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Evaluation Of The Usage Of Artificial Intellegence In Library Service Delivery And Users Experience In Academic Libraries

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ABSTRACT

This study explores the evaluation of the usage of Artificial Intelligence (AI) in academic library service delivery and user experience, with a focus on emerging library operated AI-based tools and their implications for staff, patrons and institutional policies. The paper highlights how AI-driven chatbots, recommendation systems, intelligent search interfaces, and automated metadata workflows are enhancing efficiency, personalisation, and accessibility in academic libraries. The review also underscores persistent challenges such as infrastructural limitations, staff AI-literacy gaps, data-privacy concerns, and risk of deepening the digital divide. The article concludes that AI should be treated as an enabling collaborator rather than a substitute for professional judgment, and recommends that academic libraries develop context-specific AI-integration strategies, ethical guidelines, user-centered design practices, and sustainable capacity-building programmes to maximize benefits while safeguarding equity and academic integrity.

Keywords: Artificial Intelligence Integration, Academic Library, Library Services, User Experience

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has emerged as a transformative force reshaping service delivery across diverse sectors, including education, healthcare, finance, and information management. Within the library and information services domain, AI has introduced innovative approaches that are redefining how academic libraries organise, manage, and disseminate information resources. Globally, academic libraries are increasingly leveraging Al-driven technologies such as intelligent chatbots for virtual reference services, recommender systems for personalised information delivery, automated cataloguing and metadata generation, text and data mining tools, and predictive analytics for collection development and user behavior analysis. These technologies have significantly enhanced operational efficiency, expanded access to information resources, improved decision-making processes, and elevated overall user satisfaction in academic library environments (Jebet & Gichugu, 2025; Orubebe, Oloniruha, & Oladokun, 2024). Recognising the significance of integrating cutting-edge technologies like AI into academic libraries, scholars have emphasized its potential to enhance service accessibility, both on site and online, and optimise operational efficiency, leading to increased engagement among library staff and users.

In the African context, and particularly in Nigeria, the adoption of AI in academic libraries remains at an emergent and developmental stage. While large-scale implementation is still limited, recent empirical studies indicate a growing awareness, interest, and readiness among librarians and library administrators to explore AI-enabled solutions for improved information service delivery. Librarians increasingly

recognise the potential of AI technologies to address persistent challenges such as information overload, limited staff capacity, and the growing demand for remote and personalised library services (Abba, 2024; Ezebuiro, 2025). This gradual shift reflects a broader digital transformation agenda within higher education institutions across the region, albeit progressing at an uneven pace.

Despite this growing interest, Nigerian academic libraries continue to face significant barriers to the effective integration of AI technologies into their service frameworks. Prominent among these challenges are inadequate technological infrastructure, unstable power supply, limited internet bandwidth, low levels of technical expertise, insufficient professional training in Al-related competencies, and chronic financial constraints. In addition, institutional policy gaps, resistance to change, and limited collaboration with technology providers further impede AI implementation efforts (Safana & Fari, 2024; Odigie, 2024). As a result, service delivery in many university libraries remains predominantly traditional, characterised by manual processes and limited digital innovation, which constrains their capacity to effectively support contemporary teaching, learning, and research activities in the 21st century (Akpukpu & Osawele, 2024; Ajav & Tor-Akwer, 2024).

This widening disparity between Nigerian academic libraries and their global counterparts underscores an urgent need to explore sustainable strategies for meaningful AI adoption. Bridging this digital divide is essential not only for enhancing library service delivery but also for positioning academic libraries as strategic partners in national development, research productivity, and global knowledge exchange. Purposeful investment in AI technologies, capacity building, and supportive institutional policies can enable Nigerian university libraries to transition from traditional service models to more intelligent, user-centred, and data-driven information systems.This study therefore explores the current landscape of AI adoption within Nigerian academic libraries, consolidates recent empirical findings, and delves into implications for service delivery. By synthesising evidence across contexts, it offers a nuanced understanding of both the transformative potential and the structural limitations of AI integration in Nigerian Academic library services. The paper aims to contribute to ongoing discourse on responsible, user-centered AI adoption in academic libraries, especially in resource-constrained environments such as Nigerian higher institutions.

