

# Enhancing Marketing of Library Services and Resources through AI Tools in Tanzania's Academic Libraries

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## Abstract

*Rationale of Study* – This study explored digital marketing prospects and challenges of integrating AI tools in library marketing in academic libraries in Tanzania using a qualitative research design.

*Methodology* – Data was collected from fourteen purposively selected librarians from seven university libraries in the country's Dar es Salaam, Arusha, and Kilimanjaro regions.

*Findings* – Findings revealed that most libraries have embarked on marketing their services and resources through social media pages, preferably Instagram and Facebook while maintaining a webpage linked to the institutional website to provide links to electronic resources, schedules for library training, and other educational posts. Most librarians interviewed identified content generation to keep the library's social media pages and websites updated with engaging posts and articles as the most daunting challenge. Through literature, it has emerged that librarians could leverage ChatGPT as a content-generation tool for posts, images, and captions. At the same time, chatbots and voice assistants could be utilised to provide services to users around the clock while raising awareness of library services through personalised recommendations and resource discovery. The challenges to integrating AI into library marketing that emerged during the study include the absence of well-articulated AI use policies among these institutions, financial constraints, education and training gaps, lack of institutional support, and librarians' attitudes.

*Implications* – Therefore, the study recommends continuing professional education on emerging technologies, changing attitudes among librarians, and incorporating library marketing initiatives in library policies and strategic plans to garner financial and institutional support.

*Originality* – This study contributes to the underexplored domain of artificial intelligence (AI) adoption in marketing library services and resources, particularly within Tanzania's academic libraries. The findings highlight unique contextual challenges and opportunities, advancing both theoretical and practical insights into AI-driven marketing strategies in academic library settings.

## Keywords

Academic Libraries, Artificial Intelligence, Chatbots, ChatGPT, Marketing Library Resources, Tanzania, Voice Assistants.

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## 1 Introduction

Marketing in the context of a library setting refers to providing information to users about a library's services and resources to ensure that they are aware of the services and resources available (Yi, 2016; Muneja, 2023). Libraries are increasingly marketing and redefining their role to remain relevant while taking resources and services to the users instead of sitting and waiting for them to visit the library physically. Lwehabura, Dulle, and Mulimila (2002) note that marketing is an important activity that should be taken seriously by librarians in the 21st century as new and sophisticated information technologies dominate every sector, thus requiring librarians to respond to new needs and the influence of technology. To remain at the heart of information service delivery, marketing must reach all potential library users to inform them about librarians and what they can offer while seeking to know their actual needs.

Moreover, ICT has brought about an information revolution, rendering it a commodity necessary for decision-making. Libraries now subscribe to scholarly databases and electronic books and venture into licensing. To ensure a return on investment, many libraries market their resources and services to enhance access and utilisation. Malekani and Benard (2018) identified catalogue displays, print adverts, workshops, and leaflets as some of the outreach techniques for promoting library information resources in

Tanzania's academic libraries. However, posters and websites also emerged as favoured options. Significantly, users recommended social media utilisation. On the other hand, Muneja (2023) noted the utilisation of websites for marketing as most libraries had a webpage linked to the institutional websites. The websites displayed e-resources subscribed and provided guidelines on how to use the subscribed-to resources. Mashindano (2020) identified Facebook as the most utilised social media tool for marketing library services and resources. However, difficulties in the administration and monitoring of social media accounts coupled with a lack of skilled personnel were among the challenges librarians faced.

Artificial intelligence is defined by Stryker (2024) as a technology that enables computers and machines to simulate human learning, comprehension, problem-solving, decision-making, creativity and autonomy. The author further identified the benefits of AI's automation of repetitive tasks, faster insights into the data, enhanced decision-making, fewer human errors, 24/7 availability of services, and reduced physical risks. In libraries, IFLA (2024) elaborates that artificial intelligence utilisation enhances cataloguing, search and access to information. Additionally, AI enables advanced automation, personalises recommendations and facilitates document access, improving operational efficiency and enriching user experience.

In marketing, AI processes data with algorithms and pattern recognition to simulate human intelligence. Also, there are two types of AI in marketing: i.e. predictive AI, which analyses patterns in data to anticipate what outcomes might happen next and generative AI, which helps marketers create new content through following text and images (Odusanya, 2025). Leveraging AI can assist librarians in marketing library resources through image generation, posters and short videos detailing library tours, newly acquired library books, and tutorials for navigating library subscribed-to databases, thus enhancing library marketing—a component that librarians in Tanzania have yet to exploit fully.

## 2 Literature review

Odusanya (2025) notes that marketing in libraries involves identifying user information needs, matching these needs with appropriate information resources, and proactively satisfying customer requirements. While profit-making is the main goal of any business marketing, providing improved services to library users is the hallmark of library and information marketing. Dennis (2012) identified websites, e-format newsletters, and social media accounts (Facebook and Twitter) as some of the initiatives for promoting the library and reaching new and current users in broad and diverse ways.

