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Artificial Intelligence and Information Repackaging Services in Tanzanian Academic Libraries

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Abstract

Rationale of study: This study examines the integration of AI in the repackaging of library services among academic libraries in Tanzania.

Methodology: The study was anchored in the interpretivist paradigm, adopted a qualitative research approach, and employed a multisite qualitative exploration design. A total of 13 librarians from 13 academic libraries across the country participated in the study. Data for the study were collected through telephone interviews, in which 13 librarians were purposively selected. A documentary review was conducted to corroborate the findings from the interviews. Data collected from interviews were subjected to content analysis after transcription.

Findings: The study found that most academic libraries in Tanzania have not yet begun implementing AI in their services, though a few have. Regarding awareness of AI tools for repackaging library services, the study found that a few librarians were aware of these tools and their use. At the same time, the majority were unable to demonstrate such awareness. Regarding librarians' perceptions of AI use, the majority supported its integration. Various challenges to AI integration among academic libraries in Tanzania were identified, including a lack of librarian training, high installation costs, limited AI-use skills among librarians, concerns about data privacy and security, and an absence of AI policies.

Implications: The study recommended the formulation of well-written AI use policies, training for librarians on AI use, and the allocation of funds by top institutional management to facilitate AI integration.

Originality: The originality lies in the use of a qualitative research approach, which provides an in-depth understanding of how academic libraries use AI in repackaging services.

Keywords

Academic libraries, Artificial intelligence, repackaging services, library services, Tanzania

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1 Background to the Study

Information repackaging involves taking analysed, consolidated information and presenting it in a form that is more relevant, accessible, and practical for a library or its intended users. The process of repackaging encompasses a wide range of activities, including but not limited to translation, literacy, scientific and technical information, economic transformation, and selective dissemination of information (Dogara et al., 2022). Stilwell (2001), in her review of the origins, theory, and practice of repackaging, notes that an information service selects appropriate materials, reprocesses them into an easy-to-understand form, repackages them, and arranges them in a manner suitable for the user's consumption. Looking back at history, libraries and librarians' function on information repackaging aimed at delivering information to illiterate people (Aina, 1991), hence librarians interpreted, summarised, repackaged, and disseminated information to users' locales such as farmers, for understanding and assimilation to improve their practice; thereby noting information repackaging was focused on rural development (Iwhiwhu, 2008).

In libraries, Singh (2020) and Stilwell (2001) identify services such as abstracting and indexing, selective dissemination of information, translation services, bibliographies, special bulletins, and current awareness services (CAS) to encompass information repackaging as these services attempt to provide the available information in an acceptable and usable format for targeted users. With the rise of literacy, advances in Information and Communication Technology (ICT), and the interplay with Artificial Intelligence, the question lingers: do traditional information repackaging services matter? Indeed, with the advent of ICT, information is generated, procured, repackaged, and disseminated at a rapid pace, leading users to turn their backs on the library as they feel confident utilising ICT for everything (Agbaji & Odumu, 2017). Unfortunately, Dongardive (2013) notes that most users lack the requisite skills to search for, retrieve, interpret, synthesise, and apply information in the digital realm, thereby necessitating that librarians remain at the pinnacle of information retrieval in the age of AI, as they possess these skills in abundance.

In an era of information explosion, where sifting through massive amounts of available information in multiple formats causes anxiety, navigating the digital realm to find what one seeks makes information repackaging a valuable service, as it can save time, labour, and costs for users (Dongardive, 2013). Many libraries and information services find it difficult to meet user needs within the constraints of a limited budget. Some libraries have seen a decline in service quality due to budget cuts (Dogara et al., 2022). One of the strategies for attaining user satisfaction preferred by librarians is adding value to their services, including information packaging and repackaging. Dongardive (2013) affirms that these value-adding elements include information analysis, editing, translation, media, and symbolic format transformation. Additionally, IR makes sure that the information is current, relevant, thorough, and easy to understand (e.g., technical level, presentation style).

Nkiko and Okuonghae (2021) state that AI technologies are being deployed to facilitate a wide

variety of services and resources to library users. AI applications in libraries include automated indexing and abstracting, expert system reference services, cataloguing, and classification. Chatbot technology enables automated conversations between library users and machines. There is also a speech-to-text-to-speech service where a user explains their information needs to the robot, and it uses machine-generated indexes to locate potential content. The literature consulted shows that for decades, information repackaging services have been conducted by librarians; however, with the advancements of information and communication technologies (ICTs), such services, including indexing, abstracting services, translation services, language editing services, bibliographies, and many others, are being overtaken by artificial intelligence. Sife and Matto (2022) aver that, currently, the internet of things (IoT), artificial intelligence (AI), cloud computing, big data analytics, advanced robotics, sensors, blockchain, and 3D printing are among the technologies that power libraries in the 4IR.

