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CATALOGUERS' AWARENESS, KNOWLEDGE, AND PREPAREDNESS FOR THE ADOPTION OF ARTIFICIAL INTELLIGENCE IN CATALOGUING AND CLASSIFICATION: A STUDY OF FEDERAL UNIVERSITY LIBRARIES, NORTHEAST NIGERIA

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ABSTRACT

Four objectives were formulated and, four research questions were answered in the study. The population was forty-four (44) cataloguers and total enumeration sampling was adopted. A self-designed 5 points-likert's type questionnaire was used for data collection. The instrument had a reliability coefficient of .83 obtained using Pearson Product Moment Correlation through test re-test method. 44 copies of the questionnaire were administered to the cataloguers of seven federal university libraries Northeast Nigeria, out of which thirty-nine (39) were returned and used for the data analysis. Data were analyzed using descriptive statistics of frequency counts, percentage, mean and standard deviation. The findings revealed that cataloguers were not aware of the adoption of AI, their level of knowledge was low, and they were not prepared for the adoption of AI in cataloguing and classification. the challenges and barriers to the adoption of AI in cataloguing and classification include technical infrastructure limitations, lack of training and expertise, bias in AI decision-making, difficulties in balancing automation with human judgment, copyright and licensing issues, problems of integration with existing workflows, job displacement, difficulties in addressing ethical considerations, problems of interoperability with existing systems, inadequate funding and resource allocation. Based on the findings some recommendations among other were made the management of the libraries under study should Provide training and workshops on AI applications in cataloging and classification. Encourage cataloguers to attend conferences and webinars on AI in libraries. Share relevant literature and resources on AI in cataloging and classification.

KEYWORDS

Cataloguers, Awareness, Knowledge, Preparedness, Artificial Intelligence, Cataloguing and Classification

Background of the Study

The advent of Artificial Intelligence (AI) has transformed various sectors, including libraries and information management. AI-powered tools and techniques have the potential to revolutionize cataloging and classification

processes, enhancing efficiency, accuracy, and user experience. However, the successful adoption of AI in cataloging and classification depends on the awareness, knowledge, and preparedness of cataloguers. The increasing volume and complexity of information resources have necessitated the exploration of

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innovative technologies to enhance cataloguing and classification processes. Artificial Intelligence (AI) has emerged as a potential game-changer, offering automated solutions for metadata creation, entity disambiguation, and knowledge graphing. Nevertheless, the successful integration of AI in cataloguing and classification depends on the readiness of cataloguers to adapt to new technologies.

Cataloguing and classification has an essential position in running library services successful because it is concerned with organisation and creation of metadata for all collections in libraries. The collections or information resources can include textbooks, journals, sound recordings, motion pictures, audio-visuals, cartographic materials, computer files e-journal and electronic books are in huge number in different libraries and information centers across the globe. Therefore, if they are not organised, users might find it almost impossible to have access to them. If such happens, it is as good as the information resources are lost or that the library is empty. For access to be provided to users, the information resources ought to be organised properly and that is where cataloguing and classification comes in action. This will make access and locating information resources in libraries smoothly and faster. Cataloguing and classification has existed and functioned in numerous eras including ranging from the initial stage of manual cataloguing and classification system, automated cataloguing and classification system using MARC to copy-cataloguing, and now, here we are in the era of artificial intelligence. And no doubt, this era where artificial intelligence is the center of focus has revolutionised the way we do our daily activities as professionals, and has also revolutionised how we think (Gundakal and Kaddipujar (2019)

The integration of Artificial Intelligence (AI) in cataloguing and classification has revolutionised information resource management in libraries, but cataloguers' preparedness is vital for successful AI adoption (Owobabi Okorie, Yemi-Peters, Oyetola, & Oladokun 2021). As AI technologies continually evolve, cataloguers must develop awareness, knowledge, and preparedness to effectively utilise these tools. However, university libraries and cataloguers in Nigeria exhibit limited enthusiasm and readiness for AI adoption. Despite awareness of global AI applications in libraries, Nigerian academic libraries struggle to integrate AI into daily operations, with librarians holding divergent views on preparedness (Owobabi Okorie, Yemi-Peters, Oyetola, & Oladokun 2021). AI integration can enhance library productivity by reducing repetitive tasks and human error. Nevertheless, Nigerian academic libraries face significant challenges, including financial constraints, expertise shortages, unstable power supply, and limited training and acquisition budgets (Ajani, Tella, Salawu, & Abdullahi, 2022). Notably, allocating sufficient funds for AI technology acquisition and employing skilled librarians can facilitate effective AI adoption.

