obtained Cronbach Alpha reliability coefficient of $r = 0.98$ which translated to high reliability of the instrument and therefore considered adequate

The researchers and two trained research assistants administered the questionnaire to the respondents. The data generated from the respondents were analyzed using both descriptive and inferential statistics. The criterion mean was placed at 2.50. Pearson's product correlation was used to test the hypothesis at a 0.05 level of significance. Out of 123 copies of the questionnaire administered, 84(68.3%) were retrieved. The response rate of 68.3% is considered adequate for the study because the standard and acceptable response rate for most studies is 60% (Dulle et al., 2010).

Results

Rationale for career advancement of LIS postgraduate students

Table 1: Rationale for Career Advancement of LIS Postgraduate students

Rationales	Agree		Disagree		Total	
	No.	%	No.	%	No.	%
Job opportunities.	69	82.1	15	17.9	84	100
Salary attractiveness.	66	78.6	18	21.4	84	100
Recognition and relevance.	60	71.4	24	28.6	84	100
It gives room for improved salary expectations and living.	57	67.9	27	32.1	84	100
Become lecturer/teacher of LIS.	54	64.3	30	35.7	84	100
Secure job.	54	64.3	30	35.7	84	100
Acquire more knowledge in the discipline.	48	57.1	36	42.9	84	100
Prevention of mediocrity and job dissatisfaction.	45	53.6	39	46.4	84	100
Work environment.	42	50	42	50	84	100
Creating opportunity for improved salary prospects and employment.	42	50	42	50	84	100
It offers prospects for pursuing other career interests.	42	50	42	50	84	100
Scarcity of job vacancies for first degree holders.	42	50	42	50	84	100
Creation of avenue to pursue other career interests and look for new opportunities.	33	39.3	51	60.7	84	100
Encouragement of continuous learning and professional advancement.	24	28.6	60	71.4	84	100
Prestige of the profession.	18	21.4	66	78.6	84	100

As shown in Table 1, the LIS postgraduate students agree that the rationales for their career advancement include job opportunities 69(82.1%), salary attractiveness 66(78.6%), recognition and relevance 60(71.4%), it gives room for improved salary expectations and living 57(67.9%), become lecturer/teacher of LIS 54(64.3), secure job 54(64.3%), and acquire more knowledge in the discipline 48(57.1%). However, the students disagree that the rationales for their career advancement are for creation of avenue to pursue other career interests and look for new opportunities 33(39.3%), encouragement of continuous learning and professional advancement 24(28.6%), and prestige of the profession 18(21.4%). Career advancement of LIS postgraduate students in the various areas of librarianship

Table 2: Extent of Career Advancement of LIS Postgraduate Students in the Various Areas of Librarianship

Career Advancement	Very High Extent	High Extent	Low Extent	Very Low Extent	Mean ($\bar{x}$)	Std Dev.
Academic libraries.	40	20	16	8	3.10	1.025
Public libraries.	36	24	9	15	2.96	1.124
School libraries.	29	30	11	14	2.88	1.069
Information systems and technology organizations.	26	28	9	21	2.70	1.159
Research/special libraries	24	18	19	23	2.51	1.177
Lecturing in library schools.	18	21	25	20	2.44	1.079
Documentation.	13	22	26	23	2.30	1.039
Classification/cataloguing systems organization.	18	8	27	31	2.15	1.146
Information systems management firms.	19	10	17	38	2.12	1.216
Media organizations (radio, television, newspaper and magazine house).	6	30	12	36	2.07	1.039
Manuscript preservation and conservation organizations.	16	15	12	41	2.07	1.200
Archives and Records Management organization.	14	12	23	35	2.06	1.112
Publishing and Information Technology firms.	8	10	42	24	2.02	.891
Teaching in secondary schools.	5	12	22	45	1.73	.923
Indexing and abstracting organizations.	0	6	12	66	1.29	.593
Average Mean					2.29	1.053
Criterion Mean					2.50	

As revealed in Table 2, the average mean 2.29(SD=1.053) is less than the criterion means 2.50. This means that the extent of career advancement of LIS postgraduate students in the various areas of librarianship is low. The extent of career advancement of LIS postgraduate students in academic libraries ($\bar{x}$ =3.10, SD=1.025), public libraries ($\bar{x}$ =2.96, SD=1.124), school libraries ($\bar{x}$ =2.88, SD=1.069), and information systems and technology organizations ($\bar{x}$ =2.70, S=1.159) is high. However, the extent of career development is low in some areas such as publishing and information technology firms ($\bar{x}$ =2.02, SD=.891), teaching in secondary schools ($\bar{x}$ =1.73, SD=.923), and indexing and abstracting organizations ($\bar{x}$ =1.29, SD=.593).

LIS postgraduates' attitude toward institutional repositories for career advancement in South-south, Nigeria

Table 3: LIS Postgraduate students' Attitude toward Institutional Repositories for Career Advancement

Attitude	Mean ($\bar{x}$)	Std Dev.
I will visit the institutional repository when the management requests me to do	2.92	.839
I like institutional repositories because I possess the necessary skills and experience to navigate through it	2.88	.766
Establishing institutional repositories in my university libraries will enable me to deposit my work for others to use for teaching, learning and research	2.65	.752
I encourage the use of institutional repositories because some of its contents are in full-text	2.50	.843
I like using institutional repositories	2.45	.999
Using an institutional repository is acceptable to me	2.35	.843
I will submit my thesis to the institutional repository because it helps to increase the ranking of my university	2.25	.790
I like the quality of the information in institutional repositories	2.24	.939
I think the institutional repository will increase the citation impact of the work I use	2.20	.724
I think contents in institutional repositories are peer reviewed	2.20	1.039
Criterion Mean	2.50	
Average Mean	2.46	0.85

As revealed in Table 3, the average mean 2.46(SD=0.85) is less than the criterion mean 2.50. This means that the LIS postgraduate students' attitude towards institutional repositories for career advancement in South-south, Nigeria is negative. The students claimed that they will visit the institutional repository when the management requests them to do ($\bar{x}$ =2.92, SD=0.839), like institutional repositories because they possess the necessary skills and experience to navigate through it ($\bar{x}$ =2.88, SD=0.766), and the establishment of IR in their university libraries will enable them to deposit their work for others to use for teaching, learning and research ($\bar{x}$ =2.65,

SD=0.75). However, the attitude of the students is negative in the areas of liking for the quality of the information in institutional repositories ($\bar{x}=2.24$, SD=0.94), thinking that the institutional repository will increase the citation impact of the work the used ($\bar{x}=2.20$, SD=0.72), and thinking that the contents in institutional repositories are peer reviewed ($\bar{x}=2.20$, SD=1.04).

Hypothesis 1: There is no significant relationship between the attitude of students towards institutional repositories and career advancement of LIS postgraduates in South-south, Nigeria.

Table 4: Relationship between Attitude toward Institutional Repositories and Career Advancement of LIS Postgraduate Students

		Attitude	Career Advancement
Attitude	Pearson Correlation	1	.713**
	Sig. (2-tailed)		.002
	N	84	84
Career Advancement	Pearson Correlation	.713**	1
	Sig. (2-tailed)	.002	
	N	84	84

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

Table 4 reveals that the Pearson's Product Moment Correlation Coefficient (r) is statistically significant ($r=.713$ $n=84$, $p<0.002$). The correlation is also significant at a 0.002 level which is less than the 0.05 level of significance upon which the hypothesis was tested. This means that there is positive significant relationship between attitude toward institutional repositories and career advancement of LIS postgraduate students. Therefore, the null hypothesis stating that there is no significant relationship between the attitude of students towards institutional repositories and career advancement of LIS postgraduate students is rejected while the alternative hypothesis is accepted. This implies that attitudes of LIS postgraduate students toward institutional repositories affect their career advancement.

Discussion

The result of the analysis on LIS postgraduate students' rationale for career advancement include job opportunities, salary attractiveness, recognition and relevance, room for improved salary, and opportunity to become lecturers/teachers of LIS. However, the students disagree that the rationales for their career advancement are for creation of avenue to pursue other career interests and look for new opportunities, encouragement of continuous learning and professional advancement, and prestige of the profession. This is in agreement with the assertion of Igbinosa (2007) who claimed that the current global technological advancement and rigorous training that librarianship entails has given librarianship a lift thereby enhancing librarians' information role with which LIS postgraduates have the privilege of being electronic librarians, programmers, webmaster, database

managers, digital curators, etc. The finding that job opportunities enhance the interest for career advancement of LIS postgraduates is in line with the position of Ukamaka et al., (2020) and Anyanwu et al. (2010) that proficient and versatile LIS postgraduates can serve as librarians, archivists, records managers, information scientists, information brokers, information systems analysts and designers, database managers, cataloguers, abstractors, indexers, classifiers, curators, editors, educators, book publishers, etc.

The study revealed that the extent of career advancement of LIS postgraduates in the various areas of librarianship is low, except in academic libraries, public libraries, school libraries, information systems and technology organizations, and research/special libraries. This is in agreement with that of Egunjobi et al. (2014) who noted that the extent of career advancement in librarianship is very limited. Also, Goodsett and Koziura (2016) asserted that LIS profession is named in a Forbes article as the most horrible to pursue due to low salaries and dawdling career advancement which serve as a discouragement to many graduates who would have wanted to study librarianship at postgraduate level. However, contrary to the finding of this study, some earlier findings have found that numerous career prospects are offered in LIS. These, according to Sinha and pandey (2014), include information systems management, classification/cataloguing systems, bibliography, documentation, preservation and conservation of manuscript, collection management, information systems and technology, reference, archives management, indexing, library planning, etc. Ukamaka et al. (2020) asserted that on the strength of postgraduate qualifications, LIS postgraduate students have the possibilities of career advancement as information officers, knowledge officers, knowledge managers, communications and relationship officers, field officers, etc.

This study found that the LIS postgraduates' attitude toward institutional repositories for career advancement in South-south, Nigeria is negative. The students claimed that they will visit the institutional repository only when the management requests them to do so, and the establishment of institutional repositories in their university libraries will enable them to deposit their work for others to use for teaching, learning and research. Meanwhile, the attitude of the students is negative in the areas of submission of thesis to the institutional repositories, liking for the quality of the information in institutional repositories, and thinking that the contents in institutional repositories are peer reviewed. This is in agreement with the position of Swan and Brown (2015) who found that the attitude of students in colleges and universities in the United States and Canada toward institutional repositories is generally negative. A similar study by Dutta and Paul (2014) also found that students have negative attitude towards institutional repository.

This study found a positive significant relationship between the attitude of LIS postgraduate students toward institutional repositories and career advancement. This is in agreement with the finding of Adedimeji and Adekoya (2019) that as students are developing positive attitude in the use of institutional repositories, there is high tendency that their career advancement and possibility of job prospect will be enhanced. Also, Amunga and Khayesi (2012) observed that positive attitude to the use of institutional repositories is needed for career advancement if LIS students.

Conclusion

LIS postgraduate students' attitude toward institutional repositories for career advancement in South-south, Nigeria, is explored in this study. Empirical data on variables that determined the postgraduate students' attitude and use of institutional repositories for career advancement is provided in the study. Based on the findings of the study, the following conclusions were reached. The LIS postgraduate students' attitude towards institutional repositories for career advancement is negative. The rationale for their career advancement includes job opportunities, salary attractiveness, recognition and relevance, improved salary expectations and living, become lecturer/teacher of LIS, and secure job. The extent of career advancement of LIS postgraduate students in the various areas of librarianship is low. There is positive significant relationship between the attitude towards institutional repositories and career advancement of LIS postgraduate students.

Recommendations

In line with the findings of this study, the following recommendations are made:

1. LIS postgraduate students should develop positive attitude towards institutional repositories by making adequate use of the institutional repositories. This can take the form of enlightenment programmes that will enhance their career advancement.
2. The experts in LIS profession should concertedly design the curriculum of LIS postgraduates' programmes in line with the requirements of job market in the modern day. This will, among other things, enhance the marketability of the LIS profession.
3. Sufficient teaching facilities (print and electronic) should be provided for proper training and retraining of LIS postgraduates. By making ICT content in LIS programme adequate, the students' understanding and use of institutional repositories will improve remarkably.

References

- Adedimeji, A. A., & Adekoya, C. O. (2019). Attitude of university students towards the use of institutional repositories. Proceedings of the 3rd International Conference on Big Research ICBDR, Cergy-Pontoise, France, November 20-22, 2019. 42-48.
- Ajibola, J. (2012). Researcher's attitudes towards open access and institutional repository: A methodological study for developing a survey form directed to researchers in business schools in Finland. Retrieved from elpub.scix.net/dala/works/aff/015_elpub2008.content.pdf.
- Allen, M. (2015). The diffusion of core publications in American sociology: A replication. *International Journal of Information Management*, 6 (1), 29 - 35.
- Amunga, B., Khayesi, M. K. (2012). Library and Information Science Education in Kenya: An overview of potential and challenges. <https://www.dx.doi.org/10.1108/03074800710722/80>.
- Anyanwu, E. U., Amadi, E. I. & Oparaku, D. C. (2011). *Introduction to entrepreneurship development*. Owerri: Springfield Publishers.
- Cherry, J. M., Duff, W., Singh, N., & Freund, L. (2011). Student perceptions of the information professions and their master's programme in information studies. *Library & Information Science Research* 33(2), 120–31.
- Dulle, F. W., Minish- Majanja, M. K., & Cloete, L. M. (2010). Factors influencing the adoption of open access scholarly communication in Tanzanian public universities. <http://www.ifla.org/files/gh/peper/ifla/138/dulle-en.pdf>

- Dutta, G., & Paul, D. (2014). Awareness on institutional repositories-related issues by faculty of University of Calcutta. *DESIDOC*, 34(4), 293-297.
- Egunjobi, A. F., Salisu, T. M. & Ogunkeye, O. I. (2014). Academic profile and career choice of fresh undergraduates of Library and Information Science in a Nigerian university of education. *Annals of Library and Information Studies (ALIS)*, 60(4), 296–303.
- Goodsett, M., & Koziura, A. (2016). Are library science programmes preparing new librarians? Creating a sustainable and vibrant librarian community. *Journal of Library Administration*, 56(6), 697–721.
- Igbinsosa, I. O. (2007). University of Benin students' perception of library and information science profession. *Nigerian Library Link*, 5(1). 74-82.
- Madu, A. U., Odenigbo, P., & Tongs, H. (2014). Relationship between school library management and students' choice of career in librarianship. *Information and Knowledge Management*, 4(4), 75–82.
- Manjunatha, K. (2011). Academic scholars' attitude towards deposit in institutional repositories of Universities in Karnataka a study (Master's thesis, Anna University, Chennai). <http://www.shodhganga.inflibnet.ac.in/handle/10603/14547>.
- Mullhall, S. (2014). Careers and career development. In B. Harney and K. Monks (eds) *Strategic HRM: research and practice in Ireland*. Dublin; Orpen Press, pp.211-229.
- Newbutt, S., & Sen. B. A. (2009). What impressions do young people have of librarianship as a career?" In *Strategies for Regenerating the Library and Information Profession*, 46–60.
- Peninah, T. (2014). Integration and use of institutional repositories in public universities: The case of the University of Nairobi. An MLIS thesis at University of Nairobi.
- Petricca-Harris, A. & Mckenna, S. (2013) Identity struggle, professional development and career: A career life history of a human resource management professional. *Journal of Management Development*, 32(8), 823-835.
- Sibiya, T., & Shongwe, M. (2021). South African Library and Information Science (LIS) students' perceptions, motivations and reasons for enrolling in the LIS Program. *Libri*, 71(2), 18-27.
- Sinha, M. K., & pandey, B. K. (2014). Status of job opportunities and employment of library and information science professionals in India: An analysis of job advertisements. *Journal of Humanities and Social Science*, 19(1), 79-93.
- Stauf, S. & Bread, W. (2016). 5 reasons why being a librarian isn't boring at all. <http://money.com/librarian-job-perks>.
- Swan, W. H., & Brown, M. C. (2014). Open access issues and engineering faculty attitudes and practices. *Journal of Library Administration*, 51(5-6), 432-454.
- Swan, W. H., & Brown, M. C. (2015). Investigating the use of web 2.0 technology by Malaysian students. *Multicultural Education and Technology journal*, 4(1), 12-29.
- Tadasad, P. G. (2015). Employability of Library and Information Professionals: Issues for Postgraduate Departments of Library and Information Science. *Journal of Indian Library Association*, 51(4), 30–39.
- Ukamaka, A., Iwuoha, J., Urhiewhu, L. O., & Nwachukwu, S. C. (2020). Awareness of career prospects in librarianship and students preparedness in library schools in South-East, Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 11(4), 117-128.

Influence Of Utilization Of Advanced Digital Technologies On Digital Resource Security In Federal University Libraries In North-East Nigeria

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Abstract

This study examined the influence of advanced digital technologies on digital resource security in federal university libraries in North-East Nigeria. Using a descriptive survey research design, the study covered the entire population of 26 electronic librarians drawn from six federal universities in the North-East Nigeria. Data were collected through questionnaire and analyzed using descriptive and inferential statistics. The findings revealed that artificial intelligence and quantum computing tools are utilized to a low extent, while cyber-security tools are utilized to a moderate and great extent in enhancing digital resource security. Three hypotheses were tested found that there was no significant difference in the utilization of AI- based tools for enhancing digital resource security among e- librarians in federal university libraries in North- East, Nigeria. There

is no significant difference in the utilization of quantum computing tools for digital resource security. there is no significant difference in the utilization of cyber - security for enhancing digital resource security among e - librarians in federal university libraries in North-East, Nigeria. University libraries in North-East Nigeria should prioritise the gradual integration of AI- driven security applications such as intelligence access control systems, user-behavior analytics and automated threat detection tools. These results highlight a significant gap between global best practices and local implementation, particularly regarding emerging security technologies. The study recommends that federal university libraries should adopt a comprehensive cyber-security framework that integrates regular system audits, updated security software, data backup.

Keywords: Digital Resource Security, Digital Technologies, Federal University Libraries, North-East Nigeria, Utilization

Introduction

The rapid expansion of digital resources in federal university libraries has fundamentally transformed scholarly communication, access to knowledge, and information management. Electronic journals, databases, institutional repositories, digitized theses, and users' records now constitute core assets of academic libraries worldwide. However, this digital shift has simultaneously exposed libraries to increasing security threats, including unauthorized access, data breaches, malware attacks, system intrusions, and loss of sensitive information. Incidents of compromised institutional repositories, ransomware attacks on university library servers, and unauthorized harvesting of licensed databases have been reported globally, resulting in service disruptions, data corruption, financial losses, and erosion of user trust. Consequently, digital resource security has emerged as a critical concern in academic librarianship, as the inability to adequately secure digital resources undermine the integrity, availability, and confidentiality of scholarly information (Olafimihan, Atanda & Gbotosho, 2025).

Digital resource security in libraries extends beyond routine access control to encompass the protection of electronic collections from data loss, safeguarding users' personal and academic records, ensuring continuous system availability, and preventing cyber intrusions capable of compromising institutional credibility. The adverse effects of inadequate digital security are far-reaching: compromised digital resources can interrupt teaching and research activities, expose sensitive user data, violate licensing agreements with publishers, and weaken confidence in library systems. In response to these risks, university libraries across developed regions have increasingly adopted advanced digital technologies to strengthen security architectures. These efforts reflect a growing recognition that traditional security measures are insufficient in the face of sophisticated and evolving cyber threats (Cheng, Li, Tang & Cheng, 2024).

Globally, deliberate efforts have been made to secure digital resources through the deployment of advanced digital tools. Artificial intelligence is now widely used in academic libraries to automate threat detection, monitor abnormal access patterns, and support real-time intrusion response. Cyber-security tools such as firewalls, intrusion detection and prevention systems, encryption software, and multi-factor authentication mechanisms form the backbone of digital protection strategies. Additionally, emerging technologies such as quantum computing-related security

applications are shaping future-oriented discussions on encryption and secure data transmission, particularly in anticipation of quantum-enabled cyber threats (Ajani, Tella, Salawu & Abdullahi, 2022). These technologies represent coordinated global efforts to move from reactive to proactive digital resource security frameworks.

In contrast, the utilization of these advanced digital technologies in federal university libraries within developing regions, particularly Nigeria, remains uneven. Nigerian university libraries have increasingly digitized collections and services, adopting integrated library management systems, institutional repositories, Online Public Access Catalogues (OPACs), and electronic databases to enhance access and service delivery (Umar, 2024). However, this rapid digitization has not been matched with equivalent investment in advanced security technologies. Evidence suggests that many libraries operate with limited or fragmented security systems, exposing digital resources to cyber risks (Igbinovia & Ishola, 2023). The situation is more pronounced in North-East Nigeria, where infrastructural challenges, limited technical capacity, and regional instability further complicate digital security efforts.

Studies indicate that federal university libraries in North-East Nigeria have experienced incidents such as system downtime, malware infections, unauthorized access to digital repositories, and loss of digital files, all of which negatively affect access to scholarly resources and disrupt academic activities. Abdullahi (2025) observed that although cyber threats to digital library resources are increasing in the region, security measures are often basic and largely reactive. This reflects a broader gap between global security practices and local implementation, suggesting limited utilization of advanced digital tools specifically designed for protecting digital resources.

