

PERCEPTION OF LIBRARIANS ON THE APPLICATION OF ARTIFICIAL INTELLIGENCE (AI) IN SELECTED ACADEMIC LIBRARIES IN NIGERIA

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Abstract

The study examined the perception of librarians on the application of artificial intelligence (AI) in some selected academic libraries in Nigeria. This study adopted the descriptive survey design. The population of the study consists of 113 librarians in some selected academic libraries in Nigeria. A self constructed questionnaire was used for the study. A total of 113 copies of the questionnaire were distributed and 95 copies were retrieved using descriptive statistics mean and percentage mean score of 2.5 and above and percentage score of 50% were considered as acceptable. The study revealed that AI-powered tools are being utilized for research impact analysis and information discovery, enabling libraries to better support academic and research activities, AI is seen as a potential enabler of future library services , AI is being explored for its ability to revolutionize knowledge organization and improve administrative efficiency, capable of handling routine tasks such as circulation, serial management, and selective dissemination of information , and AI is being explored for its ability to revolutionize knowledge organization and improve administrative efficiency. Study affirmed the challenges inhibiting the implementations of artificial intelligence (AI) in academic libraries as budget constraints for adopting new technologies, technological knowledge gap among librarians, user data privacy is an issue that cannot be ignored , fear of job loss , and many librarians feel unprepared to adopt this technology due to a lack of adequate training and understanding. The study recommends that to increase productivity, user experience, and data management while guaranteeing employee and user training, institutions should invest in AI, and through collaborations and strategic planning, policymakers and library managers must address obstacles including finance, infrastructure, and change opposition.

Keywords: Perception, Librarians, Artificial Intelligence (AI), Academic Libraries

Introduction

Academic librarians are information specialists employed by colleges and universities who oversee the use of academic resources to promote learning and research. They work as faculty members conducting research and teaching information literacy, have master's degrees in library science (MLIS), and frequently have topic specializations. By granting access to a wide range of academic resources, these librarians serve the institution's teaching, learning, and research missions. They must embrace the use of artificial intelligence (AI) in academic libraries in order to provide their clientele with technology services.

Over the past 20 years, artificial intelligence (AI) has become a powerful technological force that is transforming a number of sectors including the academic libraries. (Jackson, 2019). AI, which is defined as the ability of machines to perform tasks that typically require human intelligence, has been smoothly incorporated into contemporary technology, frequently without users' conscious knowledge (Russell & Norvig, 2021). AI is a crucial topic of research for organizations like academic libraries because of its quick development, which offers improved ease, efficiency, and connection (Shietal., 2020). AI applications are often subtly integrated into everyday digital services, such as recommendation engines, chatbots, and automated indexing systems (Russell & Norvig, 2021). Through intelligent search engines, virtual reference services, and AI-based cataloging systems, these technologies can improve user experience in academic libraries

by allowing users to obtain exact information with little effort (Okike & Nwachukwu, 2023). Adoption of AI technology has the potential to close the service gap and optimize information access in a scalable and sustainable manner for Nigerian academic institutions, where library budgets and human resources are frequently limited. Libraries are using AI technology more and more to improve service delivery and optimize operations. AI is utilized in academic libraries for reference services, cataloging, and categorization (Choukimath et al., 2019).

Libraries may now better assist academic and research activities thanks to the use of AI-powered technologies for information discovery and research impact analysis (Choukimath et al., 2019). AI is viewed as a possible facilitator of future library services in African libraries, capable of managing serial management, circulation, and selective information distribution (Enakrire & Oladokun, 2023). Similar to this, AI is being investigated in Nigerian libraries for its potential to transform knowledge organization and boost administrative effectiveness (Adewojo et al., 2024). AI is used in libraries for user statistics, reference services, and cataloging (Harisanty et al., 2023). There are difficulties in implementing AI policies in libraries. Adoption of AI technology may be hampered by organizational obstacles such financial limitations and a lack of experience (Chen, and Li, 2024).). The necessity for libraries to actively participate in AI policies is becoming more widely acknowledged despite these obstacles. This includes helping to create standards and best practices for the ethical application of AI in library environments (Chen and Li, 2024).It is in light of this attributes and challenges that prompted the researcher to embark

on the study on the perception of librarians on the application of artificial intelligence (AI) in some selected academic libraries in Nigeria.