Conceptual Background

Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to the capability of computer systems and digital technologies to simulate human intelligence by performing tasks that ordinarily require cognitive functions such as learning, reasoning, problem-solving, pattern recognition, decision-making, and natural language processing (Abba, 2024). AI systems are typically powered by algorithms, machine learning models, and large datasets that enable them to adapt, improve performance over time, and provide intelligent responses to user needs. Within the context of library and information services, AI represents a paradigm shift from traditional, manual operations to intelligent, automated, and data-driven service delivery models. In academic libraries, AI is increasingly deployed to support core library functions and enhance user engagement. Common applications include chatbots and virtual reference assistants that provide real-time responses to user queries; machine learning—based recommender systems that personalise access to books, journals, and electronic resources; automated indexing, abstracting, and cataloguing tools that improve bibliographic control; and intelligent search and discovery systems that enhance information retrieval efficiency. Additionally, Al-powered analytics tools support evidence-based decision-making by predicting user needs, optimising collection development, and monitoring usage patterns (Jebet & Gichugu, 2025; Yusuf, Owolabi, Okani, & Ayoni, 2025). These applications position AI as a strategic enabler of efficiency, accessibility, and innovation in contemporary academic libraries.

Academic Library

An academic library is a specialised information center attached to a higher education institution (such as college, polytechnic or university) designed to support the tripartite mission of the parent organization which is teaching, learning, and research. Modern scholarship emphasizes that these libraries are no

longer just physical rooms but are hybrid digital-physical environments that provide all day seamless access to vast repositories of electronic resources, including research databases, multimedia content, and e-books (Swaminathan, 2024). An academic library serves two complementary purposes: to support the curriculum and the research of the university, faculty and students. Academic libraries play a vital role in education by supplying necessary resources and services that are that help foster academic success and scholarly research. They support the parent school goals by facilitating access to information, offering research assistance and creating spaces for studying and collaboration (Ebijuwa, 2025).

Academic libraries cater to students, teachers, and researchers with high core demands and background materials use. Users are classified into various categories, with varying information demands. Library services like collection building, processing, stacking, and display are tailored to users' needs. Understanding users' information needs is crucial for libraries to justify their existence and serve their purpose

Academic libraries are enhancing their service delivery by adopting AI technology, which approves efficiency and user experience. This technology supports library operations and is uers-friendly, making it crucial and easier for libraries to adapt to evolving AI developments. Memela (2023) posited that Artificial Intelligence is emerging as a pivotal source of optimism for academic libraries in their pursuit to provide an expanded range of automated services to their clientele, given that it is one of the transformative technologies that has surfaced and is set to play a crucial role in the Fifth Industrial Revolution (5IR). Nonetheless, Bubinger and Dinneen (2021), in conjunction with Huang (2022) posited that the advent of Artificial Intelligence has complicated the operational frameworks of libraries to a greater extent, thereby requiring aspiring librarians to develop more advanced, analytical, inventive and creative cognitive abilities, along with emotional intelligence, to effectively design and execute library services in Artificial Intelligence driven environment.

Library Services

Library services are interconnected professional activities designed to facilitate the creation, access, and ethical use of information in a digital-first world. Library services encompass all the proactive and reactive functions performed by information professionals to meet the diverse needs of their users. In an academic context, these services are the engine room of the institution, transforming a passive collection of data into an active ecosystem of learning and research (IFLA, 2025).

Review of Related Literature

Recent literature shows that artificial intelligence (AI) is increasingly being integrated into academic libraries to enhance both service delivery and user experience. A systematic review by highlights that AI integration in academic libraries has enabled automation of repetitive tasks, improved data-driven decision-making, and ushered in more personalized, user-centered services (Garcia-Garcia, Hernandez-Garcia & Sanchez-Garcia, 2025). The authors argue that libraries that leverage AI tools for cataloguing, metadata creation, and discovery systems report higher efficiency and better alignment with evolving research and teaching needs (Cox & Mazumdar, 2022).