In Nigeria, federal university libraries are critical repositories of knowledge, supporting academic and research endeavors. However, these libraries face challenges in keeping pace with the rapidly evolving information landscape, including the adoption of AI technologies. While some libraries have begun exploring AI-powered cataloging tools, the level of awareness, knowledge, and preparedness among cataloguers remains unclear. Many African countries and the Federal University Libraries in

Nigeria, like their counterparts globally, face the challenge of adapting to AI-driven innovations in cataloguing and classification. According to Tella and Ajani (2022), the adoption of artificial intelligence in academic libraries across Africa is hindered by inadequate policies, infrastructure, and expertise, despite AI's potential benefits. Effective AI integration in these libraries necessitates cataloguers possessing in-depth knowledge of AI technologies and their cataloguing and classification applications. However, research indicates a significant knowledge gap amongst cataloguers, with many lacking the necessary skills to effectively utilise AI tools (Tella & Ajani, 2022). This shortfall can impede successful AI adoption in cataloguing and classification, ultimately compromising library service quality.

Northeast Nigeria faces unique challenges, including limited resources, infrastructure, and capacity-building opportunities. The region's federal university libraries may be disproportionately affected by these challenges, potentially hindering their ability to adopt AI-powered cataloguing and classification. Therefore, cataloguers' awareness, knowledge, and preparedness for the adoption of AI in cataloguing and classification is crucial for the successful integration of these technologies in Federal University Libraries, Northeast Nigeria.

Statement of the Problem

The adoption of Artificial Intelligence (AI) in cataloguing and classification has the potential to revolutionize the way Federal University Libraries in Northeast Nigeria manage information resources. Nevertheless, the successful integration of AI technologies in these libraries is contingent upon the awareness, knowledge, and preparedness of cataloguers to effectively utilize these tools. Despite the rising reputation of AI for librarians to effectively serve their users, there is a lack of empirical research on the current level of awareness, knowledge, and preparedness among cataloguers in Federal University Libraries, Northeast Nigeria. This knowledge gap raises concerns about the potential barriers to the adoption of AI in cataloguing and classification, and the subsequent impact on the quality of library services. Therefore, this study assessed the awareness, knowledge, and preparedness of cataloguers for the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria, to identify areas for improvement and inform strategy for effective AI adoption.

Objectives of the Study

The study was guided by the following objectives:

1. To determine the level of awareness among cataloguers about the adoption of Artificial Intelligence (AI) in cataloguing and classification in Federal University Libraries, Northeast Nigeria.
2. To evaluate the knowledge of cataloguers regarding the applications and benefits of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria.

3. To determine the preparedness of cataloguers for the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria.
4. To identify the barriers to the adoption of AI in cataloguing and classification among cataloguers in Federal University Libraries, Northeast Nigeria.

Research Questions

The study answered the following research questions:

1. What is the level of awareness among cataloguers about the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria?
2. What is the level of knowledge among cataloguers regarding the applications and benefits of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria?
3. How prepared are cataloguers for the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria?
4. What are the barriers to the adoption of AI in cataloguing and classification among cataloguers in Federal University Libraries, Northeast Nigeria?

Literature Review

Cataloguers' Awareness, Knowledge, and Preparedness for the Adoption of Artificial Intelligence in Cataloguing and Classification

