



ISSN:3027-110X



NIGERIAN LIBRARY ASSOCIATION
NIGER STATE CHAPTER

CONFERENCE PROCEEDINGS

7th ANNUAL
HYBRID CONFERENCE
/AGM 2025

THEME:
INNOVATIVE TECHNOLOGIES IN LIBRARY SERVICES:
EXPLORING THE AVENUES FOR BUILDING USERS'
CONFIDENCE IN LIBRARIES.



28TH SEP., - 1ST OCT., 2025.



**CPES HALL, FEDERAL UNIVERSITY OF
TECHNOLOGY MINNA, BOSSO CAMPUS,
NIGER STATE**



NIGERAN LIBRARY ASSOCIATION (NLA) NIGER STATE CHAPTER

7TH ANNUAL HYBRID CONFERENCE PROCEEDINGS

THEME:

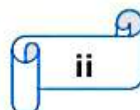
**INNOVATIVE TECHNOLOGIES IN LIBRARY
SERVICES: EXPLORING THE AVENUES FOR
BUILDING USERS' CONFIDENCE IN LIBRARY**

DATE:

28TH SEPTEMBER– 1ST OCTOBER, 2025

VENUE:

**CPES HALL, FEDERAL UNIVERSITY OF
TECHNOLOGY, MINNA, NIGER STATE, NIGERIA.**





NLA NIGER STATE EXCOS

Dr. Musa Baba Adamu
Chairman

Mal. Kamaludeen Isa El-kalash
Vice Chairman

Lbrn. Mohammed Musa Saba
Secretary

Lbrn. Lawal Abubakar
Asst. Secretary

Lbrn. Kasim Muhammad Bala
Financial Secretary

Lbrn. Rabi Shehu Ahmed
Treasurer

Lbrn. Isah Yahaya Abdullahi
P.R.O

Dr. Fatimah Jibril Abduldayan
EX-Officio

Prof. Abdulganiy Okanla Ahmed
Editor-in-Chief

ARTICLE REVIEWERS

Dr. G. A. Babalola

Dr. Adamu Mohammed Saba

Dr. Fatimah Jibril Abduldayan

Dr. Salisu Adamu Aliero

Dr. Chuks-Ibe Prisca Oluchi

Dr. Sadiat Adetoro Salau

Dr. Muhammad Kpakiko Mohammed

Dr. Mirriam Ayinda Salubuyi

Dr. Muhammed Ali Fakandu

Dr. Idris Ibrahim Saleh

Lbrn. Mohammed Musa Saba

FROM THE EDITORIAL DESK

The Nigerian Library Association, (NLA), Niger State Chapter's is pleased to formally release her the 2nd Edition of her compiled Book of Proceedings. This is a compilation of Papers Presented at the Chapter's 7th Annual Hybrid Conference held at CPES Hall, Federal University of Technology Minna, Niger State. High quality research is leading to corresponding high-quality theories that are finding their place in the real world of application. Nigerian Library Association, Niger State Chapter brings forth an opportunity for researchers in Librarianship Profession to create knowledge for application in emerging issues that will result to massive development in the society. The Conference with a theme “**Innovative Technologies in Library Services: Exploring the Avenues for Building Users’ Confidence in Library**” was carefully carved out and was intended to provide forum for exchange of ideas among professional colleagues towards finding tenable solutions to current issues in the global information value chain.

I owe a heartfelt thanks to all the article contributors for a very fascinating research output which promised to constantly thrive upon high quality research. Cases published in this issue have gone through internal editorial committee’s review and the comments received from experts have helped to improve upon the quality of work. In this pursuit, I extend my immense gratitude to a very dedicated team of editors for their relentless and untiring efforts in this regard. We are also indebted to our external reviewers who have spared their valuable time despite their tight schedules and contributed immensely towards the success of this publication.

We sincerely hope that the readers will find the research outputs interesting, relevant and intellectually stimulating leading to building up diverse outlook about contemporary issues.

Prof. A. O. Ahmed
Editor-in-Chief



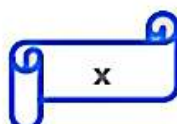
Published and Printed
© Manasara Publishing
& Printing Service Venturers,
Minna, Niger State
Tel: 07032844805, 07087783846
email: mpiventures87@gmail.com

ISSN: 3027-110X



TABLE OF CONTENTS

A Review of Common Issues in Preserving Digital Information Resources in African Academic Libraries Buhari Yakubu ¹ Abubakar Alhaji Mohammed ² Akawu Lami ³	1
Acceptance of KOHA Library Management Systems in Selected Polytechnic Libraries in Jigawa State, Nigeria. Abdulkarim Haruna ¹ Muhammad Aminu Hassan ²	8
Adoption and Use of Artificial Intelligence in the Delivery of Library Services in Academic Libraries Abdulumuni Abdulhamid ¹ Asiya Rabe Abdullahi ² Lawal Abubakar ³	16
Adoption and Perceptions of Innovative Technologies in Records Management by Administrative Staff in Federal Polytechnic Offa Daniel Loretta Odiri ¹ Adetunji Juliana Bolatito ² Owolabi Rukayat Shayo ³	21
Assessing the Impact of Data-Driven Analytics for Informed Collection Development and User Satisfaction in University Libraries Abdulbaqi Mohammed Gabdo ¹ Muhammad Aminu Hassan ² Amina Abubakar Ado ³	30
Awareness and Utilization of Artificial Intelligence Based Research Tools among Linguistic Students in Bayero University Library, Kano Yusuf Muhammad ¹ Shamsiyya Sarki Gidado ² Nura Muhammad Lawan ³	35
Awareness and Utilisation of Online Public Access Catalogue (OPAC) in Selected Academic Libraries in Adamawa State, Nigeria Adamu Abbas Lamido Gora ¹ Abdullahi Zainab Mohammed ² Gombe Ahmed Baba ³	42
Big Data Analytic Shift Towards Medical Librarianship: Notes from Modibbo Adama University Teaching Hospital Yola, Adamawa State, Nigeria Babangida Umar Babayi ¹ Damaris Joseph ² Mamza Wavi Pur ³	53
Effect of Perceived Visual Attractiveness on Post-Interaction Use Behaviour of a Prototype Medical Library Website for Federal Universities in Nigeria S.A. Imavah ¹ G.U. Oyedum ² G.A. Babalola ³ J.A. Ojeniyi ⁴ P.O. Chuks-Ibe ⁵	61





