

**LIBRARIANS' AWARENESS ON THE INFLUENCE OF ARTIFICIAL
INTELLIGENCE (AI) ON SERVICE DELIVERY IN SOME SELECTED ACADEMIC
LIBRARIES IN EBONYI STATE, NIGERIA**

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Abstract

This paper examines Librarians' Awareness on the Influence of Artificial Intelligence on Service Delivery in Alex Ekwueme Federal University Ndufu-Alike (AE-FUNAI) Abakaliki, David Umahi Federal University of Health Sciences (DUFUHS) Uburu and Ebonyi State University (EBSU) Abakaliki. The specific objectives of this study are to identify the extent of awareness of librarians in the application of AI technologies in service delivery, to identify librarians' perception on the impact of AI on various library services and to find out the challenges librarians face in understanding or adopting AI-driven tools. The population of the study is 60 which consist of librarians and library officers in the institutions under study. The research design adopted for this study is descriptive survey design, while a structured questionnaire was used to gather data on librarians' awareness on the influence of AI on service delivery. Findings from the study revealed that respondents affirmed that they are aware that AI can perform automated cataloguing, classification and indexing thereby reducing manual effort and improving accuracy with a mean response score of 3.35, respondents confirmed that automated routine task and data analytics centers are some of the perceived impact of AI on library service delivery with a mean response score of 3.33 while insufficient technical knowledge among and lack of user privacy and data security was the major challenges faced by librarians' in understanding or adopting AI-driven tools as indicated by mean response of 3.32. It was recommended among others that parent institutions should engage in awareness campaigns and professional developments for librarians to build technical competencies and promote confidence in using AI tools.

Keywords: Artificial Intelligence, Librarian; Information Communication Technology (ICT); Library Service Delivery

INTRODUCTION

The importance of library in institutions of higher learning cannot be over emphasized as they are considered a *sine qua non* in the establishment of academic institutions in Nigeria. As the knowledge hub, they provide wide range of resources that are usually tailored to programs offered by its parent institution to facilitate effective learning activities for the attainment of intellectual growth of students, staff and university community at large. Library services are performed through the activities of the collection development, reference services management, document delivery service, readers' services to assist users in information search and retrieval.

Librarians are vital to the functioning of libraries, serving as knowledgeable guides and facilitators of information access. They possess unique combination of expertise in information management, research skills, and community engagement, making them essential contributors to the intellectual growth and development of individuals and communities. American Library Association (ALA) defines librarians as "professionals who are responsible for the organization, management, and dissemination of information and knowledge in libraries. They provide both traditional and electronic services to users depending on the available resources and facilities in their libraries.

Academic libraries globally have progressively employed diverse technological tools in the delivery of customized and efficient services. For instance, libraries have undergone varying technological evolutions ranging from clay tablets, stones, parchments, paper, microfilms, computers, internet, virtual libraries, library 2.0, cloud computing, and lately, artificial intelligence (Oname & Alex-Nmecha, 2020). These stages of transformation in the field of library and information services have recorded a tremendous development as regards integration of

information technology (IT) in service delivery. The introduction of IT in library services enhances operational efficiency, and most importantly improves service quality and customer experience. This makes library work to become very fast and accurate thereby satisfying the needs of library users which are the most important two dimensions in user expectations. Basically, Information and Communication Technology (ICT) enhances the workflow of the library by reducing manual work and increasing ICT-based information services to meet the users' demands. Emerging ICTs have changed traditional libraries into knowledge centers which make librarians to function more like consulting information engineers or knowledge managers (Kumar & Biradar, 2010). The adoption of ICT and a blend of Artificial Intelligence in academic library services like OPAC, library databases, automated circulation of library materials etc have greatly impacted on each sphere of academic library activity as well as giving opportunity to provide value-added information services and access to a wide variety of digital-based information resources to its users.

At the moment, AI technologies are being adopted throughout the world as a developing strategy that provides ease of operations and services in the libraries and so, raising the bar for effectiveness and efficiency of library service delivery, enabling libraries to enhance and offer dynamic services for library users. It is user-friendly, especially in searching for information, and it is used to direct and assist library activities (Yusuf et al, 2022). In other words, AI is a set of technologies that enable computers to perform a variety of advanced functions, including the ability to see, understand and translate spoken and written language, analyze data, make recommendations and more. Artificial intelligence is a branch of computer science that uses computerization models to perform tasks that previously required human intelligence. Consequently, it is regarded as backbone of innovation in modern computing, unlocking value for

individuals and businesses. Accordingly, it is no longer a hidden truth that AI have significantly taken over various sectors in some parts of African, Europe, China, America and beyond, especially in the area of healthcare, agriculture, hospitality, industries, finance, education and e-commerce (Bostrom & Yudkowsky, 2014, Russell & Norvig, 2016).