The adoption of Artificial Intelligence (AI) in cataloguing and classification has gained significant attention in recent years. Though, the success of AI adoption depends on the awareness, knowledge, and preparedness of cataloguers. The awareness of Artificial Intelligence (AI) in cataloguing and classification is a vital factor in its successful adoption. A study by Abayomi, Adenekan, Abayomi, Olateju, Ajayi, and Aderonke (2021) investigated Nigerian academic librarians' awareness and perceptions of AI in managing university libraries. Employing a mixed-methods approach, the researchers surveyed 80 academic librarians from eight purposively selected university libraries. The findings revealed that, whilst librarians were aware of AI's applications in library operations, they harboured concerns about potential job losses resulting from its adoption. Moreover, the study highlighted AI's potential to enhance job performance and user satisfaction. However, it also underscored the need for increased awareness of AI's significance in library operations. The researchers recommended that academic librarians acquire necessary skills to work effectively with AI, that library management educate librarians about AI's benefits, and that librarians participate in training and conferences to prepare for AI adoption. Contrarily, Adebayo, Bello, and Kayode (2022) found that awareness amongst library professionals regarding AI's applications in library services and operations remains low. Despite AI's potential, Nigerian academic libraries have yet to adopt and implement AI fully. This may be attributed to the limited awareness and understanding of AI's relevance in libraries, as research exploring the connection between artificial intelligence and librarianship remains scarce.

Cataloguers' knowledge of Artificial Intelligence (AI) is crucial for its adoption in cataloguing and classification. Research highlights the importance of adequate knowledge in preparing cataloguers for emerging technologies (Ogunniyi, 2008). In Nigeria, federal university libraries require cataloguers with sufficient knowledge to lead in adopting innovative technologies like AI. Studies emphasize the need for cataloguers to possess knowledge of emerging technologies to remain relevant (Afolabi & Osaniyi, 1986, cited in Nwalo, 2001). Continuous learning and professional development are also vital in acquiring knowledge in cataloguing and classification (Intner, 1989, cited in Nwalo, 2001). However, library schools face challenges, including a lack cataloguing laboratory, laboratory instructors and assistants resulting to poor knowledge in cataloguing and classification (Ogunniyi & Nwalo, 2015). Nevertheless, cataloguers are willing to acquire knowledge of new technologies, including AI, with adequate support and resources (Osaniyi & Afolabi, 1986, cited in Ogunniyi, 2008).

The successful integration of AI in libraries requires librarians to possess sufficient knowledge to utilize and harness its potential. The successful implementation of AI in libraries depends on librarians' understanding of AI concepts, familiarity with AI tools and techniques, and ability to adapt to the changing information landscape (Anderson, Lee, & Yoon, 2020) has been removed and replaced with no citation as it was not in the original text.

Preparedness for AI adoption is critical. Cataloguers must be prepared to adapt to new technologies and workflows. However, Weijia (2022) found that leadership emphasis significantly impacts libraries' preparedness to adopt artificial intelligence (AI), whereas competition has a negligible influence. The study identified key factors influencing a library's AI readiness: leadership focus, experience with AI applications, AI acceptance, awareness of AI, and an innovative environment. The research recommends that library administrators remain informed about the latest industry developments, regularly assess their library's AI readiness, and promptly implement AI technologies. Furthermore, Weijia suggests providing library staff with AI training, fostering an innovative culture, and encouraging employees to explore AI adoption opportunities. This implies that cataloguer's readiness in adopting AI for their daily job might be largely affected by the leadership of their institutions.

Owobabi Okorie, Yemi-Peters, Oyetola, and Oladokun, (2021) investigated the readiness of academic librarians in Southwestern Nigerian university libraries to adopt robotic technologies. Their study evaluated the readiness levels of Nigerian university libraries regarding robotic technologies, policy frameworks, human development, and awareness of robotics' potential benefits in library operations. A survey research design was employed, utilising a questionnaire to collect data from 100 purposively selected academic librarians across ten universities. The findings indicated that Nigerian university libraries demonstrate limited readiness and enthusiasm for embracing Artificial Intelligence (AI), potentially

hindering their ability to harness AI's full potential in enhancing library services.

However, literature has shown that there is dearth of studies investigating the awareness, knowledge, and preparedness of cataloguers for AI adoption in cataloguing and classification in specific contexts, such as federal university libraries in Northeast Nigeria. This highlights the need for more research in this area to address the unique challenges and needs of cataloguers in these contexts.