Enhancing Course Accreditation through Library Quality Assurance Practices: A Systematic Review of University Libraries Busa Danlami Umar ¹ Musa, Hussaini ² Onyeabor, Grace ³	71
Ethical Issues on the Use of Artificial Intelligence for Research Activities in Law Faculties in Federal Universities in North Central Nigeria Abdulkadir Rukayat Osheiza ¹ J. N. Udensi ² R. O. Salami ³	81
Exploring the Strategies and Practices of Safeguarding Electronic Information Resources in Bayero University Kano Library Hadiza Umar ¹ Auwalu Dansale Yahaya ²	87
Evaluating the Readiness of Nigerian University Libraries for AI-Driven Collection Development: A Systematic Review Martha Tizhe ¹ Fatimah Jibril Abduldayan ² Prisca Oluchi Chuks-Ibe ³	93
Evaluation of Security Measures for Sustainable Information Systems in Public University Libraries in Nigeria Mohammed Safiya Garba ¹ Hussaini Musa ² Rhoda Wusa Goshie ³	103
Exploring Librarians' Knowledge and Competency in the Integration of Artificial Intelligence Tools for Sustainable Library Services in Nasarawa State Wilson Oserada ¹ ² Hassan Mallam Ibrahim ³ Juliana Nkechi Udensi	109
Future Roles and Skills Set of Reference Librarians: Leveraging Innovative Technology for Effective Reference Service in Libraries Buhari Ganiyu Idowu ¹ Abdulsalam Jamiu Adewale ² Oyewole Saheed Oluwasegun ³ Rotimi James Omolehin ⁴ Soladoye Ibraheem Oluwatosin ⁵	117
Harnessing Social Media to Strengthen Marketing Strategies and Library Service Delivery: Evidence from Kogi State University Library, Kabba, Nigeria Oluwatosin Daniel Akobe ¹ Onivehu Abdulraheem Kareem ² Amina Badaru Lukman ³	124
Infrastructure Readiness for Implementing Artificial Intelligence and Integrated Library Management Systems in Academic Libraries in Nigeria: A Systematic Review Abubakar Hadiza Oluwatayo ¹ M.A. Salubuyi ² Isah Ndashiru ³	136
Information Communication Technology Skills on Academic Activities of Officer Cadets in Universities in North-West, Nigeria Adamu Sagir Mohammed ¹ Obaje Alfred Michael ² Adamu Mohammed Saba ³	143

READINESS OF NIGERIAN UNIVERSITY LIBRARIES FOR AI-DRIVEN COLLECTION DEVELOPMENT: A SYSTEMATIC REVIEW

By

Martha Tizhe¹, Fatimah Jibril Abduldayan² & Prisca Oluchi Chuks-Ibe³

¹&³Department of Library and Information Science, Federal University of Technology, Minna

²University Librarian, Nigeria Maritime University, Okerenkoko, Delta State

Corresponding author: Email: mtkkwasini@gmail.com; Phone number: +2347034423299

PRESENTED AT THE:
7TH ANNUAL HYBRID CONFERENCE/AGM 2025
CPES HALL, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
DATE: 28TH SEPTEMBER -1ST OCTOBER 2025

ABSTRACT

The emergence of Artificial Intelligence (AI) in academic libraries presents transformative opportunities for enhancing collection development practices. However, the readiness of libraries particularly in developing countries like Nigeria to adopt AI-driven systems remains underexplored. This paper presents a systematic review of literature on the readiness of Nigerian university libraries for AI adoption in collection development. The review was conducted using structured searches across major academic databases including Google Scholar, Scopus, and African Journals Online (AJOL), targeting publications between 2018 and 2025. Inclusion criteria focused on peer-reviewed articles, conference papers, and institutional reports discussing AI in library services, technological infrastructure, policy frameworks, and staff competencies. The findings were organised thematically around key readiness indicators: technological infrastructure, human resource capacity, policy support, and institutional willingness, challenges facing AI adoption and opportunities and positive trends. The study reveals that while there is increasing awareness of AI applications in library settings, actual readiness for adoption is limited by infrastructural deficits, lack of formal training, absence of AI-focused policies, and low funding. Nonetheless, a strong interest and willingness among library professionals suggest fertile ground for future interventions. The study concludes with practical recommendations including the development of institutional AI roadmaps, investment in librarians' upskilling, and strategic collaboration between libraries, universities, and technology partners to drive AI integration in collection development.

Keywords: Artificial Intelligence, Collection Development, Library Readiness, Nigeria, Systematic Review

Introduction

The digital transformation of academic libraries has accelerated globally, with Artificial Intelligence (AI) emerging as a cornerstone technology in redefining traditional library functions. In developed countries, academic libraries are already leveraging AI tools such as machine learning, natural language processing, and predictive analytics to automate collection development

processes, improve user experience, and enhance resource discoverability. Institutions in the United States, the United Kingdom, and parts of Europe are using AI to predict user needs, assess usage patterns, recommend acquisitions, and manage digital content more efficiently (Sodiya *et al.*, 2024; Borlund, 2020). For instance, AI-powered systems are employed to monitor circulation trends and user interactions in order to make data-informed purchasing decisions, thereby minimizing redundancy and optimising budget allocations. AI has been instrumental in reducing human workload by handling routine tasks like cataloguing, metadata tagging, and recommendation services, while offering adaptive and personalised access to library materials. These advancements have not only improved efficiency but have also aligned library services with user expectations in the digital era. However, this trend presents a sharp contrast when viewed through the lens of Nigerian academic libraries.