Several empirical studies conducted in non-Western contexts reinforce these findings. In 2025, a study on academic libraries in Turkiye found that AI-integrated reference services, recommendation systems, and chatbots significantly improved user satisfaction and perceived service quality. The researchers concluded that AI-based tools reduced response times, simplified information retrieval, and created a more interactive and engaging user environment (Barsha & Munshi, 2023).

In African and Nigerian university settings, recent research on AI adoption in academic libraries indicates that libraries are beginning to experiment with chatbots, natural language search interfaces, and AI-assisted reference services, though adoption remains relatively modest and uneven (Abayomi, Adebayo & Oluwatuyi, 2021). Analysis of AI use in African academic libraries notes that AI-enabled tools enhance user experience by streamlining interactions, reducing waiting times, and supporting data-driven collection development based on user behaviour analysis (Allal, 2022). Adetoro and Olatunji (2024) emphasise that while AI brings operational and service benefits, challenges such as infrastructural

limitations, staff digital-literacy gaps, and ethical concerns around data privacy remain significant barriers (Cox & Mazumdar, 2022; Abayomi, Adebayo, & Oluwatuyi, 2021).

With regard to user experience specifically, a meta-analysis on AI tools for disadvantaged student groups in academic libraries shows that AI-based and smart technologies improve access, engagement, and information retrieval for maginalised users when equity and accessibility are explicitly considered in design. The study cautions, however, that poorly planned AI integration can deepen the digital divide if not matched with inclusive policies, training, and assistive features. (Moleke, Cross, Falola, & Mpofu, 2020). In another study on user perceptions of AI in academic libraries found that faulty members view AI-driven recommendation engines, personalized alerts, and predictive analytics as useful for researcher and teaching, but they also express concerns about overreliance on machines and the erosion of human-driven reference services (Ogar, & Dushu, 2018).In parallel, scoping and literature-review studies underscore that generative AI tools are being applied to cataloguing, classification, metadata generation, circulation workflows, and virtual reference, with documented gains in accuracy, speed, and staff productivity (Pierce, 2022; Cox, & Mazumdar, 2022).

Finally, studies on library professionals' perspectives reveal that while many librarians see AI as a valuable collaborator rather than a replacement, they call for clear ethical frameworks, training programmes, and institutional policies to guide implementation. The literature suggests that AI integration in academic libraries can substantially improve service delivery and user experience, but its success depends on context-specific planning, stakeholder engagement, and a strong commitment to equity, privacy, and professional values (Garcia-Garcia, Hernandez-Garcia, Sanchez-Garcia, 2025; Cox, & Mazumdar, 2022).

The Need for AI Academic Libraries

The integration of AI in academic libraries serves a transformative force that address various challenges such as resource constraints, improves information retrieval, streamlines knowledge organization, presonalises user services and enhances resource management, thereby significantly improving library services (Barsha & Munshi, 2023). The diverse capabilities of AI, ranging from natural language processing to classifying books to enriching metadata, are redefining traditional library operations (Ali, Naeem, & Bhatti 2020; Cox & Muzumdar,2022). By using modern technologies such as natural language processing and machine learning algorithms to automate the indexing and accurate classification of library collections, AI also enables the creation of customised recommendation systems that significantly improve the discoverability and accessibility of resources for library patrons (Suryawanshi, 2024).

The impact of AI goes beyond mere automation; it frees librarians from mundane tasks, as chatbots serve as a simple platform to reach out to target users such as students and researchers and can help them access the library's databases, allowing librarians to focus more complex tasks (Kaushal, &Yadav, 2022; Aithal & Aithal, 2023). For users, AI simplifies the search for relevant research materials by using generative AI to streamline search procedures and save valuable time (IFLA, 2023a). Librarians are freed from repetitive tasks and can spend their time getting to know and serve their clientele better (Chakarova & Trabert, 2017).

