

ASSESSMENT OF AWARENESS, PERCEPTIONS, AND ADOPTION OF ARTIFICIAL INTELLIGENCE IN UNIVERSITY LIBRARIES IN OSUN STATE, NIGERIA

OYEKALE, JOHN OYEWALE

Postgraduate Student. Department of Library and Information Sciences.

Adeleke University Ede, Osun state

John.ovekale@uniosun.edu.ng

&

ZUBAIRU, AISHATU NYA

Senior Librarian

Adeleke University Library Ede, Osun State.

aishatu.zubairu@adelekeuniversity.edu.ng

Abstract

The study examined an assessment of awareness, perceptions, and adoption of artificial intelligence in university libraries in Osun State, Nigeria. The study adopted a descriptive survey. The population for this study consisted of 10 university libraries in Osun State, Nigeria. Structured interview questions were used to elicit responses from the respondents. Frequency count and percentages were used to analyze the data collected. Findings revealed that 80% of the respondents are aware of artificial intelligence, similarly, 80% of the respondents claimed to have a positive perception regarding AI, they affirmed that AI is here to make library routine easier and not take their job from them, and finally 100% of the responded claimed that AI is yet to be adopted in the surveyed libraries. Based on the results, the awareness level of librarians was high, as well as their perception, however, AI is yet to be adopted among the libraries surveyed, considering the advantages associated with AI to libraries. The study, therefore, recommends that stakeholders in library administration and institutional management need to invest in artificial intelligence and also encourage the training of librarians in this regard for efficient information service delivery.

Keywords: Adoption, Artificial intelligence, Assessment, Awareness, Perception, University libraries.

Introduction

In recent years, artificial intelligence (AI) has filtered into many facets of human activities. Due to its importance, it has permeated almost all facets of human endeavors. Since the beginning of time, librarians have reacted to new technology developments that give convenience to their daily tasks. One of the processes that have increased the capacity of library services and workflows is library automation. Robotics, Pattern Recognition (PR), Expert Systems (ES), and Natural Language Processing (NLP) has been demonstrated in earlier studies in librarianship

to be aspects of artificial intelligence that are helpful for library operations and services (Moghali, 2014; Vijay & Sheshadriri, 2019; Okpokwasili, 2019; & Asemi et al. 2020). Artificial intelligence (AI) is one of the technical developments that has gained traction over time.

Machine learning and decision-making that resembles human intellect are known as artificial intelligence. The creation of intelligent machines that can function and communicate like people is at the heart of artificial intelligence technology. This is dependent on machine learning and natural language processing, which allow the computer

to perform specific jobs by analyzing vast volumes of data to find patterns, offer input for predictions, and receive feedback to increase accuracy over time (American Library Association (ALA), 2020). Currently, the development of artificial intelligence (AI) can update, improve, and augment many digital applications, providing these technologies some autonomy without the need for human intervention. The requirement for awareness regarding AI cannot be overstated given the variety of needs of the current technological survey clientele.

The awareness level of AI among librarians has received varied outcomes. It has not only been in recent years that the conversations surrounding the impact of AI on libraries have emerged (Hervieux, & Wheatle, 2021). Although, Wood and Evans (2018) posited that artificial intelligence is not much discussed in library literature as compared to professions like medicine, law, military, and aviation. However, its possibilities for library services can be indescribable. The ability of machine learning, natural language processing, and massive computing power will have a profound impact on librarianship as other professions (Das & Islam, 2021). Similarly, Abayomi et.al (2020) affirmed that most academic librarians are aware of the existence of AI usage in university libraries. In a related development, Berdasco et.al (2019) asserted that 99% of their respondents were aware of the various assistants but, only 86% had used them. Codex (2019) stated that at least 22% of librarians studied were aware of having used the technology at some point as part of their job duties. Even though they expressed varied perceptions regarding the concept.

Perception is viewed as the feelings expressed about AI by librarians. Some studies have focused on librarian perception of AI. Hervieux and Wheatley (2021) argued that librarians have mixed feelings while some expressed positive feelings about AI, others have negative feelings because to them AI is irritating, a

possible loss of skills for them among others. Yoon et. al (2022) emphasized that librarians have positive perceptions regarding AI, they are optimistic that AI and related technologies will transform information provision as well service delivery. Although all these mixed perceptions may affect its acceptance and adoption in some libraries.