Mtega (2019) examined the content of Tanzanian government websites using data from local government authorities and found that most of the limited content available is repackaged into less rich media, which may hinder users' understanding of the messages conveyed. Furthermore, traditional repackaging services are time-consuming and labour-intensive, preventing librarians from focusing on more strategic tasks and improving user engagement. The need to migrate from traditional to intelligent libraries necessitates integrating AI into academic libraries (Bakiri et al., 2023). The advent of AI has changed how users prefer to access library services and resources, with many now using AI on devices such as smartphones, laptops, and iPads. This situation requires librarians to acquire relevant AI-use skills to respond to the evolving technological needs of library users. Although the consulted literature demonstrates that integrating AI into repackaging library services can improve service quality compared to traditional repackaging, the extent to which AI has been integrated into academic libraries and the role librarians are playing in the AI era have not been sufficiently examined. This paper, therefore, explores information repackaging in the digital realm, exploring the interplay of artificial intelligence in the process. Specifically, the study intends to:

(i) Examine the level of AI adoption in repackaging services
(ii) Identify AI tools used for the repackaging of library services and products.
(iii) Exploring librarians' perceptions and roles in AI integration
(iv) Analysing challenges affecting AI implementation in academic libraries in Tanzania

2 Literature Review

Libraries play a pivotal role in collecting, organising, and disseminating knowledge to society. To reach this end, libraries have been providing various services, such as information packaging and repackaging, to ensure users' needs are met. Bello and Ojo (2018) argue that it spans acquisition, the disarray of information needs, and the reloading of information resources in the most effective way for a group of users. According to Dongardive (2013), the repackaging process relies

on materials available from government agencies, research institutes, internet networks and services, and indigenous knowledge. Therefore, repackaging can be viewed as a step in the information consolidation process.

Agbaji and Odumu (2017) identify the following steps involved in information repackaging: identifying the target information user's knowledge, identifying the target group's information needs, choosing the right format for repackaging, and selecting the channel for dissemination. A study conducted in Nigeria by Okuonghae and Igbinovia (2025) found that low literacy levels, infrastructural challenges, and cultural beliefs were barriers to accessing health information for rural dwellers. Repackaging information has proven effective in eliminating the existing information gap. This demonstrates the usefulness of repackaging services towards ensuring the information needs of different community groups are met.

Bello and Salawu (2020) noted that although information repackaging is not a new idea, developments in information technology have made it necessary to improve the process of building libraries' capacity to provide information services more readily. Therefore, repackaging became essential due to the growing complexity and cost of information resources, shrinking budgets, and the need to provide the user community with optional access to essential information (Oyadonghan et al., 2016). Radhakrishnan and Francis (2018) advocated that the benefits of ICT tools and techniques can be applied to both access bundled information and enhance the content. Multimedia tools, for instance, can be utilised to create material, and other channels, such as library websites or blogs, can be used to disseminate repackaged information effectively. This implies that library services could successfully move away from relying on print to their full potential and towards repackaging information for oral and other forms of communication (Dogara et al., 2022). In Tanzania, a study by Bakiri, Mbembati, and Tinabo (2023) found that few academic libraries have integrated AI into basic services to a limited extent. This is probably due to the high cost of AI installation, inadequate skills among librarians, negative perceptions of AI use, and the absence of clear guidelines for its use. The slower pace of integrating AI into repackaging library services and products continues to put academic libraries under pressure as users' needs evolve. Similarly, the study by Mondal (2025) found that slow integration of AI in academic libraries is associated with the lack of training and other essential competencies. Training is key to the successful integration of AI in academic libraries; librarians need to be trained in the application and ethical use of AI, as well as its associated risks. Doing so may enhance awareness among the librarians, create readiness, and smooth the adoption process.