Advanced digital technologies offer significant potential to address these security gaps. Artificial intelligence can enhance digital resource security by automating monitoring processes, detecting suspicious activities, and reducing human error in security management (Efevberha-Ogodo & Ivwighrehweta, 2023). Quantum computing–related security approaches, although still emerging, are increasingly recognized for their role in strengthening encryption and preparing institutions for future security threats (Pasupulet, 2024). Cyber-security tools remain the most immediate and widely applied technologies for protecting digital assets, yet their effectiveness depends on the extent of their utilization and integration within library systems (Igbinovia & Ishola, 2023). In North-East Nigeria, available evidence suggests that utilization efforts have largely focused on basic cyber-security tools, with limited deployment of AI-driven systems and minimal engagement with quantum-related security applications (Umar, 2024).

The limited utilization of advanced digital technologies for digital resource security in federal university libraries in North-East Nigeria raises important empirical questions. While global and national discourses emphasize the adoption of advanced tools, little is known about what is actually obtainable in practice within libraries in the region. Akor, Nongo, Udofot and Oladokun (2024) reported a notable increase in attempted cyber intrusions targeting African university libraries, reinforcing the urgency of assessing existing security practices. Yet, empirical studies providing an overview of how advanced digital technologies are utilized to secure digital resources in federal university libraries in North-East Nigerian remain scarce.

The interplay of AI, quantum awareness, and cyber-security tools creates a synergistic framework for digital resource security, yet their utilization in federal university libraries in North-East Nigeria reveals stark disparities. Umar (2024) found that while AI awareness is moderate among librarians in universities in North-East Nigeria, infrastructural readiness such as stable Internet and computing hardware remains inadequate, limiting full deployment. This is compounded by the nascent state of quantum education; without targeted workshops, librarians cannot anticipate how quantum-resistant algorithms might fortify library networks. Cyber-security, often the most immediate concern, sees partial use of tools like VPNs for remote access, but comprehensive systems integrating all three technologies are rare (Rejeb, Rejeb, Zrelli & Sule, 2025).

Akor, Nongo, Udofot and Oladokun (2024) noted that African university libraries, including those in Nigeria, experienced a 30% rise in attempted breaches during this period, highlighting the need for robust tools. In North-East Nigeria, this vulnerability is acute; institutions like Adamawa State University report frequent downtime from cyber incidents, disrupting scholarly activities. Advanced technologies offer a pathway forward, but utilization rates below 40%, per regional surveys. Factors like erratic power supply and low digital literacy among staff exacerbate this, turning potential assets into underused novelties. These backdrops therefore informed the choice of this study. Isiaka (2023) indented a study on application and use of AI for library and information delivery in academic libraries in Kwara State Nigeria and reported academic libraries to have used limited advanced AI systems and lack of expertise and infrastructure were challenge to deployment of AI technologies

Statement of the Problem

Despite the increasing deployment of digital resources such as electronic databases, institutional repositories, and library management systems in federal university libraries, concerns surrounding the security of these digital assets persist. When digital resources are inadequately secured, libraries are exposed to risks including unauthorized access to licensed databases, compromise of institutional repositories, malware infections, data corruption, service disruptions, and potential loss of sensitive user and academic data. Such security breaches not only threaten the integrity and availability of digital collections but also undermine user confidence, violate publisher licensing agreements, and disrupt teaching, learning, and research activities that depend on continuous access to electronic resources.

Globally, university libraries respond to these risks through the utilization of advanced digital technologies designed specifically to enhance digital resource security. Artificial intelligence is increasingly employed to monitor access patterns, detect anomalies, and automate intrusion response; cyber-security tools such as firewalls, encryption systems, and intrusion detection mechanisms are deployed to protect digital infrastructures; and emerging quantum computing–related security approaches are shaping future strategies for secure data transmission and encryption. These technologies constitute critical tools for safeguarding digital resources in contemporary library environments.

In the context of Federal University libraries in North-East Nigeria, there is limited empirical evidence on how extensively these advanced digital technologies are utilized to secure digital resources. While digital collections continue to grow, it remains unclear whether artificial intelligence applications are actively used for security monitoring, whether cyber-security tools are comprehensively deployed to protect digital assets, and how emerging security technologies are being integrated into library operations. This lack of clarity creates uncertainty about the actual level of protection afforded to digital resources in the region.

The absence of empirical data on the utilization of advanced digital technologies for digital resource security represents a critical gap in the literature. Without clear evidence of how these tools are used in practice, federal university libraries in North-East Nigeria may continue to operate within vulnerable digital environments, exposing valuable resources to security threats. It is within this context that the present study seeks to examine the extent to which advanced digital technologies specifically artificial intelligence, quantum computing–related security applications, and cyber-security tools are utilized for securing digital resources in federal university libraries in North-East Nigeria, with the aim of providing an informed overview of current practices and identifying areas requiring strategic attention.

Research Questions

The following research questions were formulated to provide awareness to the study:

1. What is the extent of Artificial Intelligence (AI)-based tools utilization to enhance digital resource security in federal university libraries in North-East Nigeria?
2. What is the extent to Quantum Computing tools is being used for digital resource security in federal university libraries in North-East Nigeria?
3. what is the extent of cyber-security tools utilization to enhance digital resource security in federal university libraries in North-East Nigeria?

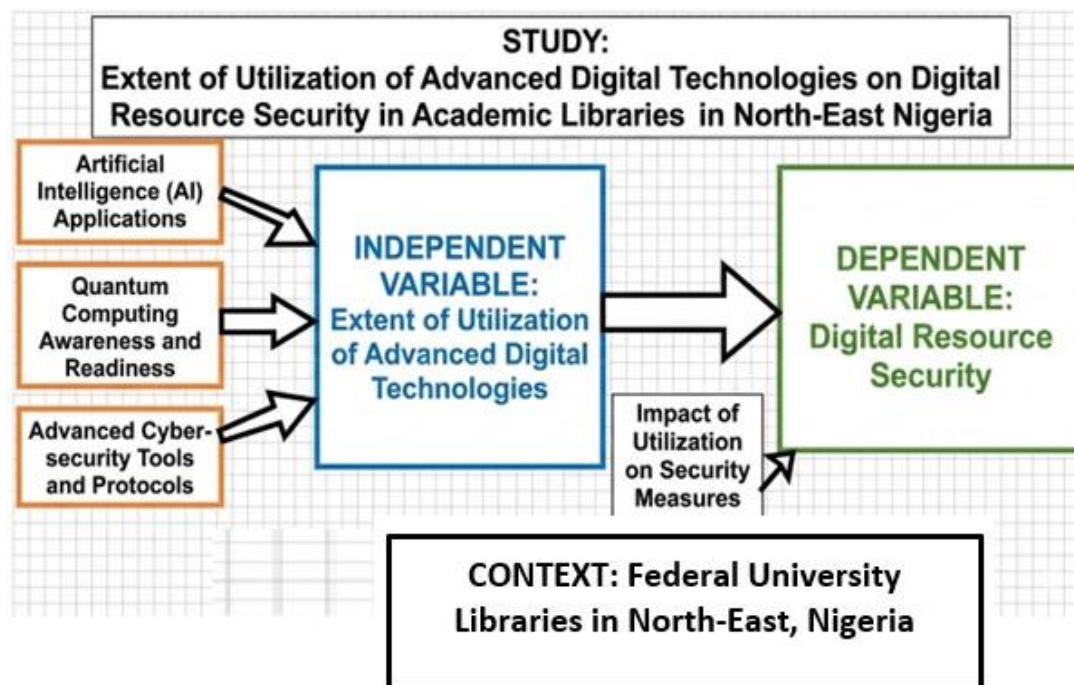
Hypotheses

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

Ho1: There is no significant difference in the utilization of AI-based tools to enhance digital resource security in federal university libraries in North-East Nigeria based on their years of experience.

Ho2: There is no significant difference in the use of quantum computing tools for digital resource security in federal university libraries in North-East Nigeria based on their years of experience

Ho3: There is no significant difference in the utilization of cyber-security tools to enhance digital resource security in federal university libraries in North-East Nigeria based on their years of experience.



Source- Authors' Developed Conceptual Model (2026)

The diagram illustrates a clear conceptual framework for the study on the extent of utilization of advanced digital technologies in securing digital resources within federal university libraries in North-East Nigeria. At its core, the independent variable, the extent of utilization of advanced digital technologies draws from three interconnected components: Artificial Intelligence (AI) applications, quantum computing awareness and readiness, and advanced cyber-security tools and protocols. These elements collectively influence the dependent variable, digital resource security, which represents the overall protection of electronic collections, user data, and library systems from threats like breaches, malware, and unauthorized access.

AI applications serve as a proactive layer, enabling automated threat detection, anomaly monitoring, and efficient resource management to strengthen immediate security measures. Quantum computing awareness and readiness prepare libraries for future-proofing, particularly against emerging risks such as post-quantum cryptography needs, ensuring long-term resilience in an evolving threat landscape (Igbinovia & Ishola, 2023). Advanced cyber-security tools and protocols provide the foundational defense, including encryption, firewalls, and intrusion systems tailored to library environments.

The model highlights how higher utilization of these technologies directly enhances digital resource security, while also acknowledging the mediating impact of utilization on existing security measures. In the challenging context of North-East Nigerian academic libraries marked

by infrastructural constraints, regional instabilities, and limited resources this inter-relationship underscores the need for targeted adoption to bridge gaps and safeguard scholarly heritage effectively (Umar, 2024).

Theoretical Framework

The Technology–Organization–Environment (TOE) Framework

The Technology–Organization–Environment (TOE) Framework was propounded by Tornatzky and Fleischer in 1990. The framework was developed to explain how organizations adopt, implement, and utilize technological innovations by considering a holistic set of internal and external factors. Rather than viewing technology adoption as a purely technical decision, Tornatzky and Fleischer conceptualized it as a complex organizational process shaped by technological characteristics, organizational conditions, and environmental influences. The TOE framework has since become one of the most widely used theoretical models for studying technology adoption across sectors, including education, healthcare, and information services.

According to Tornatzky and Fleischer (1990), the technological context refers to both internal and external technologies relevant to an organization. This includes existing technologies already in use, as well as new or emerging technologies available in the broader environment. The authors emphasized that attributes such as relative advantage, compatibility, complexity, and perceived usefulness of a technology significantly influence adoption decisions. In this sense, organizations are more likely to adopt technologies that align with their operational needs, improve efficiency, and can be integrated with existing systems without excessive disruption. The technological context therefore shapes not only whether a technology is adopted but also the extent to which it is effectively utilized.

The organizational context, as articulated by the propounders, encompasses the internal characteristics and resources of an organization. These include organizational size, managerial structure, human capital, communication processes, and the availability of financial and technical resources. Tornatzky and Fleischer argued that organizations with skilled personnel, supportive leadership, and adequate infrastructure are better positioned to adopt and sustain technological innovations. Organizational readiness, culture, and strategic orientation play crucial roles in determining whether technologies move beyond symbolic adoption to meaningful and sustained use.

The environmental context represents the external conditions in which an organization operates. This includes industry characteristics, regulatory frameworks, competition, government policies, and socio-economic pressures. The theory posits that environmental forces can either enable or constrain technology adoption. External pressures, such as security threats, policy mandates, or professional standards, often compel organizations to adopt innovations to remain relevant, competitive, or compliant within their operating environment.

In relation to the present study, the TOE framework provides a robust analytical lens. Advanced digital technologies such as Artificial Intelligence, quantum computing awareness, and cyber-

security tools fall within the technological context; librarians' skills, institutional capacity, and management support represent the organizational context; while infrastructural challenges, security conditions, funding patterns, and regulatory expectations in North-East Nigeria constitute the environmental context. By applying the TOE framework, this study systematically explains how the interaction of these three dimensions influences the extent to which advanced digital technologies are utilized to secure digital resources in federal university libraries in North-East Nigeria.

Methodology

Area: This study was conducted in North-East Nigeria.

Research Design: This study adopted a descriptive survey research design. A descriptive survey research design is suitable for this study because it enables the systematic collection of data from librarians and library systems to describe the current extent to which advanced digital technologies are utilized for digital resource security in federal university libraries in North-East Nigeria.

Population of the Study: The population of this study comprised all the 26 electronic librarians in the six federal universities in North East Nigeria. These are: Ramat Library, University of Maiduguri, Borno State; Abubakar Tafawa Balewa, Bauchi University Library, Bauchi State; Ibrahim Badamasi Babangida Library, Modibbo Adama University, Yola, Adamawa State; Federal University Kashere Library, Gombe State; Professor Abubakar Adamu Rasheed Library, Federal University Wukari, Taraba State; Federal University Gashua Library, Yobe State.

Sample Size and Sampling Technique: The entire population of 26 electronic librarians was adopted because the size can be managed by the researchers and thus, there was no need for sampling hence called total enumeration.

Instrumentation: Data for the study was collected by means of questionnaire developed by the researchers titled "Questionnaire on Advanced Digital Technologies on Digital Resource Security in federal university Libraries" (QADTDRSUL). The instrument was divided into three clusters in line with the research questions of the study. Cluster I addressed items on extent of utilization of artificial intelligence on digital resource security in federal university libraries; cluster II addressed items on the extent of utilization of quantum computing tools on digital resource security in federal university libraries; cluster III focused on items on the extent of utilization of cyber-security tools on digital resource security in federal university libraries in North-East Nigeria respectively.

The instrument was validated by two experts. The instrument was pilot tested using 5 e-librarians in federal university libraries in Ahmadu Bello University, Zaria. Cronbach Alpha method was used to test the internal consistency of the instrument and coefficient values of 0.77, 0.75 and 0.88 were obtained for cluster I – III and the overall reliability ecoefficiency of 0.80 respectively was obtained which signifies the adequacy of the instrument for the study

Method of Data Collection: The researchers personally supervised the distribution and collection of the copies of questionnaire with the help of six research assistants; one assigned to each of the six Federal Universities in North-East Nigeria. These assistants were carefully selected based on their familiarity with the university environment and thoroughly briefed on the objectives of the study.

Method of Data Analysis: Descriptive statistics such as mean and standard deviation was used to analyze data to provide answer the three research questions. The mean scores were interpreted using the real limit of numbers of the scale values as stated below:

Table 1: Decision Rule

Response	Rating Scale	Real Limit of Numbers
Very Great Extent	4	3.50 – 4.00
Great Extent	3	2.50 – 3.49
Low Extent	2	1.50 – 2.49
Very Low Extent	1	0.50 – 1.49

On Table 1, Analysis of Variance was used to test the null hypotheses at 0.05 alpha level. Where the p-value is equal to or greater than the alpha level of 0.05 ($p > 0.05$), the null hypotheses was not to be rejected. On the other hand, when the p-value is less than the alpha level of 0.05 ($p < 0.05$), the null hypothesis was rejected. The analysis was carried out with the Statistical Package for Social Sciences (SPSS) Version 27.

Results

Table 2: Extent of artificial intelligence tools utilization to enhance digital resource security in federal university libraries in North-East Nigeria

S/N	To what extent do you use:	X	SD	Remarks
1	Chatbots or virtual assistants with security protocols to manage user authentication and access queries safely.	3.46	1.17	High extent
2	AI-driven user behaviour analytics to identify potential internal security risks	2.17	1.22	Low extent
3	AI-based tools for real-time monitoring and automated threat response to cyber-attacks (e.g., DDoS, malware).	2.14	1.45	Low extent
4	Intelligent systems that predict and patch software vulnerabilities in the library's digital infrastructure.	2.46	1.42	Low extent
5	AI-enhanced spam and phishing email filters specifically for protecting library staff and administrative accounts.	2.02	1.49	Low extent
	Cluster Mean	2.45		Low extent

Table 2 indicates that artificial intelligence tools are generally utilized to a low extent for enhancing digital resource security in federal university libraries in North-East Nigeria, with the exception of chatbots or virtual assistants for secure user authentication, which recorded a high extent of utilization ($\bar{x} = 3.46$). The cluster mean of 3.45 summarized that electronic utilized to a

low extent artificial intelligence tools to enhance digital resource security in federal university libraries in North-East Nigeria. The standard deviation values, ranging from 1.17 to 1.49, indicate moderate variability in respondents' views.

Table 3: Extent of Quantum computing tools utilization to enhance digital resource security in federal university libraries in North-East Nigeria

S/N	To what extent does your library:	X	SD	Remarks
6	Quantum Key Distribution (QKD) tools secure data transmission between servers	2.40	1.20	Low extent
7	apply Post-Quantum Cryptography (PQC) algorithms to protect encrypted digital archives	2.03	0.96	Low extent
8	integrate quantum-resistant encryption methods to safeguard user authentication processes	2.28	1.15	Low extent
9	incorporate quantum-safe VPN tools for remote access to library resources	2.25	1.14	Low extent
	Cluster Mean	2.24		Low extent

Table 3 indicates that items 6 – 9 with mean scores 2.40, 2.03, 2.28, and 2.25 were rated low extent. The cluster mean of 2.24 summarizes those electronic librarians to a low extent utilized quantum computing tools to enhance digital resource security in academic libraries in North-East Nigeria. The standard deviation values, ranging from 0.96 to 1.20, indicate moderate variability in respondents' views

Table 4: Extent of cyber-security tool are utilization to enhance digital resource security

S/N	To what extent does your library:	X	SD	Remarks
10	use firewalls and network segmentation tools to block unauthorized access to digital resources	2.54	0.57	Great extent
11	implement multi-factor authentication (MFA) for accessing library databases and user accounts	2.66	0.71	Great extent
12	apply encryption tools (such as SSL/TLS) to protect data in transit and at rest in digital repositories	2.91	0.92	Great extent
13	antivirus and anti-malware software to scan and protect electronic collections from viruses and malicious programs	3.10	0.99	Great extent
14	use endpoint detection and response (EDR) tools on library computers and servers to detect advanced threats	2.14	0.89	Low extent
Cluster Mean		2.67		Great extent

Table 4 indicates that items 10 – 13 with mean scores 2.54, 2.66, 2.91, and 3.10 were rated great extent, while item 14 with mean score 2.14 was rated low extent. The cluster mean of 2.67 summarizes that cyber-security tools are utilized to a moderate and great extent to enhance digital resource security in federal university libraries in North-East Nigeria. The standard deviation values, ranging from 0.57 to 0.99, indicate low to moderate variability in respondents' views.

Table 5: ANOVA analysis on the significant difference in the utilization of AI-based tools for digital resource security in federal university libraries in Northeast Nigeria based on their years of experience

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	112.684	3	37.561	1.284	.301
Within Groups	644.316	22	29.287		
Total	757.000	25			

The result in Table 5 revealed that the p-value (.301) is greater than the 0.05 level of significance ($F(3, 22) = 1.284, p > 0.05$), indicating that the difference is not statistically significant. This implies that there is no significant difference in the utilization of AI-based tools for enhancing digital resource security among e-librarians in federal university libraries in North-East Nigeria based on their years of experience

Table 6: ANOVA analysis on the significant difference in the utilization of quantum computing tools for digital resource security in federal university libraries in Northeast Nigeria based on their years of experience

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	380.544	3	126.848	4.321	.115
Within Groups	645.456	22	29.339		
Total	1026.000	25			

The result in Table 6 revealed that the p-value (.115) is greater than the 0.05 level of significance ($F(3, 22) = 4.321, p > 0.05$), indicating that the difference is not statistically significant. This implies that there is no significant difference in the utilization of quantum computing tools for digital resource security among e-librarians in federal university libraries in North-East Nigeria based on their years of experience.

Table 7: ANOVA analysis on the significant difference in the utilization of cyber-security tools to enhance digital resource security in federal university libraries in North-East Nigeria based on their years of experience

Sources of variance	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	542.879	3	180.959	1.542	.226
Within Groups	2583.121	22	117.415		
Total	3126.000	25			

The result in Table 7 revealed that the p-value (.226) is greater than the 0.05 level of significance ($F(3, 22) = 1.542, p > 0.05$), indicating that the difference is not statistically significant. This implies that there is no significant difference in the utilization of cyber-security tools for enhancing digital resource security among e-librarians in a federal university library in North-East Nigeria based on their years of experience.

Discussion of Findings

The finding revealed that electronic utilized to a low extent artificial intelligence tools to enhance digital resource security in federal university libraries in North-East Nigeria. The corresponding hypothesis revealed that there is no significant difference in the utilization of AI-based tools for enhancing digital resource security among e-librarians in federal universities libraries in North-East Nigeria based on their years of experience. This finding agreed with that of Isiaka (2023) who found that Nigerian libraries found limited use of advanced AI systems and noted that lack of expertise and infrastructure constrain broader deployment of AI technologies, even though they have potential benefits for services including security (e.g., cataloging and resource access).

The finding also revealed that electronic librarians to a low extent utilized quantum computing tools to enhance digital resource security in federal university libraries in North-East Nigeria. The corresponding hypothesis revealed that there is no significant difference in the utilization of

quantum computing tools for digital resource security among e-librarians in federal university libraries in North-East Nigeria based on their years of experience. Pasupule (2024) recognise the role of quantum computing tools in preparing instrument for future security threats even though the related security approaches are emerging.

Finally, the findings revealed that cyber-security tools are utilized to a moderate and great extent to enhance digital resource security in federal university libraries in North-East Nigeria. Although, Igbinovia and Ishola (2023) stressed that cyber security will continue to be active as security tool in safeguarding digital tools even though this function depends on their use and integration into system.

