

INTEGRATION OF ARTIFICIAL INTELLIGENCE IN ACADEMIC LIBRARY OPERATIONS: PERSPECTIVES OF PROFESSIONALS IN UNIVERSITY OF JOS LIBRARY, PLATEAU STATE

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Abstract

This study was designed to explore the perspectives of University of Jos library professionals about the integration of Artificial Intelligence (AI) into the library's operations. Six research questions guided the study. Mixed methods design was adopted as the research design. Questionnaire and interview were used to obtain the required data. The following are the major findings obtained from the analyses of the questionnaire: majority of the participants 15 (88.2%) are aware of the concept of AI; majority 15 (88.2%) are aware of Chat GPT and Google Gemini as AI tools; about three quarter of them 13(76.4%) use Chat GPT personally for educational purposes; and all the participants 17 (100%) have the perspective that AI will revolutionize the library's operations. Findings obtained from the interview revealed that Chat GPT is currently being used to index newspaper articles in the library's serials section. The findings further revealed that the library plans to integrate AI tools into more of its operations gradually. Based on the findings, it was inferred amongst others that mainstream professionals have positive perspective on the integration of AI into the library's operations. Also, based on the findings, it was recommended that the library management should organize in-house seminars to further enlighten the professionals about AI. Also, it was recommended that the professionals should attend numerous AI conferences. Finally, it was recommended that the management should partner and learn from other academic libraries that are ahead of them in terms of the integration AI into their operations.

Keywords: Artificial intelligence; library operations; perspectives; library professionals; Nigeria; university library

Introduction

In recent times, an emerging technology (Artificial Intelligence) which is an offshoot of Information and Communication Technology (ICT) has begun to gradually transform the society. Valle-Cruz, Munoz-Chavez, and Garcia-Contreras (2023) described “emerging technology” as new or rapidly evolving technology that has the potential to change the way people live, work, and interact with each other. In a report prepared by World Economic Forum (2024), top ten emerging technologies were highlighted and discussed in detail. Amongst the ten are privacy-enhancing technology, integrated sensing and communication, Artificial Intelligence (AI) and so forth.

Russell and Norvig (2020) noted that there is no generally accepted definition of the term AI. According to Sheikh, Prins and Schrijvers (2023) AI is commonly defined as a technology that enables machines to imitate various complex human skills. In 2019, the High-Level Expert Group on Artificial Intelligence proposed a more detailed definition of AI as:

Software or hardware systems designed by humans that given a complete goal, act in the physical or digital dimensions by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information derived from the data and deciding the best action (s) to take to achieve the given goal.

AI is a term that is gaining rapid popularity all over the world. Manning (2020) mentioned that the term was coined out by Emeritus Stanford Professor John McCarthy in 1955, and was defined by him as “the science and engineering of making intelligent machines”. AI is an academic discipline that emerged from the computer science discipline (Khaleed, Jebrel & Shwehdy, 2024). The beginning of AI as a discipline dated as far back as

1956 in a laboratory where a group of scientists made it the subject of an event entitled “The Dartmouth Summer Research Project on AI”. With this project, these scientists formulated a research agenda that launched AI as a discipline (Sheikh et al., 2023). According to Tai (2020) some schools of thought view AI as the industrial revolution 4.0. Schwab (2025) affirms that AI belongs to the fourth industrial revolution technologies.

Contextual setting

The University of Jos Library began as a campus library servicing the newly created Jos campus of University of Ibadan, in 1972. Services in the Library started in February 1972 with seating capacity for fifty-six readers (Akintunde, 2015). Today the library has three main branches each with a collection of various types of resources in different formats especially print and electronic (University of Jos, 2025). Also, the library has a work force of 117 staff (J.Gwomson, “personal communication”, 2025). Through head count, out of the 117 staff, 32 are professional librarians who hold various degrees in the field of library and information science ranging from first degree, master’s and doctoral degrees. These librarians work in various sections of the library together with other library staff who are para-professionals or non-professionals.