With the development of information and communication technologies (ICT), most library services have been digitised, making library resources, digital content, and information services more easily accessible online (Bakiri et al., 2023). To retrieve, save, and share information, library users today rely on devices with internet access. While some technologies are for science and engineering, most of the technologies relevant to libraries are IoT, cloud computing, robotics,

artificial intelligence, blockchain, and big data. This suggests that to function in the 4IR, LIS professionals must acquire new skills (Tella, 2020). The advent of technologies such as robots, artificial intelligence (AI), mobile computing, machine learning, automation, and the internet of things (IoT) has rapidly connected humans and machines in the modern period (Soori et al., 2023).

In their study, Adigun and Igboechesi (2024) observed that over time, libraries' interest in AI technologies has grown because, although they use a variety of information management systems to organise, package, and repackage services, the dependability and efficacy of these services are greatly impacted by several factors, including the growing number of users, limited resources, the modern decentralised learning pattern, and the rise of digital technologies. A local study conducted by Kadilikansimba et al. (2025) revealed that repackaging agricultural research in an appropriate language and format can promote best farming practices among smallholder farmers in Tanzania. This study did not concentrate directly on the use of AI in repackaging library services and products, but it provides insights into the usefulness of repackaging services to information consumers. Academic libraries, for example, are embracing AI to transition from traditional to intelligent libraries. With the ongoing development of artificial intelligence, many scholars believe AI has the potential to improve library services (Bakiri et al., 2023). This implies that librarians must be able to handle artificial intelligence systems, provide remote access to information, evaluate the reliability and authenticity of information sources, and instruct patrons on how to operate robotics in a library context (Oseji et al, 2023). Several studies were conducted in Tanzania on AI integration in academic libraries, including those by Msonde et al. (2025), Bakiri et al. (2023), and Kyumana (2025). However, the extent to which AI has been integrated into academic libraries and the role that librarians are playing in the AI era have not been sufficiently explored. This current study will uncover the existing knowledge gap.

3 Theoretical Framework

This study is informed by the Diffusion of Innovation (DOI) Theory, propounded by Everett Rogers in 2003, that elucidates how new ideas, technologies, or practices spread through social systems over time. Five stages of adoption, according to Rogers (2003), are knowledge, persuasion, decision, implementation, and confirmation. Individuals or organisations adopt innovations at different rates, classified as innovators, early adopters, early majority, late majority, and laggards. The theory assumes that the spread of innovation depends on communication channels, social context, and time. Key factors influencing adoption include the perceived advantage of the innovation, its compatibility with existing systems, ease of use, ability to try it out, and observable benefits (Rogers, 2003). Several studies have applied DOI to the adoption of AI technology in academic libraries. For example, a study by Gutiérrez, Picazo-Vela, and Kareem (2025) found that there was a good number of the late majority followed by early AI adopters among higher education institutions in Latin America, and a study by Lund (2025) established that DOI is a useful theory for gaining insights regarding user behaviour relating to evolving library technologies.

In this study, DOI theory helps explain why and how academic libraries in Tanzania are adopting AI technology to improve services. A major strength of DOI theory is its comprehensive approach, considering individual, organisational, and social factors that influence adoption. It also stresses the power of communication and visible successes in encouraging wider acceptance. However, it can overlook structural challenges like limited resources or regulatory barriers that are common in developing countries like Tanzania. DOI theory is highly relevant to this study because it offers a clear framework for analysing the adoption and effectiveness of AI in repackaging library services among academic libraries in Tanzania.

It helps explain why some academic libraries provide better library services to their users than others, how different adoption levels affect the services offered, and how implementation quality affects library services and user satisfaction. AI can assist librarians in providing users with timely and promising library services, thereby upholding the fourth law of library sciences. AI can also perform tasks librarians can do, freeing up their time to focus on other library duties. Therefore, the quality of services offered by academic libraries that have integrated AI into the repackaging of their services and products will differ from that of those using traditional repackaging services. Using DOI enables this research to provide practical insights for enhancing AI integration in the repackaging of library services across academic libraries and improving the quality of services offered to users.

4 Methodology

This study was premised on the interpretivist paradigm and guided by a qualitative research approach. Butina, Campbell, and Majid (2015) contend that qualitative research is more flexible than quantitative research, that data are collected in natural settings based on participants' opinions and experiences, and that the sample is small and targeted. A multisite qualitative exploration design was used because the study collected data from multiple academic libraries in Tanzania to generate new insights. Kalu and Bwalya (2017) assert that, to ensure it is a good qualitative study, the study's purpose and research questions should guide the choice of a qualitative research design.