The three null hypotheses revealed that there were no significance differences in the utilization of AI based tools, quantum computing tools and cyber security tools for enhancing digital resource security among e-librarians in federal universities in North-east Nigeria. This findings confirm that of Umar (2024) who discovered evidences' that utilisation efforts have been largely focused on cyber security tools with limited development in AI-driving systems and minimum engagement with quantum-related security applications".

Conclusion

Based on the findings of this study, it is evident that the utilization of advanced digital technologies for digital resource security in academic libraries in North-East Nigeria remains uneven and largely underdeveloped. While cyber-security tools are employed to a moderate extent, their effectiveness is limited by the minimal integration of intelligent, predictive technologies. The low utilization of Artificial Intelligence tools reveals a missed opportunity to enhance proactive threat detection, automated monitoring, and secure user management. Similarly, the near absence of quantum computing awareness underscores a lack of forward-looking security planning in an era of rapidly evolving digital threats. Collectively, these gaps expose academic libraries to heightened security risks and undermine the sustainability of their digital resources.

Recommendations

Based on the results and discussion, the following recommendation are proffered

1. Federal university libraries in North East Nigeria should prioritize the gradual integration of AI-driven security applications such as intelligent access control systems, user-behavior analytics, and automated threat detection tools. This should be supported through targeted capacity-building programmes, including continuous professional training and partnerships with ICT experts, to improve librarians' technical competence and confidence in deploying AI solutions.
2. Federal university libraries should focus on building foundational knowledge rather than immediate adoption. Library administrators, in collaboration with universities and ICT units, should organize seminars, workshops, and curriculum-based training aimed at improving awareness of quantum computing and its future impact on data encryption and digital security

3. Federal university libraries in northeast Nigeria should adopt comprehensive cyber-security frameworks that integrate regular system audits, updated security software, data backup protocols, and incident response plans.
4. Federal university libraries in North-East Nigeria should prioritise the gradual integration of AI- driven security applications such as intelligence access control systems, user-behavior analytics and automated threat detection tools.
5. Federal university libraries in North-East Nigeria university should adopt a comprehensive cyber-security framework that integrates regular system audits, updated security software, data backup protocols and incidents response plan.

References

- Abdullahi, D. A. (2025). Enhancing digital literacy and cyber security awareness amongst librarians for effective utilization in academic libraries. *International Journal of Academic Research and Development*, 10(5), 6 – 9
<https://allreviewjournal.com/assets/archives/2025/vol10issue5/10073.pdf>
- Ajani, Y. A., Tella, A., Salawu, K. Y., & Abdullahi, F. (2022). Perspectives of librarians on awareness and readiness of academic libraries to integrate artificial intelligence for library operations and services in Nigeria. *Internet Reference Services Quarterly*, 26(4), 213–230. Available via: <https://doi.org/10.1080/10875301.2022.2086196>.
- Akor, S. O., Nongo, C., Udofot, C., & Oladokun, B. D. (2024). Cybersecurity awareness: Leveraging emerging technologies in the security and management of libraries in higher education institutions. *Southern African Journal of Security*, 2:14. <https://doi.org/10.25159/3005-4222/16671>.
- Cheng, C. H., Li, M. H., Tang, B. J., & Cheng, Y. R. (2024). The impact of knowledge management and organizational learning promotion in small and medium enterprises on the implementation of industry 4.0 and competitiveness. *Administrative Sciences*, 14(8), 161. <https://doi.org/10.3390/admsci14080161>
- Efevberha-Ogodo, O., & Iwighrehweta, O. (2023). Awareness and availability of Artificial Intelligence (AI) and Machine Learning (ML) in academic libraries in Northern Nigeria. *ASRIC Journal of Social Sciences*, 4(2). <https://asric.africa/social-sciences/asric-journal-social-sciences-2023-v4-i2/awareness-and-availability-artificial>
- Igbinovia, M. O., & Ishola, B. C. (2023). Cyber security in federal university libraries and implication for library and information science education in Nigeria. *Digital Library Perspectives*, 39(3): 248–266. <https://doi.org/10.1108/DLP-11-2022-0089>
- Isiaka, A. O. (2023). *Application and use of Artificial Intelligence (AI) for library services delivery in academic libraries in Kwara State, Nigeria. Library Philosophy and Practice*. <https://digitalcommons.unl.edu/libphilprac/7998/>
- Olafimihan, C. O., Atanda, L. A., & Gbotosho, A. S. (2024). Navigating the digital frontier: The impact of emerging technologies in libraries services. *Journal of Library and Information Science*, 1(1), 1 – 11.
- Pasupulet, M. K. (2024). Quantum computing and the future of digital security. *International Journal of Academic and Industrial Research & Innovations*.

https://www.researchgate.net/publication/379234889_Quantum_Computing_and_the_Future_of_Digital

- Rejeb, A., Rejeb, K., Zrelli, I., & Süle, E. (2025). Industry 5.0 as seen through its academic literature: An investigation using co-word analysis. *Discover Sustainability*, 6(1), 1–20. <https://doi.org/10.1007/s43621-025-01166-0>
- Tornatzky, L. G., Fleischer, M., & Chakrabarti, A. K. (1990). *The processes of technological innovation*. Free Press.
- Umar, H. (2024). Transforming university libraries with artificial intelligence: Librarians' awareness and infrastructural readiness in North Eastern Nigeria. *International Journal of Science and Research*, 14(3), 1192 – 1201.

**Evaluation of Drug Prescription Practices On Antimicrobial Resistance Among
Proprietary Medicine Vendors In Kwara State Nigeria**

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Abstract

The study evaluated drug prescription practice of PPMVs and the relationship between the education level on knowledge, prescription pattern, and compliance to drug prescription in the Ilorin metropolis. A cross-sectional study was conducted among randomly selected 400 registered and licensed proprietary PPMVs aged 18 years and above. A multistage sampling technique was used to select the respondents. Pre tested and validated semi-structured interviewer-administered questionnaire was used to collect data, which was coded, collated and analyzed using a statistical package for social science (SSPS version 28.0) with a text of significant at $p < 0.05$. The results show that majority of the respondents 94.1%(366) had knowledge of rational drug prescription with only 39(10.1%) of the respondents were fully aware of antimicrobial drug resistance. Patient demand, with 31%, lack of diagnostic tool 27%, Insufficient training on drug use 29%, economic incentives (4%), and peer pressure (2%) are the common factors influencing drug prescription practices. There was no significant association between drug prescription patterns and the education level of PPMVs. ($\chi^2 = 5.369$, p -value = 0.497. the educational level of PPMVs had a significant association with frequency of dosage administration ($\chi^2 = 9.252$, p -value = .026), however, educational level had no significant association with the consultation of healthcare professional ($\chi^2 = 2.332$, p -value = .506), prescription based on age ($\chi^2 = 5.608$, p -value = 0.132), and the use of standard dosage ($\chi^2 = 3.627$, p -value = .727). Despite high knowledge,

PPMVs lack AMR awareness, operate in isolation, and follow profit-driven prescribing; education has no effect, requiring targeted antimicrobial stewardship training.

Keywords; AMR, PPMVs, Drugs Prescription, Nigeria

Introduction

Drug prescription refers to the process by which medications are dispensed to patients and other health consumers based on judgment, and recommendations on prescription paper by a qualified and licensed medical professional such as medical practitioners, primary health care providers, nurse and community health workers (Sahoo, et al., 2025)¹. The proprietors of pharmacies, sometimes referred to as proprietary patent medicine vendors (PPMVs) are “individuals without formal pharmacy training selling orthodox pharmaceutical products on a retail basis for profit (Onwujekwe et al., 2020)². Although formal training in medicine or pharmacy is not necessary for a PPMV license, most PPMVs do an apprenticeship with a more experienced member of the profession before opening their store (Beyeler, 2015)³.

The development of antimicrobial has fundamentally changed medical practice and reduced the global morbidity and mortality rate from infectious diseases. However, the global emergence of antimicrobial resistance organisms (AMRO) and the accompanying difficult-to-treat infections, prolonged hospital stays, higher healthcare costs, and worse health outcomes are the result of, among other factors, microbial evolution, in appropriate antibiotic prescription and misuse^{4,5}. Antimicrobial resistance (AMR) is a global public health threat and inappropriate antimicrobial drugs use significantly contributes to its acceleration⁶. The misuse and overuse of antimicrobial drugs contribute to the emergence of resistant strains of bacteria, viruses, fungi and parasites making infections harder to treat and posing a severe risk to public health⁷.

In Nigeria, as PPMVs are not legally authorized to prescribe medications, but they play crucial roles in essential drug delivery, they are often the primary source of healthcare for many people in rural areas. The quality and appropriateness of drug prescriptions issued by PPMVs is a significant concern, as inappropriate drug use can lead to negative clinical and economic consequences there is a pressing need to assess and address drugs prescription practices within these settings.

The level of knowledge among proprietary patent medicine vendors about antimicrobial resistance, its implications, and the role of appropriate drugs use in combating AMR is not well-documented in the study area. This knowledge gap may contribute to suboptimal prescription practices. Economic factors, including financial incentives or constraints, may impact prescription habits. Understanding the motivations factors behind PPMVs drugs prescriptions practices is crucial for designing effective interventions. The study seeks to evaluate drug prescription practice of PPMVs

and the relationship between the education level on knowledge, prescription pattern, and compliance to drug prescription in the Ilorin metropolis.

Literature Review

Drugs are chemical substances that, when consumed, cause a change in an organism's physiology, including its psychology if applicable. They can be used in the diagnosis, treatment, and prevention of conditions or diseases, or to affect the structure or function of the body. Drugs can be pharmaceutical medications used for medical purposes, such as treating, curing, preventing, or diagnosing diseases, or they can be substances taken for pleasure, performance enhancement, or due to addiction (World Health Organization [WHO], 2024).

In the context of patent and proprietary medicines vendors (PPMV) in Nigeria, drug prescription refers to the process by which these vendors, who are not licensed medical professionals, issue prescriptions for medications or drugs to patients (Beyeler et al., 2015). Ensuring that everyone has access to high-quality healthcare services regardless of where they reside is known as universal health coverage (UHC). Many nations, including Nigeria, have made achieving UHC a top goal. To do this, they must make the most of the material and human resources that the public and private sectors have to offer. The private sector is a major player in the delivery of health care in many resource-poor nations, such as Nigeria, where it serves a sizeable section of the populace. For instance, the 2018 Nigeria Demographic and Health Survey, reveals that 33% of women gave birth in an institution and 41% of users obtained contemporary contraception from the commercial sector. Treatment for pediatric diseases was sought by 62.3% of children under five who had fever, 63.5% who had diarrhea, and 50.5% who had acute malaria (NDHS, 2018).

The proprietors of pharmacies, sometimes referred to as patent and proprietary medicine vendors (PPMV) and defined as "individuals without formal pharmacy training selling orthodox pharmaceutical products on a retail basis for profit," are notable members of Nigeria's private sector (World Bank, 2005). An estimated 200,000 PPMVs existed in 2005, which is over 100 times more than registered pharmacies and nearly four times more than physicians. According to a recent survey, pharmacy stores are as densely populated in many regions of the nation as formal health facilities, if not more so. For most Nigerians, PPMVs serve as the first line of treatment, offering family planning, treatment for malaria, diarrhea, pneumonia, and other illnesses, and tending to both adults and children, particularly in rural areas (World Bank, 2000).

The PPMVs also have many qualities that appeal to members of the community such as long opening hours, hospitability, and more consistent availability than public facilities that frequently experience service interruptions. Given their widespread presence, well-regulated and well-trained PPMVs could boost Nigeria's progress towards UHC by being more involved in promising health interventions such as integrated community case management (iCCM) (Oyeyemi et al., 2020). In addition, the PPMVs are more hospitable, have longer opening hours, and are more consistently available than public spaces that regularly have service outages all attributes that appeal to community members. Because PPMVs are so common, they might accelerate Nigeria's progress toward UHC by participating more in innovative health treatments like integrated community case management (iCCM) (Oyeyemi et al., 2020).

The development of antibiotics has fundamentally changed medical practice and reduced the global morbidity and mortality rate from infectious diseases. However, the global emergence of antimicrobial resistance organisms (AMRO) and the accompanying difficult-to-treat infections, prolonged hospital stays, higher healthcare costs, and worse health outcomes are the result of, among other factors, microbial evolution, antibiotic misuse, and inadequate infection control practices. Developing nations in Asia and Africa are most vulnerable to the growing global danger posed by antibiotic resistance (AMR). If nothing is done to stop the rising trend of antimicrobial resistance (AMR), it is predicted that by 2050, 10 million people worldwide roughly 4 million in each of Asia and Africa will pass away from AMR.

PPMVs are legally allowed to offer a restricted quantity of pre-packaged, the discovery of antibiotics has significantly altered medical practice and lowered the prevalence of infectious disease-related morbidity and mortality worldwide. Antimicrobial resistance organisms (AMRO) have emerged globally, and with them come hard-to-treat infections, longer hospital stays, greater healthcare costs, and worse health outcomes. These are caused, in part, by microbial evolution, antibiotic misuse, and insufficient infection control procedures. The developing world's most vulnerable countries to the growing threat of antimicrobial resistance (AMR) include those in Asia and Africa. Antimicrobial resistance (AMR) is expected to kill 10 million people globally by 2050—roughly 4 million in each of Asia and Africa—if nothing is done to halt the growing trend of AMR.

Although formal training in medicine or pharmacy is not necessary for a PPMV license, most PPMVs do an apprenticeship with a more experienced member of the profession before opening their store. Conventionally, the minimum educational level has been primary schools. Customer demand frequently determines the goods and services offered by PPMV shops since their main purpose is retail sales rather than healthcare, which could result in PPMVs operating outside of their legal boundaries (Prach et al., 2015). PPMVs offer medications and services for a wide range of health needs, such as tuberculosis, respiratory infections, diarrhea, malaria, common colds, and reproductive health, but the quality of these treatments is poor, according to a recent comprehensive evaluation of PPMV practices. PPMVs typically have poor health and little health understanding.

A recent systematic review of PPMV practices shows that PPMVs provide medicines and services for a wide variety of health needs, including malaria, respiratory infections, diarrhea, common cough and cold, tuberculosis, and reproductive health; however, the quality of these services is low. PPMVs generally have low health knowledge and poor health treatment practices, stock poor quality medicines (e.g. partial or repackaged doses, and sub-standard formulations as well as medicines and commodities they are prohibited from selling. The available evidence indicates that PPMVs' limited knowledge of proper treatment practices contributes to the sales of inappropriate, ineffective, and incorrect drugs for many health problems (Kodaolu et al., 2020).

There is a lack of information about the full range of services offered at PPMVs as most studies focused on a single health focus; with a few notable exceptions, little is known about the spectrum

of conditions that customers seek treatment for, how PPMVs interact with customers to dispense medications for those conditions, and the variety of drugs sold at PPMV shops (Prach et al., 2015). Inappropriate drug prescription patterns can have negative consequences for patients, including adverse drug reactions, drug interactions, and increased healthcare costs. Therefore, it is important to promote appropriate drug prescription patterns and reduce inappropriate prescribing practices in healthcare facilities in Nigeria (Prach et al., 2015).

This is a controversial issue in Nigeria, as PPMVs are not legally authorized to prescribe medications, but are often the primary source of healthcare for many people in rural areas. The quality and appropriateness of drug prescriptions issued by PPMVs is a significant concern, as inappropriate drug use can lead to negative clinical and economic consequences (Kodaolu et al., 2020). Antimicrobial resistance (AMR) is a global public health threat and inappropriate antibiotic use significantly contributes to its acceleration. In Nigeria, where patent medicine vendors play crucial roles in essential drug delivery, there is a pressing need to assess and address antibiotic prescription practices within these settings. The misuse and overuse of antibiotics contribute to the emergence of resistant strains of bacteria, making infections harder to treat and posing a severe risk to public health (Burden et al., 2022).

The problem at hand is the lack of comprehensive understanding and evaluation of antibiotic prescription practices among the patent medicine vendors in Nigeria. Despite the existence of guidelines for antibiotic use, there is a growing concern that these guidelines are not consistently followed, leading to inappropriate antibiotic prescriptions (Federal Ministry of Health Nigeria, 2016). The factors influencing prescription decisions, adherence to guidelines, knowledge levels about antibiotic resistance, and the impact of economic considerations on prescription habits remain poorly understood within these settings (Burden et al., 2022).

The level of knowledge among patent medicine vendors about antibiotic resistance, its implications, and the role of appropriate antibiotic use in combating AMR is not well-documented. This knowledge gap may contribute to suboptimal prescription practices (Akpan et al., 2019). Economic factors, including financial incentives or constraints, may impact prescription habits. Understanding the economic motivations behind antibiotic prescriptions is crucial for designing effective interventions (Ogunleye et al., 2018).

Klein et al. (2018) found that Antibiotic consumption increased dramatically between 2000 and 2015 (+65% globally), mostly due to a sharp increase in low- and middle-income countries (LMICs) (+114%), where levels of antibiotic consumption are high and quickly approaching those observed in high-income countries (HICs). This was discovered through a multinational survey conducted across 76 countries to determine the magnitude of antibiotic consumption and its trend over time. Since this investigation relied on drug sales data, it is possible that several factors, including the paucity of information regarding the prescription practices of healthcare practitioners, contribute to the high level of antibiotic usage in low- and middle-income countries.

Inappropriate use of antibiotics, defined as selecting the right molecule, dosage, and length of therapy based on the infection site and the patient's characteristics, is a major concern in addition

to abuse (i.e., prescription without clinical indication) (Ogunleye et al., 2018). Evaluating drug prescription practices of PPMVs in Nigeria is essential for addressing a critical public health issue, promoting responsible drug use, and protecting the health of the Nigerian population. It provides a foundation for evidence-based interventions, policies, and education to combat antibiotic resistance and its associated challenges.

Drug resistance especially Antibiotics is a global public health threat, and its proliferation is significantly influenced by the inappropriate use of antibiotics. Evaluating the prescription practices of PPMVs is essential to understand the extent to which these healthcare practitioners contribute to the problem. Nigeria has one of the highest rates of irrational use of drugs in the world, often due to factors such as self-medication, over-the-counter access to antibiotics, and prescription practices. Assessing the roles of PPMVs in this context is crucial. Identifying areas where prescription practices can be improved is a key step in promoting responsible antibiotic use. This evaluation can highlight areas where interventions, education, and guidelines can be implemented to enhance antibiotic stewardship. There is a paucity of information regarding the degree and pattern of antibiotic use in outpatient primary healthcare facilities, i.e., any service (other than pharmacies) providing care for people making initial contact with a health professional. Having this information will be helpful to design and implement effective stewardship interventions and policies in LMICs. PMVs play a significant role in healthcare access, especially in rural areas with limited access to formal healthcare facilities. Understanding their prescription practices can help ensure that drugs are accessible while also being used responsibly. Evaluating prescription practices can reveal gaps in the knowledge and awareness of drug resistance among PPMVs. This can inform targeted educational initiatives.

Assessing prescription practices can help identify areas where regulatory measures need to be enforced or strengthened to ensure compliance with established guidelines and regulations. Inappropriate drugs especially antibiotics use can lead to prolonged illnesses, increased healthcare costs, and adverse health outcomes. Improving prescription practices can lead to cost savings for individuals and the healthcare system. Ultimately, the primary motivation for this evaluation is to protect patient health. Ensuring that drugs are prescribed appropriately, can reduce the risk of drug-resistant infections and promote better health outcomes. Most studies investigating the magnitude and determinants of drug use have focused on HICs, and those from LMICs have been carried out predominantly in hospital settings, leaving several unanswered questions about current practices at the local level.

Methodology

A cross-sectional study was conducted among registered and licensed proprietary patent medicines vendors (PPMVVs) aged 18 years and above, that are actively involved in delivering of essential health services and drugs to the communities in the Ilorin metropolis Kwara State, Nigeria. Using formula for calculating sample size⁸, and adjusted sample size of the response rate, 400 respondents were randomly selected for the study.

A Multistage sampling technique was used to select the respondents.

Stage 1: Selection of Local government areas (LGAs): 2 LGAs were selected randomly from the 4 LGAs in Kwara State using a Simple random sampling technique by balloting.

Stage 2: Selection of Patent and Proprietary Medicines shops: from the 2 LGAs selected, 400 PPMVs shops were selected using a simple random sampling technique.

Stage 3: Selection of Respondents: One PPMV per shop were selected.

Pre tested and validated semi-structured interviewer-administered questionnaire was used after, the reliability of the tool which was carried out using test- re- test method, where 10% (40) respondents who were not part of the study were selected, the questionnaire was administered to the respondents after 2 weeks the same questionnaire was re-administered to the same respondents. Questionnaires were checked for errors and omissions at the end of the data collection period to ensure the correctness and completeness of the data. The data collected was checked daily for correctness and completeness. It was coded and analyzed using a statistical package for social science (SSPS version 28.0) based on a predetermined analysis with a text of significant at $p < 0.05$ and the results were presented.