Statement of the problem

AI holds great and numerous potentials for academic libraries. At the University of Jos library, from observation, AI has not been officially launched and integrated into the operations of the library. However, since AI technology is gaining fast popularity and acceptance in the educational sector, there is every likelihood that in no distant time, the

University of Jos library will also key into this new technological innovation just like other academic libraries that are currently doing so. Hence, there is need to investigate the perspectives of the librarians concerning the possible integration of AI into the operations of the library.

Research questions

To investigate the perspectives of University of Jos library professionals on the integration of AI into the library's operations, six research questions were formulated. The research questions are:

1. What is the awareness level of the library professionals about the concept of AI?
2. What are the specific AI tools that are being used personally by the professionals?
3. What are the professionals' purposes for using the AI tools?
4. What is the level of awareness among the professionals regarding the prospects that AI offers to academic libraries?
5. What are the perspectives of the professionals concerning the integration of AI in the library's operations?
6. What is the present status of the library with respect to the integration of AI into its operations?

Literature review

For a new technology to be used, the potential users of the technology need have adequate knowledge about the technology. This is necessary because without having

adequate knowledge, using it efficiently will be problematic. In literature, studies have been conducted that revealed findings on librarians' awareness of the use of AI in academic libraries. Among such studies is the study that was conducted by Owolabi, Fauziyah, Adeleke, Adesina and Ajayi (2021). Findings of the study revealed that participants who are academic librarians are aware of the use of AI in libraries. A similar finding was reported by Lulu-Pokubo and Okwo (2024), while a contrary result was reported by Onwubiko, Offor and Onwubiko (2025).

There are numerous AI tools available for use by individuals and organizations. Szatar (2024) described AI tools as applications or software program that leverage AI models and algorithms to perform a specific task. Rathinabapathy, Swetha and Veeranjaneeyulu (2023) highlighted some AI tools that are available for use by librarians. These include Bing Create, Books AI, Chat GPT, Consensus, Semantic Scholar and GrammarGPT (Rathinabapathy et al., 2023). Odigie (2024) explored the awareness, use and challenges facing the integration of AI in library services by librarians in north-central Nigeria. Findings of the study revealed that reference librarians demonstrated a substantial awareness of AI tools such as ChatGPT and Gemini. However, the findings further revealed that the utilization of these tools remains primarily for personal use rather than professional service delivery.

Individuals use AI daily for different personal purposes. Marr (2019) highlighted some examples of the use of AI in our everyday life. These include its use in face recognition through smartphones, assisting individuals to get personalized feeds, and being employed

by individuals as digital voice assistants. Other purposes of using AI by individuals include: to organize schedules, to set reminders, and to provide quick answers to queries (Alarape, 2025).

AI is transforming the tertiary education sector, and academic libraries are no exception. AI holds numerous prospects for being used to perform library tasks. Thus, there are evidences of using AI in academic libraries. In a study conducted by Mahmud (2024) it was reported that AI technologies particularly machine learning and natural language processing, offer significant potential for enhancing efficiency, consistency and depth in metadata creation and classification.

When there is an emerging technology in the society, people working in an organization tend to have different perspectives concerning the integration of the technology into their organizational operations. Cambridge University Press (2025) defined the word “perspective” as a particular way of viewing something, that depends on one’s experience and personality. By this definition, it implies that ones’ view about an issue such as the adoption of a new technology, could be positive, negative, or in form of concern due to foreseen challenges or difficulties that might be encountered when trying to adopt the technology. In the finding of the study that was conducted by Owolabi et al. (2021), it was revealed that the participants have the view that the AI technology will enable efficient user satisfaction. Similar finding was reported in the study that was conducted by Onwubiko et al. (2025).

In literature, there are evidences of the integration of AI into academic library operations. Such evidences could be found in the studies carried out by Huang, Cox and Cox (2023) in the United Kingdom and Mainland China; Owusu-Ansah, Amankwah, Yeboah, Amoako, Boateng and Nutsukpui (2024) in Ghana; Masinde, Mugambi and Wambiri (2024) in Kenya; and Wagwu, Okpala, Oladokun and Ajani (2023) in Nigeria. However, in literature, a few studies were found that investigated the perspectives of librarians on the integration of AI in academic library operations. These include the studies conducted by Ajani, Tella, Salawu and Abdullahi (2022), K. (2024), Odigie (2024), Kalbande, Suradkar, Chavan, Verma and Yuvaraj (2024), Onwubiko et al. (2025), Oyekale and Zubairu (2023), and Tai and Ghosh (2025). The present study adds to the existing literature.