In Nigeria, the integration of AI into library services is still in its infancy. While libraries have adopted basic digital technologies such as computers, scanners, social media platforms, and OPAC systems, the penetration of advanced AI tools remains limited (Isiaka *et al.*, 2024). Nigerian university libraries, especially those in North-Central Nigeria, continue to face infrastructural, financial, and human capacity barriers that impede readiness for AI-driven collection development. According to Heath (2018), AI is a technology that enables machines to learn, plan, reason, and problem-solve capabilities that can significantly enhance how library collections are curated. Yet, the realities in Nigerian academic libraries indicate low levels of digital readiness, lack of skilled manpower, and an absence of institutional policies that support AI innovation (Owolabi *et al.*, 2022). Collection development, defined as the process of selecting, acquiring, and managing library resources has traditionally relied on manual selection, professional judgment, and user suggestions (Miller and Ward, 2022). However, these conventional approaches are increasingly challenged by the rapid growth of digital resources, shifting user expectations, and tightening budgetary constraints. AI tools offer promising alternatives that could automate acquisition decisions, predict user demand, and allocate resources more efficiently (Ikwuanusi *et al.*, 2022).

In this context, readiness refers not only to technological infrastructure such as reliable internet, cloud computing, and AI platforms, but also to the availability of trained personnel, financial support, and a policy framework that supports innovation (Borlund, 2020). Librarians must not only be aware of AI trends but also be equipped with the necessary competencies to apply these

tools effectively. The question thus arises: Are Nigerian academic librarians prepared technically and professionally to embrace AI in collection development? Do they have access to adequate training, institutional support, and ethical guidance to integrate AI into their workflows? The literature suggests otherwise. Despite the enthusiasm surrounding AI's potential, its implementation in Nigerian libraries is sporadic and uncoordinated, constrained by poor funding, lack of awareness, and limited institutional commitment (Nwakunor, 2021). Nonetheless, AI adoption offers transformative possibilities. Libraries in Nigeria must evolve to meet the dynamic demands of a data-driven academic landscape, and librarians must adapt their roles to effectively collaborate with intelligent systems. This paper presents a systematic review of existing literature to evaluate the readiness of Nigerian university libraries in Nigeria, to adopt AI technologies for collection development.

Statement of the problem

The rapid advancement of Artificial Intelligence (AI) has significantly transformed academic library services in developed countries, particularly in areas such as collection development, user personalization, and resource management. AI systems are now employed to analyse user behavior, automate acquisition decisions, and streamline access to digital resources. However, in contrast, many university libraries in Nigeria remain underprepared to adopt AI technologies. Despite the growing global shift toward data-driven and intelligent library services, Nigerian academic libraries continue to face critical challenges such as inadequate technological infrastructure, limited digital competencies among librarians, and the absence of clear institutional policies or strategic frameworks supporting AI integration.

Existing studies highlight a concerning gap between awareness of AI's potential and actual readiness for implementation (Odigie, 2024). While basic ICT tools have been introduced in some Nigerian libraries, the adoption of advanced technologies like AI remains minimal and sporadic. This lack of readiness threatens to widen the digital divide and limit the effectiveness of Nigerian university libraries in meeting evolving user demands. Without deliberate efforts to assess current capabilities, address infrastructural deficits and build human resource capacity, these institutions risk being left behind in the global transformation of library services. Therefore, it is imperative to evaluate the current state of readiness among Nigerian university libraries for AI-driven collection development and to identify the key barriers and opportunities for future adoption.

Objectives of the Study

The primary objective of this systematic review is to evaluate the preparedness of Nigerian university libraries for the adoption of Artificial Intelligence (AI) in collection development processes. Specifically, the study seeks to:

1. To examine the availability, quality, and adequacy of ICT infrastructure and digital systems required to support AI integration in university libraries.
2. To analyse the extent to which library personnel possess the digital literacy, AI-related competencies, and professional training necessary for implementing AI-driven tools and workflows.
3. To explore the existence and effectiveness of institutional policies, strategic frameworks, and administrative support that facilitate AI adoption in academic library operations.
4. To document barriers such as funding limitations, resistance to change, ethical concerns, and technological constraints that impede AI implementation in university libraries.
5. To uncover areas of potential growth, innovation, and successful case examples that indicate promising directions for AI integration in library collection development across Nigerian universities.

Research Questions

1. To what extent are Nigerian university libraries equipped with the technological infrastructure required for the implementation of AI in collection development?
2. What is the level of digital literacy and AI-related competency among library staff in university libraries?
3. What institutional policies and strategic frameworks are in place to support the adoption of AI in university library operations?
4. What are the major challenges facing university libraries in adopting AI for collection development?
5. What opportunities and emerging trends exist that could facilitate the successful adoption of AI-driven collection development in university libraries?