Results

Table 1: Socio-demographic information of the respondents

Variables	Sub-Variables	Frequency	Percentage
Gender	Male	100	25.7
	Female	289	74.3
	Total	389	100.0
Age	Less than 25 years Old	34	8.7
	25-40 years Old	238	61.2
	41-55 years Old	108	27.8
	Above 55 years Old	9	2.3
	Total	389	100.0
Years of Experience	Less than 5 years	92	23.7
	5-10 years	58	14.9
	11-15 years	82	21.1
	Above 15 years	157	40.4
	Total	389	100.0
Educational Level	No Formal Education	2	.5
	Primary	6	1.5
	Secondary	204	52.4
	Tertiary	177	45.5
	Total	389	100.0
Marital status	Single	15	3.9
	Married	373	95.9
	Divorced	1	.3
	Total	389	100.0

Religion	Christianity	116	29.8
	Islam	272	69.9
	Traditional	1	.3
	Total	389	100.0

Table 1 shows the socio-demographic information of the respondents; it indicated that 389 respondents adequately responded with a response rate of (97.25%). Most of the respondents 289(74.3%) were female while 100(25.7%) were male. The age of the respondents indicated that 34(8.7%) were less than 25 years Old, 238(61.2%) were between 25-40 years Old, 108(27.8%) were between 41-55 years Old, and 9(2.3%) were Above 55 years Old. The years of experience displayed in table 1 indicated that 92(23.7%) had less than 5 years, 58(14.9%) had 5-10 years, 82(21.1%) had 11-15 years and 157(40.4%) had above 15 years of experience. Table 1 equally revealed that 2 (.5%) had no formal education, 6(1.5%) had primary, 204(52.4%) had secondary and 177(45.5%) had tertiary education. It further showed that 15(3.9%) were single, 373(95.9%) were married and only 1(0.3%) was divorced. It displayed respondents' religion that 116(29.8%) were Christians, 272(69.9%) were Muslims and only 1(.3%) was traditional worshiper.

Table 2: PPMVs Knowledge of Rational Drug Prescription

Variables	Sub-Variables	Frequency	Percentage (%)
Knowledge	Yes	366	94.1
	No	23	5.9
	Total	389	100.0
	Internet	41	5.5%
	Friends	25	3.3%
Sources of Information	Seminars	329	43.9%
	Mass Media	298	39.7%
	No Source	57	7.6%
	Total	750	100.0%
	Age	161	41.4
Dosage Determination Parameters	Weight	191	49.1
	All of the Above	37	9.5
	Total	389	100.0%

Dosage Determination Method	Always administer the maximum dosage to ensure effectiveness	34	8.4%
	Consult a healthcare professional for dosage instructions	318	78.5%
	Base the dosage solely on the patient's age	16	4.0%
	Use a standard dosage regardless of age, weight, or medical condition	37	9.1%
	Total	405	100.0%

Assessing the knowledge of the respondents about drug prescription, table 2 displayed that the majority of the respondents 94.1%(366) had knowledge of rational drug prescription. The sources of information about drug prescription include Internet (5.5%), friends (3.3%), seminars (43.9%), and mass media (39.7%). About half 49.1% of the respondents considered the patient's weight as a determinant of drug dose, 41.4% considered age while only a few (9.5%) considered both. The majority of the respondents (78.5%) expressed that they consult a healthcare professional for dosage instructions. Of the respondents, 9.1% use a standard dosage regardless of age, weight, or medical condition, and 8.4% said that they always administer the maximum dosage to ensure effectiveness. However, only 4% of the respondents base the dosage solely on the patient's age.

Table 3: Awareness and Continuing Education on Antimicrobial Drug Resistance

Variables	Sub-Variables	Freq.	%
Awareness about the issue of antimicrobial drug resistance in Nigeria	Not aware	24	6.2
	Somewhat Aware	16	4.1
	Moderately Aware	310	79.7
	Very Aware	38	9.8
	Extremely Aware	1	.3
	Total	389	100.0
Participation in continuing Education on antimicrobial drug resistance	Yes	361	92.8
	No	28	7.2
	Total	389	100.0

Table 3 above shows that only 39(10.1%) of the respondents were fully aware of antimicrobial drug resistance while the majority of the respondents 310(79.7%) were moderately aware of antimicrobial drug resistance, and only 24(6.2%) were not aware of antimicrobial drug resistance. Of the respondents, 361(92.8%) indicated they participate in continuing education and only 28(7.2%) of them do not participate in continuing education on drug resistance. This data points to a crucial disconnect, while education efforts are reaching the vendors (92.8% participate in CE), they are not achieving deep, comprehensive understanding (only 10.1% are fully aware).

The high knowledge of rational drug prescription (94.1%) contrasted with the dismal awareness of AMR (10.1%) suggests that Proprietary Patent Medicine Vendors (PPMV) understand the *mechanics* of selling drugs (dosage, duration) but do not understand the *biological threat* of resistance. This "mechanical" knowledge without clinical depth leads to the overuse of "strong" antibiotics for minor viral infections, a primary driver of AMR.

Antimicrobial Drug Prescription Pattern (Practices) of PPMVs

Table 4: Frequency of antimicrobial drug requests and prescription practices

Variables	Response	Frequency	Percentage
How often do customers request antimicrobial /antibiotics drugs or treatments?	Rarely	109	28.0
	Moderately	263	67.6
	Frequently	17	4.4
	Total	389	100.0
How often do you prescribe antimicrobial without a medical prescription?	Rarely	293	75.3
	Moderately	91	23.4
	Frequently	5	1.3
	Total	389	100.0

Table 4 shows the frequency of antimicrobial drug requests and prescriptions of antibiotics. It indicated that more than two-thirds of the respondents, 263(67.6%) had a moderately frequent request for specific drugs, and 109(28%) rarely had such request. It also showed that about three-quarters, 293(75.3%) of the respondents rarely prescribe antibiotics.

Table 5: Common drug prescription prescribed for conditions by PPMVs

Items	Responses	
	N	Percent
Painkiller	364	18.7%
Antidiarrhoea	331	17.0%
Antimalaria	352	18.1%
Antibiotics	25	1.3%
Contraceptives	273	14.0%
Multivitamin	310	15.9%
Cough syrup	291	15.0%
Total	1946	100.0%

Table 5 showed the common products prescribed by the respondents, it indicated that 18.7% of the products prescribed are Painkillers, 17.0% Anti-diarrhoea, Anti-malaria (18.1%), Antibiotics (1.3%), Contraceptives (14.0%), Multivitamin (15.9%), and Cough syrup (15.0%). While PPMVs dispense a wide range of common medications, antibiotics constitute a very small percentage of their *prescriptions* compared to non-prescription items like painkillers, antimalarials, and multivitamins

Table 6 Factors Influencing Drug Prescription Practices

Items	Responses	
	N	Percent
Patient demand	330	31.0%
Diagnostic uncertainty	13	1.2%
Economic incentives	44	4.1%
Lack of access to diagnostic tools	291	27.3%
Peer pressure	23	2.2%
Insufficient training on antibiotic use	308	28.9%
Lack of awareness about antibiotic resistance	34	3.2%
Pharmaceutical marketing	7	0.7%
Regulatory pressure	16	1.5%
	1066	100.0%

Multiple response

Table 6 showed factors influencing drug prescription practices. The most common reason reported by respondents was patient demand, with 31% of respondents saying this influenced their decision

to prescribe drugs. This means that more than a third of the time, respondents felt pressured by patients to prescribe antibiotics.

Another common reason was lack of access to diagnostic tools, which was reported by 27% of respondents. This suggests that nearly a third of the time, respondents prescribed antimicrobial drug because they couldn't accurately diagnose the illness. Insufficient training on drug use was another important factor, affecting 29% of prescriptions. This means that almost a third of the time, respondents felt they may not have had enough training to know when antimicrobial drugs were truly necessary. Less common reasons for prescribing antibiotics included economic incentives (4%), peer pressure (2%), lack of awareness about antibiotic resistance (3%), pharmaceutical marketing (less than 1%), and regulatory pressure (1%).

Table 7: Chi-square analysis of Association between drug prescription practices and educational level of PPMVs

Statement	Response	NF E	Primar y	Secondar y	Tertiar y	Tota l	χ^2	d f	p- val.	Decisio n
Prescripti on of anti- microbial drugs	Rarely	2	5	145	141	293	5.36 9 ^a	6	.49 7	NS
	Moderate ly	0	1	55	35	91				
	Frequentl y	0	0	4	1	5				
		2	6	204	177	389				

df: Degree of freedom; S: Significant, NS: Not Significant

Table 7 shows that there was no significant association between drug prescription patterns and the education level of PPMVs. ($\chi^2 = 5.369$, p-value = 0.497).

Ho: There is no statistical significant difference between compliance with drug prescription patterns and education level among PPMVs.

Table 8: Chi-square analysis of the Association between factors affecting drug prescription and educational level of PPMVs

Statements	Responses	NF E	Primary	Secondary	Tertiary	Total	χ^2	D f	p- val.	Decision
	Yes	1	6	166	157	330				
Patient demand	No	1	0	38	20	59	6.915 _a	3	.075	NS
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	D f	p- val.	Decision
Diagnostic uncertainty	Yes	0	0	9	4	13				
	No	2	6	195	173	376	1.641 _a	3	.650	NS
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	D f	p- val.	Decision
Economic incentives	Yes	1	1	29	13	44				
	No	1	5	175	164	345	7.647 _a	3	.054	NS
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	D f	p- val.	Decision
Lack of access to diagnostic tools	Yes	1	6	137	147	291				
	No	1	0	67	30	98	15.392 _a	3	.002	S*
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	D f	p- val.	Decision
	Yes	0	0	16	7	23				

Peer pressure	No	2	6	188	170	366	3.089 _a	3	.378	NS
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	Df	p-val.	Decision
Insufficient training on antibiotic use	Yes	2	5	149	152	308				
	No	0	1	55	25	81	10.068 _a	3	.018	S
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	Df	p-val.	Decision
Lack of awareness about antibiotic resistance	Yes	0	1	20	13	34				
	No	2	5	184	164	351	5.150 _a	6	.525	NS
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	Df	p-val.	Decision
Pharmaceutical marketing	Yes	0	0	3	4	7				
	No	2	6	101	173	382	3.206 _a	6	.783	NS
	Total	2	6	204	177	389				
		NF E	Primary	Secondary	Tertiary	Total	χ^2	Df	p-val.	Decision
Regulatory pressure	Yes	0	0	14	2	16				
	No	2	6	190	175	373	9.387 _a	6	.153	NS
	Total	2	6	204	177	389				

Table 8: Shows that there was no significant association between factors affecting drug prescription and education level of PPMVs. The table showed that there is no significant

association between the factors and education level because the $p > 0.05$. However, some of the factors were found to have significant associations with educational levels. Such include lack of access to diagnostic tools ($\chi^2 = 15.392, p \leq 0.002$) and Insufficient training on antibiotic use ($\chi^2 = 10.068, p < 0.018$).

Discussion

The study shows that the distribution of the PPMVs by gender had more females as compared to males, this study agrees with (Olaniyan et al., 2022)⁹, and (Rosapep et al., 2022)¹⁰ who state that more than two-thirds of PPMVs are women. Thou several studies (Prach et al., 2015)¹¹, (Okeke et al., 2022)¹² and (Oyetunde et al., 2022)¹³ conducted in different regions have found that males constitute the majority of Patent and Proprietary Medicine Vendors (PPMV), often suggesting a geographical or cultural variation in the occupation's demographics. These findings suggest that PPMV demographics can vary significantly by location within Nigeria, with Southern urban areas often showing a female majority, while Northern and specific rural areas tend to have more male vendors.

More than two third of the PPMVs fall within the age bracket of 25-40 years confirming that the occupation is often pursued by relatively young adults, it aligns with (Okeke et al.)¹³, and (Agha et al. 2022)¹⁴ which equally stated that more than half of PPMVs were under 40 years of age. These findings suggest that PPMVs are a relatively young workforce, which has implications for training and the adoption of new technologies. Thou Several studies, (Prach et al., 2015), Oyetunde and Nwauche, 2022) particularly those in more rural areas or involving long-standing vendors, show a higher concentration of older individuals.

This study established that more than half of the PPMVs had secondary education and less than half had tertiary education, however, this is slightly lower than (Agha et al. 2022) Who stated that about one- fifth of PPMVs had greater than secondary education. The result also supports (Naomi et al. 2015). According to findings from the study, many PPMVs have elementary education levels that are greater than average. The findings imply that PPMV workforce are largely secondary school graduates without formal medical knowledge and formal training often leads to poor dispensing practices and limited knowledge of appropriate diagnostic procedures and treatment guidelines. PPMVs may manage conditions they are not qualified to handle, leading to misdiagnosis

As seen in table 2 on PPMV knowledge of rational drug prescription, there is significant disparity between the *theoretical knowledge* of PPMVs and their *actual practice* regarding rational drug use. The findings suggest a classic "knowledge-practice gap" where possessing theoretical knowledge does not automatically translate into adherence to best practices. The respondents know *what* rational prescribing is (94.1% knowledge) similar to studies (Oyetunde et al., 2022) and (Beyeler et al., 2015). There may be operational shortcuts from the small percentages of PPMVs who use standard dosages regardless of age/weight (9.1%) or administer maximum dosage (8.4%) might be prioritizing speed, perceived effectiveness, or simplicity over patient individualization, likely due to a lack of formal diagnostic tools or detailed patient history capture. While they have general "knowledge," their training (often an apprenticeship model) may not have

emphasized the critical practical application of weight/age-based dosing calculation. The 4% who base dosage *solely* on age further reinforces the idea that comprehensive factors (age, weight, condition) are often ignored. This is similar to (Prach et al., 2015), study that PPMVs' limited knowledge often contributes to the sale of inappropriate and ineffective drugs

The findings in the table 3, that only a small percentage of PPMVs are "fully" aware of drug resistance, despite high moderate awareness and significant participation in continuing education, has several implications for public health and training initiatives. This level of awareness might mean they know AMR is a problem generally but lack the nuanced knowledge of *how* their specific dispensing practices (e.g., selling incomplete antibiotic courses, overprescribing) contribute to it. Moderate awareness is often insufficient to change deeply ingrained habits. This is in line with (Beyeler et al., 2015). that despite various interventions, PPMV practices often do not align with official health guidelines and conformed with (Olaniyan et al., 2022) that even with awareness, adherence to using diagnostics before dispensing anti-malaria is often poor.

On the awareness of PPMVs on drug resistance, about two-thirds of the respondents claimed to be only moderately aware of the rising challenges of drug resistance in Nigeria. (Table 3) This partially supports (Akande-sholabi et al., 202)¹⁵ that showed that about 41.6 % of the participants in his study had demonstrated poor knowledge about antimicrobial resistance. The rising problem of antibiotics drug resistance seems to be partially hidden from the general populace; this was established by the PPMVs who are the first line of healthcare that people patronize. They claim that customers usually request drugs even when there is no indication for it. This was further buttressed by some of the chairmen of the association during the key informal interview sessions conducted with them.

Finding in Table 4, shows that **more** than two-thirds of respondents had a moderately frequent request from patient for specific drugs like antibiotics, this is very common in Nigeria and is driven by patient self-diagnosis, financial constraints preventing formal clinic visits, and prior experience where a certain drug (e.g., amoxicillin) worked for similar symptoms. Patients often bypass a consultation to save money and time, directly requesting what they believe they need. Studies (Adamu et al., 2020) and Abubakar et al., 2020¹⁶) have found that patient demands are a key deciding factor for pharmacists and PPMVs in dispensing antibiotics without prescriptions.

Also, (Adamu et al., 2020) stated that the Irrational use of drugs is aided by access from non-prescription sales. Although access to antibiotics without prescription is a global problem, it is estimated to be worse in low- and middle-income countries. On sales of Antibiotics without a medical prescription, our study shows that most PPMVs do not sell Antibiotics without a medical prescription (Table 4). This finding suggests that while patients *request* antibiotics frequently, the majority of PPMVs may restrict the actual act of *initiating* antibiotic treatment without a prior diagnosis or clear indication, which is a positive adherence to their scope of practice. Their role is legally meant to be *dispensing* non-prescription medications, not *prescribing* (diagnosing and initiating treatment). This suggests a degree of professional self-regulation or adherence to an internal code of practice, despite the lack of a formal medical background

The findings in (table 5) indicate that while PPMVs dispense a wide range of common medications, antibiotics constitute a very small percentage of their *prescriptions* compared to non-prescription items like painkillers, anti-malaria, and multivitamins. It highlights the specific local disease burden in Nigeria (malaria and diarrheal diseases are common). PPMVs serve as the first point of contact for managing these endemic conditions. The high proportion of anti-malarials aligns with government efforts to use PPMVs for the distribution of essential malaria treatments, as referenced in several public health reports ([Malaria Consortium, 2022](#))¹⁸. The findings also align with the previous statistic in table 4, that 75.3% of respondents rarely "prescribe" antibiotics. It strongly suggests that most vendors understand that antibiotics require a formal diagnosis by qualified medical personnel and remain largely outside their prescribing scope. The report of the Key informant interview also buttressed the common conditions people seek care for at the PPMV shop. "The common conditions people complain about include common cold, pains, stomach disturbances, malaria, worm infestation, boil, wound and minor accidents, etc." (Chairman A, NAPPMED)".

However, it is not surprising that Antibiotics prescription is not very common, this may be attributed to high level of knowledge and different sources information on drug prescription reported in (table 2), in addition, there is absence of antibiotics on the list of approved drugs to be sold by the PPMVs in Nigeria, even though the majority of PPMVS do sell antibiotics. According to (Adda, et al., 2023)¹⁹. Antibiotics for common colds, catarrh, influenza, coughs, and sore throats were also reportedly prescribed by the majority of PPMVs.

Additionally, PPMVs believed that adding antibiotics to the therapy for malaria accelerated patients' recovery. These views were expressed in KII conducted and is similar to findings from other studies (Adda, et al, 2023), (Abubakar et al., 2020). The findings indicate that the majority of PPMVs sell antibiotics without a prescription and that they always sell half or a card's worth of antibiotics in response to requests from customers or patients.

In this study, about 88% of the PPMVs claim to follow National and International guidelines when prescribing drugs. This is contrary to Naomi et al., 2015 who stated that the majority of PPMVs sell non-recommended drugs and only about half recommend proper treatment for malaria and other health conditions. Additionally, in 2020, Adamu AA, Gadanya MA, Jalo RI, Uthman OA, and Wiysonge CS discovered that PPMV who stated they had never been trained on antibiotic use and resistance were more likely to sell antibiotics without a prescription than those who stated they had.

The factor that the majority of the PPMVs claim to influence their Antibiotics prescription and sales is patient demand. This is however in line with According to Adamu AA, et al., 2020, PPMV stocks and sells medications with positive polarity because of the high demand for antibiotics from people in communities and the profit from sales. This highlights the fact that PPMV is driven to stock and sell antibiotics due to both community demand for the drugs and sales revenue.

PPMV often sell prescription-only medicines (POMs) over-the-counter (OTC), which is unlawful in many countries, including Nigeria. This lack of regulation allows for the widespread misuse of antimicrobial drugs, leading to the development of resistance. PPMVs often lack proper training and knowledge about the appropriate use of antimicrobial drugs, which can lead to incorrect

diagnosis and treatment, further contributing to resistance. PPMVs often stock and dispense a wide variety of medicines, including antimicrobial drugs, without adhering to recommended guidelines. This can result in the overuse and misuse of these drugs, promoting resistance.

The finding that patient demand is the most common reason (31% of respondents) influencing PPMVs' decisions to prescribe or dispense drugs highlights significant public health and regulatory implications. This finding reinforces the notion that even when vendors may have some knowledge of appropriate practices, commercial interests and the desire to satisfy customer expectations often override professional guidelines. The business motive supersedes clinical judgment. Patient-driven requests are based on self-diagnosis, which is often inaccurate. When PPMVs yield to these demands, it significantly increases the likelihood of patients receiving the wrong medication, the incorrect dosage, or an unnecessary antibiotic, leading to poor health outcomes and contributing to antimicrobial resistance (AMR). The findings undermine formal healthcare system referrals by the ease with which patients can bypass formal diagnosis by visiting a PPMV for immediate symptom relief reinforces this behavior. This perpetuates a cycle where the formal health system is avoided, delaying proper treatment for serious conditions

The finding that the lack of access to diagnostic tools was reported by 27% of respondents as a reason for prescribing/dispensing drugs has critical implications for public health, particularly in the context of antimicrobial resistance (AMR). This is arguably a more serious issue than patient demand. Without a definitive diagnosis (e.g., distinguishing between a viral and bacterial infection, or the specific pathogen causing a UTI), the "prescription" of antimicrobial drugs becomes a blind guess. This leads directly to the misuse and overuse of antibiotics, as broad-spectrum drugs are often used as a precautionary measure, which is a primary driver of global AMR. Many studies (Beyeler et al., 2015) and (Rosapep et al., 2022)²⁰ support the context that a lack of diagnostics contributes to poor practices:

Insufficient training on drug use was cited by 29% of respondents as the reasons for prescribing/dispensing drugs, it shows that most PPMVs gain their knowledge through informal apprenticeships rather than accredited medical or pharmaceutical training. The National Association of Patent and Proprietary Medicine Dealers (NAPPMED) provides some training, but it often lacks depth and standardization. This finding directly points to a systemic failure in equipping vendors with the necessary clinical judgment to handle complex decisions like antimicrobial use. The result is a high degree of uncertainty, leading to potentially incorrect prescribing almost a third of the time.

Financial gain is often perceived as a major driver of non-prescription sales, the PPMVs themselves perceive their lack of *knowledge* as a far more significant issue (29%) than conscious profit-seeking behavior (4%). This means the problem is primarily educational and structural, rather than purely intentional non-compliance.