With advances in Information and Communication Technologies (ICTs), library

marketing has evolved to leverage ICT and embrace the digital age (Horsfall, 2020). Indeed, ICTs have changed users' information-seeking behaviours; they have adapted to navigating various digital platforms (Furi and Balog, 2016). In the digital era, technology and information available at the user's fingertips through their phones, tablets, laptops, and computers has further enhanced library operations. Curran, Murray, and Christian (2007) note that libraries have leveraged Web 2.0 principles and technology to harness benefits and opportunities to serve existing patrons better and reach out beyond the walls of the libraries for potential users. Now, users can view online, borrow locally, and request from afar what is appropriate to meet their needs and circumstances. Horsfall (2016) further contends that the emergence of electronic information resources has transformed information handling and management in academic libraries, necessitating the need to market library services much more favourably to boost usage within the library or from remote locations.

### 2.1 State of library marketing in Tanzanian academic libraries

In Tanzania, Malekani and Bernard (2018) identified catalogues, displays, print adverts, workshops, phones, and leaflets as some outreach techniques for promoting library information resources. On the other hand, Pessa (2019) found that OPAC and Web 2.0 were utilised to inform users of resources

available in academic libraries. Additionally, Mashui (2023) and Lwehabura, Dulle, and Mulimila (2002) identified university websites, the internet, posters, flyers, instructional sessions, leaflets, guides, and email alert services that facilitated the marketing and promotion of library resources. Indubitably, these marketing and promotion tools are essential for librarians' survival in the 21st century.

Social media has come in handy in promoting libraries and information services since most library patrons are Gen Z and Millennials. Berens and Noords (2023) contend that Millennials and Gen Z users rely heavily on mobile computing, check social media at various times throughout the day, and read a lot on mobile devices, especially social media. In Tanzania, Mashindano (2020), Kyumana (2022), and Kirita and Mwantimwa (2021) have indicated that academic libraries are utilising social media for marketing library resources, particularly Facebook, Instagram, and Twitter (now X), whereas Muneja (2023) noted that many libraries utilise websites linked to the institutional web page for marketing. Though the literature on marketing and promoting library resources is abundant, few studies have bothered to look at how libraries can incorporate and leverage the benefits of using artificial intelligence (AI) to engender library marketing.

## 2.2 AI tools for library marketing

Artificial intelligence (AI) marketing is increasingly assuming a bigger role with the advent of intelligent marketing tools and generative AI like ChatGPT, creating innumerable opportunities for marketing librarians. Consequently, contemporary marketing has begun experimenting with modern, cutting-edge AI technologies in mainstream operations to ensure accelerated success (Chintalapati and Panday, 2022).

While AI in libraries is extensively discussed in terms of awareness, adoption and readiness, librarians still have mixed feelings about the integration of AI in library operations as challenges such as funding problems, inadequate experts, limited power supply, and insufficient budget to procure technology looms over many academic libraries in Africa (Ajani et al., 2022). Mabona et al. (2024) noted that traditional operations are currently automated in South Africa. However, policy concerns still persist as they are non-existent in ethically guiding the use of AI tools. Similarly, Zondi et al. (2024) noted that implementing AI in academic libraries faces infrastructural limitations, financial constraints and employment concerns. Similar sentiments were echoed by Echedom and Okuonghae (2021) and Ngulube and Vincent Mosha (2025), while Molaudzi and Ngulube (2025) added that most libraries did not have clear strategies for adopting AI innovations.

As academic libraries continue to evolve to meet their patrons' diverse and evolving needs, the integration of advanced technologies becomes imperative (Chen, 2023). AI for library marketing aims to deploy AI tools/technologies to enhance library marketing endeavours and boost user interaction and satisfaction (Sapri, Rashid, and Tormizi, 2024). With decreased patronage and a rise in tech-savvy library users of Gen Z and Millennials, AI could benefit librarians, particularly in highly personalised content recommendations, automating routine marketing tasks such as content and image generation, and conducting sophisticated analysis on user behaviour patterns (Berens and Noorda, 2023; Sapri, Rashid and Tarmizi, 2024). In the context of libraries, Aithal and Aithal (2024) have noted that ChatGPT can facilitate social media monitoring of brands or products and provide libraries with real-time feedback on how users receive their services. Furthermore, Okwu, Oyighan, and Oladokun (2024) note that integrating AI in library operations such as marketing has the advantages of providing personalised and responsive service delivery, streamlined operations, and evolution in roles and responsibilities of library staff, for instance, chatbot for answering user's queries and voice assistants for reserving books and explore library collection remotely.

Even though the literature on AI integration in academic libraries has significantly increased

(Barsha and Munshi, 2023; Rahman, 2023; Mabona, Van Greunen, and Kevin, 2024; Bhattacharya, 2024), there remains a gap on how libraries can leverage AI in marketing library resources in the Tanzanian context. This study aims to fill that knowledge void by:

1. Assessing the current state of library marketing in academic libraries in Tanzania.
2. Examining the role of AI in library marketing in academic libraries in Tanzania.
3. Identifying types of AI tools relevant to academic library marketing in Tanzania.
4. Evaluating barriers to integrating AI tools in academic libraries' marketing in Tanzania.