Data was collected from thirteen (13) librarians from the University of Dar es Salaam, Mzumbe University, Nelson Mandela Institution of Science and Technology, Moshi Co-operative University, Mbeya University of Science and Technology, Sokoine University of Agriculture, Mwenge Catholic University, Institute of Finance Management, Institute of Accountancy Arusha, College of African Wildlife Management, Mwalimu Julius Kambarage Nyerere University of Agriculture and Technology, University of Dodoma, and Kilimanjaro Christian Medical University College, who were purposefully selected to participate in the study. The use of a multisite qualitative exploratory study allows for a small sample to gain initial insights into the phenomenon under study, which can later be examined with a larger or more diverse sample. Therefore, the sample size in a multiple-site study cannot be large (Audet & d'Amboise, 2001). The study included librarians from universities and other tertiary institutions because both work in academic institutions where artificial intelligence can be used to repackage information services to meet users' expected needs.

This study employed semi-structured interviews that used both open- and closed-ended questions to gather data. The interview guide was designed to guide the researcher and the interviewee who willingly participated in the study. The interview questions were designed in line with the study's objective and research questions. Interviews were conducted via mobile phones and lasted 20-25 minutes. Interviews were recorded using a voice recorder after receiving consent from the interview participants. The recorded interviews were transcribed before the analysis phase.

In developing themes and categories, six steps suggested by Braun and Clarke (2006) were used. This includes: first, familiarisation with the collected data from the interview participants, second, generating initial codes from the collected data, third, searching for themes, fourth, reviewing themes by comparing them to understand their similarities and differences, fifth, defining and naming themes, and finally, preparation of the report. Content analysis of the collected qualitative data was then conducted. Furthermore, a documentary review was used to identify effective AI tools for repackaging library services and products, corroborating findings from interviews. Approval for conducting this research was obtained from the Moshi Co-operative University, where the two researchers work, and the researchers sought consent from the interview participants before beginning the study. Participants could withdraw from the study without providing reasons. Researchers adhere to all ethical standards throughout the study, including ensuring the confidentiality and anonymity of interview participants.

5 Findings of the Study

This section presents the study's findings.

5.1 The level of AI adoption in the repackaging of library services

The first objective of the study was to examine the level of AI adoption in repackaging services among academic libraries in Tanzania. Librarians who participated in the interview explained their awareness of AI use and the extent to which they have adopted it in their services. During the interview, Librarian 1 had this to say:

> "*Here at our institution, we have not started to use AI in repackaging library services and products. However, we are surveying to see how AI can be adopted in providing library services to meet the current needs of our university community*."

On the other hand, Librarian 2 alluded that:

> "*Yes, we do offer repackaging services at our library, but we have not started to use AI in offering such services. Now we have an option to ask the librarian on our library webpage, but AI does not power it. Therefore, once a user needs help, he/she will send his/her questions through email and will be attended to by the responsible librarian.*"

Similar observations were made by Bakiri et al. (2023) in their study conducted in Tanzania, which found that librarians were aware of AI use in the repackaging of library services and products; however, AI adoption was low among academic libraries.

Additionally, the study revealed that low AI adoption in repackaging services is due to factors such as the lack of intensive training in AI use among librarians. This situation has created a knowledge gap on the use of AI, which is one of

the key factors for AI integration among academic libraries, as noted by Librarian 3, who alluded to that:

> "*Artificial intelligence is still a new concept in our libraries; therefore, we need to learn and understand how it works before we move forward with integrating it into our services. Most of us here are still working in traditional methods because of the lack of exposure to AI use in libraries*."

Contrary to this study's finding, Ayinde et al. (2026) report growing adoption of AI among academic libraries in other parts of the world. However, a study by Kalbande et al. (2024) shows that in India, low adoption is associated with the absence of adequate information scientists, who could play an important role in AI adoption. Regarding the value of AI adoption in academic libraries, Librarian 4 elaborated that:

> "*The integration of AI in the repackaging of library services will add more value to our library services; however, there is a need for our institutions to invest in training to equip us with the necessary skills to work in an AI environment*."

In a similar vein, Hussain (2023) notes that in the era of information overload, artificial intelligence in library services will provide users with access to reliable information and serve as a useful instrument for the natural fusion of libraries and readers. In addition to interacting on the same platform, readers will have cheaper access to humanised services. Barsha and Munshi (2024) contend that AI-powered systems can completely transform several library functions, such as resource management, knowledge organisation, information retrieval, and user services. Even outside regular library operating hours, AI-powered virtual assistants, such as chatbots, may respond to patrons' enquiries with speed and accuracy.