The chi-square analysis of the association between drug prescription patterns and education level of PPMVs. indicated that there was no significant association between drug prescription patterns and the education level of PPMVs. ($\chi^2 = 5.369$, p-value = 0.497). It suggests that regardless of whether a PPMV has a secondary or tertiary education, their approach to prescribing (or mis-

prescribe) drugs remains similar. This implies that general formal education does not necessarily translate into better clinical or pharmaceutical judgment. Because higher general education does not improve prescribing patterns, interventions should focus on specific, mandatory pharmaceutical training and antimicrobial stewardship rather than relying on the vendor's academic background. The finding of this study is aligned with Abubakar & Tangiisuran (2020), findings with implication that the *content* of education matters more than the *level*. Similarly, a comprehensive systematic review by Beyeler, Liu, & Walker (2015), emphasizes that the business nature of the PPMV sector and limited formal training override general education levels.

The Chi-square analysis of association was used to assess the association between knowledge and education level of PPMVs. It revealed that the educational level had a significant association with frequency of dosage administration ($\chi^2 = 9.252$, p -value = .026), no significant association with the consultation of healthcare professional ($\chi^2 = 2.332$, p -value = .506), prescription based on age ($\chi^2 = 5.608$, p -value = 0.132), and the use of standard dosage ($\chi^2 = 3.627$, p -value = .727). The p -value of 0.026 for "frequency of dosage administration" (e.g., once daily, twice daily) is below the 0.05 significance threshold, implies that PPMVs with higher general education levels are statistically more likely to correctly understand and advise on the timing and frequency of medication doses. Basic numerical literacy and the ability to interpret standardized pharmaceutical labeling are likely enhanced by a higher education level.

However, there is no statistically significant association between general education level and consultation of healthcare professionals $p=0.506$ it implies education level does not make a vendor more likely to refer a patient or seek professional advice. This decision is likely driven by business constraints, accessibility, or regulatory pressure rather than academic background. Similar, general education level and prescription based on age $p=0.132$ implies that education level does not improve the vendor's ability to adjust dosages based on a patient's age (e.g., pediatric vs. adult dosing). Finally, general education level and use of standard dosage $p=0.727$ implies that general education level does not guarantee adherence to standardized dosage guidelines (e.g., mg/kg).

Conclusion

This study shows that there are high rates of irrational anti-microbial drugs prescription practices by the PPMVs within the study area. The major factors that influence the PPMVs' drug prescription, are patient demand and financial incentives leading PPMVs to prescribe or dispense medications outside of their legal scope. In addition, weak regulatory enforcement and lack of consistent dispensing among PPMVs contribute to the widespread practice of selling antibiotics prescription drugs, without proper authorization. This can result in the overuse and misuse of antibiotics drugs leading to promoting antimicrobial resistance. The study also revealed that the educational level had a significant association with frequency of dosage administration. It is recommended that there should be more capacity building along with regular and random inspections to ensure PPMVs comply with existing regulations on prescription practices to reduce antimicrobial resistance.

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References

- Abubakar, U., & Tangiisuran, B. (2020). Factors influencing non-prescription sales of antibiotics among patent and proprietary medicine vendors in Kano, Nigeria: A cross-sectional study. *Journal of Pharmaceutical Health Services Research*, 11(3), 265–274. doi.org
- Adamu, A. A., Gadanya, M. A., Jalo, R. I., Uthman, O. A., Nnaji, C. A., & Bello, I. W. (2020). Assessing readiness to implement routine immunization among patent and proprietary medicine vendors in Kano, Nigeria: A theory-informed cross-sectional study. *BMC Health Services Research*, 20(1), Article 282. doi.org
- Adda, D. K., John, O. T., Toge, B., Ochu, C., Okwor, T., Egwenu, A., Yahaya, R., Kahwir, O. F., Saleh, F., & Sikiru, B. (2023). Antimicrobial prescription habits among community pharmacists and patent and proprietary medicine vendors in Nigeria: A rational use of drugs survey. *International Journal of Research and Innovation in Applied Science*, 8(11), 95–112. doi.org
- Agha, S., Ruiz-Gaona, L. A., Friedman, J., Cheikh, N., & Gorgens, M. (2022). Factors associated with the adoption of a digital health service by patent proprietary medicine vendors (PPMV) in Lagos, Nigeria. *Digital Health*, 8. doi.org
- Akande-Sholabi, W., & Ajamu, A. T. (2021). Antimicrobial stewardship: Assessment of knowledge, awareness of antimicrobial resistance and appropriate antibiotic use among healthcare students in a Nigerian university. *BMC Medical Education*, 21(1), Article 488. doi.org
- Aminov, R. I. (2010). A brief history of the antibiotic era: Lessons learned and challenges for the future. *Frontiers in Microbiology*, 1, Article 134. doi.org
- Beyeler, N., Liu, J., & Sieverding, M. (2015). A systematic review of the role of proprietary and patent medicine vendors in healthcare provision in Nigeria. *PLOS ONE*, 10(1), Article e0117165. doi.org
- Dhingra, S., Rahman, N. A. A., Peile, E., Rahman, M., Sartelli, M., Hassali, M. A., Islam, T., Islam, S., & Haque, M. (2020). Microbial resistance movements: An overview of global public health threats posed by antimicrobial resistance, and how best to counter. *Frontiers in Public Health*, 8, Article 535668. doi.org
- Malaria Consortium. (2022, July 6). *Access to anti-malarials must be synchronised with access to diagnostic tests to avoid malaria medicine misuse in Nigeria*. malariaconsortium.org

- Mukherjee, K. (2024). View of antimicrobial resistance and its impact on public health. *International Journal of Medical Research & Review*, 12(3). medresearch.in
- Murray, C. J. L., Ikuta, K. S., Sharara, F., Swetschinski, L., Robles Aguilar, G., Gray, A., Han, C., Bisignano, C., Rao, P., Wool, E., Johnson, S. C., Browne, A. J., Chipeta, M. G., Fell, F., Hackett, S., Hamre, A. K. S., Kashef Hamadani, B. H., Kumaran, E. A. P., McManigal, S., ... Naghavi, M. (2022). Global burden of bacterial antimicrobial resistance in 2019: A systematic analysis. *The Lancet*, 399(10325), 629–655. doi.org
- National Population Commission (NPC) [Nigeria] and ICF. (2019). *Nigeria Demographic and Health Survey 2018*. NPC and ICF.
- Okeke, U., Rosapep, L. A., Adu, A., Mian, N., & Agha, S. (2024). [Title of article required]. *Reproductive Health*, 21(1), Article 163. doi.org
- Olaniyan, O., Nwaeze, R., Abimbola, O., Olawande, A., & Opeyemi, I. (2022). Awareness and adherence of proprietary patent medicine vendors to malaria rapid diagnostic test in Nigeria: A cross-sectional study. *Iconic Research and Engineering Journals*, 5(12), 192–199.
- Onwujekwe, O., Agwu, P., Orjiakor, C., Mbachu, C., Hutchinson, E., McKee, M., Goudge, J., Ibe, O., & Balabanova, D. (2020). The potential role of patent and proprietary medicine vendors' associations in improving the quality of services in Nigeria's drug shops. *BMC Health Services Research*, 20(1), Article 566. doi.org
- Oyetunde, O. O., & Nwauche, V. O. (2022). Process evaluation of an intervention to improve access to injectable contraceptives among patent medicine vendors in Nigeria. *BMC Public Health*, 22(1), Article 2110. doi.org
- Prach, L. M., Treleaven, E., Isiguzo, C., & Liu, J. (2015). Care-seeking at patent and proprietary medicine vendors in Nigeria. *BMC Health Services Research*, 15, Article 231. doi.org
- Rosapep, L. A., Adu, A., Mian, N., & Agha, S. (2022). Common childhood illnesses: A cross-sectional study of commodity knowledge and availability among patent and proprietary medicine vendors in Ebonyi and Kaduna States, Nigeria. *BMC Health Services Research*, 22(1), Article 384. doi.org
- Rosapep, L. A., et al. (2022). The role of job aids in supporting task sharing family planning services to community pharmacists and patent proprietary medicine vendors in Kaduna and Lagos, Nigeria. *BMC Health Services Research*, 22(1), Article 990. doi.org

Sahoo, S., Dudhgaonkar, S., & Uike, P. S. (2025). Evaluation of prescription patterns using World Health Organization prescribing indicators in outpatient department at a tertiary care hospital in Central India. *International Journal of Basic & Clinical Pharmacology*, 14(9). <https://dx.doi.org/10.18203/2319-2003.ijbcp20252892>

Wang, H., & Ji, M. (2024). Sample size calculation in clinical research. *Health Care Science*, 3(1), 14–25. doi.org

World Bank. (2005). *Nigeria: Private health sector assessment* (Report No. 34567). worldbank.org

World Health Organization. (2023, November 21). *Antimicrobial resistance*. <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>

World Health Organization. (2024). *Drugs*. who.int

Libraries as Catalysts to Combating Organised Crime and Corruption in Nigeria

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Abstract

Many records have showcased organised crime has become one of the main drivers of insecurity in Nigeria. This is not a good testimony about any country in the world. As observed from the literature, the role libraries play in the fight against orgnaised crime particularly in the Nigeria context has not been conceptually, theoretically or empirically documented. In light of this and given the bad name regarding organised crime and corruption prevailing in Nigeria, the situation calls for urgent attention. Therefore, this paper examined through a critical review of the literature the role of libraries in the fight against organised crime and corruption in Nigeria. To achieve this, the paper feature discussion on the concept of libraries, their roles in society and their importance in preserving knowledge and information; organized crime, corruption and their various forms and impact on Nigeria society; history of Nigeria, its current political and social climate, and the challenges it faces in combating organized crime and corruption; the role of libraries in the fight against organized crime and corruption; the future of libraries as catalysts for transparency and accountability; libraries challenges in the fight against organised crime and corruption in Nigeria and the way forward to fight against organised crime and corruption in Nigeria. Based on these discussions, the paper concluded and suggested relevant recommendations.

Keywords: *Organised crime, Corruption, Kidnapping, Insurgency, Bribery, Embezzlement, Role of Libraries, Nigeria*

Introduction

According to a report by the United Nations Office on Drugs and Crime (UNODC) (2022), organized crime in Nigeria has become both more sophisticated and violent. The report identifies several types of organized crime enterprises prevalent in the country, including cultism, maritime crime, trafficking in drugs, wildlife, and persons; migrant smuggling and more (UNODC, 2023). The report also highlights that organized crime has become one of the main drivers of insecurity in Nigeria (UNODC, 2023).

Nigeria's strategic location along global shipping routes between the Americas, Europe and Asia, large-scale transport infrastructure, and porous borders make it an attractive target for criminal organizations that use the country as a base and transit point for their operations. Youth unemployment and widespread multidimensional poverty provide a large pool of potential recruits for criminal organizations. Governance gaps combined with an abundance of natural resources often located in remote areas offer strong incentives for engaging in criminal activities.

Organised crime within and across borders constitutes a serious threat to national and global development and stability. Consequently, governments, organisations, scholars and citizens across the world have over the past three decades shown interest and concern about the growth and impact of organised crime in different parts of the world. Since the mid-1980s, the emergence and growth of drug trafficking, money laundering, trafficking in persons and arms as well as theft of mineral resources and piracy have increasingly attracted the interest and intervention of many countries and agencies (UNODC, 2023).

As Alemika (2022) observed in a mutually reinforcing pathway, organised crime weakens government by employing corruption to co-opt officials and to capture critical state agencies such as the electoral management bodies, parliament, armed forces, law enforcement services and the judiciary. This implies there is urgent attention needed to counteract this misdemeanour before getting out of hand since the thing is becoming rampant and increasing by the day. Unfortunately, as many organizations, agencies concerned citizens, groups and private individuals are making efforts to combat this issue of organised crime, there seems to be no direct research on the role of libraries in the fight against organized crime and corruption in Nigeria. Libraries can contribute to the fight against organized crime and corruption in several ways. Libraries can provide access to information, educate the public, and promote transparency and accountability. Libraries can also help to promote literacy and education, which can help to reduce poverty and inequality, two factors that are often associated with organized crime and corruption (UNODC, 2023). However, literature has not documented or provided an account of such role libraries can play in the fight against organised crime particularly in the Nigeria context. It is on this note that this paper through a critical review and synthesis of literature examines the role of libraries in the fight against organised crime and corruption in Nigeria.

To achieve that objective, the topic is broken down into the following sub-topics:

1. **Libraries:** This sub-topic will cover the definition of libraries, their role in society, and their importance in preserving knowledge and information.
2. **Organized Crime:** This sub-topic will cover the definition of organized crime, its impact on society, and the various forms it can take.
3. **Corruption:** This sub-topic can cover the definition of corruption, its impact on society, and the various forms it can take.
4. **Nigeria:** This sub-topic can cover the history of Nigeria, its current political and social climate, and the challenges it faces in combating organized crime and corruption.
5. **The Role of Libraries in the fight Against Organized Crime and Corruption:** This sub-topic covers the specific ways in which libraries can contribute to the fight against organized crime and corruption in Nigeria. This can include the role of libraries in providing access to information, educating the public, and promoting transparency and accountability.

Concept of Libraries, Roles in Society and Their Importance in Preserving Knowledge and Information

Libraries are often regarded as the quiet, unassuming pillars of society, yet their role is nothing short of transformative. In the tapestry of modern civilization, they are the custodians of knowledge, the keepers of stories, and the gateways to a world of information (Ashikuzaman, 2016). Libraries are not merely repositories of books; they are vibrant hubs of learning, innovation, and cultural enrichment.

The role of libraries in society is multifaceted and extends far beyond being repositories of books. They play a crucial role in empowering individuals through education, providing a space for self-learning, and disseminating reliable information. Libraries are the bedrock of modern society, serving as dynamic institutions that transcend traditional roles. They are essential in ensuring that everyone has equal opportunities and access to resources, which is essential for a harmonious and just future.

In contemporary society, libraries have become vibrant hubs of learning, innovation, and cultural enrichment. They are essential in addressing the evolving needs of modern society, such as education and lifelong learning, technology and innovation, sustainable practices, healthcare access, and social equity. Libraries are gateways to knowledge and culture, and the resources and services they offer create opportunities for learning, support literacy and education, and help shape new ideas and perspectives that are central to a creative and innovative society (Wipo Magazine, 2012).

As summarised by (Ashikuzzaman, 2016), libraries are indispensable institutions that serve as gateways to knowledge, culture, and community. They adapt to evolving needs and technologies, serving as catalysts for positive societal change. As we navigate an ever-complex world, libraries continue to be pillars of enlightenment and progress, enriching the lives of individuals and

strengthening the social fabric of our global community. Their role in modern society is vital; it's transformative, ensuring that knowledge remains accessible, culture thrives, and communities flourish in the 21st century and beyond. No doubt, libraries are the custodians of knowledge and play a vital role in shaping and enriching the fabric of society. They are essential in ensuring that everyone has equal opportunities and access to resources, which is essential for a harmonious and just future (Ashikuzzaman, 2016).

Organized Crime, Its Various Forms and Impact on Society

Organized crime is like a shadowy underworld, weaving its way through society, and leaving its mark in various forms. According to a report by the United Nations Office on Drugs and Crime (UNODC, 2023), organized crime in Nigeria has become both more sophisticated and violent. The report identifies several types of organized crime enterprises prevalent in the country, including cultism, maritime crime, trafficking in drugs, wildlife, and persons; migrant smuggling and more (Aghogho, 2023). The report also highlights that organized crime has become one of the main drivers of insecurity in Nigeria.

One classic example is the Mafia, with its structured hierarchy and codes of conduct. Then there are more modern iterations, like drug cartels or cybercrime syndicates (Wall, 2015). These groups operate with precision, often exploiting legal gaps and weaknesses. Their impact on society is like a ripple effect you feel it even if you're not directly in their crosshairs.

Firstly, there's the economic toll. Organized crime siphons off resources, whether through illegal trade, extortion, or other means (UNODC, 2023). It creates an underground economy that thrives on illicit activities, contributing to a cycle of poverty and instability.

On a more personal level, there's the human cost. Violence is a constant companion in the world of organized crime. Lives are lost, families are torn apart, and communities live in fear. According to the Department for International Development (2015), the power these groups amass allows them to corrupt institutions, making it harder for society to break free from their grip.

Nigeria, like many other countries, grapples with various forms of organized crime that have evolved over the years (Ellis, 2016). The Nigerian context is unique, shaped by a combination of historical, social, and economic factors. Here are some prominent forms of organized crime in Nigeria:

Advance Fee Fraud (419 Scams):

Nigeria gained notoriety for the "419 scams," named after the relevant section of the Nigerian Criminal Code (Glickman, 2005). These scams involve fraudulent schemes where individuals or

groups trick victims into paying upfront fees with the promise of receiving a much larger sum later. Email scams, fake lottery winnings, and romance scams fall under this category.

Oil Theft and Bunkering:

Nigeria is a major oil producer, and organized criminal groups engage in illegal oil bunkering, siphoning off crude oil from pipelines (Cartwright & Atampugre, 2020). This not only results in massive economic losses for the country but also environmental damage due to oil spills.

Kidnapping for Ransom:

Kidnapping has become a lucrative business for organized crime groups in Nigeria. Criminals target both locals and expatriates, demanding ransom payments for their release. This crime has had a significant impact on the security situation, especially in certain regions of the country.

Terrorist Activities:

Groups like Boko Haram, based in northeastern Nigeria, have been responsible for numerous terrorist activities. They engage in bombings, abductions, and attacks on both civilians and security forces. The impact of terrorism extends beyond the loss of life, affecting displacement, economic activities, and overall stability (NSACC, 2023; Yusuf & Mohd, 2022).

Human Trafficking:

Nigeria is a source, transit, and destination country for human trafficking. Organized crime groups exploit vulnerable individuals, often promising better economic opportunities abroad (Yusuf & Mohd, 2022).. Victims end up in forced labour, sexual exploitation, or other forms of modern slavery.

Cattle Rustling and Herdsmen-Farmer Conflicts:

Interconnected with the broader issue of security, cattle rustling and conflicts between herders and farmers have been on the rise (Olaniyan & Yahaya, 2016). Organized criminal groups take advantage of these tensions, exacerbating the situation and causing displacement and economic losses (Chukwuma, 2020; Igoli, Eneyo & Boma, 2023).

Corruption and Economic Crimes:

Corruption is a pervasive issue in Nigeria, and organized crime often intersects with corrupt practices. Embezzlement, bribery, and other economic crimes contribute to a culture of impunity and hinder socio-economic development (Kawu, & Abdullahi, 2023).

Addressing organized crime in Nigeria requires a comprehensive strategy that involves law enforcement, judicial reforms, community engagement, and efforts to tackle the root causes, such as poverty and lack of opportunities. International cooperation is also crucial to combat

transnational aspects of organized crime, especially in cases like cybercrime and human trafficking.

Then there's the impact on governance and the rule of law. Organized crime often infiltrates political structures, undermining the very systems meant to protect society. This erodes trust in institutions and can lead to a breakdown in the social fabric.

The digital age has brought new dimensions to organized crime, with cybercrime becoming increasingly sophisticated. From hacking and identity theft to online fraud, these activities can disrupt not just individual lives but entire economies.

Combating organized crime requires a multi-faceted approach. It involves strengthening legal frameworks, enhancing law enforcement capabilities, and addressing the root causes that allow these groups to flourish. Societal awareness and resilience also play a crucial role in breaking the cycle (United Nations, 2020). It's a complex issue, like a puzzle with many pieces, but solving it is essential for fostering a safer and more stable society.

Forms of Organised Corruption in Nigeria

As there is organised crime, there is also a manifold of corruption in Nigeria. Corruption is also a major issue in Nigeria. According to a report by Transparency International (2020), Nigeria ranks 149th out of 180 countries in the Corruption Perceptions Index. The organisation emphasised that corruption is pervasive in many areas of Nigerian society, including politics, business, and law enforcement. _Corruption has a significant impact on the country's economy and development, as it undermines public trust in government institutions and hinders foreign investment. Common forms of corruption in Nigeria include bribery, embezzlement, fraud, etc. These are discussed as follows:

Bribery: Bribery is a common form of corruption in Nigeria. According to the Independent Corrupt Practices and Other Related Offences Act 2000 (ICPC), bribery refers to the offering, giving, soliciting, or receiving of any item of value as a means of influencing the actions of an individual holding a public or legal duty (Legal500. 2023). The ICPC prohibits direct or indirect giving/offering and receipt of bribes or gratification to influence official acts related to official duties. The receipt, as well as the giving of a bribe, is an offence under relevant Nigerian legislation. Bribery is pervasive in many areas of Nigerian society, including politics, business, and law enforcement. It is often used as a means of gaining access to public services, such as healthcare and education, or to influence the outcome of legal proceedings (Ezeifekwauaba, 2019). Bribery can also be used to secure contracts or gain preferential treatment in business dealings (Legal500, 2023). The fight against bribery and corruption in Nigeria has been ongoing for many years. The country has enacted several laws and established various anti-corruption agencies to combat the problem (Legal500, (2023). However, corruption remains a significant challenge in Nigeria, and more needs to be done to address the issue.