Statement of the problem

Artificial Intelligence (AI) is one of the technologies that are now changing how academic libraries operate. Librarians may now automate tedious tasks, improve data-driven decision-making, and offer more individualized and effective information services thanks to the incorporation of AI into library systems. AI has recently played a significant role in revolutionizing the services and operations of libraries, including cataloging, categorization, information retrieval, and user engagement. Reference services are supported, digital resource discovery is improved, administrative efficiency is increased, and librarians' professional growth is aided.

It has been observed that research topics on the application of artificial intelligence in academic libraries exist, but no one has carried a study on the perception of librarians on the application of artificial intelligence (AI) in some selected academic libraries in Nigeria, hence the need for this study.

Research questions

1. What are the perceptions of librarians in the application of artificial intelligence (AI) in academic libraries?

2. What are the challenges inhibiting the implementations of artificial intelligence (AI) in academic libraries?

Literature review

Chemulwo, Sirorei, and Mahmud, (2024) established in their works that libraries and information services are drastically changed by artificial intelligence (AI) which introduces new capabilities and modifies established procedures. It increases productivity and lessens the strain of library employees by automating repetitive operations like cataloging, categorization, and indexing. Senthilkumar et al., (2024), sees Generative Artificial Intelligence (GAI), a specialized subset of AI, focuses on producing new content, such as text, images, and music, based on patterns from existing data, while AI encompasses tasks like decision-making, speech recognition, and predictive analytics (Abbes et al., 2024; Renugadevi et al., 2024). Specifically, GAI uses sophisticated models like Transformers and GANs to create human-like outputs like ChatGPT and Perplexity, emphasizing creativity and synthesis (Alzoubi et al., 2024). By responding to their questions and directing them to resources, these GAI models can help users (Aribas & Daglarli, 2024).

GAI can help automate the development of metadata, summaries, or abstracts in the setting of library and information science (LIS) (Chen & Li, 2024; Joselin et al., 2024; Khamis, 2024). Additionally, it makes it easier to create material for social media or library websites, which increases outreach initiatives (Zixin & Xin, 2024). GAI is being used by

libraries more and more to improve user experiences, increase resource access, and streamline operations (Narendra et al., 2025). But even while GAI is becoming more popular in the information and education sectors, its use in LIS is still unexplored.

Particularly in light of the modernization of library services, the application of artificial intelligence (AI) in academic libraries has grown in importance. Numerous studies demonstrate how AI may enhance the efficacy and efficiency of library services while also improving user's satisfaction. For instance, a study by Linda and Sayekti found that AI has been used in a number of library services, such as literature searches using automated book shelves and robots, as well as reference services using robots and expert system applications (Linda M.Kom, & Sayekti, 2023). Additionally, Saptari contends that the idea of a smart library that incorporates AI technology can enhance academic library services (Saptari, 2023). Libraries may manage their collections and services more effectively and provide people easier access by deploying AI. This is in line with the requirement that libraries change into establishments that are more able to adapt to changing user demands and technology developments.

However, there are still a number of difficult obstacles to overcome before AI may be used in academic libraries. Budgetary restrictions for implementing new technology, a lack of expertise among librarians, and worries about user data protection are some of the problems that come up. First, the problem of financial limitations is apparent, especially in poorer nations, where the majority does not yet have the resources to apply efficient AI

solutions (Barsha & Munshi, 2023). Second, study conducted in Taiwan reveals that while librarians are aware of the potential of artificial intelligence (AI), many feel unprepared to utilize this technology because they lack sufficient training and comprehension (Huang, 2022). Third, it is impossible to overlook the problem of user data privacy. The application of AI in libraries to gather and examine user data may give rise to significant ethical and privacy issues (Gajbhiye, 2024). According to research by Haffenden et al., while AI can improve library services, issues with data security and privacy must be properly addressed in order to foster user confidence (Haffenden et al., 2023). Lund et al., (2020), opined that it's critical that libraries provide explicit and unambiguous policies on how user data is used in the context of AI.

Research methodology

The descriptive survey design was used in this investigation. 113 librarians from a few chosen Nigerian university libraries make up the study's population. A self constructed questionnaire was used for the study. Descriptive statistics were used to extract 95 of the 113 copies of the questionnaire that were disseminated. A mean score of 2.5 or above and a percentage score of 50% were deemed satisfactory.