Previous research has shown that libraries always work to adapt to new technology to keep up with them. A discussion about AI is also expected to be present in libraries as it continues to generate buzz. According to Hervieux and Wheatley (2021), some librarians did not think that their library held any AI technologies, while the majority of libraries denied that they were actively using AI. Young-Ho (2022) asserted librarians agreed that AI application is inevitable, though its uptake has been constrained by the difficulties of its implementation.

Given that librarianship is a patron-driven profession, AI is more crucial than ever. Libraries have historically offered support for new technologies, one of which is the maker space craze of the twenty-first century (Fourie & Meyer, 2015). Libraries have recently been striving to remain relevant in a digital environment that has long sought to demonstrate the field's obsolescence. Libraries that have been mechanized or digitalized have demonstrated resilience of libraries by working to enhance the user experience. As a result, integrating AI into libraries must be a top priority.

Despite the benefits associated with AI, observation, and literature revealed a dearth of study, especially in libraries. Therefore, the study investigated: an assessment of awareness, perceptions, and adoption of artificial intelligence in university libraries in Osun State, Nigeria.

Statement of the Problem

The next phase of the industrial revolution is fundamentally dependent on artificial intelligence (AI). This time is already moving toward a future in which service robot teams, unmanned aerial vehicles, virtual assistants, and other intelligent agents that aid humanity will be an integral part of daily life for people. Although the library is renowned for its efforts to implement cutting-edge technologies to simplify daily tasks and information services delivery. However, the library must seize the opportunities that AI is providing for it. given the nature of its regular operations and the technologically astute nature of its current users. Observation and research found that little has been done about the incorporation of AI into librarianship, despite the opportunities connected with AI for libraries (Wood & Evans, 2018). Evaluation of Artificial Intelligence Awareness, Perceptions, and Adoption in University Libraries in Osun State, Nigeria.

Objectives of the Study

1. assess the level of awareness of artificial intelligence by librarians in university libraries in Osun State Nigeria;
2. evaluate librarian's perceptions toward artificial intelligence in Osun State Nigeria; and
3. find out the extent of adoption of artificial intelligence in university libraries in Osun State, Nigeria.

Research questions

1. what is the level of awareness of artificial intelligence by librarians in university libraries in Osun State Nigeria?
2. what are the librarian's perceptions toward artificial intelligence in Osun State Nigeria?

3. what is the extent of the adoption of artificial intelligence in university libraries in Osun State, Nigeria?

Methodology

The study adopted a survey design. The population of the study consisted of ten (10) universities accredited by the National Universities Commission (NUC) in the State. Namely, Adeleke University, Ede; Bowen University, Iwo; Fountain University, Osogbo; Joseph Ayo Babalola University, Ikeji-Arakeji; Kings University, Ode-Omu; Obafemi Awolowo University, Ile-Ife; Oduduwa University, Ipetumodu, Ile-Ife; Osun State University, Osogbo; Redeemer's University, Data were collected using structured interview questions. Data were analyzed using percentages and frequency counts.

Literature Review

A study by Aboyemi et. al (2021) on awareness and perception of artificial intelligence in the management of university libraries in Nigeria. The findings of the study revealed that academic librarians are aware of the existence of AI usage in university libraries based on their perception level, they expressed no fear of job losses, but they opt for the need to acquire the necessary skills with the technology. Similarly, Hervieux and Wheatley's (2021) study evaluates the perceptions of librarians concerning artificial intelligence in academic libraries. An online survey of 24 questions was distributed through library distribution lists in Canada and the United States. Findings on perception suggest that librarians require more training in artificial intelligence and its potential applications in libraries. Similarly, some expressed optimism about the benefits it would offer the library, while others have negative feelings toward AI. In a related development, A study by Cox et.al (2019) on the intelligent library: Thought leaders' views

on the likely impact of artificial intelligence on academic libraries. The findings revealed that 22% of their respondents were aware of AI and they also affirmed using this technology at some point as part of their job duties, however, 8% of librarians affirmed they have adopted this technology and that they were actively using AI in their libraries