Embezzlement: Embezzlement is a common form of corruption in Nigeria. According to the Independent Corrupt Practices and Other Related Offences Act 2000 (ICPC), embezzlement refers to the fraudulent conversion of property or money by a person to whom it has been entrusted (Ovuorie, 2022). Embezzlement can occur in both the public and private sectors, and it often involves the misappropriation of funds that are intended for public use. Embezzlement is a serious problem in Nigeria, and it has a significant impact on the country's economy and development (Edeh & Nwakamma, 2017). The misappropriation of public funds can lead to a lack of investment in critical infrastructure and services, such as healthcare and education, which can have long-term consequences for the country's development. Embezzlement can also undermine public trust in government institutions and hinder foreign investment. The fight against embezzlement and corruption in Nigeria has been ongoing for many years. The country has enacted several laws and established various anti-corruption agencies to combat the problem. However, corruption remains a significant challenge in Nigeria, and more needs to be done to address the issue.

Fraud: Fraud is another common form of corruption in Nigeria. According to the Independent Corrupt Practices and Other Related Offences Act 2000 (ICPC), fraud refers to the intentional deception or misrepresentation of facts by a person for personal gain or to cause loss to another person van (Duyne & Harvey, 2021). Fraud can occur in both the public and private sectors, and it often involves the misappropriation of funds that are intended for public use (World Bank, 2019). Fraud is a serious problem in Nigeria, and it has a significant impact on the country's economy and development. The misappropriation of public funds can lead to a lack of investment in critical infrastructure and services, such as healthcare and education, which can have long-term consequences for the country's development. Fraud can also undermine public trust in government institutions and hinder foreign investment.

According to a report by the Council on Foreign Relations, fraud is pervasive in many areas of Nigerian society, including politics, business, and law enforcement (Duyne & Harvey, 2021). The report highlights that corruption is endemic within government and that business arrangements and family loyalties dominate governmental appointments, paving the way for politicians, officials, and their business associates, who together make up the ruling elite to ensure that they all become wealthy through behind-the-scenes agreements and the awarding of profitable contracts to favoured supporters (Duyne & Harvey, 2021).

The fight against fraud and corruption in Nigeria has been ongoing for many years. The country has enacted several laws and established various anti-corruption agencies to combat the problem. However, corruption remains a significant challenge in Nigeria, and more needs to be done to address the issue.

History of Nigeria, its current political and social climate, and the challenges it faces in combating organized crime and corruption

Pre-Colonial Period: Nigeria has a rich history dating back to ancient civilizations, with diverse ethnic groups and kingdoms. The Benin Empire, the Kanem-Bornu Empire, and the Oyo Empire are examples of pre-colonial states that thrived in the region.

Colonial Era: Nigeria was colonized by the British in the late 19th century. The amalgamation of Northern and Southern Nigeria in 1914 created the entity now known as Nigeria. The colonial period had a profound impact on the country's socio-political structure and set the stage for future challenges.

Independence: Nigeria gained independence in 1960, with a parliamentary system of government. However, political instability and ethnic tensions characterized the early post-independence years.

Civil War: The Nigerian Civil War (1967-1970), also known as the Biafran War, resulted from ethnic and political tensions, particularly between the Igbo-dominated southeastern region and the federal government. The war had a lasting impact on the nation's psyche.

Military Rule: Nigeria experienced a series of military coups, leading to decades of military rule. The country alternated between civilian and military governments until the return to civilian rule in 1999.

Current Political and Social Climate

Democratic Governance: Nigeria is currently a federal republic with a presidential system of government. Since 1999, the country has seen a series of democratic transitions, with periodic elections at the federal and state levels.

Ethnic and Religious Diversity: Nigeria is ethnically and religiously diverse, with over 250 ethnic groups and a significant divide between the predominantly Muslim north and the largely Christian south. This diversity, while culturally rich, has also been a source of political and social tension.

Economic Challenges: Despite being a major oil producer, Nigeria faces economic challenges, including high unemployment rates, poverty, and inadequate infrastructure. Economic disparities contribute to social unrest and can be exploited by organized crime groups.

Challenges in Combating Organized Crime and Corruption

Nigeria is facing with some challenges in her struggle to fight against organised crime and corruption. Some of the challenges Nigeria is grappling with are discussed in this section.

Corruption: Nigeria has long struggled with corruption, affecting both public and private sectors. Corruption hampers economic development, undermines public trust in institutions, and creates an environment conducive to organized crime.

Boko Haram Insurgency: The Boko Haram insurgency in the northeastern part of the country poses a significant challenge to national security. The group has engaged in terrorism, kidnappings, and attacks, contributing to the overall climate of insecurity.

Kidnappings and Extortion: Organized crime groups, including kidnappers and extortionists, operate in various regions, posing a threat to both citizens and businesses. Kidnappings for ransom have become a lucrative criminal enterprise.

Economic Crimes: Cybercrime, fraud, and other economic crimes are on the rise, reflecting the adaptation of criminal enterprises to the digital age. These activities contribute to financial losses and undermine the integrity of financial systems.

Weak Judicial System: The effectiveness of the judicial system in prosecuting and convicting individuals involved in organized crime and corruption has been limited. Delays, inefficiencies, and lack of resources pose challenges to the rule of law.

Youth Unemployment: High levels of youth unemployment contribute to social unrest and make young people susceptible to recruitment by organized crime groups. Addressing unemployment is crucial for long-term stability and crime prevention.

Inadequate Policing: Challenges within the law enforcement sector, including corruption, lack of resources, and inadequate training, impede the ability to effectively combat organized crime. Strengthening the capacity and integrity of law enforcement agencies is essential.

In addressing these challenges, Nigeria needs comprehensive strategies that involve legal reforms, institutional strengthening, community engagement, and international collaboration. Tackling corruption, improving governance, and addressing socio-economic disparities are crucial for building a resilient and secure nation.

The Role of Libraries in the Fight Against Organized Crime and Corruption

Libraries can play a significant role in the fight against crimes and corruption in Nigeria. According to a paper published by the Research and Scientific Innovation Society, libraries can promote transparency and combat corruption in Nigeria by providing access to information, educating the public, and promoting accountability (Ukubeyinje & Eda, 2019). Libraries can also help to promote literacy and education, which can help to reduce poverty and inequality, two factors that are often associated with crime and corruption.

In addition, libraries can serve as safe spaces for community members to come together and discuss issues related to crime and corruption, and to develop strategies for addressing these issues (Wexelbaum, 2016). Libraries can also provide training and support for whistleblowers, which can help to encourage citizens to report corrupt practices without fear of retaliation (Okafor, 2020). Overall, libraries can play an important role in promoting transparency, accountability, and civic engagement, which are all critical components of any effective anti-corruption strategy (Ukubeyinje & Eda, 2018; Ivanyna & Salerno, 2021). This next section detailed the specific ways in which libraries can contribute to the fight against organized crime and corruption in Nigeria. This includes the role of libraries in providing access to information, educating the public, and promoting transparency and accountability.

Role of libraries in providing access to information

Libraries play a pivotal role in providing access to information, serving as hubs for knowledge dissemination, education, and community engagement. The detailed explorations of their crucial roles are discussed in the following section.

Knowledge Repository: Libraries serve as repositories of a vast array of information resources, including books, journals, periodicals, and multimedia materials (Ashikuzaman, 2016). This diverse collection caters to the informational needs of a wide audience, from students and researchers to the general public.

Equal Access to Information: Libraries contribute to democratizing access to information by providing resources and services free of charge or at nominal costs (Chukwueke, 2020). This ensures that individuals from diverse socio-economic backgrounds have the same opportunities to acquire knowledge, fostering a more informed and equitable society.

Educational Support: Libraries are integral to education, offering a wide range of academic resources to students and educators (Rodrigues & Mandrekar, 2020). From textbooks and reference materials to online databases, libraries support formal education by providing the tools necessary for research and learning.

Digital Access: In the digital age, libraries have evolved to provide access to electronic resources, online databases, and e-books. This adaptation ensures that patrons can access information remotely, expanding the reach of libraries beyond their physical spaces (Tella & Ogbonna, 2023).

Community Hub: Libraries serve as community hubs, hosting events, workshops, and lectures that promote cultural enrichment, literacy, and lifelong learning (American Library Association ALA, 2023). These activities contribute to the social fabric of communities, fostering a sense of connection and shared knowledge.

Information Literacy: Librarians play a crucial role in promoting information literacy. They guide patrons in navigating information sources, evaluating the credibility of information, and honing research skills. This empowers individuals to be critical thinkers and discerning consumers of information (ALA, 2023).

Preservation of Cultural Heritage: Libraries undertake the preservation of cultural heritage by housing rare manuscripts, historical documents, and archives (Ewelem et al., 2011). This ensures that future generations have access to the collective knowledge and cultural artifacts of the past.

Inclusive Spaces: Libraries are inclusive spaces that welcome people from all walks of life. They provide a quiet environment for study and research, as well as spaces for collaborative learning and community gatherings. This inclusivity contributes to the development of a diverse and interconnected society.

Technology Access: Many libraries offer access to computers, internet connectivity, and other technological resources. This is particularly crucial for individuals who may not have access to such resources at home, narrowing the digital divide and promoting digital literacy.

Adaptation to Changing Needs: Libraries continuously adapt to changing information landscapes. They embrace new technologies, facilitate online learning, and engage in community-driven initiatives to stay relevant and responsive to the evolving needs of their patrons.

As observed from the foregoing, libraries are dynamic institutions that go beyond being book repositories. They are vital components of education, community development, and the dissemination of information, playing an essential role in shaping informed, empowered, and connected societies.

Role of Libraries in educating the public

Libraries play a crucial role in educating the public by serving as dynamic learning hubs that go beyond traditional book repositories. Explanations on the exploration of their multifaceted role in education are hereby discussed in detail in this section.

Access to Educational Resources: Libraries provide access to a wide range of educational resources, including textbooks, reference materials, journals, and multimedia resources. This vast collection supports formal education by offering materials necessary for research and study.

Support for Academic Institutions: Libraries are indispensable partners for academic institutions, offering students and educators a wealth of resources to complement classroom learning. They provide supplementary materials, research assistance, and a quiet environment conducive to studying.

Promotion of Lifelong Learning: Libraries promote the concept of lifelong learning by offering resources and programs that cater to individuals at every stage of life. Whether it's learning a new skill, exploring a hobby, or pursuing further education, libraries support continuous intellectual development.

Information Literacy Programs: Librarians conduct information literacy programs to teach patrons how to navigate the vast sea of information. These programs focus on critical thinking, research skills, and the ability to evaluate the credibility of information essential skills in today's information-rich environment.

Digital Literacy Initiatives: In the digital age, libraries contribute to digital literacy by providing access to computers, the internet, and technology training programs. They empower individuals to navigate online resources, use digital tools, and stay current with technological advancements.

Community Workshops and Events: Libraries host a variety of workshops, seminars, and events that cover diverse educational topics. These community-driven initiatives foster a culture of learning, bringing people together to explore new ideas, share knowledge, and engage in intellectual discussions.

Early Childhood Education: Many libraries offer early childhood education programs, including story hours, interactive sessions, and literacy initiatives for young children. These programs contribute to early literacy development and lay the foundation for a love of learning.

Language and Literacy Programs: Libraries actively support language and literacy development in their communities. They may offer language classes, literacy tutoring, and reading programs to enhance communication skills and promote a culture of reading.

Cultural Enrichment: Libraries contribute to cultural education by hosting events that showcase art, literature, music, and other forms of creative expression. These cultural activities broaden individuals' perspectives and contribute to a well-rounded education.

Job and Career Development Services: Many libraries offer resources and services to support job seekers and individuals looking to enhance their career skills. This may include resume workshops, job search assistance, and access to online career development resources.

Inclusive Learning Spaces: Libraries provide inclusive spaces that welcome individuals from diverse backgrounds and abilities. They create an environment where everyone, regardless of age, socio-economic status, or educational background, feels comfortable engaging in educational activities.

In essence, libraries are dynamic educational institutions that adapt to the evolving needs of their communities. By offering a rich array of resources, programs, and services, libraries contribute significantly to the education and intellectual development of the public, fostering a culture of continuous learning and knowledge sharing.

Role of Libraries in promoting transparency and accountability

Libraries play a vital role in promoting transparency and accountability within society by serving as information hubs, fostering access to knowledge, and supporting an informed citizenry. Here's a detailed exploration of their role in promoting transparency and accountability:

Access to Government Information: Libraries provide access to government publications, documents, and information. This includes legislative records, reports, and other materials that empower citizens to stay informed about government activities, policies, and decisions.

Open Data Initiatives: Many libraries actively participate in open data initiatives, making government data more accessible to the public. By providing platforms for hosting and disseminating open data, libraries contribute to transparency and enable citizens to analyze, understand, and scrutinize government actions.

Freedom of Information Support: Libraries often serve as advocates for freedom of information. They support individuals in exercising their right to access public information, guiding them on how to navigate freedom of information laws and request relevant documents from government agencies.

Civic Education Programs: Libraries conduct civic education programs that focus on informing the public about their rights, responsibilities, and the functioning of democratic institutions. These programs enhance citizens' understanding of how government works, encouraging active civic engagement.

Media Literacy Initiatives: Libraries play a role in promoting media literacy, helping individuals critically assess information sources and distinguish between reliable and unreliable sources. This literacy is crucial for citizens to make informed judgments about government actions and policies.

Community Forums and Discussions: Libraries often serve as neutral and inclusive spaces for community forums and discussions. These gatherings provide opportunities for citizens to engage

in open dialogues about issues affecting their communities, fostering a culture of transparency and accountability.

Archiving and Preservation: Libraries contribute to the preservation of historical records and documents, ensuring that information about past government actions is accessible to future generations. This archival function promotes transparency by allowing citizens to understand the historical context of decisions and policies.

Whistleblower Protection Resources: Libraries may provide resources and information about whistleblower protection laws and mechanisms (Chalouat et al., 2019). This supports individuals who wish to expose corruption or wrongdoing within government institutions by ensuring they are aware of their rights and protections.

Collaboration with Oversight Bodies: Libraries can collaborate with government oversight bodies, such as ombudsman offices or anti-corruption commissions, by providing them with resources, research support, and information services (OECD, 2023). This collaboration strengthens the capacity of these bodies to fulfil their accountability roles.

Promotion of Ethical Leadership: Libraries can host events and discussions that promote ethical leadership and governance (Dunmade & Tella, 2023). By showcasing examples of transparent and accountable leadership, libraries contribute to building a culture that values integrity and responsible decision-making.

Digital Access and Information Security: In the digital age, libraries play a role in promoting digital access to information while also advocating for information security and privacy. This includes educating the public about cybersecurity, data protection, and the responsible use of technology to prevent abuses of power (Dunmade & Tella, 2023).

It should be noted that libraries act as catalysts for transparency and accountability by providing access to information, fostering civic education, and creating spaces for open dialogue. Their commitment to preserving and disseminating knowledge empowers citizens to actively participate in democratic processes and hold institutions accountable for their actions.

Details Ways of Combating Crimes in Nigeria

Corruption is a significant challenge in Nigeria, and there are several ways to combat it. Explanations of some of the ways to combat corruption in Nigeria are provided in the following section.

1. **Vigilantism:** Vigilantism is a community policing group that protects the public through the law enforcement style of policing. It can be a non-violent and regulated way to combat crime (The Conversation, 2022).
2. **Social media policing:** Social media can be used for early warning, threat assessment of mobs, riots, and protests staging locations; mapping, prediction, and profiling of crimes; and fostering collaborative efforts with citizens in policing the society (The Conversation, 2022).
3. **Traditional beliefs and systems:** Traditional beliefs and systems can be used to fight crime in parts of Nigeria. For example, there are four traditional crime and conflict management structures. The first is the traditional spiritualist called elegboogi (medicine men and women) and babalawo (diviners) whose task is to protect people from being victims of crime. They also assist in demystifying puzzles surrounding theft (The Conversation, 2022).
4. **Citizen reporting:** Nigeria needs to provide platforms for citizens to make complaints and report suspected cases of economic and financial crimes. With the advancement of technology, we can create new methods of citizen reporting. An example is the Eagle Eye; the EFCC's mobile app for reporting crimes (Akindele, 2021).
5. **Partnerships:** The anti-crime agencies need to forge partnerships with intelligence agencies, law enforcement agencies, civil society organizations, and other organizations with similar mandates. Nigeria needs to work with other countries to combat transnational crimes (Akindele, 2021).
6. **Strengthening the rule of law:** Strengthening the rule of law can help to reduce impunity and ensure that corrupt officials are held accountable for their actions. This can be achieved by advancing the timely, effective, and transparent dispensation of criminal justice, strengthening access to justice for women, children, and persons with disabilities at federal and state levels, and building the capacity of anti-corruption agencies (British Council, 2017).
7. **Public engagement:** Public engagement can be an effective way to curb corruption in Nigeria. By tracking government-budgeted projects, citizens can ensure service delivery and reduce corruption. To be effective, there must be transparency, community engagement, political party neutrality, and offline and online participation. This should include the use of information and communications technology and social media (The Conversation, 2019).
8. **Technology:** Technology can be used to combat corruption in Nigeria. Experts have advised on the use of technology to reduce corruption. Adopting and harnessing technology would reduce the incidence of corruption in Nigeria (British Council, 2017).
9. **Partnerships:** The anti-corruption agencies need to forge partnerships with intelligence agencies, law enforcement agencies, civil society organizations, and other organizations with similar mandates. Nigeria needs to work with other countries to combat transnational crimes (British Council, 2017).

It's important to note that the fight against corruption in Nigeria has been ongoing for many years. The country has enacted several laws and established various anti-corruption agencies to combat

the problem (British Council, 2017). However, corruption remains a significant challenge in Nigeria, and more needs to be done to address the issue.

Ways of Fighting Corruptions in Nigeria

Corruption is a significant challenge in Nigeria, and there are several ways to combat it. Here are some of them:

1. **Strengthening the rule of law:** Strengthening the rule of law can help to reduce impunity and ensure that corrupt officials are held accountable for their actions. This can be achieved by advancing the timely, effective, and transparent dispensation of criminal justice, strengthening access to justice for women, children, and persons with disabilities at federal and state levels, and building the capacity of anti-corruption agencies (Lawal, 2021).
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4. **Partnerships:** The anti-corruption agencies need to forge partnerships with intelligence agencies, law enforcement agencies, civil society organizations, and other organizations with similar mandates. Nigeria needs to work with other countries to combat transnational crimes (Lawal, 2021).
5. **Education:** Education can be an effective way to combat corruption in Nigeria. By promoting education and awareness about the negative effects of corruption, citizens can become more informed and better equipped to resist corrupt practices. Education can also help to promote transparency and accountability in government institutions.
6. **Whistleblower protection:** Whistleblower protection can be an effective way to combat corruption in Nigeria. By providing legal protection for whistleblowers, the government can encourage citizens to report corrupt practices without fear of retaliation. This can help to increase transparency and accountability in government institutions.
7. **International cooperation:** International cooperation can be an effective way to combat corruption in Nigeria. By working with other countries to combat transnational crimes, Nigeria can benefit from the expertise and resources of other nations. International cooperation can also help to promote transparency and accountability in government institutions.
8. **Asset recovery:** Asset recovery can be an effective way to combat corruption in Nigeria. By recovering stolen assets, the government can reduce the financial incentives for corrupt practices and promote transparency and accountability in government institutions.

It's important to note that the fight against corruption in Nigeria has been ongoing for many years. The country has enacted several laws and established various anti-corruption agencies to combat the problem. However, corruption remains a significant challenge in Nigeria, and more needs to be done to address the issue. It's important to note that the fight against corruption in Nigeria has been ongoing for many years. The country has enacted several laws and established various anti-corruption agencies to combat the problem (Lawal, 2021). However, corruption remains a significant challenge in Nigeria, and more needs to be done to address the issue.

Libraries Challenges in the Fight against Organised Crime and Corruption in Nigeria

Addressing organized crime and corruption through libraries in Nigeria is not without its challenges. Here are some key obstacles faced by libraries in the fight against organized crime and corruption:

Limited Resources: Many libraries in Nigeria operate with limited financial resources. This constraint hampers their ability to invest in modern technologies, security measures, and the expansion of relevant collections that could aid in the fight against organized crime and corruption.

Lack of Specialized Training: Librarians may lack specialized training in areas related to organized crime and corruption. A gap in knowledge and expertise can limit their capacity to curate resources, provide targeted information, and actively contribute to anti-corruption initiatives.

Security Concerns: Libraries may face security challenges, particularly in regions with high levels of organized crime. The safety of both library staff and patrons can be compromised, affecting the overall functioning of the library as a secure and accessible space.

Limited Access to Information: In some cases, access to relevant information may be restricted due to legal or bureaucratic barriers. Libraries may face challenges in obtaining and disseminating critical documents related to corruption cases or organized crime activities.

Digital Divide: The digital divide in Nigeria poses a challenge in leveraging technology for the fight against organized crime. Libraries may struggle to provide digital resources and services to users, limiting the reach and impact of their anti-corruption initiatives.

Fear of Retribution: Whistleblowing, a crucial aspect of fighting corruption, may be hindered by a fear of retribution. Librarians and library users may be hesitant to report suspicious activities or provide information on corruption due to concerns about personal safety.

Inadequate Legal Framework: The absence of a robust legal framework or the enforcement of existing laws may hinder libraries' ability to actively participate in the fight against corruption. Legal constraints may limit their role in advocating for transparency or providing information on corruption cases.