Theoretical Framework

Diffusion of Innovation Theory (DoI)

The notion of diffusion was initially examined by German and Austrian anthropologists and geographers, including Friedrich Ratzel and Leo Frobenius, as well as by the French sociologist Gabriel Tarde in the late 19th century (Kinnunen, 1996). The 1920s and 1930s saw a boom in the study of innovation diffusion in the midwestern U.S. subfield of rural sociology. As agricultural technology advanced quickly, scientists began studying the adoption of hybrid seeds, tools, and methods by independent farmers (Valente and Rogers, 1995). The groundbreaking book *Diffusion of Innovations* was released in 1962 by Everett Rogers, a rural sociology professor at Ohio State University. Research from more than 508 diffusion studies in the disciplines that first shaped the theory, anthropology, early sociology, rural sociology, education, industrial sociology, and medical sociology, was synthesised by Rogers. Rogers used it to address family planning, cancer prevention, drunk driving, and hygiene in the healthcare context. Rogers developed a theory of innovation uptake by individuals and organisations based on his synthesis (Rogers, 1962). The DoI theory highlights the significance of five innovative attributes: relative advantage, compatibility, complexity, trialability, and observability that impact adoption (Mbatha, 2024). For AI in collection development:

In assessing the readiness of Nigerian university libraries for AI-driven collection development, several innovation attributes drawn from Rogers' Diffusion of Innovation Theory—are particularly relevant. **Relative advantage** is evident, as AI offers faster, more efficient collection analysis and facilitates user-centered acquisitions, thereby improving service delivery and resource relevance. However, **compatibility** remains a significant barrier, as many libraries still operate with outdated systems and some staff hold traditional mindsets that resist technological change. The **complexity** of AI tools further complicates adoption, particularly when such tools are not user-friendly or lack adequate technical support, training, or documentation. Additionally, **trialability** is limited across most Nigerian university libraries, as few institutions have access to sandbox environments or demo versions that allow staff to experiment with AI applications before full implementation. These factors collectively influence the rate and effectiveness of AI adoption in library collection development practices.

Methodology

This study employed a systematic review method following a narrative synthesis approach. By relying on explicit, systematic methods to reduce bias in the selection and inclusion of studies, to evaluate the quality of the included studies, and to summarise them objectively, the systematic review approach seeks to reduce the risk for bias and increase transparency at every stage of the review process (Liberati *et al.*, 2009). Systematic literature reviews (SRs) are a method for synthesising scientific data to address a specific research question in a transparent and repeatable manner, while attempting to include all published data on the subject and evaluating the quality of this data (Lame, 2019).

Search Strategy

The search strategy combines the key terms in your search query to find relevant results. As the first step in conducting a literature search, a search strategy must be created to specify how important studies might be located across databases (Atkinson and Cipriani, 2018). The following steps were taken to ensure a thorough search for the articles pertinent to this study: The research question served as the source for the key terms, these terms' variations as they appear in the literature were identified; from the terms that were returned, a search string was created and connected with Boolean operators; a particular search term was chosen; different online databases were picked to search. The search string was modified in accordance with each database's specifications; the string was employed in an abstract search; identification of potential substitutions for our key search terms based on terminology found in published literature and the searches were constrained by dates. The studies' findings were released between January 2018 and May, 2025.

Additionally, the search methodology employed for this study is the "keyword searching". The words and phrases that appear in free text are known as keywords. A keyword search typically looks for search terms in the reference's title and abstract. The three Boolean operators (OR, NOT, and AND) were used for a more thorough literature search using the aforementioned keywords and/or phrases. However, the "NOT" operator is used to retrieve any literature that contained only the first keyword or phrase, excluding any literature that contained the second keyword or term. The "OR" operator was frequently used to search for and retrieve any literature that contained any

of the keywords or phrases. However, the "AND" operation retrieves all publications that contained mentions of keywords and/or phrases, Lawless and Foster's (2020).

Word strings

From the main research question: Are Nigerian academic librarians prepared technically and professionally to embrace AI in collection development? Do they have access to adequate training, institutional support, and ethical guidance to integrate AI into their workflows? The following key search terms were used: “Artificial Intelligence in libraries,” “AI and collection development,” “Nigerian academic libraries,” “library technology readiness,” “AI adoption,” “university libraries Nigeria. Internet databases helped with an effective search strategy for filtering, extracting, and sorting peer-reviewed literature that was used for findings needed to achieve the study's objective (Patten and Newhart, 2018). Additionally, the following database search tools were used: Scopus, TRIP, Web of Science, Education Research Complete (EBSCO), ScienceDirect (Elsevier), Researchgate, ERIC (ProQuest) and institutional repositories. Additionally, databases like Google Scholar, Semantic Scholar, and a straightforward Google Search were utilised.

Study selection

Duplicate citations were removed after all the results from the online databases had been collected. The publications were of a high caliber because papers from journals that did not rank in the top two quartiles were excluded. Reading the titles and abstracts of the papers allowed us to weed out any irrelevant ones that the search engines' poor performance had brought up. The results of database searches were maintained in an excel matrix, as stressed by Lawless and Foster (2020), to allow evaluation of studies to determine whether they are appropriate for inclusion in this study. The inclusion/exclusive criteria served as the basis for choosing the studies for this investigation. After eliminating all duplicate titles and those with titles that were obviously unrelated to this study, the titles of the literature were first examined. Following an evaluation of the titles, those that weren't sufficiently clear were further evaluated by reading the abstracts. Studies with pertinent abstracts but no complete text available at completion were disregarded. To confirm that they were based in Nigeria and not in another nation, the abstracts were carefully read. To ensure that the study receives the most valuable data possible, the best participant pool is created using effective inclusion and exclusion criteria that balance broad and specific requirements on an

inclusion/exclusion list (Hornsberger and Sneha, 2020). Only the literature that met the inclusion criteria listed in table below was used after the literature search and critical evaluation were complete. Peer-reviewed articles, conference papers, theses, and institutional report. Sources between 2018-2025. Focused on AI use or readiness in academic or university libraries and Nigeria-focused or applicable to Sub-Saharan Africa as shown in figure one:

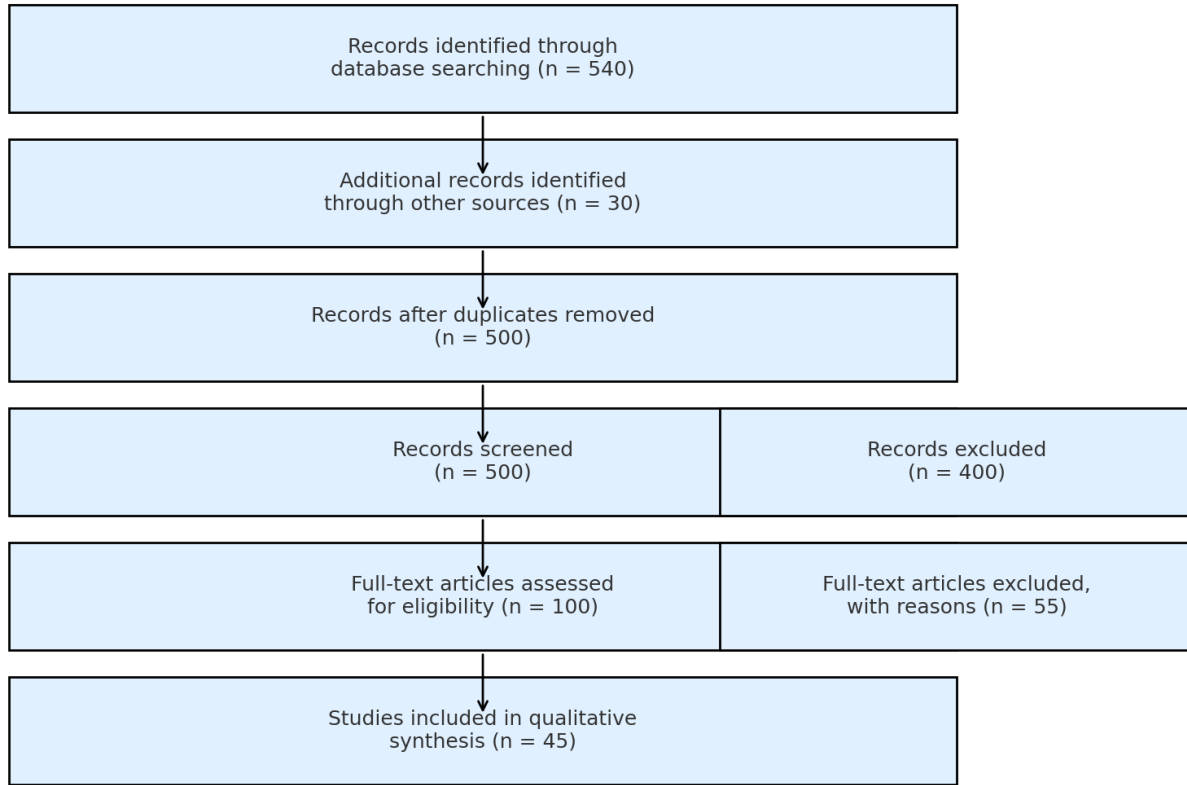


Figure 1: PRISMA Flow Diagram for the systematic review

Findings and Discussion

The Findings and discussions are Organised into themes aligned with research questions:

Technological Infrastructure Readiness

Several studies highlight the weak ICT infrastructure in Nigerian academic libraries as a major barrier to AI adoption (Ajani et al.,2023; Isiaka et al., 2024). Poor internet connectivity, obsolete hardware, and inconsistent power supply prevent libraries from running or integrating AI systems. Omeluzor and Ojukwu,2024) found that only 30% of federal university libraries surveyed in

Nigeria had reliable digital platforms, making it difficult to deploy AI tools for tasks such as predictive acquisitions. The findings revealed that weak ICT infrastructure poses a major obstacle to AI adoption in Nigerian academic libraries. Key issues such as poor internet connectivity, outdated hardware, and inconsistent power supply hinder the effective deployment of AI systems. These infrastructural deficiencies make it difficult for libraries to support AI-driven tools like predictive acquisitions or automated services. Additionally, the limited availability of reliable digital platforms—reported to be present in only 30% of federal university libraries—indicates that many institutions are still at the early stages of digital transformation. This underscores the urgent need for significant investment in technological infrastructure before AI integration can become feasible or sustainable in Nigerian academic libraries.

An investigation examining academic librarians' opinions regarding Nigerian libraries' preparedness for incorporating AI technology into operations and services was carried out by Ajani *et al.*, in 2022. According to their opinions, the respondents were asked to rank the capability of Nigerian academic libraries to incorporate AI systems into their operations and services as well as to explain what they believe to be the level of preparedness. Nigerian university libraries, according to the majority of respondents, are not ready to incorporate AI technology into their operations and services. While only a small number of academic libraries in Nigeria, including Covenant University and the University of Lagos, have done so, the respondents identified some academic libraries in Africa, particularly in Kenya, Ghana, and South Africa, that have demonstrated their readiness for the integration of the Internet of Things into library operations and services. Some explanations were provided to support the reason. As an example, one respondent stated that:

"I can boldly say that academic libraries in Nigeria are not ready for the integration of AI systems in library operations and services. This is based on my understanding that most of the academic libraries in Nigeria have partially accepted the changes that are currently evident in the librarianship profession, technically as a result of the application of ICT in library services. This is shown in their expression of lethargic willingness to invest in the infrastructure that will help them conform to the change brought by ICT application in library services (Ajani *et al.*, 2022).