Bardasco et.al (2019) investigated user experience comparison of intelligent personal assistants: Alexa, Google Assistant, Siri, and Cortana. The study found that 99% of the respondents were aware of the existence of various assistants but only 86% had used them. Equally, Arora et.al (2020) investigated invigorating libraries with the application of artificial intelligence. Their study reported the most common use of the adopted AI is the virtual reference chatbots that use machine learning, a subtype of AI to provide patrons with answers to simple questions. In the same vein, the Yoon et.al (2021) study reported perceptions of AI technologies were generally more positive. In all, 67% of them responded that AI and related technologies will transform the library's functions, and 68% of librarians reported that they are interested in training. However, based on these results training for preparing librarians for AI and related technologies becomes very important.

A study by Ali et.al (2022) on Artificial intelligence tools and university librarians: an overview. The results showed that librarians are aware of AI technologies. Services based on

Natural Language Processing (NLP) are used in libraries, e.g. Google Assistant, Voice Searching, and Google Translate. Pattern recognition methods, such as text data mining, are also used to retrieve library material and conduct online searching. Big data is accessed via services such as cloud computing, OneDrive, and Google Drive. Although there is a very low level of awareness of robotics and chatbots. This study further provides librarians with suggestions as to how AI tools could be used in libraries that either are yet to adopt AI technologies or wish to implement more advanced tools. Vysakh and Rajendra (2020) investigated libraries' robot which focuses on India. Their study enumerated how robots can be effectively deployed in libraries. They claimed that many libraries in the US and China have installed this technology. They further enumerated areas where robots can be used including the arrangement of books, sorting of materials, retrieval of information, resource handling, and record keeping.

Wheatley and Hervieux (2019) collected information about academic libraries by reviewing their various documents and scholarly articles to ascertain the level of references to artificial intelligence and to ascertain the context in which it was been made. To know how libraries and librarians are responding to the artificial intelligence revolution of the present time. Their findings showed that academic libraries are not responding positively to the current trend in technology.

Results Presentation

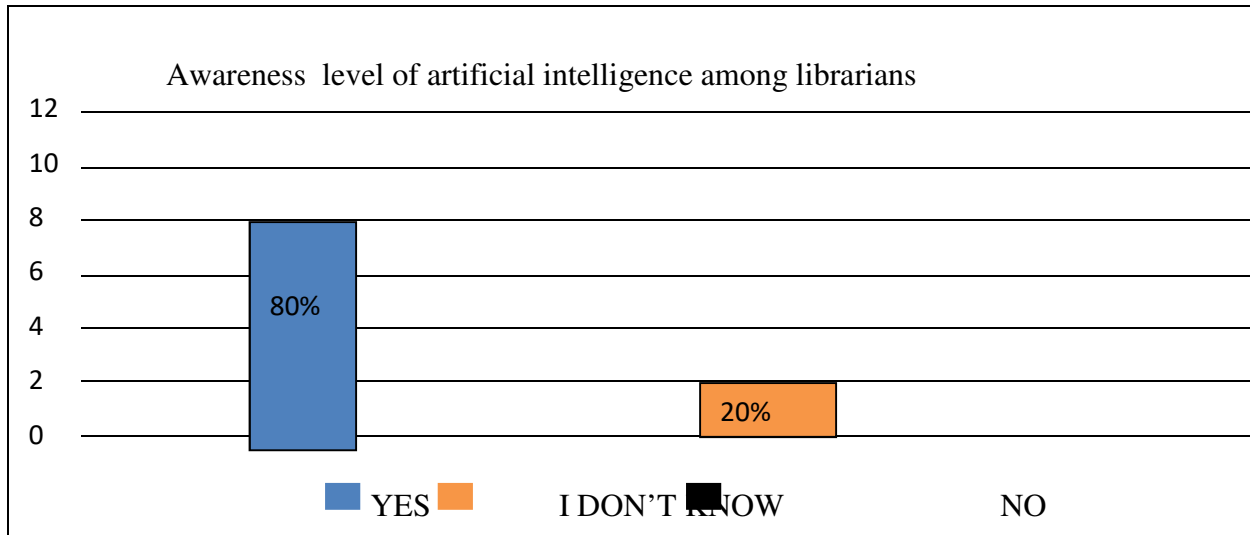


Chart 1: Question 1, (n=10)