Lack of Civic Engagement: Libraries may face challenges in fostering civic engagement within communities. Lack of awareness or interest in anti-corruption initiatives may result in a passive response from the public, limiting the impact of library-led efforts.

Censorship and Government Interference: Libraries may encounter censorship or government interference that restricts their ability to disseminate information freely. This can impede efforts to raise awareness about corruption and organized crime, particularly if certain topics are considered sensitive.

Limited Collaboration: Collaboration between libraries and other stakeholders, such as law enforcement agencies, anti-corruption bodies, and civil society organizations, may be limited. Effective strategies often require a multi-agency approach, and the lack of collaboration can hinder the synergy needed for impactful interventions.

To overcome these challenges, it is crucial to address issues such as resource constraints, enhance the training of library professionals, improve access to information, and promote a culture of transparency and accountability within both library systems and the broader society. Additionally, advocating for legal reforms and fostering collaboration between libraries and other stakeholders can contribute to a more effective role for libraries in the fight against organized crime and corruption in Nigeria.

Conclusion

In conclusion, the fight against organized crime and corruption in Nigeria is a complex and ongoing challenge that demands a comprehensive and sustained effort from various stakeholders. To effectively address these issues, a multi-faceted approach is necessary, encompassing legal reforms, law enforcement capacity building, public awareness, and international cooperation. While progress has been made in some areas, the persistence of organized crime and corruption underscores the need for continued commitment at all levels of government. Political will, leadership integrity, and a robust legal framework are crucial components of any successful strategy. Additionally, empowering citizens through education, engaging communities, and protecting whistleblowers are essential elements in building a society that rejects corruption.

The fight against organized crime and corruption requires a long-term perspective, acknowledging that systemic changes and cultural shifts take time. By fostering a culture of transparency, accountability, and ethical behavior, Nigeria can move towards a future where the influence of criminal networks diminishes, and the trust of the public in institutions is restored. International collaboration, especially in the context of transnational organized crime, remains vital. Shared intelligence, joint operations, and cooperation with neighboring countries can enhance the effectiveness of efforts to dismantle criminal networks that operate across borders.

It should be noted that the fight against organized crime and corruption in Nigeria requires perseverance, collaboration, and a commitment to systemic change. It is a journey that involves continuous reforms, community engagement, and the cultivation of a society that values integrity and justice. While challenges persist, a concerted effort by all stakeholders can pave the way for a more transparent, accountable, and just Nigeria.

Libraries are integral to the fabric of a transparent and accountable society. Their multifaceted roles in providing access to information, promoting civic education, and fostering open dialogue contribute significantly to empowering citizens. By serving as guardians of knowledge, advocates for freedom of information, and hubs for community engagement, libraries play a crucial part in building a culture that values transparency, accountability, and informed civic participation.

In an era where information is a powerful tool for democracy, libraries stand as beacons of knowledge, ensuring that individuals have the resources and skills to navigate the complexities of government actions and policies.

Their commitment to preserving historical records and promoting media literacy reinforces the foundations of an informed citizenry capable of critically evaluating information and making sound judgments. As technology continues to reshape the information landscape, libraries adapt by embracing digital access initiatives, supporting open data movements, and advocating for information security. In doing so, they not only bridge the digital divide but also champion responsible and ethical use of technology to safeguard democratic principles.

In conclusion, libraries are not mere repositories of books; they are dynamic institutions that play a pivotal role in shaping societies that value transparency, accountability, and the active participation of citizens in the democratic process. Their enduring commitment to knowledge dissemination and community empowerment makes them indispensable allies in the ongoing pursuit of a just and well-informed society.

The Future of Libraries as Catalysts for Transparency and Accountability

For a future where libraries continue to thrive as catalysts for transparency, accountability, and knowledge, a few recommendations come to mind:

Enhance Digital Access and Literacy:

Invest in technology infrastructure to ensure widespread digital access. Additionally, prioritize programs that enhance digital literacy, empowering individuals to navigate online resources safely and responsibly.

Collaborate with Technology Partners:

Foster collaborations with technology companies and organizations to stay at the forefront of digital innovations. This includes leveraging advancements in data management, artificial intelligence, and information security to enhance library services.

Expand Open Data Initiatives: Encourage and actively participate in open data initiatives. Libraries can take a leading role in making government data accessible to the public, promoting transparency and enabling citizens to engage with information relevant to their communities.

Community Engagement and Inclusivity: Strengthen efforts to engage with diverse communities. Develop programs that cater to the specific needs of different demographic groups, ensuring that libraries remain inclusive spaces that serve everyone in the community.

Promote Media and Information Literacy: Expand initiatives that promote media and information literacy. Equip citizens with the skills to critically evaluate information sources, distinguish between credible and unreliable information, and navigate the complexities of the digital age.

Advocate for Freedom of Information: Actively advocate for freedom of information and support individuals in exercising their right to access public information. Libraries can play a pivotal role in educating the public about relevant laws and procedures for obtaining government documents.

Collaborate with Educational Institutions: Strengthen partnerships with educational institutions to provide comprehensive support for students and educators. By aligning library resources with academic curricula, libraries can enhance the educational experience and contribute to the development of informed citizens.

Continuous Professional Development for Librarians: Prioritize ongoing training and professional development for librarians. Equip them with the skills needed to navigate evolving information

landscapes, provide effective digital services, and engage with community members on issues of transparency and accountability.

Advocate for Library Funding: Advocate for sustained funding for libraries at local, regional, and national levels. Adequate financial support is crucial for libraries to maintain and expand their services, ensuring that they remain vibrant centres for community learning and engagement.

Adaptability and Innovation: Embrace adaptability and innovation as core principles. Libraries should be agile in responding to changing community needs, technological advancements, and societal shifts, ensuring their continued relevance in an ever-evolving information ecosystem.

By implementing these recommendations, libraries can position themselves as dynamic and indispensable contributors to the advancement of transparency, accountability, and education in society. The way forward involves a collaborative and forward-thinking approach that places libraries at the forefront of shaping informed, empowered, and inclusive communities.

The Way Forward to Fight Against Organised Crime and Corruption in Nigeria

Fighting organized crime and corruption in Nigeria requires a comprehensive and multi-pronged approach involving government institutions, civil society, and the general public. Here are some recommendations and a potential way forward:

Strengthen Law Enforcement: Enhance the capacity of law enforcement agencies through training, resources, and modern technology to effectively investigate and combat organized crime and corruption.

Legal Reforms: Advocate for and enact legal reforms that address gaps and weaknesses in the legal framework. This may include updating existing laws, closing loopholes, and ensuring that penalties are sufficient deterrents.

Independent Anti-Corruption Agencies: Ensure the independence and effectiveness of anti-corruption agencies. These agencies should have the autonomy to investigate and prosecute corruption cases without undue political interference.

Whistleblower Protection: Implement and strengthen whistleblower protection mechanisms to encourage individuals to come forward with information about organized crime and corruption without fear of reprisals.

Transparency in Public Procurement: Enhance transparency in public procurement processes to minimize opportunities for corruption. Implement systems that ensure accountability and fair competition in government contracts.

Public Awareness and Education: Conduct public awareness campaigns to educate citizens about the detrimental effects of organized crime and corruption. Promote a culture of intolerance towards corrupt practices through educational programs at various levels.

International Cooperation: Collaborate with international organizations and neighbouring countries to tackle transnational organized crime. Shared intelligence, joint investigations, and extradition agreements can strengthen efforts against criminal networks that operate across borders.

Asset Recovery and Forfeiture: Strengthen mechanisms for the recovery and forfeiture of assets obtained through illicit means. This includes both domestic and international efforts to seize and repatriate stolen funds and assets.

Community Engagement: Involve local communities in the fight against organized crime and corruption. Community policing initiatives and engagement programs can create a sense of ownership and responsibility among citizens.

Political Will and Leadership: Ensure strong political will and leadership commitment to combat organized crime and corruption. Leaders at all levels of government should set an example through their actions and create an environment where corruption is not tolerated.

Judicial Reforms: Implement reforms in the judicial system to expedite the adjudication of corruption cases. This includes establishing specialized courts and providing training for judges and legal professionals involved in anti-corruption efforts.

Technology and Data Analytics: Leverage technology and data analytics to enhance the efficiency of investigations and identify patterns of organized crime and corruption. This may include the use of digital platforms for reporting, data sharing, and analysis.

Civil Society Engagement: Encourage and support the active involvement of civil society organizations in monitoring and advocating for anti-corruption measures. Civil society can act as a watchdog, ensuring accountability and transparency.

Ethics and Integrity Training: Integrate ethics and integrity training into educational curricula and professional development programs. Fostering a culture of ethical behavior from an early age can contribute to long-term efforts against corruption.

Economic Reforms: Implement economic reforms that address underlying socio-economic issues contributing to organized crime. Creating opportunities for employment, reducing poverty, and promoting inclusive economic growth can diminish the appeal of criminal activities.

The way forward involves a sustained and collaborative effort, with a focus on prevention, enforcement, and systemic reforms. Success in combating organized crime and corruption requires a commitment from all sectors of society, coupled with effective policies and institutional measures.

References

- Aghogho, U. (2023). Nigeria ranks sixth in the world, and second in Africa for organized crime – Report. <https://nairametrics.com/2023/09/27/nigeria-ranks-sixth-in-the-world-second-in-africa-for-organized-crime-report/>
- Akindele A.O. (2021). Combating crime in Nigeria. The Guardian, 7 December, 2021. Retrieved from <https://guardian.ng/opinion/combating-crimes-in-nigeria/> (accessed 22 December 2023)
- American Library Association (2023). Social role of the library - Libraries matter. <http://www.ala.org/tools/research/librariesmatter/category/social-role-library> (Accessed December 23, 2023).
- Ashikuzzaman, M.D. (2016). Role of library in society. <https://www.lisedunetwork.com/role-library-society/>
- British Council (2017). Strengthening the rule of law, curbing corruption and reducing impunity in Nigeria. Retrieved <https://www.britishcouncil.org/partner/international-development/news-and-events/nov-2017/strengthening-rule-law-curbing-corruption-and-reducing-impunity-nigeria> (accessed 22 December 2023).
- Cartwright, R. & Atampugre, N. (2020). Organised oil crime in Nigeria The Delta paradox: organised criminals or community saviours? *Research Paper 21*, <https://enact-africa.s3.amazonaws.com/site/uploads/2020-11-26-organised-oil-crime-in-nigeria.pdf>
- Chalouat, I., Carrión-Crespo, C., & Licata, M. (2019). Law and practice on protecting whistle-blowers in the public and financial services sectors. WP328, https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_718048.pdf
- Chukwueke, C. (2020). Transposing Public Libraries for Effective Information Services Delivery and Rural Development: The Nigerian Focus. *Library Philosophy and Practice (e-journal)*. 4660. <https://digitalcommons.unl.edu/libphilprac/4660>.
- Chukwuma, K. (2020). Constructing the Herder–Farmer Conflict as (in) Security in Nigeria. *African Security*, 13(1), 1-23. Doi.10.1080/19392206.2020.1732703.
- Department for International Development (2015). Why corruption matters: understanding causes, effects and how to address them Evidence paper on corruption. <https://assets.publishing.service.gov.uk/media/5a7f86f2e5274a2e87db6625/corruption-evidence-paper-why-corruption-matters.pdf>

Dunmade, A.O. and Tella, A. (2023). Libraries and librarians' roles in ensuring cyberethical behaviour", *Library Hi Tech News*, 40 (7), 7-11. <https://doi.org/10.1108/LHTN-04-2023-0068>.

Edeh, J. N. &Nwakamma, M.C. (2017). Corruption In The Nigerian Local Government System: The Way Forward. *African Journal of Politics and Administrative Studies*, 10 (1), 99-114.

Ekwelem, V. O.; Okafor, V. N.; & Ukwoma, S. C. (2011). Preservation of Cultural Heritage: The Strategic Role of the Library and Information Science Professionals in South East Nigeria. *Library Philosophy and Practice (e-journal)*. 562.
<https://digitalcommons.unl.edu/libphilprac/562>.

Ellis, S. (2016). *This Present Darkness: A History of Nigerian Organised Crime*. A Project: The African Studies Centre Leiden is an interfaculty institute of Leiden University, The Netherlands.

Ezeifekwuaba, T.B. (2022). *Bribery and corruption in Africa: Nigeria as a case study*. *Social Science Research Network*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3391672

Glickman, H. (2005). The Nigerian "419" Advance Fee Scams: Prank or Peril?. *Canadian Journal of African Studies / Revue Canadienne des Études Africaines*, 39(3), 460-489.
Doi.10.2307/25067495.

Igoli, T., Eneyo, L.S. & Boma, W.E. (2023). Banditry, Herder-Farmers Conflicts and Implications on National Security in Nigeria. *University of Nigeria Journal of Political Economy*, 13(1), 227 -242.

Ivanyna, M., & Salerno, A. (2021). Governance for Inclusive Growth, *IMF Working Papers*, 2021(098), A001. Retrieved Dec 23, 2023,
from <https://doi.org/10.5089/9781513582467.001.A001>

Kawu, A.I., Abdullahi, S.A. (2023). Effect of economic and financial crime commission (efcc) on socio-economic development in Nigeria. *Lapai International Journal of Administration*, 21(1), 205-215.

Legal500 (2023). Nigeria: bribery and corruption.
<https://www.legal500.com/guides/chapter/nigeria-bribery-corruption/>

Lawal, A. (2021). Anti-corruption in Nigeria: Lessons and recommendations for future programming

Lessons from the Anti-Corruption in Nigeria (ACORN) project and recommendations for future programming. ITAD, <https://www.itad.com/article/anti-corruption-in-nigeria-lessons-and-recommendations-for-future-programming/>

[NSACC](https://nsacc.org.ng/security-challenges-in-nigeria-and-the-implications-for-business-activities-and-sustainable-development/) (2023). Security challenges in Nigeria and the implications.

<https://nsacc.org.ng/security-challenges-in-nigeria-and-the-implications-for-business-activities-and-sustainable-development/>

OECD Library (2023). Protecting and promoting the right to access information as a core component of civic space. <https://www.oecd-ilibrary.org/sites/cf2678b8-en/index.html?itemId=/content/component/cf2678b8-en>

Okafor, K. (2020). Public library services in Nigeria: Challenges and strategies. *Library and Information Science Digest*, 13, 116-125.

Olaniyan, A., & Yahaya, A. (2016). Cows, Bandits, and Violent Conflicts: Understanding Cattle Rustling in Northern Nigeria. *Africa Spectrum*, 51(3), 93–105.
<http://www.jstor.org/stable/44982211>

Ovuorie, T. (2022). Nigeria's hopeless fight against corruption. <https://www.dw.com/en/nigerias-hopeless-fight-against-corruption/a-61946896>

Rodrigues, C.M., & Mandrekar, B. (2020). Impact of academic library services on students success and performance. *Library Philosophy and Practice (e-journal)*. 4246.
<https://digitalcommons.unl.edu/libphilprac/4246>

Role of Libraries and Information Centres in Modern Society. (2017). Retrieved from <http://egyankosh.ac.in/handle/123456789/33044>

Tella, A. & Ogbonna, O.P. (2023). Telepresence robots in libraries: applications and challenges. *Library Hi Tech News*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/LHTN-03-2023-0035>.

The Conversation (2022). Vigilantism in Nigeria: a way to combat crime if it's non-violent and regulated. <https://theconversation.com/vigilantism-in-nigeria-a-way-to-combat-crime-if-its-non-violent-and-regulated-175676>

The Conversation (2019). Lessons from Nigeria on how public engagement can curb corruption. <https://theconversation.com/lessons-from-nigeria-on-how-public-engagement-can-curb-corruption-110626>

Transparency International (2020). Corruption perceptions index. <https://www.transparency.org/en/cpi/2020/index/nga>

Ukubeyinje, S. & Eda, R. (2018). The role of libraries in transparency and combating corruption in Nigeria. *International Journal of Research and Innovation in Social Science*, 3(4), 259-264.

United Nations (2020). UN Common Guidance on Helping Build Resilient Societies. United Nations Sustainable Development Group. <https://unsdg.un.org/sites/default/files/2021-09/UN-Resilience-Guidance-Final-Sept.pdf>

United Nations Office on Drugs and Crime (UNODC) (2023). ORGANIZED CRIME IN NIGERIA: A THREAT ASSESSMENT.

https://www.unodc.org/documents/nigeria/NOCTA_Web_Version_25.09.2023.pdf

United Nations Office on Drugs and Crime (UNODC) (2023). From cults to kidnapping: a deeper look into organised crime in Nigeria.

https://www.unodc.org/unodc/en/frontpage/2023/September/from-cults-to-kidnapping_-a-deeper-look-into-organized-crime-in-nigeria.html

United Nations Office on Drugs and Crime (UNODC, 2023). Module 10: Citizen participation in Anti-Corruption Efforts: The role of citizens in fighting corruption.

<https://www.unodc.org/e4j/en/anti-corruption/module-10/key-issues/the-role-of-citizens-in-fighting-corruption.html>

van Duyne, P.C, and Harvey, J.H. (2021). What can be learned from a review of cases? Grand corruption in Nigeria. <https://ace.globalintegrity.org/wp-content/uploads/2021/06/grand-corruption-in-nigeria-harvey-06-2021-1-1.pdf>

Wall, D. (2015). Dis-Organised Crime: Towards a Distributed Model of the Organization of Cybercrime. *SSRN Electronic Journal*, 10.2139/ssrn.2677113.

Wexelbaum, R. (2016). The Library as Safe Space. In book: *Advances in Library Administration and Organization: The Future of Library Space* (pp.37-78); Emerald Group Publishing Limited; Editors: Samantha Schmehl Hines, Kathryn Moore Crowe. Doi. 10.1108/S0732-067120160000036002.

WIPO Magazine (2012). Guaranteeing access to knowledge: The role of libraries.

https://www.wipo.int/wipo_magazine/en/2012/04/article_0004.html

World Bank (2019). Public sector internal audit: Focus on fraud.

https://cfr.worldbank.org/sites/default/files/2019-11/public_sector_internal_audit_fraud_pages.pdf

Yusuf, A, & Mohd, S. (2022). Growth and Fiscal Effects of Insecurity on the Nigerian Economy. *European Journal of Development Resources*, doi: 10.1057/s41287-022-00531-3. Epub ahead of print. PMID: 35464616; PMCID: PMC9016214.

Utilisation Patterns of Open Access Information Resources (OAIR) among Polytechnic Students in South-west Nigeria

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Abstract

The study investigated the utilisation patterns of Open Access Information Resources (OAIRs) among polytechnic students in South-West Nigeria. It examined the types of OAIRs accessed, the purposes of their utilisation, and the frequency of use. The study adopted descriptive survey research design with the population comprising ND and HND students across 47 polytechnics in South-West Nigeria. Questionnaire was used as the instrument for data collection for the study

and the study sampled 1,630 National Diploma (ND) and Higher National Diploma (HND) students across 47 polytechnic institutions using a multistage sampling technique. The data retrieved from the respondents were analysed using descriptive statistics, Pearson correlation, and multiple regression tests via SPSS. The findings reveal that students predominantly utilise databases, research articles, repositories, theses, and e-books, reflecting a preference for peer-reviewed and academically authoritative resources. OAIRs were primarily used for academic discussions, seminars and workshops, independent study, assignments, and research activities, indicating that these resources are embedded within formal academic workflows. In terms of frequency, research articles and e-books were accessed most regularly, whereas audio/video lectures and repositories were consulted less frequently. The study further highlights that usage patterns are influenced by factors such as digital literacy, awareness, accessibility, and institutional support. Based on these findings, the study recommend that Polytechnic libraries should intensify sensitisation programmes to increase students' awareness of diverse open access platforms, particularly repositories and multimedia resources that recorded lower usage frequency. Regular workshops on digital literacy and effective search strategies should be organised to improve students' competence in navigating open access databases, repositories, and scholarly platforms.

Keywords: Open Access, Information Resources, Open Access Information Resources, Polytechnic, Utilisation Patterns

Introduction

Academic libraries are essential in providing scholarly information resources that support teaching, learning, and research in higher institutions. In order to satisfy the various academic needs of patrons, these libraries have historically been in charge of gathering, organizing, conserving, and sharing information resources. However, in the contemporary academic setting, a paradigm shift has taken place from print-dominated collections to digital and open access information systems that allow unrestricted access to scholarly materials (Nwalor & Agbanu, 2025). Open access resources are developed, organised, and disseminated through a range of interoperable digital platforms that rely on open-source technologies. These include institutional repository software, open journal management systems, and metadata harvesting tools which collectively facilitate the creation, storage, visibility, and accessibility of scholarly outputs (Bala et al., 2018; Rao, 2012).

However, Pomfowaa and Ofori (2020) considered open access resources as scholarly literature made freely available on the public internet, permitting users to read, download, copy, distribute, print, search, link to the full texts, crawl them for indexing, convert them into data for software applications, or use them for other lawful purposes without financial, legal, or technical barriers, except those inherent in gaining internet access. Open Access (OA) information resources including open access journals, institutional repositories, open educational resources, and freely accessible scholarly databases have become increasingly important in promoting equitable access to academic knowledge. These resources enable users to obtain relevant scholarly materials without financial or legal barriers. Similarly, Odiachi and Obinyan (2020) emphasized that the

awareness of open access resources significantly influences their utilisation, noting that academic users increasingly rely on e-journals, e-books, subject gateways, and electronic databases for research and academic activities.