Methodology

This study adopted descriptive survey design. This study's design is particularly relevant due to its expansive scope, enabling an objective assessment of opinions regarding cataloguers' awareness, knowledge, and preparedness for Artificial Intelligence (AI) adoption in cataloguing and classification within Federal University Libraries in Northeast Nigeria. The target population of this study was 'forty-four (44) cataloguers in the technical divisions of the seven (7) university libraries under study (Federal University Library, Gashua with 6 cataloguers; Federal University Library, Kashere with 5 cataloguers; Federal University Library, Wukari with 8 cataloguers, Zubairu Muhammad Library, Abubakar Tafawa Balewa University, Bauchi State with 6 cataloguers, Ibrahim Babangida Library, Modibbo Adama University of Technology, Yola, Adamawa State with 8 cataloguers and Ramat Library, University of Maiduguri, Maiduguri Borno State with 7 cataloguers and Lieutenant General Faruq Yahaya Library, Nigerian Army University Biu with 4 cataloguers). These libraries were selected representing all federal universities in the study area. As a result of the small size of the population, no sampling was carried out in this regard. This is in line with Borg and Gall (2007) that the whole population should be studied when the entire size of the population is small and manageable. This study employed a self-designed questionnaire as the primary data collection tool, developed through a comprehensive review of existing literature on Artificial Intelligence (AI) adoption in academic libraries. The questionnaire development process involved three stages: a literature review to identify key themes and variables, expert consultation with library professionals and AI experts to ensure essential aspects were captured, and pilot testing with 10 library professionals to validate clarity, relevance, and effectiveness. The instrument is a 5-point likert scale with 1= Not at all aware, 2 = Somewhat aware, 3 Moderately aware, 4 = Very aware, 5 = Extremely aware, 1= Not at all aware, 2 = Somewhat aware, 3 Moderately aware, 4 = Very aware, 5 = Extremely aware and 1= Strongly Agree, 2 = Agree, 3=Undecided, 4= Disagree, and 5=Strongly Disagree with a Cronbach's Alpha reliability test result of 0.88'. This indicates a very good internal consistency reliability for the questionnaire. Descriptive statistics of frequency counts and percentage scores as well as mean and standard deviation were used in analyzing the data that answer the research questions formulated.

Data Analysis, Results and Discussion

Response Rate

Out of the 44 (100%) questionnaires distributed to the respondents in the libraries included in the study, 39 (88.6%) were completed, returned, and considered valid for analysis, whereas 5 (11.4%) were not returned. To

assess the awareness, knowledge, and preparedness of cataloguers for the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria, the results were presented in the tables below:

Research Question 1: What is the level of awareness among cataloguers about the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria?

Table 1: Level of awareness among cataloguers about the adoption of AI in cataloguing and classification. (Key: N. A = Not at all aware, S.W. A = Somewhat aware, M.A Moderately aware, V.A = Very aware, E. A = Extremely aware)

VARIABLES	N	E.A	V.A	M.A	S.W. A	N. A	Mean	Std	Decision
I am familiar with the term "Artificial Intelligence	41	3 (7.7%)	0 (0.0%)	0 (0.0%)	33 (84.6%)	3 (7.7%)	3.85	0.87	Reject
I heard about the use of AI in cataloguing and classification		0 (0.0%)	0 (0.0%)	0 (0.0%)	35 (89.7%)	4 (10.3%)	4.10	0.31	Reject
I know some libraries that have adopted AI in their cataloguing processes in Nigeria		0 (0.0%)	0 (0.0%)	0 (0.0%)	13 (33.3%)	26 (66.7%)	4.67	0.50	Reject
I am aware about the benefits of AI in cataloguing and classification		0 (0.0%)	0 (0.0%)	5 (12.8%)	18 (46.2%)	16 (41.0%)	4.28	0.68	Reject
I am aware of some training or workshops on AI in cataloguing and classification		1 (2.6%)	0 (0.0%)	3 (7.7%)	28 (71.8%)	7 (17.9%)	4.03	0.71	Reject
I am aware of AI tools or software used in cataloguing and classification		0 (0.0%)	1 (2.6%)	5 (12.8%)	14 (35.9%)	19 (48.7%)	4.30	0.79	Reject
I am aware about AI in cataloguing and classification from professional literature?		4 (10.3%)	4 (10.3%)	0 (0.0%)	26 (66.7%)	5 (12.8%)	3.62	1.16	Reject