Innovation through AI extends further, transforming library operations such as self-checkout systems and enabling 24-hour services (IFLA, 2023b). The tireless nature of AI systems ensures continuous library operation, freeing librarians from round-the-clock responsibilities (Omame & Alex-Nmecha, 2020). AI-driven virtual reference assistants like Pixel or chatbots constructed using Hypertext Pre-processor (PHP) prove instrumental in delivery consistent and efficient 24/7 services, catering for users' need and personlised information.

In era characterised by information overload, the role of AI in academic libraries becomes indispensable. AI technology's ability to analyse extensive metadata associated with scientific collections elevates indexing, reference services and information retrieval (Allal, 2022). Ultimately, the integration of AI not only ensures accessibility and availability of library resources, but also equips library staff to adeptly

navigate and harness AI's capabilities to address user inquiries (Abayomi, Adenekan, Abayomi, Ajayi, & Aderonke, 2021).

Application of Artificial Intelligence in Academic Library

The use of artificial intelligence in Nigerian libraries has grown significantly. This progress is evident in the implementation of expert systems for reference services, the introduction of book-reading and shelf-reading robots, and the use of virtual reality for immersive learning, among other advancements. While some may view the integration of AI in libraries as potentially distancing librarians from their users, it is more likely to empower libraries to achieve more rather than replace the roles of librarians. The adoption of artificial intelligence in Nigerian libraries has expanded considerably. This advancement is reflected in the deployment of expert systems for reference services, the use of book-reading and shelf-reading robots, and the incorporation of virtual reality for immersive learning, among other innovations. Although some may fear that AI could distance librarians from their patrons, it is more likely to enhance the capabilities of libraries, enabling them to accomplish more rather than replacing the essential roles of librarians.

Artificial intelligence is a cutting-edge technology with significant potential and promising applications in libraries. This makes it essential to explore both its advantages and disadvantages to fully harness its benefits for innovative and efficient service delivery. As Corke (2013) asserted, AI systems, including robots, will be pivotal technologies in this century. In the context of libraries, AI systems offer the advantage of being less prone to errors compared to humans and can operate continuously, 24/7, allowing librarians to focus on other tasks. According to Asemi and Asemi (2018), the application of artificial intelligence has become increasingly valuable across various fields and is advancing rapidly with the development of smartphones, smart homes, the Internet of Things (IoT), and the Internet of Vehicles (IoV).

Artificial Intelligence systems are designed to guide library users to the most relevant information sources within the library system, effectively addressing their reference questions. The rise of digital reference resources and services in libraries has led to more extensive development of AI systems for reference services than for any other library service or section (Chemulwo & Sirorei, 2020). These systems enable users to access information resources and receive answers to their reference queries in real-time, even in the absence of a librarian. Additionally, AI has practical applications in subject indexing, a task that typically requires a librarian's technical expertise and intellectual judgment to analyse, evaluate, and assign appropriate index terms or keywords to a document. Any computer system capable of performing this task can be considered intelligent. An Expert System, for example, can be developed to manage subject indexing or provide reference services.

AI tools can be utilized to select suppliers or book dealers for library collections. By leveraging data from previous successful transactions involving specific types of publications, an intelligent system can be developed to identify suitable vendors or book sellers. These tools are particularly valuable for acquiring less common materials, such as conference proceedings, publications in foreign languages or from international sources, and specialized technical reports. Research has demonstrated that AI systems have been implemented within the library field to assist with the selection process. An innovative example of this technology is The Monograph Selection Advisor, which simulates the item by-item decision-making process performed by subject bibliographers when selecting monographic resources. For the AI system to be effective, its knowledge base must be comprehensive and its interface must be user-friendly (Chemulwo & Sirorei, 2020).

The application of AI has significantly enhanced the provision and utilization of library information resources, supporting the achievement of library goals and objectives. To remain relevant, librarians must adopt innovative approaches, as AI has introduced a wide range of applications in libraries, from book filing to book delivery. AI has also opened new possibilities, such as integrating physical library resources with electronic materials and linking video assistance to physical information resources and objects.