5.2 AI tools used for the repackaging of library services and products

The second objective of the study was to assess librarians' awareness of AI tools for repackaging information resources and services. The findings established that most librarians who participated in the interviews were aware of various AI tools that can be used to repackage library services and products. However, few were aware of the various AI tools that can be applied to the delivery of library services. Librarian 10 remarked that:

> "*I know ChatGPT is an AI tool, and I normally use it for content creation, report writing, and writing letters*."

Additionally, another participant, Librarian 13, added that:

> "*Although we are not using it in our library, I know the Chatbots AI tool that is used for conversation between librarians and patrons when seeking library services*."

Furthermore, Librarian 9 added that:

> "*The most common AI tools that I am familiar with are Grammarly and QuillBot, which I usually use for language editing and paraphrasing*."

The study found that although few librarians were aware of AI tools for repackaging, most participants had little awareness of AI tools useful for enhancing library services. A study conducted in Indonesia by Harisanty et al. (2022) found that librarians were highly knowledgeable about AI

tools and their use in libraries. This laid the groundwork for the introduction of AI in Indonesian libraries. In a study conducted in Nigeria by Eneh and Idiodi (2024), it was established that librarians working in urban areas have demonstrated a high level of awareness, and that the integration of AI tools has improved user engagement and information retrieval. According to a study by Isiaka et al. (2024), librarians in Kwara State, Nigeria, were aware of AI technologies and believed they were beneficial to library operations. These useful technologies included AI chatbots for reference services, AI for cataloguing and classifying library materials, AI drone surveillance for library security, AI expert search tools for information search, and AI for automating library functions.

Findings from the documentary review demonstrate that various AI tools are useful for repackaging information services and products, as mentioned by Rathinasabapathy et al. (2023) and presented in Table 1. According to Dongardive (2013), these tools can be used to repackage various library services, such as current awareness services, selective dissemination of information, creating case studies, conducting literature reviews, preparing excerpts and extracts, preparing reprints, preparing bibliographies, and more.

Table 1: AI tools for repackaging of library services and resources

Type of AI Tools	Description
Any Summary	Any summary is a useful tool for librarians and academics who need to go through substantial textual or audiovisual data. It enables them to extract important insights efficiently, aiding in research analysis and content curation.
Bing Create	Librarians can utilise Bing Create to quickly develop visual representations of concepts or research findings, improving the visual appeal of their materials and presentations.
Books AI	Books AI is a time-saving tool for librarians and scholars to create concise book summaries, which are crucial for anyone seeking rapid insights into the content of various publications.
ChatGPT for Search Engines	ChatGPT is an AI-powered chatbot extension that can be integrated into search engines, enabling users to pose queries and receive responses that resemble human responses.
Consensus	This tool increases librarians' productivity by offering a reliable, fast method for locating materials and answering questions.
Elicit	Elicit is useful for researchers and librarians because it can quickly find relevant research papers, condense key findings, and extract important data.
Explain Paper	Explain Paper makes it easier to grasp complicated academic papers. Librarians and academics can profit from each of these technologies in different ways, whether through easier data management, more effective literature reviews, or innovative engagement with academic literacy content.
Gamma App	Gramma can help librarians create better material for seminars and library presentations. Researchers can use it to produce aesthetically pleasing reports and presentations that successfully convey their findings.
GPT for Sheets	This tool can help librarians and researchers with a variety of activities related to data analysis, content production, and organisation in Google Sheets.
Grammar GPT	Grammar GPT helps librarians and researchers ensure that their written works, such as research papers and reports, are accurate and understandable, improving the overall calibre of their work.
Konjer	Konjer provides librarians and academics with a distinctive and interesting experience. Users can engage with historical personalities, fictional characters, or delve deeply into subjects of interest.
MiniGPT-4	MiniGPT can help librarians produce visually appealing content for library campaigns and events. Researchers can use it to improve data visualisation and the visual presentation of their findings.
OpenRead	OpenRead is a cutting-edge, AI-driven interactive document platform that aims to transform how researchers and librarians access and engage with research articles. It offers several strong features, such as the Paper Q&A tool, which makes it easier to get quick replies to enquiries about research papers.
Paper Brain	Paper Brain is an effective tool made to make research more efficient, especially for researchers and librarians conducting literature reviews.
Talk to Books	Talk to Books is a cutting-edge AI-powered search engine created to help researchers and librarians in their pursuit of information. With this service, users can ask questions about books and receive responses that sound human and natural in conversation.
Zeroscope Text-to-Video	Zeroscope can make it easier for librarians to produce engaging video tutorials or marketing materials for the resources and services libraries offer.