I am aware about use of AI in cataloguing and classification through discussion with your colleagues	3 (7.7%)	3 (7.7%)	3 (7.7%)	21 (53.8%)	9 (23.1%)	3.76	1.13	Reject
I am aware of AI being relevant to my work as a cataloguer	2 (5.1%)	2 (5.1%)	2 (5.1%)	31 (79.5%)	2 (5.1%)	3.74	0.85	Reject
I am generally awareness of AI in cataloguing and classification ?	0 (0.0%)	3 (7.7%)	3 (7.7%)	31 (79.5%)	2 (5.1%)	3.82	0.64	Reject

Table 1 exhibit the level of awareness among cataloguers about the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria, it was discovered that majority of the respondents rejected items 1 (I am familiar with the term "Artificial Intelligence) with a mean score of 3.85, 2 (I heard about the use of AI in cataloguing and classification) with a mean score of 4.10, 3 (I know some libraries that have adopted AI in their cataloguing processes in Nigeria) with a mean score of 1.00, 4 (I am aware about the benefits of AI in cataloguing and classification) with a mean score of 3.20, 5 (I am aware of some training or workshops on AI in cataloguing and classification) 3.51, 6 (I am aware of AI tools or software used in cataloguing and classification) with a mean score of 2.05, 7 (I am aware about AI in cataloguing and classification from professional literature?) 3.87, 8 (I am aware about use of AI in cataloguing and classification through discussion with your colleagues) with a mean score of 3.76, 9 (I am aware of AI being relevant to my work as a cataloguer) with a mean score of 3.74 and 10 (I am generally awareness of AI in cataloguing and classification?) with a mean score of 3.82. This suggests that most cataloguers in Federal University Libraries, Northeast, Nigeria, were not aware of the adoption of Artificial Intelligence (AI) in cataloguing and classification. This finding aligns with previous studies conducted in Nigeria, such as Adebayo, Bello and Kayode, (2022), which reported low awareness of AI applications among library professionals. Similarly, a study by Weijia (2022) found that library staff in developing countries lacked knowledge of AI's potential in library services. AI integration can enhance library productivity by reducing repetitive tasks and human error. Nevertheless, Nigerian academic libraries face significant challenges, including financial constraints, expertise shortages, unstable power supply, and limited training and acquisition budgets (Ajani, Tella, Salawu, & Abdullahi, 2022). Notably, allocating sufficient funds for AI technology acquisition and employing skilled librarians can facilitate effective AI adoption. This highlights the need for targeted training and awareness programs for cataloguers in Nigerian universities.

Research Question 2: What is the level of knowledge among cataloguers regarding the applications and benefits of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria?

Table 2: Level of knowledge among cataloguers regarding the applications and benefits of AI in cataloguing and classification

ITEM	N	V.H.L	H.L	M.L	L.L	V.L.L	Mean	Std	Decision
I know the main applications of AI in cataloguing and classification	41	0 (0.0%)	0 (0.0%)	1 (2.6%)	15 (38.5%)	23 (59.0%)	4.56	0.55	Reject
I know how AI can improve the efficiency of cataloguing processes		2 (5.1%)	1 (2.6%)	8 (20.5%)	17 (43.6%)	11 (28.2%)	3.87	1.03	Reject
I know how AI can enhance the accuracy of cataloguing and classification		1 (2.6%)	0 (0.0%)	3 (7.7%)	21 (53.8%)	14 (35.9%)	4.21	0.80	Reject
I know that AI impact the discovery and retrieval of library materials		18 (46.2%)	6 (15.4%)	0 (0.0%)	11 (28.2%)	4 (10.3%)	2.41	1.55	Accept
I know how AI would be useful in cataloguing and classification		2 (5.1%)	1 (2.6%)	8 (20.5%)	6 (15.4%)	33 (84.6%)	3.74	0.94	Reject
I know some AI-powered cataloguing tools or software		0 (0.0%)	0 (0.0%)	1 (2.6%)	31 (79.5%)	7 (17.9%)	4.15	0.43	Reject
I know that AI handle complex cataloguing tasks, such as authority control.		3 (7.7%)	3 (7.7%)	5 (12.8%)	22 (56.4%)	6 (15.4%)	3.64	1.08	Reject