Integration of Artificial Intelligence in Academic Library

The integration of Artificial Intelligence (AI) into library services in Nigeria represents a significant trend aimed at modernizing and enhancing the efficiency of library operations. Adopting AI is becoming essential for Nigerian libraries to stay aligned with global advancements and address the evolving needs of users. By improving efficiency, user experience, accessibility, and research support, AI has the potential to transform Nigerian libraries, making them more effective and relevant in the digital era. As noted by Alala et al. (2024), the primary goal of AI in libraries is to develop computer systems or machines capable of thinking, behaving, and performing at levels comparable to human intellect. This advancement carries profound implications for the field of librarianship.

The integration of Artificial Intelligence (AI) into Nigerian library services is rapidly advancing, offering significant potential to transform library operations and enhance user experiences. As AI technology continues to develop, it promises to further improve the efficiency, accessibility, and overall effectiveness of library services in Nigeria. Currently, AI is garnering considerable attention for its potential to revolutionize various aspects of human Endeavor, including the library and information science sector. Viewed as a groundbreaking technology, AI is poised to introduce new opportunities for growth and fundamentally change how work is conducted across organizations, industries, and libraries (Duggal, 2023).

Integrating AI aligns Nigerian libraries with global best practices and technological advancements, and this increases the competitiveness of Nigerian educational and research institutions on an international level, attracting more partnerships and funding opportunities. To successfully integrate AI into Nigerian library services, a phased and strategic approach is essential such as Assessment and Planning, Investment in Technology and Infrastructure, Training and Capacity Building, collaboration with universities, research institutions, and international organization, and establishing metrics to monitor the performance and impact of AI integration.

User Experience

AI also enables academic libraries to deliver more personalised and interactive user experiences. Through tools such as sentiment analysis, user behaviour analytics, and adaptive learning systems, libraries can gain deeper insights into user needs, preferences, and satisfaction levels. These insights inform service design, outreach programmes, and information literacy initiatives, allowing librarians to proactively engage users across disciplines and academic levels. In Nigerian academic libraries, Al-supported user engagement strategies can improve communication, increase resource usage, and strengthen the library's visibility and relevance within the academic community (Fagbola & Egbebi, 2025; Safana & Fari, 2024).

Overall, the application of Artificial Intelligence in academic libraries extends beyond operational efficiency to fundamentally redefine the role of libraries as active collaborators in teaching, research, and knowledge dissemination. For Nigerian academic libraries, strategic adoption of AI has the potential to bridge service delivery gaps, enhance user satisfaction, and align library services with the evolving demands of a digitally driven academic environment. By embracing AI within a supportive policy and capacity-building framework, academic libraries can reposition themselves as innovative and indispensable components of the higher education ecosystem. AI enables libraries are meant to provide personalised and interactive experiences, increasing user satisfaction and proactive service delivery.

Benefits of Artificial Intelligence in Academic Library

The integration of AI into academic library services offers several benefits, including:

AI integration helps to improve the accessibility and inclusivity of library services. This is supported by Jackson et al. (2018) who believe that these developments were in line with the library's goal of granting everyone, regardless of ability or language preference, access to information. Hussain (2023) investigated the possibilities and challenges associated with integrating artificial intelligence into library services. The results demonstrated that AI is a potent technology that can enhance library services.

AI improves accessibility for patrons with disabilities by incorporating technologies such as text-to-speech and speech recognition, which make library resources more accessible to visually impaired or dyslexic users. Additionally, AI-driven predictive analytics can forecast demand for specific materials, ensuring that library collections remain relevant and up-to-date.

AI-driven chatbots and virtual assistants offer fast, continuous support, enhancing user satisfaction which increases user knowledge. The importance of AI capabilities in library services is examined by Al-Aamri and Osman (2022). The findings show that a lot of libraries have already incorporated AI technology into a variety of services, like technical support and reference services, to make it easier for users to access information.

AI provides instant assistance to users by answering common questions, offering research guidance, and handling basic inquiries, even in the absence of librarians. It can also analyze large volumes of data to reveal insights into library usage patterns, user demographics, and resource popularity, which aids in strategic planning, resource allocation, and service improvements.