The assertion by the respondent highlights a critical concern in evaluating the technological readiness of Nigerian academic libraries: the lack of full commitment to digital transformation, particularly regarding AI integration. While Information and Communication Technology (ICT) has made noticeable inroads into library systems such as OPACs, digital cataloguing, and online repositories, this progress remains partial and inconsistent across institutions. Institutional reluctance to fully embrace emerging technologies due to financial constraints, inadequate planning, and resistance to change. The term “lethargic willingness” underscores the slow and often passive approach many libraries have taken toward infrastructural development. This aligns with other studies (Omeluzor and Ojukwu, 2024), which found that investments in ICT infrastructure are often reactionary rather than strategic. Furthermore, readiness for AI integration cannot be isolated from earlier ICT foundations. The inability of libraries to fully implement basic ICT tools such as automated circulation systems or digital repositories reveals a weak baseline from which to adopt more complex systems like AI. Hence, if libraries are still struggling with ICT fundamentals, it becomes evident that they are not structurally or technically prepared for AI, which demands higher levels of computing power, data management systems, and skilled personnel. AI adoption appears aspirational rather than practical. Unless libraries in Nigeria move beyond mere awareness and adopt a proactive investment strategy in digital infrastructure, their readiness for AI will remain low.

Human Resource Capacity and Skills

Librarians’ knowledge and attitudes toward AI significantly influence adoption readiness. Safana et al. (2024) observed that while many Nigerian librarians have heard of AI, few possess the technical competencies required to operate AI-enhanced systems. Most libraries lack structured professional development programs to train staff in emerging technologies. Safana et al. (2024) recommend institutional collaborations with ICT departments to bridge this gap. According to a study by Jothimani *et al.* (2024) titled "Artificial Intelligence in Collection Development and Management in Libraries: A Research Overview," AI technologies like machine learning, predictive analytics, and automated cataloguing can improve library collection development procedures. The authors examined case studies and academic literature on AI systems like Ex Libris Alma and OCLC WorldCat using a documentary research methodology, emphasising advantages like cost optimisation, data-driven acquisition, and customised user services. But they

also point out important obstacles, such as practical ones (integration issues, high implementation costs) and ethical ones (data privacy, algorithmic prejudice)

Policy and Institutional Support

Institutional policy plays a pivotal role in determining AI adoption. However, there is a notable absence of AI-specific strategic plans within library management structures (Rudiansyah, 2023). Most libraries operate under general ICT policies that do not account for AI applications. The lack of funding and prioritisation of library innovation by university management also limits progress. However, research like that conducted by Isiaka *et al.* (2024) demonstrates that although librarians at Nigerian university libraries are keen about AI, many of them feel limited by the lack of constructive administrative rules or a clear organisational roadmap. In the absence of leadership-driven tactics and clear roles for AI in library operations, adoption initiatives are frequently fragmented or stagnant. For the same reason, Subaveerpandiyan (2023) looked at what factors affect libraries' readiness to use AI. It was determined that the most important component was leadership, followed by knowledge of AI applications, acceptance and awareness of AI, and an innovative environment. As per the report, library administration should stay abreast of the most recent advancements, regularly evaluate the library's preparedness for embracing AI, and promptly integrate the technology. A study by Jan *et al.* (2024) study on organisational readiness to embrace AI in the library and information sector in Pakistan revealed that some participants agreed that organisational size and financial resources have a major impact on their readiness to use AI. Most participants thought that bigger colleges will quickly and more heavily invest in the adoption of new technologies, such as artificial intelligence. The primary obstacles to the use of AI in university libraries, according to one participant, are the administrators' and universities' lack of initiative, strategy, vision, and policy. During the interview, another participant stated that the library and information industry is not very forward-thinking when it comes to adopting new technology.

Challenges in adopting AI in Nigerian university libraries

The challenges of adopting and using artificial intelligence (AI) in academic libraries are numerous and cannot be fully addressed in this brief discussion. The literature reviewed in this study highlights several obstacles that hinder AI implementation in academic libraries. A key challenge

is the lack of technological infrastructure, including insufficient high-speed networks and integrated systems (Aslim et al., 2023), along with poor internet connectivity (Eiriemiokhale and Sulyman, 2023). These issues are particularly prevalent in developing countries, where internet access is limited, and many libraries do not have adequate broadband connectivity. Additionally, the integration of AI into academic library systems is rare. Most libraries' current systems and services are not AI-compatible (Huang et al., 2023). Beyond technological barriers, concerns about job displacement also pose a significant hurdle. Librarians, like many other professionals, worry that AI might replace human roles within the library a concern echoed across various sectors (Alekseeva et al., 2021). Despite these fears, many believe AI has the potential to enhance library operations, creating new opportunities for librarians through roles in technical expertise, reskilling, and upskilling. Another major barrier is the lack of a clear AI strategy. While this issue is not widely discussed in studies from developing countries, it has been subtly noted in research from developed nations. For instance, Huang et al. (2023) found that neither British nor Chinese universities have included AI in their strategic plans. The existence of such a roadmap in academic libraries from developing countries remains unclear. However, for AI to be successfully adopted in academic libraries, a strategic plan is essential. This plan should address libraries' attitudes toward AI, ensure sufficient funding and institutional support, and develop the technical skills of librarians (Huang et al., 2023).

Opportunities and Positive Trends

Despite challenges, there are emerging trends that suggest future readiness. Study by Adebayo and Musa (2023) showed increasing interest in AI workshops, research, and institutional pilot projects. The COVID-19 pandemic accelerated the adoption of digital tools, creating fertile ground for future AI integration in core functions like collection development. Jha (2023) found that, expert systems in libraries are one key area where AI can bring significant benefits. These AI-based systems can automate tasks such as document classification, cataloguing, indexing, and abstracting. Rudiansyah (2023) provides examples of expert system software currently in use, including the Online Catalogue Library of Congress (OCLC) Automated Title Page Project for cataloguing, Canserach and MenUse for generating search statements in Medline, and Machine Aided Indexing (MIA) for indexing purposes. Other expert systems like COAL SORT, EP-X, and BIOSIS are used for classification tasks (Vijayakumar and Sheshadri, 2019). AI-powered virtual assistance is

another area where libraries can benefit, offering intelligent consultation for tasks like searching, navigation, and reminders. One of the most common AI applications in academic libraries is the use of chatbots or virtual agents (VA), which rely on machine learning (ML) and natural language processing (NLP) (Huang *et al.*, 2023). Platforms like MSN, WeChat, and others can be leveraged.