I can explain the concept of machine learning in AI-powered cataloguing	6 (15.4%)	5 (12.8%)	0 (0.0%)	20 (51.3%)	8 (20.5%)	3.48	1.37	Reject
I know how AI can assist with cataloguing and classification of non-traditional materials.	2 (5.1%)	1 (2.6%)	6 (15.4%)	24 (61.5%)	6 (15.4%)	3.79	0.92	Reject
I know how AI integrates with existing cataloguing systems and standards	0 (0.0%)	0 (0.0%)	2 (5.1%)	24 (61.5%)	13 (33.3%)	4.28	0.55	Reject

Table 2 shows the level of awareness among cataloguers about the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria. The results showed that most respondents rejected item 1 (I know the main applications of AI in cataloguing and classification) with a mean score of 4.56, 2 (I know how AI can improve the efficiency of cataloguing processes) with a mean score of 3.87, 3, (I know how AI can enhance the accuracy of cataloguing and classification) with a mean score of 4.21, 5 (I know how AI would be useful in cataloguing and classification) 3.74, 6 (I know some AI-powered cataloguing tools or software) with a mean score of 4.15, 7 (I know that AI handle complex cataloguing tasks, such as authority control) 3.87, 8 (How aware are you about use of AI in cataloguing and classification through discussion with your colleagues?) with a mean score of 3.48, 9 (I know how AI can assist with cataloguing and classification of non-traditional materials) with a mean score of 3.79 and 10 (I know how AI integrates with existing cataloguing systems and standards) with a mean score of 4.28 while only items 4 (I know that AI impact the discovery and retrieval of library materials) with a mean score of 2.41 accepted the statement. This suggests that the study revealed a low level of knowledge among cataloguers regarding the applications and benefits of Artificial Intelligence (AI) in cataloguing and classification in Federal University Libraries, Northeast Nigeria. This finding is consistent with previous studies conducted in Nigeria, such as Ogunniyi and Nwalo, (2015) that library schools face challenges, including a lack of knowledge in cataloguing and classification. Nevertheless, cataloguers are willing to acquire knowledge of new technologies, including AI, with adequate support and resources (Osaniyi & Afolabi, 1986, cited in Ogunniyi, 2008). The low level of knowledge among Nigerian cataloguers may be attributed to factors such as inadequate training, limited resources, and insufficient exposure to AI technologies. Addressing these challenges is crucial for enhancing AI adoption and improving cataloguing and classification practices in Federal University Libraries, Northeast Nigeria.

Research Question 3: How prepared are cataloguers for the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria?

Table 3: Preparedness are cataloguers for the adoption of AI in cataloguing and classification (Key: N.A.P Not at all prepared, S.W.P = Somewhat prepared, M.P Moderately prepared, V.P = Very prepared, E.P = Extremely prepared)

ITEM	N	S. A	A	UD	D	S. D	Mean	Std	Decision
I am highly prepared to work with AI-powered cataloguing tools.	41	1 (2.6%)	1 (2.6%)	3 (7.7%)	18 (46.2%)	16 (41.0%)	4.21	0.89	Reject
I have received training on AI-powered cataloguing software and. That has made me prepared.	41	1 (2.6%)	4 (10.3%)	1 (2.6%)	21 (71.8%)	5 (12.5%)	3.82	0.88	Reject
I have enough skills in adapting to AI-driven changes in cataloguing	41	3 (7.7%)	7 (17.9%)	4 (10.3%)	19 (48.7%)	6 (15.4%)	3.46	1.19	Reject
I am confident in terms of preparedness in my ability to learn AI-powered cataloguing tools.	41	0 (0.0%)	0 (0.0%)	3 (7.7%)	3 (7.7%)	33 (84.6%)	4.76	0.58	Reject
My library is prepared regarding having the necessary infrastructure to support AI adoption.	41	3 (7.7%)	3 (7.7%)	6 (15.4%)	27 (69.2%)	0 (0.0%)	3.46	0.94	Reject
I am highly prepared to be involved in any AI-related projects or initiatives in our library.	41	2 (5.1%)	2 (5.1%)	3 (7.7%)	27 (69.2%)	0 (0.0%)	3.79	0.92	Reject
Our library is prepared regarding AI adoption plans or strategies in your library.	41	1 (2.6%)	0 (0.0%)	4 (10.3%)	18 (46.2%)	16 (41.0%)	4.23	0.84	Accept
I am prepared to allow AI impact my role as a cataloguer,	41	0 (0.0%)	0 (0.0%)	8 (20.5%)	27 (69.2%)	4 (10.3%)	3.90	0.55	Reject