AI technologies like optical character recognition (OCR) and image recognition support the digitization and preservation of rare or deteriorating materials, broadening access to collections and ensuring their long-term preservation. AI can also translate library resources into multiple languages, supporting diverse language communities and multicultural initiatives. Additionally, AI enhances security by detecting and preventing threats such as data breaches, identity theft, and fraudulent activities, using machine learning to identify suspicious behavior and safeguard sensitive patron information.

By automating repetitive tasks, AI increases staff efficiency by allowing employees to concentrate on more intricate and valuable tasks. Han (2021) research on "Intelligent Library Management under the Background of Artificial Intelligence" argues that AI can help with data collection and analysis so that management decisions about libraries can be made with less stress on library staff. The study claims that combining AI with human knowledge can produce a more intelligent and successful library management system. The benefits of using AI in library management are also covered in the study. These benefits include reduced working hours and fewer errors, both of which may increase customer satisfaction.

By spotting possible security threats, Artificial Intelligence (AI) can monitor library spaces by utilizing machine learning and surveillance technology to identify anomalous behaviour and notify staff about possible problems. This keeps the library's environment secure and safe for patrons. AI helps with improved inventory control and resource allocation which is known as resource management.

AI-powered translation tools make it easier for non-English speakers to participate, reaching a wider audience for the library. The AI study by Al-Aamri and Osman (2022) examined pertinent Arabic and international research that focused on AI applications in knowledge management within information institutions.

Challenges of AI Integration in Academic Libraries

Despite the transformative potential of Artificial Intelligence (AI) for academic library services in Nigeria, several challenges continue to impede its effective adoption and utilisation. These challenges span ethical, technical, infrastructural, policy, and funding dimensions.

Ethical Concerns

The deployment of AI tools in libraries raises critical ethical issues, particularly regarding bias, misinformation and data privacy. AI algorithms may inadvertently reinforce existing biases if trained on skewed datasets, potentially marginalising certain user groups or subject areas. The increasing use of generative AI also poses risks of misinformation, plagiarism, and intellectual property violations, as AI systems may produce content without proper attribution (Jegbefume, 2025). In Nigeria, concerns have been raised about using Al-powered chatbots for legal or research queries, as some automated responses were found to misinterpret legal terms, demonstrating the risk of misinformation and the need for human oversight. Similarly, in some postgraduate research support services at Ahmadu Bello University, Zaria, students expressed worries about how Al-assisted research tools handle personal and thesis data, highlighting the importance of robust data privacy protocols (Orubebe, Oloniruha, & Oladokun, 2024).

Technical and Infrastructural Gaps

Effective AI implementation is often hampered by inadequate technological infrastructure. Many institutions face challenges such as unreliable electricity, low-bandwidth internet connectivity, and outdated or insufficient digital infrastructure (Odigie, 2024; Safana & Fari, 2024). Furthermore, there is a shortage of library professionals with specialised AI, machine learning, or data analytics skills, limiting the capacity to deploy, manage, and maintain AI systems (Fagbola & Egbebi, 2025). An attempt to deploy Al-driven discovery systems in the electronic library may frequently be disrupted by intermittent power supply and network outages, causing delays in service delivery. Nigerian universities may face challenges integrating machine learning tools for metadata tagging due to insufficient staff training, requiring extensive external technical support. These examples underscore that technical readiness and human resource capacity are critical determinants of successful AI adoption.

Policy and Funding Limitations

The absence of coherent policy frameworks and sustainable funding mechanisms further constrains AI integration in Nigerian academic libraries. Unlike developed countries with national AI strategies and dedicated budgets for digital innovation, Nigerian universities often rely on irregular government subventions or donor-funded projects, limiting the scalability and continuity of Al initiatives (Ajav & Tor-Akwer, 2024). A pilot Al-based virtual reference system in Nigeria University may not be sustained beyond its initial phase due to a lack of ongoing funding, despite positive user feedback. Due to lack of policy, planned Al-driven cataloguing initiatives stalled because institutional policies did not prioritise digital transformation or allocate recurrent budgets for software licensing and maintenance.