5.3 Librarians' perceptions and roles in AI integration

During the interviews, librarians were asked to explain their views on adopting AI to repackage library services. The literature consulted demonstrates that the integration of AI into library service delivery begins with librarians' attitudes and perceptions towards emerging technologies in their field of expertise. During the interview, Librarian 7 asserted that:

> "*The use of AI has the potential to improve various library services and serve the users in a more modern way because there is no need for users to visit the physical library building every time they need information.*"

On the other hand, Librarian 8 proclaimed that:

> *"The needs of the current library users have changed; therefore, we librarians should change from the traditional ways of providing library services and harness the use of AI technology to provide quality library services."*

A study conducted in Tanzania by Msonde et al. (2025) notes that Librarians are essential knowledge stewards whose adoption of AI depends on their awareness, perceived advantages, and views on how AI might affect their professional roles. Enakrire and Oladokun (2024) insisted that librarians continue to engage with intelligent technologies that exhibit human behaviour, even though they are not actual humans, because of the support they provide in delivering library services. Oyadonghan et al. (2016) assert that librarians ought to take the lead in helping their institutions respond to the changes brought about by the technological age. Monyela and Tella (2024) contend that by effectively employing AI technologies, librarians can enhance user experiences, encourage interdisciplinary collaboration, expedite knowledge organisation, and support a more sustainable and inclusive knowledge ecosystem. The introduction of AI has complicated library operations, and to plan and deliver successful library services in the future, librarians may need to possess more sophisticated, critical, creative, and imaginative thinking, in addition to emotional investment (Isiaka et al., 2024). Shahzad et al. (2024) recommended that librarians, academics, and AI specialists form a partnership to enable ongoing competency development for librarians to accomplish the seamless integration of AI in library services. To persuade academics to use AI-powered databases such as Google Assistant, librarians must highlight the importance and reliability of the information they contain and continue to offer training on efficient search techniques (Subaveerapandiyan, 2023).

5.4 Challenges affecting AI implementation in academic libraries

The last objective of the study was to identify challenges affecting AI adoption among academic libraries in Tanzania. The study found that several factors affect the integration of AI in academic libraries in Tanzania. One of the major factors is the inadequate funding of academic libraries. During the interview, one participant, Librarian 3, affirms that:

> "*Here at our library, we do not have any of the library services that AI powers. I think this type of investment requires enough budget, as some of these AI tools are expensive in terms of their operations.*"

Studies indicate that integrating AI into academic library services faces several challenges. A study conducted in Tanzania by Bakiri et al. (2023) identified several issues, including the high cost of AI technology, the need for highly qualified IT staff, librarians' reluctance, and inadequate management. Other challenges observed in a study conducted in Tanzania by Sife and Matto (2022) included limited bandwidth, subpar network infrastructure, insufficient necessary hardware and software, cybersecurity threats, and power outages. Also, there are concerns about the adequacy of librarians' knowledge and abilities, fear of losing their positions, and anxiety about their readiness (Enakrire & Oladokun, 2024). A study by Suleiman et al. (2024) showed that the implementation of AI technology is hampered by several infrastructure issues experienced by many Nigerian universities, including intermittent power supply, outdated hardware, and limited broadband connectivity. Another study conducted in Zambia by Subaveerapandiyan (2023) identified issues and concerns with the implementation of AI in libraries. Important considerations include privacy and ethical issues, as well as ensuring fair access to information.

6 Discussion

The study provides an understanding of the AI adoption in repackaging library services among academic libraries in Tanzania. The discussion section is organised around the study's objective: examining the level of AI adoption in repackaging library services, the AI tools used for this repackaging, librarians' perceptions and roles in AI integration, and the challenges affecting AI implementation in academic libraries in Tanzania.