Methodology

This study explored the perspectives of professionals in University of Jos library on the integration of AI into the library's operations. Explanatory sequential mixed methods research design was adopted. The study population comprised all the 21 librarians who were on ground at the time of the study, excluding the researcher. The researcher was excluded to avoid the possible introduction of subjectiveness into the study. Total enumeration method was used as the sampling technique because the population of the librarians was not too large. The study population also included all the 20 heads of sections in the library. Purposive sampling technique was used to select the library's head of systems unit to participate in the study. To address the six research questions, numeric and non-numeric data were obtained from the participants. The numeric (quantitative) data

were collected and analysed first. Non-numeric (qualitative) data were collected afterward to clarify the quantitative findings. Hence, questionnaire was used as the data collection instrument for research questions 1-5, while interview was used to obtain data for research question 6. The copies of questionnaire were administered to the librarians, while a one-on-one interview was conducted between the researcher and the head of systems unit. Out of the 21 copies of questionnaire distributed to the participants, 17 copies were completed and returned to the researcher which gave a response rate of 80.9%. The copies of questionnaire were analyzed quantitatively using simple frequency counts and percentages. The interview results were presented as verbatim quotes and interpreted by the interviewer by exploring the meanings in the quotes and by drawing valuable conclusions.

Presentation of results and discussion

In this section, the results obtained are discussed based on the six research questions that guided the study.

Research question 1: What is the awareness level of the library professionals about the concept of AI?

Table 1a: Awareness of the concept of AI among library professionals

N=17

Awareness of the concept of AI	Responses (%)
Yes	15(88.2%)
No	2(11.7%)

Total 17(100%)

Table 1a shows the participants' awareness of the concept of AI. From the table, it could be seen that majority of the participants 15 (88.2%) are aware of the concept of AI. This finding is similar to the findings obtained by Onwubiko et al. (2025), and Owolabi et al. (2021).

Table 1b. Awareness of AI tools by library professionals

N=17

S/No	Awareness of AI tools	Responses (%)
1.	Chat GPT	15 (88.2%)
2.	CoPilot	7 (41.1%)
3.	Grammarly	12 (70.5%)
4.	Turnitin	5 (29.4%)
5.	Quill Bot	8 (47%)
6.	Google Gemini	12 (70.5%)
7.	Spotify DJ	6 (35.3%)
8.	AI Face swap	4 (23.5%)
9.	DeepSeek	5 (29.4%)
10.	Others, not mentioned above	4 (23.5%)

Table 1b shows the awareness of AI tools by the participants. From the table, it could be seen that most of the participants 15 (88.2%) are aware of Chat GPT as an AI tool. This is followed by 12 (70.5%), and 12 (70.5%) participants who are aware of Grammarly and Google Gemini. However, from the result obtained, it could be seen that only 4 (23.5%) participants are aware of AI Face swap. Also, only 4 (23.5%) participants are aware of other

AI tools not mentioned in the table. This finding indicates that most of the participants are aware of Chat GPT, Grammarly and Google Gemini as AI tools. The finding is similar to the finding obtained by Odigie (2024), where it was revealed that reference librarians demonstrated a substantial awareness of AI tools such as ChatGPT and Gemini. These findings indicate that there are certain AI tools that are commonly known by the participants. This could probably be because, the AI tools are numerous, therefore, it is difficult for individuals to have knowledge about all the tools. Moreover, new tools are still emerging.

Research question 2: What are the specific AI tools that are being used personally by the professionals?