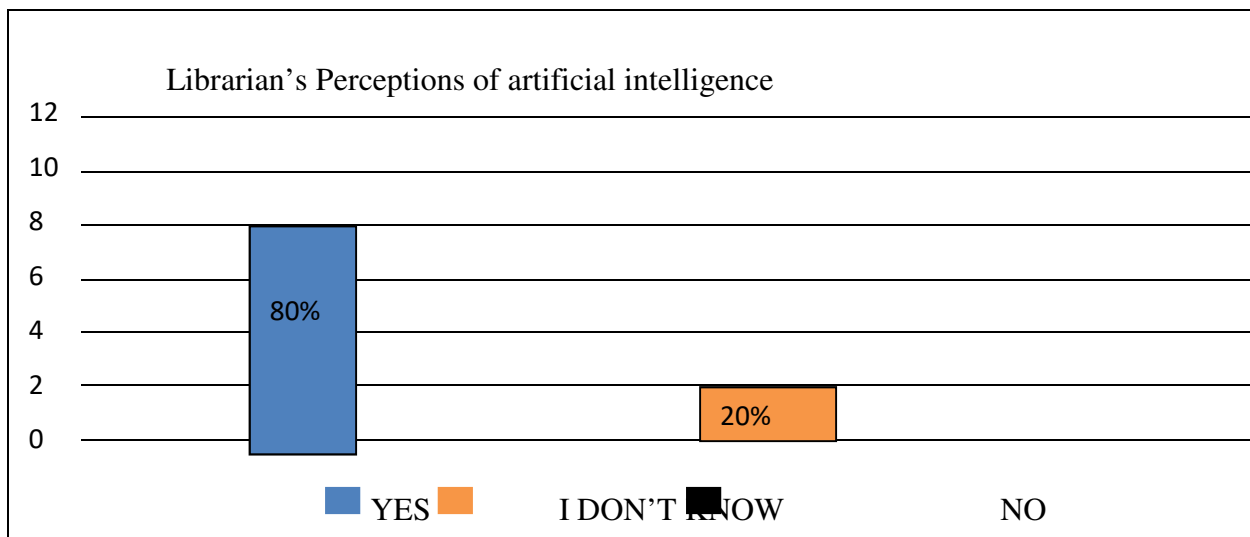


Chart 2: Question 2, (n=10)