Regarding the level of AI adoption in repackaging library services, the study found low AI adoption among academic libraries in Tanzania because the technology is still new, and some librarians have few or no skills in using it. The slow pace of AI adoption is linked to inadequate skills and awareness among librarians. Some librarians are aware of and can use AI, but most have little awareness of or skill with it. Librarians who are proactive in learning about emerging technologies and how they affect their professions, both positively and negatively, have shown greater awareness than those who wait to be overtaken by events; these librarians have shown little or no awareness of the use of AI technology in library services. In Tanzania, AI adoption in academic libraries is still emerging rather than being fully integrated into repackaging services. In a study of librarians from seven higher education institutions, awareness of AI was reported to be high at 68.3%. However, actual adoption remained low at 23%, indicating a gap between interest and implementation (Bakiri et al., 2024). Several training courses on the use of AI are organised by the Consortium of Tanzania Universities and Research Libraries (COTUL), Tanzania Library and Information Association (TLA), universities, and individual firms or experts; therefore, librarians can acquire the necessary skills in using AI to champion the adoption process in libraries and institutions where they work. The findings align with Rogers's (2003) DOI theory, which posits that knowledge is a key factor in technology adoption within an organisation.

The study found that few librarians were aware of AI tools that can be used to repackage library services, such as QuillBot, Grammarly, chatbots,

and ChatGPT. The study further revealed that several AI tools can be useful for repackaging library services and improving service delivery. These tools include ChatGPT, Zeroscope Text-to-Video, Any Summary, Bing Create, GPT for Sheets, Chatbots, MiniGPT-4, and many others. Librarians are required to learn how these AI tools work so they can integrate them into library service delivery. Some of these tools are available freely, online, while others are available for purchase. To achieve adoption, librarians should work closely with IT experts at their institutions, who have extensive AI expertise. Working in a team of experts with diverse expertise will enable librarians to acquire more skills in using AI and facilitate the adoption process by providing IT support when challenges arise. The evidence from Africa, including institutions relevant to the Tanzanian context, shows that only a small number of university libraries have adopted AI tools. However, those in use are already supporting repackaging-related services. Reported tools include ChatGPT, chatbots, Grammarly, LibKey from ThirdIron, robots, and RFID systems, with uses ranging from answering ready-reference questions and generating content to supporting cataloguing, self-checkout, marketing, and statistical evaluation (Abba, 2025).

These tools are especially relevant to repackaging because they help libraries convert, simplify, and redistribute information in forms that are easier for users to consume. The findings of the study align with Rogers's (2003) DOI theory, as ease of use determines technology adoption in an organisation. Therefore, librarians are expected to learn how to use AI tools so that they can work with them easily. Thus, academic libraries that embrace AI will remain relevant to their users in this era of the knowledge economy, where knowledge is regarded as the most valuable commodity for human survival.

The study revealed that librarians have viewed the adoption of AI positively, acknowledging its potential to improve library services and enhance user satisfaction. Realising the changing needs of library users and their information-seeking behaviour, librarians are repositioning their roles to ensure they remain relevant in this digital era. Librarians are attending short courses and seminars to acquire the skills and knowledge needed to work in an AI environment and to ensure library services are mainstreamed to meet users' needs. In Tanzania, librarians hold a positive but cautious view of AI. Bakiri et al. (2024) found high awareness and strong readiness among librarians, suggesting that many staff members see AI as useful for improving efficiency and quality of service. At the same time, librarians appear to understand that successful AI integration will require new competencies, institutional support, and policy direction. This means their role is shifting from simply delivering library services to also interpreting, curating, and managing AI-enabled workflows. Mwilongo and Mwageni (2023) also add that AI is transforming staff attitudes and user behaviour, but it also creates fear about employment security and role displacement. The authors further note a mismatch between library staff and AI due to limited awareness and inadequate qualifications, implying that librarians must become facilitators, trainers, and intermediaries between users and AI systems. In practice, this means librarians are expected to guide ethical use, improve service quality, and ensure that

AI outputs are accurate and relevant to users' needs.

The adoption of AI by academic libraries is inevitable because such technology can enhance personalised library services, enable libraries to offer services 24/7, free up librarians' time so they can concentrate on other library work, and project a positive image of the library in the eyes of users. In the Tanzanian academic library context, recent work on AI-assisted marketing shows that librarians already see practical value in ChatGPT for generating posts, captions, and images. At the same time, chatbots and voice assistants are viewed as tools for 24/7 user support and personalised discovery (Kyumana, 2025). Although this study focused on marketing rather than on repackaging in the narrow sense, it still supports promotional writing and awareness-building as part of repackaged library services and products. The findings of the study are in line with the DOI theory (2003), which states that perceived advantage and observable benefits can lead to technology adoption in an organisation. In this context, AI adoption among academic libraries in Tanzania.