Table 2: Personal use of AI tools

N=17

Personal use of AI tools	Responses (%)
Chat GPT	13 (76.4%)
CoPilot	5 (29.4%)
Grammarly	8 (47%)
Turnitin	0 (0%)
Quill Bot	4 (23.5%)
Google Gemini	11 (64.7%)
Spotify DJ	2 (11.7%)
AI Face swap	1 (5.8%)
DeepSeek	6 (35.2%)

Others, not mentioned above 0 (0%)

The result obtained in table 2 shows that most of the participants 13 (76.4%) use Chat GPT personally. This figure is followed closely by 11 (64.7%) participants who use Google Gemini. The least number of participants 1 (5.8%) use AI Face swap, while none 0(0%) of the participants indicated using other AI tools not mentioned in the table. This finding indicates that majority of the participants use Chat GPT and Google Gemini for personal purposes. This finding corresponds with the finding obtained by Odigie (2024), where it was disclosed that the utilisation of AI tools among the study participants remains primarily for personal use rather than for professional service delivery.

Research question 3: What are the purposes for using AI tools by the professionals?

Table 3: Purposes for using AI tools by the professionals

N=17

Purposes for using AI tools by the professionals	Responses (%)
Educational purposes	13 (76.4%)
Health purposes	4 (23.5%)
Financial transactions	5 (29.4%)
Sports and entertainment	2 (11.7%)
Personalized online recommendations	9 (52.9%)
Personal/voice assistants	6 (35.2%)
Navigation	13 (76.4%)
Social media activities	11 (64.7%)

Others, not mentioned above 2 (11.7%)

The result above reveals the purposes for using AI tools by the participants. From the table, it could be seen that mainstream participants 13 (76.4%), and 13 (76.4%) use AI tools for educational purposes and navigation. As concerns academic purposes, the finding implies that the participants are serious minded scholars who employ AI to assist them with their scholarly works. This is followed by 11 (64.7%) participants who use it for social media activities. However, only 4 (23.5%) participants use AI tools for health purposes. This could probably be because the participants do not know much about the use of AI for health purposes. Also, only 2 (11.7%) participants, and 2 (11.7%) participants use it for sports and entertainment, and for other purposes not mentioned in the table.

Research question 4: What is the level of awareness among the professionals regarding the prospects that AI offers to academic libraries?

Table 4: Awareness of the prospects of the use of AI in academic libraries by the library professionals

N=17

Awareness of prospects of using AI in academic libraries	Responses (%)
AI has prospects in automation of repetitive tasks	15 (88.2%)
AI has prospects in efficient resource allocation	14 (82.3%)
AI has prospects in offering personalized services	14 (82.3%)
AI has prospects in performing data analytics aimed at collection development	16 (94.1%)
AI has prospects in preservation and restoration of library materials	8 (47%)

AI has prospects in abstracting and indexing services offered by libraries	15 (88.2%)
AI can be used in the library for enhanced reference services	16 (94%)
AI can be used in the library for enhanced circulation services	14 (82.3%)
For other prospect(s) not mentioned above	3 (17.6%)

The result obtained in table 4 above shows the awareness of the prospects of the use of AI in academic libraries by the participants. From the table, it could be seen that almost all the participants 16 (94%), and 16 (94%) are aware of the prospects of using AI in performing data analytics and for enhancing reference services. This is closely followed by 15 (88.2%) participants, and 15 (88.2%) participants who are aware of the prospects of AI in automation of repetitive tasks in the library, and in abstracting and indexing services offered by academic libraries. This finding indicates that mainstream participants are aware of some prospects of the use of AI in academic libraries. However, from the findings, less than half 8 (47%) of the participants are aware of the prospect of AI in the preservation and restoration of library materials.

Research question 5: What are the perspectives of the professionals concerning the integration of AI in the library?