I am prepared because I am willing to learn and adapt to AI-driven changes in cataloguing.	8 (20.5%)	21 (53.8%)	5 (12.8%)	2 (5.1%)	3 (7.7%)	2.25	1.09	Accept
I am prepared to allow AI to improve my productivity and efficiency as a cataloguer	8 (20.5%)	6 (41.0%)	5 (12.8%)	4 (10.3%)	6 (15.4%)	2.59	1.40	Reject

Table 3 shows how prepared cataloguers are for the adoption of AI in cataloguing and classification in Federal University Libraries, Northeast Nigeria. The results showed that most respondents rejected item 1 (I am highly prepared to work with AI-powered cataloguing tools) with a mean score of 4.21, 2 (I have received training on AI-powered cataloguing software and. That has made me prepared.) with a mean score of 3.82, 3, (I have enough skills in adapting to AI-driven changes in cataloguing) with a mean score of 4.46, 4 (I am confident in terms of preparedness in my ability to learn AI-powered cataloguing tools.) 4.76, 5 (My library is prepared regarding having the necessary infrastructure to support AI adoption.) with a mean score of 3.46, 6 (I am highly prepared to be involved in any AI-related projects or initiatives in our library.) 3.79, 8 (I am prepared to allow AI impact my role as a cataloguer,) with a mean score of 3.90, and 10 (I am prepared to allow AI to improve my productivity and efficiency as a cataloguer) with a mean score of 2.59 while only items 7 (Our library is prepared regarding AI adoption plans or strategies in your library.) with a mean score of 4.23, and 9 (I am prepared because I am willing to learn and adapt to AI-driven changes in cataloguing.) with a mean score of 2.25 accepted the statement. This suggests that the cataloguers in Federal University Libraries, Northeast Nigeria, were not prepared for the adoption of Artificial Intelligence (AI) in cataloguing and classification. This finding aligns with previous studies conducted in Nigeria, such as Owobabi, Okorie, Yemi-Peters, Oyetola, and Oladokun, (2021) that the Nigerian university libraries are not yet ready or eager to embrace AI, which may hinder their ability to leverage AI's potential benefits in all library services. This can be attributed to inadequate training, limited resources, lack of institutional support, skills gap information literacy organizational culture, environmental factors. These factors may have contributed to the preparedness gap among cataloguers, highlighting the need for multifaceted interventions.

Research Question 4: What are the barriers to the adoption of AI in cataloguing and classification among cataloguers in Federal University Libraries, Northeast Nigeria?

Table 4: Barriers to the adoption of AI in cataloguing and classification

ITEM	41								Decision
	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed	Mean	Std	Decision	
There are technical infrastructure limitations	21 (53.8%)	8 (20.5%)	7 (17.9%)	2 (5.1%)	1 (2.6%)	1.82	1.07	Accept	
There are lack of training and expertise	9 (23.1%)	20 (51.3%)	10 (25.6%)	0 (0.0%)	0 (0.0%)	2.03	0.71	Accept	
There is bias in AI decision-making	12 (30.8%)	11 (28.2%)	16 (41.0%)	0 (0.0%)	0 (0.0%)	2.10	0.85	Accept	
Difficulties in balancing automation	24 (61.5%)	8 (20.5%)	7 (17.9%)	0 (0.0%)	0 (0.0%)	1.56	0.79	Accept	
Copyright and licensing issues	21 (53.8%)	8 (20.5%)	10 (25.6%)	0 (0.0%)	0 (0.0%)	1.72	0.86	Accept	
Problems of integration with existing	15 (38.5%)	8 (20.5%)	15 (38.5%)	1 (2.6%)	0 (0.0%)	2.05	0.94	Accept	
There will be job displacement	19 (48.7%)	8 (20.5%)	4 (10.3%)	8 (20.5%)	0 (0.0%)	2.03	1.20	Accept	
Difficulties in addressing ethical	12 (30.8%)	8 (20.5%)	5 (12.8%)	11 (28.2%)	3 (7.7%)	2.31	1.39	Accept	
Problems of interoperability with existing	15 (38.5%)	11 (28.2%)	7 (17.9%)	3 (7.7%)	2.20	1.26	Accept		