Table 1

Population of the study
Table 1

S/N	Academic libraries in Nigeria	Librarians
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1	University of Ibadan Library	37
2	Lagos state university Library	18
3	University of Portharcourt Library	19
4	Ahmedu Bello University Library Kano	21
Total		95

Table 1 shows the population of librarians of the study in the following order: University of Ibadan Library (37), Lagos state university Library (18), University of Portharcourt Library (19) and Ahmedu Bello University Library Kano (21) respectively.

Table 2

Perceptions of librarians in the application of artificial intelligence (AI) in academic libraries

Keys: Strongly agreed, Agree, Disagree, Strongly disagree

S/N	Items	SA	A	D	SD	-x	Decision
1	AI-powered tools are being utilized for research impact analysis and information discovery	42	45	7	1	3.3	Accepted
2	Enabling libraries to better support academic and research activities	34	49	10	2	3.1	Accepted
3	AI is seen as a potential enabler of future library services	48	39	7	1	3.4	Accepted
4	Capable of handling routine tasks such as circulation, serial management, and selective	42	44	6	3	3.3	Accepted

	dissemination of information						
5	AI is being explored for its ability to revolutionize knowledge organization and improve administrative efficiency	40	41	5	9	3.1	Accepted

Discussion of results

Table 2 depicts the perceptions of librarians in the application of artificial intelligence (AI) in academic libraries as follows: AI-powered tools are being utilized for research impact analysis and information discovery (3.3), Enabling libraries to better support academic and research activities (3.1), AI is seen as a potential enabler of future library services (3.4) and AI is being explored for its ability to revolutionize knowledge organization and improve administrative efficiency, Capable of handling routine tasks such as circulation, serial management, and selective dissemination of information (3.3), and AI is being explored for its ability to revolutionize knowledge organization and improve administrative efficiency (3.1) respectively. This finding simply implies that the application of AI into academic libraries operations will spur them into effective library services.

Table 3

Key: Strongly agreed, Agree, Disagree, Strongly disagree

The challenges inhibiting the implementations of artificial intelligence (AI) in academic libraries

S/N	Items	SA	A	D	SD	-x	Decision
1	Budget constraints for adopting new technologies	34	47	6	8	3.1	Accepted

2	Technological knowledge gap among librarians,	33	49	9	4	3.1	Accepted
3	User data privacy is an issue that cannot be ignored	43	38	7	7	3.2	Accepted
4	Fear of job loss	42	38	9	6	3.2	Accepted
5	Many librarians feel unprepared to adopt this technology due to a lack of adequate training and understanding	47	42	6	0	3.4	Accepted

Table 3 shows the challenges inhibiting the implementations of artificial intelligence (AI) in academic libraries as budget constraints for adopting new technologies (3.1), technological knowledge gap among librarians, (3.1), user data privacy is an issue that cannot be ignored (3.2), fear of job loss (3.2), and many librarians feel unprepared to adopt this technology due to a lack of adequate training and understanding (3.4) respectively. The researcher proffer from this results that stakeholders of the educational sectors should embrace AI in their respective libraries in order to meet up with the new technological challenged in the 21st century.

Recommendations

1. To increase productivity, user experience, and data management while guaranteeing employee and user training, institutions should invest in AI.
2. Through collaborations and strategic planning, policymakers and library managers must address obstacles including finance, infrastructure, and change opposition.
3. To encourage a positive attitude toward the deployment of AI, librarians should be involved through training and awareness initiatives.

Conclusion

One of the newest developments and uses of computing in libraries is artificial intelligence (AI). It entails teaching computers to perform tasks that would be considered intelligent for humans. The development of computer systems or computers that think, behave, and even match human intellect is the ultimate promise of artificial intelligence in libraries, and this undoubtedly has significant ramifications for librarianship. Artificial intelligence is becoming widely used in libraries. Among them are robots that read books and shelves, virtual reality for immersive learning, and expert systems for reference services. Artificial intelligence will likely help libraries accomplish more rather than replace librarians, despite the fact that it may be seen as alienating librarians from their patrons. It will improve the way they provide services. Artificial intelligence will

significantly enhance library services and operations, as well as elevate and increase libraries' relevance in a rapidly evolving digital society. Overall, even though artificial intelligence (AI) has many advantages for libraries and information services, it also presents serious risks and challenges that need to be carefully considered in order to minimize potential drawbacks and guarantee responsible implementation and use of AI technologies in libraries. Librarians should rise to the occasion and abandon AI at all costs.

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