Research has shown that most academic libraries in the Western world have adopted AI technologies in automated classification, collection management, information retrieval, and recommendation systems. The technology brings about implementation of chatbots which assist patrons with a wide range of tasks, from answering basic reference questions to helping with online services 24/7. This AI tool can handle multiple patron interactions simultaneously, increasing the efficiency of reference services, improve the accessibility of library resources through machine learning algorithms, performing tasks such as image and text recognition, allowing patrons with visual impairments to access digital materials with greater ease.

Scholars have explored the impact and adoption of AI in library operation with emphasis in efficiency, user experience and resources management. Some have argued that AI applications in academic libraries are more of theory than practical. More concerns were raised by librarians that if AI tools are full adopted in libraries, there will be job displacement, high cost of procurement of AI facilities and high technical knowledge involvement. However, little or no research work has been carried out to examine the perception of librarians as regards the possibility of integrating these technologies in academic libraries in Nigeria. It is for this reason that this research “Librarians’ Awareness on the Influence of Artificial Intelligence on Service Delivery in AE-FUNAI, DUFUHS and EBSU Libraries” became imperative.

Objectives of the Study

The main objective of this study is to examine librarians' awareness on the influence of artificial intelligence on service delivery in AE-FUNAI, DUFUHS and EBSU libraries. Specifically, the study seeks to:

1. Examine the extent of librarians awareness of AI technologies and its influence on service delivery in AE-FUNAI, DUFUHS and EBSU libraries;
2. Ascertain how librarians perceive the impact of AI on various service units in AE-FUNAI, DUFUHS and EBSU libraries;
3. Identify challenges librarians face in understanding or adopting AI-driven tools in AE-FUNAI, DUFUHS and EBSU libraries.

Research Question

Three questions were formulated for the study. They are:

4. To what extent do librarians in AE-FUNAI, DUFUHS and EBSU libraries aware of AI technologies and its influence on service delivery?
5. How do librarians perceive the impact of AI on various service units in AE-FUNAI, DUFUHS and EBSU libraries?
6. What challenges do librarians face in understanding or adopting AI-driven tools in AE-FUNAI, DUFUHS and EBSU libraries?

Research Methods

This study was a descriptive survey. The population of the study was 60, and the entire population was used because the size was manageable and small. A structured questionnaire was

designed by the researchers for the study. Data obtained from respondents were analyzed with the aid of the statistical package for Social Sciences (SPSS) version 26 using mean point values with benchmark mean of 3.00 and above as agreed and otherwise disagree.

Review of Empirical Studies

A study conducted by Ajani et al. (2022) examined the perspectives of librarians on the awareness and readiness of adopting AI for library operations and services. Findings revealed that academic libraries in Nigeria are aware of the use of AI and its relevance in libraries globally. In this study, the surveyed librarians were divided in response to their readiness to adopt this technology and integrate it into their daily operations. However, the academic librarians identified some obstacles that may affect the rapid adoption of AI, which include: lack of finance, shortage of expertise, unstable power supply, employee training, and acquisition budgets. Previous research conducted on the quantitative analysis of artificial intelligence's influence across many industries has yielded encouraging findings, suggesting notable enhancements in operational effectiveness and output (Hill, 2020). Within the realm of libraries, research has emphasized the significant impact of artificial intelligence (AI) in streamlining monotonous duties like cataloguing and classification. This, in turn, enables librarians to dedicate additional time to engaging in valuable interactions with library users (Chiranov, 2010). Moreover, the capabilities of artificial intelligence (AI) surpass ordinary automation.

Tripathi (2024) concluded in a study on impact of artificial intelligence on library services and information management that utilization of AI techniques allows libraries to maintain their relevance in the era of digitalization by offering tailored and precise information that corresponds to their users' individual requirements and preferences. These tools possess the capability to study

user behaviour and preferences in order to provide recommendations for pertinent resources. This functionality serves to streamline the process of information retrieval, hence reducing the time and effort expended by users in their search endeavours. In addition, content creation technologies powered by artificial intelligence can assist libraries in identifying deficiencies within their holdings and making informed choices regarding the acquisition of new resources based on data analysis.