Table 5: Perspectives of library professionals concerning the integration of AI into the library operations

N=17

Perspectives of participants concerning the integration	Responses (%)
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of AI into the library operations

Artificial intelligence will revolutionize library operations	17 (100%)
Artificial intelligence may take over the jobs of librarians due to its ability to automate jobs and perform them more efficiently	11 (64.7%)
Artificial intelligence will greatly enhance library operations	12 (70.5%)
For librarians to use AI, there will be training requirements	13 (76%)
The cost of implementing AI may be too high	17 (100%)
I am concerned about ethical issues surrounding the use of AI in the library, such as data privacy and protection, biasness, and intellectual property rights	8 (47%)
I have phobia concerning using a new technology to perform library tasks	5(29.4%)
Integration of AI into library operations may be a slow process because the concept is still relatively new in Nigerian libraries	13 (76%)
Others not mentioned above	1 (5.8%)

From the result obtained in table 5, it could be seen that all the participants 17(100%) have the perspective that AI will revolutionize the library, while 12 (70.5%) participants have the perspective that AI will greatly enhance library operations. These findings indicate that majority of the participants have a good perspective about the integration of AI into the library's operations.

However, from the result, it could also be seen that all the participants 17 (100%) have the perspective that the cost of implementing AI in the library may be too high. This finding is followed by 13 (76%) participants, and 13 (76%) participants who also have the perspective that for them to use AI in the library, there will be training requirements, and

the integration of AI into library operations may be a slow process in Nigeria. From the result, less than half 5 (29.4%) of the participants acknowledge that they have phobia in the learning of a new technology. These findings indicate that although majority of the participants have positive perspective about the integration of AI into the library's operations, they also harbour certain fears or concerns regarding the integration.

Research question 6: What is the present status of the library with respect to the integration of AI into its operations?

To address the sixth research question, an interview session was arranged between the researcher and the head of systems unit in the University of Jos Library. The interview is presented below.

Question: Has the library officially integrated the use of AI into its operations?

Response: *"Yes, for now, the library has officially integrated the use of Chat GPT into its operations in the serials section. The Serials staff use Chat GPT to carry out indexing of newspaper articles in the Section."*

Question: Apart from the serials section, is there any other section that is officially using AI tools for its operations?

Response: *"No, I am not aware of any other section that is officially using AI tools to carry out its operations."*

Question: Is there plan by the management for other sections to integrate AI tools in their operations?

Response: *“Yes, but it will be a gradual process”.*

Result of the interview with the head of systems unit revealed that at the moment, Chat GPT has been officially integrated into the operations in the serials section of the library. The result also revealed that there is plan by the management for other sections to also integrate AI tools into their operations.

The interview result compliments the questionnaire result by revealing that AI is currently limited to the serials section and expansion will be gradual. Thereby indicating that although the awareness level of AI among the professionals is high, only one section of the library has started using one of the AI tools to carry out one function which is indexing. The interview result also validates the result of the questionnaire due to the fact that it reveals that only a few staff use AI tools for official purposes. Thereby supporting the questionnaire finding that shows that majority of the professionals use AI tools for personal purposes rather than official. The interview result also supports the questionnaire result by revealing that the library management also has a positive perspective about the integration of AI into the library’s operations. Since the library has started the gradual integration of the AI tools into its operations.

Recommendations

This study was designed to investigate the perspectives of professionals on the integration of AI in University of Jos library. Based on the findings of the study, the following recommendations are proffered:

1. Due to the fact that AI is an emerging technology, there is need for the library management to organize in-house seminars for the professionals to enlighten them more about the concept. This would enable the professionals to fully understand the concept and its integration into the library's operations.
2. The management and professionals should endeavor to attend numerous AI conferences and workshops. This would enable them to be updated about the concept.
3. The management should partner with other academic libraries both nationally and internationally who are ahead of them in terms of integrating AI into their operations. This would facilitate a greater understanding of the concept for better planning and integration.
4. The management should also explore the future training needs of their professionals concerning the use of AI tools in the library to enable them understand areas where the professionals would require training and to plan ahead towards such training.
5. Professionals that experience technophobia should apply exposure therapy to build confidence and self-esteem through gradual learning of the use of AI tools.

Conclusion

This study explored the perspectives of professionals about the integration of AI in University of Jos library operations. Based on the findings, it could be inferred that majority

of the professionals have a good perspective about AI integration into the library's operations. However, some professionals also have certain concerns.

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