Summary of Findings

The table below presents a structured interpretation of the findings, linking each theme to global practices and practical recommendations.

Theme	Interpretation of Findings	Comparison to Developed Countries	Implications/Recommendations
Technological Infrastructure Readiness	Nigerian libraries lack stable internet, power, and updated systems	Libraries in developed countries have integrated cloud services and modern systems	Investment in ICT, backup power, and digital infrastructure is urgently needed.
Human Resource Capacity and Skills	Librarians lack AI-related training and technical know-how.	Developed countries offer continuous AI training and digital upskilling.	Librarians should be retrained; AI modules should be added to LIS curricula.
Policy and Institutional Support	Absence of clear AI policies; leadership lacks strategic direction.	Libraries abroad follow structured AI roadmaps and government-backed frameworks	Institutions must draft AI policies and align with national ICT strategies
Challenges in adopting AI in Nigerian university libraries	Fear of job loss, lack of funding, and ethical issues create resistance	Global libraries manage change with support, ethics frameworks, and funding.	Stakeholder engagement and AI ethics training are needed to manage fears.
Opportunities and Positive Trends	Growing local interest, post-COVID digital push, and emerging pilot projects suggest momentum	Developed countries are already testing AI in user engagement and collections.	Nigeria can build on this momentum by supporting pilot AI projects and partnerships

Implications for Practice and Policy

The findings from this review reveal critical implications for the future of collection development and broader library services in Nigerian academic institutions. The evident low readiness for AI integration underscores the need for a shift in operational strategies, policy alignment, and professional training across the academic library landscape.

1. For University Administrators

University leadership must recognise libraries as integral to academic excellence. There is a pressing need to prioritise library technology funding, especially in areas that enable AI deployment. Administrators should champion cross-departmental collaboration between library units, ICT departments, and faculties of computing or data science to foster shared digital innovation.

2. For Library Managers

Library leaders must begin internal capacity assessments and develop readiness plans tailored to AI integration. This includes auditing infrastructure, digitising legacy data, and identifying staff training needs. Managers are encouraged to adopt a phased, low-risk approach to AI—starting with data analytics and predictive tools for collection development.

3. For Policymakers and Regulatory Bodies

At the national level, there is a need for policies that promote innovation in library services. AI adoption in libraries should be integrated into broader national ICT and education strategies. Regulatory frameworks should provide ethical guidance, data privacy standards, and incentives (e.g., grants) for AI experimentation within academic libraries.

4. For LIS Educators and Library Schools

Library and Information Science (LIS) curricula must be revised to include AI concepts, data literacy, and ethical data handling. Equipping future librarians with these skills ensures long-term

sustainability and relevance of the profession. Practical modules on AI tools, machine learning, and digital policy should complement traditional cataloguing and reference instruction.

Conclusion

This study systematically reviewed the state of readiness for AI-driven collection development in selected federal university libraries in Nigeria. The findings reveal significant challenges in infrastructure, staff capacity, and institutional policy highlighting that most libraries in the region are still in the early stages of digital maturity. While there is growing awareness and interest in AI tools globally, Nigerian academic libraries lag due to persistent funding constraints, skill gaps, and a lack of strategic focus on technological advancement. To bridge this gap, it is essential for libraries to move beyond awareness to concrete investment in digital infrastructure and professional development. Strategic planning, inter-institutional partnerships, and pilot implementation of predictive tools are crucial steps towards realising the benefits of AI in collection development. Future studies should consider:

- Empirical assessment of AI pilot projects in Nigerian libraries;
- Comparative readiness assessments between regions (e.g., South-West vs. North-Central);
- Evaluations of LIS students' preparedness for AI-driven environments;
- Longitudinal studies measuring the impact of AI tools on acquisition decisions and user satisfaction.

Such research will not only inform policy and practice but also contribute to building a robust evidence base for AI implementation in African academic libraries.

Recommendations

1. **Infrastructure Development:** Federal universities must invest in high-speed internet, alternative energy solutions, and modern computing systems to support AI deployment.
2. **AI Capacity Building:** Regular training and inclusion of AI modules in library science curricula should be encouraged.

3. **Policy Frameworks:** Institutions should develop AI implementation strategies for libraries, aligning them with national ICT policies.

4. **Pilot Projects:** Launching pilot AI initiatives (e.g., chatbots for reference services) will demonstrate feasibility and build institutional confidence.

5. **Collaboration and Funding:** Government, academic institutions, and international partners should collaborate to fund AI readiness programmes in libraries.

References

- Adebayo, S., & Musa, I. (2021). Readiness for AI-driven automation in Nigerian university libraries. *Library & Information Science Review*, 45(3), 112-130.
- Ajani, Y.A, Adeyinka T.Y., Salawu, 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*, DOI: 10.1080/10875301.2022.2086196
- Alekseeva, L., Azar, J., Giné, M., Samila, S., & Taska, B. (2021). The demand for AI skills in the labor market. *Labour Economics*, 71:102002.
- Aslim, M., Arif, M., Rafiq, M. and Ahmad, R. (2023). Investigating applications of artificial intelligence in university libraries of Pakistan: an empirical study”, *The Journal of Academic Librarianship*, Vol. 49 No. 6, pp. 1-14.
- Atkinson, L. Z. and Cipriani, A. (2018) How to carry out a literature search for a systematic review: a practical guide. *The British Journal of Psychiatry Advances*, 24, p. 74–82. doi: 10.1192/bja.2017.3
- Borlund, P. (2020). Evaluation of Information Retrieval Systems. *Library Trends*, 68(2), p.140–160
- Eiriemiokhale, K. A., & Sulyman, A. S. (2023). Awareness and perceptions of artificial intelligence among librarians of university libraries in Kwara State, Nigeria. *Indonesian Journal of Librarianship*, 4(2), 107-118.
- Heath, N. (2018). What is AI? Everything you need to know about artificial intelligence. Retrieved from: www.zdnet.com/article/what-is-aieverythingyou-needto-know-about-artificial-intelligence/ [Retrieved on 23rd April, 2023].
- Hornsberger, B and Sneha, R. (2020) *Designing Inclusion and Exclusion Criteria*. University of Pennsylvania.