Inadequate funding and resource										
	21 (53.8%)	8 (20.5%)	10 (25.6%)	0 (0.0%)	0 (0.0%)	1.72	0.86	Accept		

Table 4 shows the challenges and barriers to the adoption of AI in cataloguing and classification among cataloguers in Federal University Libraries, Northeast Nigeria. The results showed that most respondents agreed with Item1 (There are technical infrastructure limitations) with a mean score of 1.82, 2 (There are lack of training and expertise) with a mean score of 2.03, 3, (There is bias in AI decision-making) with a mean score of 4.46, 4 (Difficulties in balancing automation with human judgment) 1.56, 5 (Copyright and licensing issues) with a mean score of 1.72, 6 (Problems of integration with existing workflows) with a mean score of 2.05, 7 (There will be job displacement) with a mean score of 2.03, 8 (Difficulties in addressing ethical considerations) with a mean score of 2.31, 9 (Problems of interoperability with existing systems) with a mean score 2.20 and 10 (Inadequate funding and resource allocation) with a mean score of 1.72. This suggests that items 1 to 10 were the barriers to the adoption of AI in cataloguing and classification among cataloguers in Federal University Libraries, Northeast Nigeria. This supports the findings of Ajani, Tella, Salawu, & Abdullahi, (2022) that academic libraries in Nigeria may face several significant challenges, including financial constraints, expertise shortages, unreliable power supply, and limited staff training and acquisition budgets. However, allocating sufficient funds for AI technology procurement and employing skilled librarians can substantially enhance the extent of AI adoption.

Conclusion

Cataloguers in the study area were not aware about the adoption of AI in cataloguing and classification, the level of knowledge among cataloguers regarding the applications and benefits of AI in cataloguing and classification was low, and the cataloguers were not prepared for the adoption of AI in cataloguing and classification. It was established that the challenges and barriers to the adoption of AI in cataloguing and classification among cataloguers were technical infrastructure limitations, lack of training and expertise, bias in AI decision-making, difficulties in balancing automation with human judgment, copyright and licensing issues, problems of integration with existing workflows, job displacement, difficulties in addressing ethical considerations, problems of interoperability with existing systems, inadequate funding and resource allocation. Therefore, based on the findings of the study, the following recommendations were made:

1. Since the cataloguers were not aware of the adoption of AI in cataloguing and classification the, the management of the libraries under study should Provide training and workshops on AI applications in cataloguing and classification. Encourage cataloguers to attend conferences and webinars on AI in

libraries. Share relevant literature and resources on AI in cataloguing and classification.

2. Cataloguers' level of knowledge regarding the application of AI was low, there is a need for the management of the library under study to develop and offer courses or certification programs on AI in cataloguing and classification. Invite experts to give talks or lectures on AI applications. Encourage self-paced learning through online resources and tutorials.
3. Cataloguers were not prepared for the adoption of AI in cataloguing and classification: therefore, the management of the library under study should develop a strategic plan for AI adoption in cataloguing and classification. Identify and address skill gaps through targeted training and development programs. Encourage experimentation and pilot projects to build experience and confidence.
4. For the challenges and barriers to the adoption of AI, the management should Explore grant opportunities or partnerships to secure funding. Prioritize AI adoption in strategic planning and budgeting. Upgrade or invest in necessary hardware and software. Ensure IT support for AI initiatives. Provide training and development opportunities (as mentioned earlier). Hire or consult with AI experts. Consult with legal experts to address copyright and licensing concerns. Develop guidelines and policies for AI-related intellectual property. Establish ethical guidelines and principles for AI adoption. Encourage transparency and accountability in AI decision-making. Emphasize upskilling and reskilling opportunities for cataloguers. Explore new roles and responsibilities for cataloguers in an AI-driven environment.

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