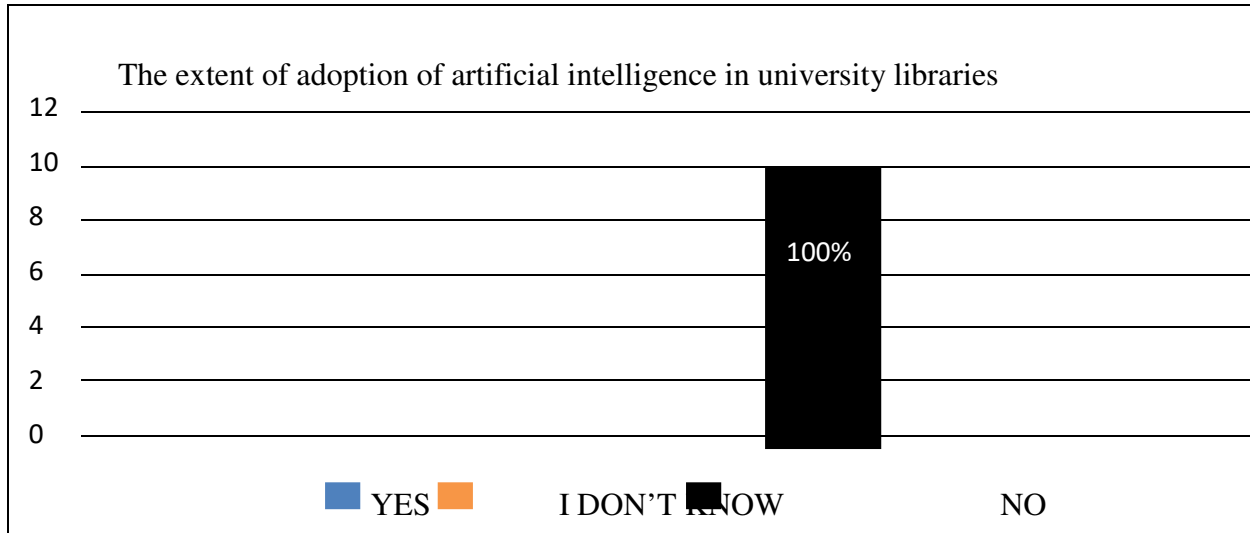


Chart 3: Question 3, (n=10)

Analysis of the research questions

Chart 1 gives the analysis of responses to research question 1, on the awareness level of artificial intelligence in the library. Based on the result, it revealed that 80% of the respondent claim to be aware of AI while 20% showed that they are not aware, as some of them mentioned integrated library Systems (ILS), video, cameras, and automatic doors as examples of artificial intelligence applications. This result is in tandem with the findings of Cox et.al (2019) whose results revealed that 22% of their respondents were aware of AI and they also affirmed that they have used this technology at some point as part of their job duties. In a similar vein, the result collaborates with Aboyemi et. al (2021) results on awareness and perception of artificial intelligence in the management of university libraries in Nigeria, revealing that academic librarians are aware of the existence of AI usage in university libraries. Also, the results are in consonant with Bardasco et. al's (2019) study found that 99% of the respondents were aware of the existence of various assistants but only 86% had used them. It is also in agreement with Ali et.al (2022, study on Artificial Intelligence Tools and University Librarians: an overview, which revealed that librarians are aware of AI technologies. Services based on

Natural Language Processing (NLP) are used in libraries, although there is a very low level of awareness of robotics and chatbots. Therefore based on the result, it revealed that librarians in Osun State are aware of AI.

Chat 2 gives the response to research question two regarding the perceptions of librarians on AI. Based on this study, the result revealed that 80% of the respondent expressed positive perception, they furthered that they don't believe AI Is here to take over their job, but rather ease the library routine while 20% expressed negative feelings. This study collaborates with the outcome of Hervieux and Wheatley (2021) who reported a positive feeling regarding artificial intelligence and its potential applications in libraries. Similarly, they expressed optimism about the benefits it can offer the library. Although others have negative feelings towards

Chat 3 responds to research question 3 on the extent of the adoption of artificial intelligence in university libraries. Based on the results of the study 100% of the respondent indicated that no library in Osun State is yet to adopt AI. This result negates the findings of Cox et.al (2019), their respondents affirmed that they have used this technology at some point as part of their job duties, however, 8% of librarians affirmed they have adopted this technology and that they were actively using AI in their libraries. Also,

the Bardasco et.al (2019) study revealed that 99% of the respondents were aware of the existence of various assistants but only 86% had used them. In a related study, Arora et.al (2020) reported the most common use of adopted AI is the virtual reference chatbots that use machine learning, a subtype of AI to provide patrons with answers to simple questions. Based on this result it is clear that university libraries in Osun State are yet to adopt any AI.

Conclusion

The study showed a high percentage level of artificial intelligence awareness by librarians. Librarians also expressed positive perceptions as regards AI. More so, findings indicated that libraries are yet to adopt AI. Unlike other professions. This shows that libraries may be missing out on the benefits AI can offer. Similarly, librarians expressed that artificial intelligence will not displace them from their job and are willing to learn, adapt, and equip themselves by attending workshops on AI.

Recommendations

Based on the findings, the study, therefore, recommends that a wider orientation to increase awareness regarding Artificial Intelligence (AI) among librarians is very essential. With the level of perception, what is required now is the need for training for librarians regarding AI such as short courses, conferences, and seminars in this regard, and an intentional investment by institutional management and embracing artificial intelligence as a tool that will enhance their information service delivery.

Also, library management and proprietors of these universities studied should afford librarians opportunities regarding training in this regard, this will equip them with the distinct means to satisfy the information needs of their diverse library users.

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