- Huang, Y., Cox, A. M., & Cox, J. (2023). Artificial intelligence in academic libraries strategy in the United Kingdom and Mainland China. *The Journal of Academic Librarianship*, 49:102772.
- Ikwuanusi, U.F., Azubuikwe, C.H.I.M.A., Odionu, C.S. & Sule, A.K.(2022). Leveraging AI to address resource allocation challenges in academic and research libraries. *IRE Journals*, 5(10), p.311.
- Isiaka A.O, Agboola O.S, Sulyman M.O, Olaita, M, Aremu B.A. & Saba-Jibril, S.(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
- Jan, S., Khan, M. & Khan, A. (2024). Organizational Readiness to Adopt Artificial Intelligence in the Library and Information Sector of Pakistan. *Evidence Based Library and Information Practice*, 19(1), 58–76. <https://doi.org/10.18438/eblip30408>
- Jha, S. K. (2023). Application of artificial intelligence in libraries and information centers service: Prospects and challenges. *Library Hi Tech New*, 40(7), 1-5. <https://doi.org/10.1108/LHTN.06-2023-0102>.
- Jothimani, B., Anandraj, K.C. and Aravind, S. (2024). *Artificial Intelligence in Collection Development and Management in Libraries: A Research Overview*. <https://www.researchgate.net/publication/387085519>
- Kinnunen, J. (1996). Gabriel Tarde as a Founding Father of Innovation Diffusion Research. *Acta Sociologica*. 39 (4): 431–442. doi:10.1177/000169939603900404. S2CID 145291431.
- Lamé G., (2019) *Systematic Literature Reviews: An Introduction*. International Conference on Engineering Design. Delft, Netherlands. pp.1633-1642,
- Lawless J. & Foster M. J., (2020) Searching Systematically and Comprehensively. In C.E. Toronto, and R. Remington, (Eds.), *A Step-by-Step Guide to Conducting an Integrative Review*. p.22-43. Switzerland: Springer Nature. National research council, (2012). *Education for life and work developing transferable knowledge and skills in 21st Century*. Washington DC, National Academies Press.
- Liberati, A., Altman, D.G., Tetzlaff, J., Mulrow, C., Gøtzsche, P.C., Ioannidis, J.P.A., Clarke, M., Devereaux, P.J., Kleijnen, J. and Moher, D. (2009) “The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration”, *PLOS Medicine*, Vol. 6 No. 7, <http://doi.org/10.1371/journal.pmed.1000100>
- Mbatha, B.T. (2024). Diffusion of Innovations: How Adoption of New Technology Spreads in Society. DOI: 10.1007/978-3-031-60267
- Miller, M.E & Ward, S.M. (2021). Rightsizing the academic library collection. *American Library Association*. <https://shorturl.at/YwhCU>

- Nwakunor, J. A. (2021). Leveraging artificial intelligence to enhance brand management. *The Guardian Newspaper*.
- Odigie, I. O. (2024). Exploring the awareness, use, and challenges facing the integration of artificial intelligence in library services by librarians in university libraries in North-Central, Nigeria. *Communicate: Journal of Library and Information Science*, 26(1), 213-219. <https://doi.org/10.5281/zenodo.14741237>
- Patten M. & Newhart M. (2017) *Understanding research methods: An overview of the essentials*, tenth edition. 10.4324/9781315213033
- Owolabi, K. A., Adenekan, F. N., Adeleke, O. A., Ajayi, T. A., & Adesina, O. (2021). Awareness and perception of the artificial intelligence in the management of university libraries in Nigeria. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserve*, 29(7), 1–16. <https://doi.org/10.1080/1072303X.2021.1918602>
- Rogers, E. M. (1962). *Diffusion of innovations (1st ed.)*. New York: Free Press of Glencoe. OCLC 254636.
- Rudiansyah, R. (2023). Artificial Intelligence: Prospects and Challenges for Library Services. In A. Nugroho Widiadi et al. (Eds.), *Proceedings of the 3rd International Conference on Social Knowledge Sciences and Education (ICSKSE) 2023 “Change and Continuity in Southeast Asia”*, *Advances in Social Science, Education and Humanities Research*, 800. Atlantis Press. https://doi.org/10.2991/978-2-38476-168-5_28
- 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), 1–20. <https://www.ajol.info/index.php/sjis/article/view/278516>
- Sodiya, E., Umoga, U., Atadoga, A. and Amoo, O. 2024. AI-driven personalisation in web content delivery: a comparative study of user engagement in the USA and the UK. *World Journal of Advanced Research and Reviews*, 21(2). 10.30574/wjarr.2024.21.2.0502
- Subaveerapandiyani, A. (2023). Application of artificial intelligence (AI) in libraries and its impact on library operations review. *Library Philosophy and Practice (e-journal)*. <https://digitalcommons.unl.edu/libphilprac/7828>
- Valente, T. & Rogers, E. (1995). The Origins and Development of the Diffusion of Innovations Paradigm as an Example of Scientific Growth. *Science Communication*. 16 (3): 242–273. doi:10.1177/1075547095016003002. PMID 12319357. S2CID 24497472
- Vijayakumar, S., & Sheshadri, K. N. (2019). Application of artificial intelligence in academic libraries. *International Journal of Computer Science and Engineering*, 7(16), 136-140.