Tanzanian academic libraries are still integrating AI slowly because these initiatives face several obstacles. A lack of training among librarians has created a knowledge gap in the use of AI technology in academic libraries. There is inadequate training to equip librarians to use AI. This has resulted in inadequate skills among librarians, thereby affecting the adoption of AI in academic libraries in Tanzania. For librarians to be upfront in AI adoption, they need adequate AI-use skills to work comfortably in an AI environment. Secondly, the high cost of AI installation is an obstacle for most academic libraries in Tanzania due to financial constraints. Some AI technologies for libraries are expensive, requiring a heavy investment that most libraries in Tanzania cannot afford. The study also found ethical issues associated with the use of AI that affect its integration into academic libraries, as most academic libraries don't have AI use policies in place. Another challenge for implementing AI in academic libraries is unstable internet connectivity in academic institutions in Tanzania. With regards to challenges of AI in higher learning institutions in Tanzania, Matto and Ponera (2025) reported insufficient skills, weak infrastructure, limited funding, and a lack of institutional policy; solidifying that these same barriers are highly relevant to academic libraries because library AI implementation often depends on broader institutional governance and digital readiness.

AI usage in libraries requires significant investments in bandwidth subscriptions to operate efficiently; however, these are missing, thereby slowing integration processes. Although the study has established several factors impeding AI adoption among academic libraries in Tanzania, human factors play a key role in the technology adoption process, as some librarians have not embraced changes in AI use due to technophobia and fear of job displacement. The findings confirm the DOI theory by Rogers (2003), which posits that individual factors may affect the technology adoption process in an organisation, while budget constraints and the absence of AI use policies are organisational factors that affect the AI adoption process.

7 Conclusion

This study examined how academic libraries in Tanzania are using AI to repackage library services. The study found that most participants have not yet integrated AI into their service delivery, except for a small number who have begun utilising the technology for some basic library functions. In terms of awareness of AI tools, the study found that few participants were aware of AI tools and how they are used in libraries, and that these were the ones who had high self-efficacy to learn and work in an AI environment. Those who had not taken any initiatives to learn more about the emergence of AI and its applications in the libraries where they work were the ones who knew the least about AI tools that can be used in library service delivery. Additionally, to stay relevant to their users, librarians must develop their AI skills and knowledge by attending short courses and seminars. Numerous obstacles to integrating AI were identified, such as a lack of training on AI use among librarians, which resulted in inadequate AI use skills among them, the high cost of AI integration, the absence of explicit AI-written policy, the instability of internet connectivity, and resistance to change among librarians because of technophobia and fear of their jobs being replaced.

8 Recommendations

Based on the study's findings, the study recommends that librarians attend seminars and conferences on artificial intelligence to equip themselves with the skills needed to work in an AI environment. Having AI knowledge will streamline the integration of AI into library service delivery, including repackaging and many other tasks. Institutional top management should allocate funds for AI adoption to enhance library service delivery within their institutions. Librarians should view the advent of AI as an opportunity rather than a threat, so they can learn to work in an AI environment and provide better library services to their clientele. Regarding ethical concerns such as privacy and data security, this study recommends that academic institutions selected for the study formulate well-written AI policies to ensure the integrity of their applications. Finally, there should be internet connectivity across campuses to ensure AI operations in library service delivery.

9 Implications of the Study

The study is significant because it highlights the level of AI adoption in the repackaging of library services among academic libraries in Tanzania. It informs policymakers of the importance of training librarians to equip them with the skills to use AI and facilitate the adoption process. The advent of AI has revolutionised the way libraries provide services; librarians should strive to acquire relevant knowledge and skills to provide services in an AI environment. Furthermore, this study will lead to the formulation of an AI policy at the national and institutional levels to ensure smooth AI adoption among academic libraries in Tanzania and curb the ethical concerns. The study further informs top management of academic institutions in Tanzania about the need to allocate funds to integrate AI into library services. The findings also validate the DOI theory by Rogers (2003), which provides insight into the factors that determine AI adoption in the repackaging of library services among academic libraries in Tanzania. Finally, evolving technologies require academic institutions to invest in modern technologies, including ensuring that internet connectivity is available around the clock to provide effective library services to on-site and off-site library users.

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