CONCLUSION

The evaluation of the usage of artificial intelligence into academic library services represents a transformative shift in how information is managed, accessed, and experienced by users. Recent studies show that AI-driven tools such as chatbots, recommendation systems, smart search engines, and automated metadata process significantly enhance service efficiency, accuracy, and personalisation. These innovations enable libraries to support evidence-based research, improve discovery experiences, and respond more dynamically to evolving teaching and learning needs, especially in resource-constrained environments such as Nigerian institutions. However, the literature also underscores that AI is not a standalone solution but an enabler that must be carefully governed and ethically deployed. Challenges such as data privacy, algorithmic bias, infrastructural limitations, and staff digital-literacy gaps require deliberate planning, training, and institutional policy frameworks.

Moreover, user perceptions and experience remain central; successful AI integration depends on designing systems that are transparent, inclusive, and genuinely responsive to diverse user needs, including those of disadvantaged and marginalized groups. In conclusion, AI integration in academic library service delivery and user experience holds substantial promise for repositioning libraries as proactive and intelligent knowledge hubs. To realize this potential, academic libraries must balance technological innovation with professional values, ethical responsibility, and continuous stakeholder engagement. By doing so, librarians can be sure that AI serves not only to automate tasks but also to deepen access, enhance learning, and strengthen the library's role as a cornerstone of academic excellence and equity.

RECOMMENDATIONS

1. The need to develop an institutional AI-integration strategy: Academic libraries should collaborate with institution ICT units, teaching departments, and research offices to design a coherent AI strategy that aligns with teaching, learning, research, and community-service mandates. This strategy should specify entry-point applications (e.g. AI-assisted search, chatbots, metadata enrichment) and long-term scaling pathways.
2. Establishment of clear ethical and data- governance policies: Libraries should adopt AI-ethical guidelines that emphasis transparency, fairness, consent, and privacy, consistent with national

data-protection regulations and international library-AI principles. Policies should clarify how user data are collected, stored, and used in AI-driven services and ensure that algorithmic outputs are regularly audited for bias and accuracy.

3. The need to Prioritise user-centered design and equity: AI-based tools should be designed with input from diverse user groups, including students, faculty, and person with disabilities, to ensure accessibility, usability and inclusivity. Libraries must provide non-AI fallback options such as human-driven reference to prevent deepening the digital divide, especially in resource-constrained African settings.
4. Investing in continuous capacity building: Academic libraries should implement structured AI-literacy programmes for staff and users, covering critical use of generative AI, interpretation of AI outputs, and recognition of limitations and risks. Capacity building should be embedded in regular professional-development schemes and supported by inter-departmental collaboration.
5. Pilot and evaluate before scaling: Libraries are advised to begin with small-scale pilot of AI-driven services (e.g. virtual reference assistants, AI-enhanced discovery tools) and to systematically collect usage data, user feedback, and performance metrics. Evaluation findings should guide decisions on whether to refine, expand, or discontinue specific AI applications.
6. Promotion of "no human, no AI" governance: AI should be positioned as an assistant rather than a replacement for professional judgment. Libraries should ensure that key decisions such as collection development choices, research-support advice, and controversial content-moderation are mediated by qualified librarians, with AI serving to augment, not supplant, human expertise.
7. Strengthen collaboration and resource-sharing: Academic libraries should join consortia and professional networks to share AI-related tools, policies, and best practices, particularly to mitigate cost and infrastructure barriers. Partnerships formation with publishers, vendors, and ICT providers should be negotiated to prioritise pedagogical and research values over purely commercial interests.
8. The need to secure sustainable funding and infrastructure: Institutions and library authorities should advocate for hybrid funding models that combine public support, institutional allocations, and external partnerships to finance AI enabled systems sustainably. Investment should target reliable connectivity, cloud platforms, and technical support that can host AI driven services without overburdening existing infrastructure.

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