Studies conducted by (Cox, Pinfield & Rutter, 2019), (Mallikarjuna, 2024) and (Pachisa & Kulkanjanapiban et al., 2025) examines the various areas AI tools that can be applied in libraries. They confirmed that AI-powered chatbots provide 24/7 reference support, reducing response times by up to 70% while freeing librarians for complex queries. Metadata automation tools now enrich bibliographic records with minimal human intervention, enhancing discoverability while alleviating staff workloads. At institutions like the Universitat Oberta de Catalunya, AI-driven search tools increased library search adoption by 72% and user satisfaction to 83.7% within months. Such advancements underscore AI's potential to transcend efficiency gains and fundamentally redefine user experiences. Moreover, students now adopt the use of AI tools in conducting research; they also enjoy projects like ProQuest Research Assistant which guides students through research workflow, from query formulation to source validation (Springer, 2025). Notably, 86% of higher education students globally now use AI tools weekly for tasks like concept explanation and summarization (Lo, 2025), signaling a seismic shift in information-seeking behaviors. However, this adoption is not uncritical; students express "mixed feelings" about AI as both a "creativity killer" and productivity catalyst (Wood & Evans, 2018).

Akinyemi (2024), Panda and Chakravarty's (2022) and (Harris & Turner, 2021) agreed that AI technologies could be applied in the following areas: reference section; AI-powered tools, such as PaperPulse assist in literature review by scanning, summarizing and categorizing research papers. They provide research guidance, recommend relevant resources, virtual reference, digital preservation, data analytics and support academic instruction. In circulation unit, AI powered chatbots and virtual assistants (e.g., ChatGPT) provide 24/7 support, answer queries instantly, and personalized user interaction, improving overall satisfaction and accessibility beyond traditional hours. Using AI in cataloguing and classification reduce human error and speed up classification and tagging of new materials, improving discoverability and librarian efficiency. Thus, AI technology application in the library generally automates repetitive tasks such as acquisitions, circulation processes, indexing and document retrieval, freeing staff to focus on higher-value activities.

Hussain (2023) and Mallikarjuna (2024) investigated the potential and difficulties encountered by librarians in adopting artificial intelligence in libraries. Findings revealed that while AI is a powerful technology, various obstacles, including financial constraints particularly in developing regions, librarian attitudes, limit access to advanced AI infrastructure, and technical abilities, may prevent its application in library operations. Others include: ethical dilemmas including algorithmic bias in resource recommendations, data privacy violations, and environmental costs, demand rigorous governance frameworks. The findings recommended among others that leadership and continuous learning, AI exploratory working groups will serve as critical success factors in building staff competency through hands-on experimentation thereby eliminating fears of displacement of librarians.

Results and Discussion

Research Question One

To what extent do librarians at AE-FUNAI, DUFUHS, and EBSU libraries aware of AI technology and its influence on service delivery?

Table 1: Mean Rating on the Extent of Awareness of AI Technology and its Influence on Service Delivery

S/n	Reasons	Mean	Decision
1	I am aware that AI can handle routine queries	3.07	Agree
2	I am aware that AI, using chatbots can handle complex task for me 24/7	3.20	Agree
3	I am aware that AI powered systems provide research guidance and recommend relevant resources for academic instruction resources for recommendation	3.33	Agree
4	I am aware that AI powered systems provide personalized recommendation enhancing user engagement and satisfaction	3.22	Agree
5	I am aware that AI automates cataloguing, classification and indexing, reducing manual effort and improving accuracy	3.32	Agree
6	I am aware that AI powered systems suggest relevant books, articles and digital contents based on users preferences	3.35	Agree
Significant mean value= 3.24			

Benchmark: Aggregate Mean ≥ 3.00 = Agree; Aggregate Mean < 3.00 = Disagree

Table 1 showed responses from librarians and library officers in AE-FUNAI, DUFUHS, and EBSU on the extent of awareness of AI and its influence on service delivery. The aggregate mean of 3.24 was obtained for all the items which are greater than the benchmark mean of 3.00. This implies that the benchmark of 3.00 is the decision rule that supersedes. From the above table, respondents agreed with all 6 items, demonstrating the level of awareness of AI technology and its influence on service delivery. This result of this study agrees with the findings of Akinyemi

(2024) and Harris & Turner, (2021) who found that AI technologies can be functional in all the service areas in the library which will ultimately bring about overall satisfaction and accessibility beyond traditional hours.