The growing dependence on open access resources has been linked to improved research engagement and productivity. Bem-Bura and Ianna (2024) found that the use of open access resources enhances scholarly output by providing librarians and academic users with unrestricted access to current literature necessary for research development. This suggests that open access resources play a critical role in supporting academic work by improving the availability of up-to-date information. Furthermore, digital resource utilisation studies indicate that students increasingly engage with electronic and open educational materials for academic purposes. Nwalor and Agbanu (2025) reported that digital resources such as e-books, e-journals, institutional databases, and open educational resources are widely accessible and utilised by students for learning and research activities. This reflects the growing relevance of open access information resources in modern academic environments.

In polytechnic institutions, particularly in South-West Nigeria, students require timely and accessible information to support their technically oriented academic programmes. Open access resources therefore serve as vital supplements to limited subscription-based resources available in institutional libraries. However, variations may exist in how students discover, access, and apply these resources. Differences in digital literacy levels, infrastructural availability, institutional support, and academic discipline may influence patterns such as frequency of consultation, preferred formats (e.g., journals versus repositories), reliance on search engines versus library portals, and the extent to which resources are used for assignments, research projects, or personal development. Understanding how polytechnic students interact with open access information resources is essential for evaluating their role in academic engagement. Examining utilisation patterns provides insights into students' information-seeking behaviour, frequency of use, preferred resource types, and the constraints influencing their access to scholarly materials.

Statement of the Problem

Open access information resources are intended to enhance access to scholarly materials and reduce dependence on costly subscription-based databases. Ideally, their availability should support academic learning, independent research, and knowledge development among students. However, the presence of these resources does not necessarily guarantee their effective utilisation. Odiachi and Obinyan (2020) noted that although awareness of open access resources may be relatively high among academic users, actual utilisation often varies depending on users' level of exposure and familiarity with available platforms. Similarly, Nwalor and Agbanu (2025) observed that while digital and open resources are widely accessible, their usage is influenced by factors such as digital literacy and infrastructural support.

In addition, Bem-Bura and Ianna (2024) highlighted that the impact of open access resources on research productivity depends largely on the extent to which users actively engage with them. This implies that availability alone is insufficient to ensure meaningful utilisation. Within polytechnic institutions, students are expected to utilise open access resources to support academic learning and

research activities. However, there is concern that these resources may not be fully utilised due to issues such as limited awareness, inadequate training, infrastructural challenges, and insufficient institutional promotion. If open access information resources remain underutilised, their potential to enhance academic performance and research capacity may not be realised. This creates a disconnect between resource provision and actual academic benefit. Therefore, there is a need to investigate the utilisation patterns of open access information resources among polytechnic students in South-West Nigeria.

Objectives of the study

The main objective of this study was to investigate Utilisation Patterns of Open Access Information Resources among Polytechnic Students in South-West Nigeria. The specific objectives were to:

- i. find out the types of Open Access Information Resources utilised by polytechnic students in South-west, Nigeria;
- ii. identify the purposes of Open Access Information Resources utilisation by polytechnic students in South-west, Nigeria;
- iii. ascertain the frequencies of Open Access Information Resources utilisation by polytechnic students in South-west, Nigeria;

Research questions

The study was guided by the following research questions:

- i. What are the types of Open Access Information Resources utilised by polytechnic students in South-west, Nigeria?
- ii. What are the purposes of Open Access Information Resources utilisation by polytechnic students in South-west, Nigeria?
- iii. What are the frequencies of Open Access Information Resources utilisation by polytechnic students in South-west, Nigeria?

Literature Review

Types of Open Access Information Resources utilised

Studies indicate that students engage with a variety of open access Information resources to support their learning activities. Zaid and Alabi (2021) reported that when undergraduate students were asked to identify the types of OERs they used, the most commonly mentioned resources included lecture notes (23.7%), scholarly journals (17.3%), and textbooks (12.2%). Additionally, courseware from other universities was accessed by 10.8% of respondents, while only a small proportion (6.5%) utilised other forms of OER such as podcasts, videos, audio, or images. These findings highlight that students predominantly rely on traditional text-based digital resources for academic work, with multimedia resources remaining underutilised. The study underscores the importance of promoting diverse OER formats to broaden students' engagement and enhance learning outcomes.

Tella and Akande (2019) investigated the types of open access information resources (OAIRs) available to undergraduate students in Nigeria and their patterns of use. The study revealed that a variety of OAIRs were accessible to students, including e-books, e-journals, online databases, and digital libraries. Among these, e-journals and online databases were reported as the most widely used, reflecting students' preference for structured, academically authoritative resources. The study also highlighted that the extent of use varied across resource types, with factors such as availability, accessibility, quality of the resources, and the level of technological infrastructure in universities influencing utilisation.

Purpose of Open Access Information Resources utilisation

The purpose for which students utilise open access information resources reflects their academic and personal information needs. Onyebinama and Ukwoma (2020) investigated the Access and Use of Open Access Resources by Undergraduate Students in Federal Universities in South East Nigeria. Their findings revealed that students primarily use these resources because they are easy to use (70%), save time (71%), and provide access to literature necessary for research activities (65.3%). Furthermore, open access resources were frequently used for project, thesis, and dissertation work (72.1%), indicating their central role in supporting formal academic tasks. Other reasons cited for utilisation included the helpfulness (68.3%), quality and reliability (68%), digital format (61.6%), and the presence of relevant information (72.8%). Students also highlighted that open access resources offer unlimited access to scholarly information (68.5%), facilitating continuous learning and research.

Odiachi and Obinyan (2020) investigated the awareness and use of open access resources among lecturers in Basic Medical Sciences at Ambrose Alli University, Ekpoma. The study revealed that all respondents (100%) used open access resources for searching relevant literature for research, downloading articles, teaching, updating knowledge, and staying current with developments in their field. Additionally, 92.5% of lecturers used these resources to search for publishing platforms for articles, 88.1% used them for identifying research topics or ideas for theses, conference papers, and journal articles, while 68.7% used them for bibliographic citation and referencing. These findings indicate that open access resources serve multiple academic and professional purposes, providing lecturers with essential support for research, teaching, knowledge enhancement, and scholarly communication.

Frequency of Open Access Information Resources utilisation by polytechnic students

Frequency of use refers to how regularly students access and engage with open access resources. According to Alves and Raposo (2019) conducted a study in Portugal to investigate the frequency of use of OAIRs available to undergraduate students. The study also found that the frequency of use of OAIRs varied among the different types of OAIRs. Academic databases were used most frequently, with 58% of respondents indicating that they used them daily. E-books and online journals were used less frequently, with 39% and 34% of respondents indicating that they used them daily respectively. Orsu (2019) explored the open-access repositories utilisation for the visibility of academic publications by lecturers in South-East, Nigeria. The study findings shows

that there are enough academic publications available such as books, journals, projects, and theses except for handouts. The study also found out that academic lecturers used information resources on weekly basis.

Olumide and Tella (2020) conducted a study in Nigeria to examine the frequency of utilization of Open-access Institutional Repositories (OAIRs) by undergraduate students. The study aimed to determine how frequently students used OAIRs and whether there was a relationship between the frequency of use and academic performance. The findings of the study showed that the majority of undergraduate students used OAIRs less than once a week, with 68% of the students reporting that they used OAIRs less than once a week. Only 14% of the students reported using OAIRs daily. Muthuvennila and Thanuskodi (2019) investigated the accessibility and use of perception on open-access resources utilisation in Library and Information Science students in Idhaya College for Women. The study shows that 25 (19.08%) respondents utilised open-access resources on a daily basis with about 29 (22.14%) respondents utilising open-access resources for fewer than 2 hours each day. There were 32 respondents (24.43%) who utilised open-access resources on a daily basis from home. Privacy Issues 27 (20.61%) and access difficulties 20 (20.62%) were the major challenges encountered by undergraduate respondents while postgraduate respondents reported difficulty with accessing and storing open-access resources were the challenges encountered.

Methodology

This study employed a descriptive survey design to examine Utilisation Patterns of Open Access Information Resources among Polytechnic Students in South-West Nigeria. The population comprised ND and HND students across 47 polytechnics. A multistage sampling technique was used for the study. it involves purposive, simple random, probability proportionate to size, and accidental sampling produced a sample of 1,630 students. Questionnaire was used as the instrument for data collection. The questionnaire covered utilisation patterns, and frequency. Instruments were administered with the support of trained research assistants. Retrieved data from the respondents were analysed using descriptive statistics and Pearson correlation and multiple regression tests in SPSS.

Results

Research Question One: What were the types of OAIRs utilised by polytechnic students in South-west, Nigeria?

To determine the types of Open-access information resources utilised by polytechnic students in South-west, Nigeria, the respondents were provided with the different OAIRs listed in the questionnaire and they were requested to indicate which ones they utilise.

Table 1: Mean and Standard Deviation of Respondents on the types of Open-Access Utilised Polytechnic Students in South-west Nigeria

S/N	Types of Open-Access information resources	N	Mean	Std Deviation
1.	OA research articles	1407	3.29	.86
2.	OA Magazines	1407	3.11	.77
3.	OA Databases	1407	3.82	.95
4.	OA e-books	1407	3.07	.86
5.	OA theses	1407	3.11	1.00
6.	Website information	1407	2.76	.85
7.	OA repositories	1407	3.36	.90
8.	OA conference papers	1407	2.64	.86
9.	OA research reports	1407	3.03	.84
10.	Catalogues (OPAC)	1407	2.96	.79
11.	OA audio/video lectures	1407	2.89	1.19
12.	OA newspapers	1407	2.97	1.04
Weighted Mean = 2.50				

Table 1 indicates that all the OAIRs listed in the Table are being utilised by the Polytechnic students in the South-west Nigeria. This is because the mean utilisation for each of the Open-access information resources is more than the Weighted Mean of 2.50. However, there are some major Open-access tools or online resources that are more utilised than the others. These are OA databases ($\bar{x} = 3.82$; $SD = 0.95$); followed by OA repositories ($\bar{x} = 3.36$; $SD = 0.90$), OA articles ($\bar{x} = 3.29$; $SD = 0.86$), thesis ($\bar{x} = 3.11$; $SD = 1.00$), Magazine ($\bar{x} = 3.11$; $SD = 0.77$), e-books ($\bar{x} = 3.07$; $SD = 0.86$) and research reports ($\bar{x} = 3.03$; and $SD = 0.84$). It implies that the types of OA online resources most often utilised by Polytechnic students in South-west Nigeria are e-databases, repositories, articles, thesis, magazines, e-books, and research reports.

Research Question Two: What is the purpose of OAIRs utilisation by polytechnic students in South-west, Nigeria?

Research question 2 was tested using mean and standard deviation to determine the purpose of OAIRs utilisation by polytechnic students in South-west, Nigeria. The results is presented in Table 2

Table 2: Mean and Standard Deviation of Respondents on the purpose of Open-Access Information Resources Utilisation

S/N	Purpose	N	Mean	Std Deviation
1.	For academic discussions	1407	3.59	.57
2.	For assignment	1407	3.40	.59
3.	For research activity/project writing	1407	3.28	.81
4.	For seminar and workshop	1407	3.43	.59
5.	To study	1407	3.42	.83
6.	To update lecture notes	1407	3.08	.67
7.	To update oneself	1407	3.27	.87
8.	Professional development	1407	3.20	.80
9.	Personal development	1407	3.37	.76
10.	For online applications and repositories	1407	2.95	.90
Weighted Mean		2.50		

The purpose for utilising Open-Access Information Resources by the Polytechnic students is revealed on Table 2. The results show that the OA information resources were utilised for all the purposes indicated in the Table because the Mean utilisation for each of the items were higher than the Weighted Mean of 2.50. Majorly, Open-access information resources were utilised for academic discussion ($\bar{x} = 3.59$; $SD = 0.57$), seminar and workshop ($\bar{x} = 3.43$; $SD = 0.59$); to study ($\bar{x} = 3.42$; $SD = 0.83$) and for assignments ($\bar{x} = 3.40$; $SD = 0.59$). It implies that polytechnic students in South-west Nigeria mostly utilised OA information resources for academic discussion, seminar and workshops, study, and assignments.

Research Question Three: What is the frequency of OAIRs utilisation by polytechnic students in South-west, Nigeria?

To determine the frequency of OAIRs utilisation by polytechnic students in South-west, Nigeria, provision was made in the questionnaire for the respondents to indicate as appropriate. The result is presented in Table 3.

Table 3: Mean and Standard Deviation of Respondents on the Frequency of Open-access Information Resources Utilisation

S/N	Frequency	N	Mean	Std Deviation
1.	Catalogues (OPAC)	1407	3.07	.71
2.	OA research articles	1407	3.27	.68
3.	OA Magazines	1407	2.99	.78
4.	OA Databases	1407	3.08	.86
5.	OA E-books	1407	3.17	.86
6.	OA theses	1407	2.92	.97
7.	OA website information	1407	3.13	.73
8.	OA repositories	1407	2.63	1.14
9.	OA Conference papers	1407	2.76	1.06
10.	OA research reports	1407	2.67	1.02
11.	OA Audio/video lectures	1407	2.50	1.17
12.	OA newspapers	1407	2.89	1.11
Weighted Average/Mean = 2.50				

As shown in Table 3, the results on the frequency of Open-access information resources utilisation revealed that all the Open-access resources were frequently utilised. However, the frequency of utilisation differs based on resources. The ones with highest utilisation frequency are Open-access research articles ($\bar{x} = 3.27$; $SD = 0.68$) and Open-access e-books ($\bar{x} = 3.17$; $SD = 0.86$), while those that are utilised with the least frequency are open-access Audio/Video lectures ($\bar{x} = 2.50$; $SD = 1.17$) and OA repositories ($\bar{x} = 2.63$; $SD = 1.14$). It implies the frequency of utilising research articles; e-books, Open-access websites, Open-access databases and OPAC Open-access Information Resources are very high compared to other Open-access information resources.

Discussion

The findings of this study reveal the types of Open Access Information Resources (OAIRs) utilised by polytechnic students in South-West Nigeria, with a clear prominence of databases, research articles, repositories, theses, and e-books. The prominence of databases and journal articles indicates a strong preference for peer-reviewed and academically authoritative sources, reflecting a curriculum-driven and assessment-oriented information seeking pattern. This finding aligned with Tella and Akande (2019), who reported that e-journals and online databases were the most widely used open access resources among undergraduates due to their scholarly reliability and structured organisation. Also, Zaid and Alabi (2021) observed that students relied predominantly on text-based digital materials, while multimedia formats were comparatively underutilised. The relatively lower engagement with conference papers and audio/video lectures

in the present study further reinforces the dominance of text-centric academic resources within students' learning practices.

Regarding purpose of utilizing open access information resources, the study demonstrates that OAIRs are primarily utilised for academic discussions, seminars and workshops, independent study, assignments, and research-related activities. This indicates that open access resources are embedded within students' formal academic workflow rather than being used casually. The findings correspond with Onyebinama and Ukwoma (2020), who established that undergraduate students accessed open access resources mainly for research and project writing. In a similar vein, Odiachi and Obinyan (2020) reported that open access resources significantly supported research, teaching, and scholarly communication among lecturers, underscoring their centrality within the academic ecosystem.

On the frequency of utilizing open access information resources, research articles, e-books, databases, website information, and OPAC were accessed more regularly than other resource types. This reinforces the earlier observation that students prioritise structured textual materials that directly support coursework and research activities. The prominence of databases and journal articles is consistent with Alves and Raposo (2019), who found that academic databases were among the most frequently accessed open access resources by undergraduates. However, the comparatively lower frequency of repository utilisation corresponds with Olumide and Tella (2020), who reported that institutional repositories were accessed less routinely by students. This variation suggests differential levels of integration of specific resource types into students' academic routines.

The findings indicate that while open access information resources are widely utilised among polytechnic students in South-West Nigeria, usage patterns remain largely text-based and academically instrumental. The comparatively lower engagement with repositories and multimedia formats may be linked to factors such as limited awareness, infrastructural constraints, usability challenges, or insufficient integration into instructional practices.

Conclusion

Utilisation patterns represent the structured behavioural trends through which users interact with information systems over time. Within the context of open access information resources, this concept extends beyond mere access to include the selection of specific resource types, the purposes driving their use, and the regularity with which they are consulted. This study examined the utilisation patterns of open access information resources among polytechnic students in South-West Nigeria, with particular emphasis on the types of resources used, the purposes for which they are accessed, and the frequency of utilisation. The findings demonstrate that open access resources are actively utilised across the sampled institutions, as all identified resource categories recorded mean values above the benchmark weighted mean. Among the various resource types, open access databases, repositories, and research articles emerged as the most utilised, indicating a strong preference for structured and academically oriented sources. Theses, e-books, magazines, and research reports were also widely consulted. This pattern suggests that students gravitate towards

resources that directly support coursework, project writing, and examination preparation. With respect to purpose, the dominant motivations for utilisation were academic discussions, seminars and workshops, personal study, and assignment completion. Research activities and project writing also recorded substantial levels of engagement. These results confirm that open access information resources are primarily integrated into formal academic tasks rather than informal or purely exploratory learning. In terms of frequency, open access research articles and e-books were accessed most regularly, followed by databases, websites, and OPAC tools. In contrast, audio/video lectures and repositories recorded comparatively lower frequency levels. This variation indicates differential engagement patterns, possibly influenced by ease of access, awareness, digital literacy, or perceived academic relevance. The study establishes that while open access information resources are available and generally utilised among polytechnic students in South-West Nigeria, the intensity and patterns of use vary by resource type and purpose. The findings reinforce the view that availability alone does not determine optimal engagement; behavioural, institutional, and infrastructural factors shape utilisation outcomes.

Recommendations

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

- i. Polytechnic libraries should intensify sensitisation programmes to increase students' awareness of diverse open access platforms, particularly repositories and multimedia resources that recorded lower usage frequency.
- ii. Regular workshops on digital literacy and effective search strategies should be organised to improve students' competence in navigating open access databases, repositories, and scholarly platforms.
- iii. Lecturers should deliberately integrate open access resources into coursework, assignments, and seminar requirements to reinforce habitual academic use.
- iv. Institutional management should strengthen internet connectivity, provide adequate computer facilities, and ensure stable power supply to remove infrastructural barriers to access.
- v. Polytechnic libraries should actively promote their institutional repositories and encourage both staff and students to utilise and contribute to them, thereby increasing visibility and engagement.
- vi. Libraries should periodically assess utilisation patterns to identify emerging trends, underutilised resources, and areas requiring strategic intervention.

References

- Alves, C., & Raposo, M. (2019). Availability and Use of Open-Access Institutional Repositories by Undergraduate Students in Portugal. *Ibersid: Revista de Sistemas de Información y Documentación*, (23), 71-80.
- Bala, S., Bansal, S. & Sharma, Y. (2018). Awareness of open access resources among the researchers of Punjab Agricultural University, Ludhiana. *International Journal of Library*

- Information Network and Knowledge*, 3(1), 139–145.
<http://slp.org.in/IJLINK/volumes/IJLINK-V3I1-12.pdf>.
- Bem-Bura, D. M., & Ianna, S. M. (2024). Influence of use of open access resources on research productivity of librarians in public university libraries in Benue State, Nigeria. *Journal of Economic and Social Research*, 10(1).
- Muthuvennila, S., & Thanuskodi, S. (2019). User Perception on Open-Access Resources among College Students in India: A Survey. *Library Philosophy and Practice*, 1-18.
- Nwalor, C. K., & Agbanu, N. A. (2025). Availability and utilisation of digital library resources by undergraduates in public universities' libraries in Anambra State. *Niger Delta Journal of Library and Information Science*, 6(1), 98–110.
- Odiachi, A. R., & Obinyan, O. O. (2020). Awareness and use of open access resources by basic medical sciences lecturers. *Journal of Applied Information Science and Technology*, 13(1), 115-124.
- Olumide, A. E., & Tella, A. (2020). Utilisation of Open-Access Institutional Repositories by Undergraduate Students in Nigerian Universities. *Library Hi Tech*, 38(1), 139-153.
<https://doi.org/10.1108/LHT-03-2019-0055>
- Onyebinama, C. O., & Ukwoma, S. (2020). Access and use of open access resources by undergraduate students in Federal Universities in South East Nigeria. *Library Philosophy and Practice*, 4124.
- Orsu, N. E. (2019). Utilization of Open-Access Repositories for Visibility of Academic Publications by Lecturers in South-East, Nigeria. *International Journal of Knowledge Content Development & Technology*, 9(4), 47-68.
- Pomfowaa, G. & Ofori, Y. (2020). Awareness and usage of open access journals among academic staff of University of Mines and Technology, Tarkwa. *Ghana Journal of Technology*, 4(2), 90
- Rao, P. V. (2012). Organizing and accessing open success resources. In: Swain, D. K. (Ed.). *Electronic age librarianship*. Ane Books Pvt. Ltd
- Tella, A., & Akande, S. O. (2019). Use of Open-Access Institutional Repositories by Undergraduate Students in Nigerian Universities. *Malaysian Journal of Library & Information Science*, 24(2), 39-51.
- Zaid, Y. A., & Alabi, A. O. (2021). Sustaining open educational resources (OER) initiatives in Nigerian universities. *Open Learning: The Journal of Open, Distance and e-Learning*, 36(2), 181-197.