Research Question Two

How do librarians at AE-FUNAI, DUFUHS and EBSU perceive the impact of AI on various library services?

Table 2: Mean Rating on the Perception of Librarians on the Impact of AI on Various Library Services in the Institutions under Study

S/n	Reasons	Mean	Decision
1	AI powered virtual assistance provide round-the-clock support for routine queries	3.15	Agree
2	AI will automate routine task and work overflow freeing librarians to focus on high valued task	3.33	Agree
3	AI improve user experience and efficiency in the library	3.07	Agree
4	AI powered systems provide personalized recommendations, enhancing user engagement and satisfaction	3.20	Agree
5	AI libraries can serve as data analytics centers, evaluating scholarly trends and user behaviour to guide academic instructions	3.33	Agree
6	AI streamlines cataloguing, classification and indexing rendering manual effort and improving accuracy	3.22	Agree
Significant mean value=3.21			

Benchmark: Aggregate Mean ≥ 3.00 = Agree; Aggregate Mean < 3.00 = Disagree

Table 2 showed responses from librarians and library officers in AE-FUNAI, DUFUHS, and EBSU on the impact of AI on various library services. The aggregate mean of 3.21 was obtained for all the items which are greater than the benchmark mean of 3.00. This implies that the benchmark of 3.00 is the decision rule that supersedes. From the above table, respondents agreed with all 6 items, showing the impact of AI on various library services in institutions under study. This finding agrees with the findings of Tripathi (2024) that found that AI techniques allows

libraries to maintain their relevance in the era of digitalization by offering tailored and precise information that corresponds to their users' individual requirements and preferences. Moreover, Akinyemi (2024), Panda and Chakravarty's (2022) and (Harris & Turner, 2021) agreed that AI technologies could be applied in the following areas: reference section; AI-powered tools, such as PaperPulse assist in literature review by scanning, summarizing and categorizing research papers.

Research Question Three

What challenges do librarians face in understanding or adopting AI-driven tools in AE-FUNAI, DUFUHS and EBSU libraries?

Table 3: Mean Rating on Challenges Librarians Face in Understanding or Adopting AI-driven Tools in Institutions under Study

S/n	Reasons	Mean	Decision
1	Limited awareness or understanding of AI applications in libraries	3.03	Agree
2	Job displacement for librarians	3.17	Agree
3	Insufficient technical knowledge or expertise among library staff	3.32	Agree
4	High implementation cost	3.07	Agree
5	Lack of user privacy and data security	3.32	Agree
6	Lack of human interaction between librarians and users	3.20	Agree
Significant Mean Value=3.18			

Benchmark: Aggregate Mean ≥ 3.00 = Agree; Aggregate Mean < 3.00 = Disagree

Table 3 showed responses from librarians and library officers in AE-FUNAI, DUFUHS, and EBSU on the challenges faced in understanding or adopting AI-driven tools. The aggregate mean of 3.18 was obtained for all the items, which is greater than the benchmark mean of 3.00. This implies that the benchmark of 3.00 is the decision rule that supersedes. From the above table, respondents agreed with all 6 items, showing the challenges faced in understanding or adopting AI-driven tools. This finding agrees with the result of Ajani et al. (2022) that established that

librarians are aware of AI technologies but are divided in response to their readiness to adopt and integrate it into their daily operations. Also, research from Hussain (2023) and Mallikarjuna (2024) affirmed that obstacles as financial constraints particularly in developing regions, librarian attitudes, limit access to advanced AI infrastructure, and technical abilities, among others may prevent its application in library operations.

Conclusion

Based on the findings of this study, AI adoption in academic libraries are no more regarded as a future plan but a now technology. Although librarians in AE-FUNAI, DUFUHS and EBSU have identified areas where AI tools will be useful in the library such as reference, circulation, cataloguing and classification etc, but they suggested likely obstacles that could slow down its realization in academic libraries in Ebonyi State and Nigeria at large. They include: lack of awareness, job displacement for librarians, high implementation rate, among others.

Recommendations

The following recommendations were made based on the findings:

1. Parent institutions should engage in awareness campaigns and professional developments for librarians to build technical competencies and promote confidence in using AI tools.
2. There should be sustainable funding from institutional budget, government or international agencies to cover the costs of procuring AI technologies, its maintenance and training.
3. Institutions should develop clear policy that will address ethical concerns as data privacy, algorithmic fairness and job displacement.

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