### **2.3 The Technology-Organisation-Environment Framework**

While examining the adoption of AI tools to enhance library marketing, the study employed the Technology-Organisation-Environment (TOE) framework, which was introduced by Tornatzky and Fleischer (1990) and further developed by Baker (2012) to provide a comprehensive guide for technological adoption in organisations. The TOE framework was developed in the field of information systems to explain how the adoption and use of new technologies are influenced by various factors, including the technology itself, the organisational context in which it is used, and the external environment

in which the organisation operates (Yong, 2023). One of the strengths of the TOE framework is that it provides a holistic perspective on technology adoption and implementation (Sang, 2024). In Tanzania, research shows that academic libraries' awareness of AI is high. However, adoption is low, citing skills gap, budget constraints and readiness as the main impeding factors, which the TOE framework covers extensively (Bakiri, Mbembati and Tinabo, 2023). In Kenya, Sang (2024) explored the adoption of AI in Kenyan academic libraries using the TOE framework. The findings revealed that technological factors (advantages, compatibility and complexity) and environmental factors (regulatory environment, competitive pressure, and vendor partnership positively affect AI in Kenyan libraries; yet, it was noted that organisational factors (size, top management support and organisation readiness) had no significant effect of AI adoption.

The TOE framework applies to this study as it provides a lens through which to examine the technological, organisational, and environmental factors affecting AI integration in library marketing or the holistic adoption of AI. The framework guides the study objectives through the evaluation of current marketing initiatives in academic libraries (technology integrated), exploring the academic libraries' readiness to adopt AI tools, particularly in marketing initiatives (organisation), identifying AI technologies that can be integrated into library marketing (technology) and identifying barriers for adoption (environment). The TOE framework guided and helped the findings have theoretical rootings, thereby facilitating the successful integration of AI tools and ensuring a holistic understanding of the challenges and opportunities for academic libraries in Tanzania.

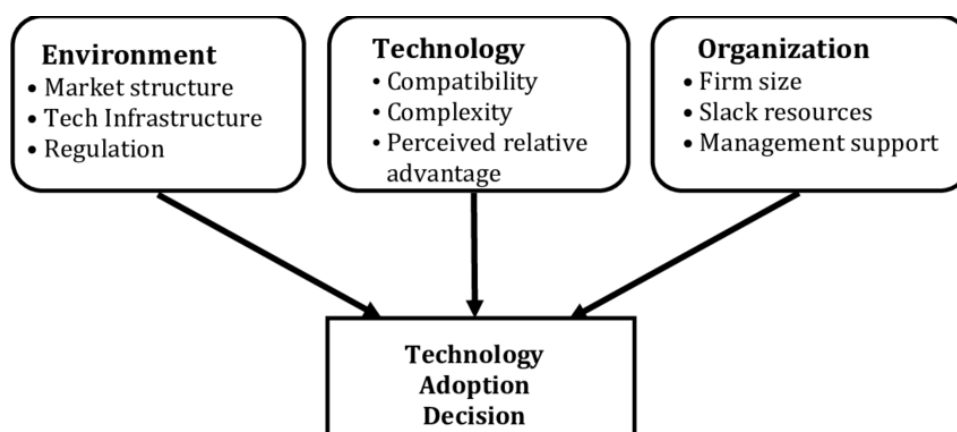


Figure 1: Technology-Organisation-Environment (TOE) Framework

Source: Yong (2023)



### 3 Methodology

The study utilised a qualitative research design to explore, understand, and interpret marketing in the context of Tanzania's library in detail, particularly the current practices and how AI can be integrated to enrich the library market. Additionally, qualitative design facilitated the understanding of the complex and context-specific experiences, perspectives and challenges library staff face in adopting AI tools in marketing initiatives (Cresswell and Cresswell, 2017; Ravitch and Carl, 2019). The qualitative design further facilitated an understanding of the TOE framework in Tanzania's academic libraries regarding technological adoption by providing a context-specific understanding of social, cultural and organisational factors influencing AI integration in library marketing (Sang, 2024). The study used purposive sampling to select fourteen (14) library staff who oversee marketing initiatives in seven (7) academic libraries of the University of Dar es Salaam, Muhimbili University of Health and Allied Sciences, Institute of Finance Management, Institute of Accountancy Arusha, Mzumbe University, Nelson Mandela University, and Moshi Cooperative University, for participation in in-depth semi-structured interviews. The qualitative data was then subjected to relational content analysis, mainly to identify marketing initiatives and perceptions of AI tools integration for content generation and management. Additionally,

document review helped to identify AI tools for integration into library marketing to facilitate content generation and service provision. The findings and discussion have been presented thematically following the study's objectives.

The study followed research protocol, including obtaining informed consent from library staff, keeping information confidential during the study, and writing a report. The study is for academic purposes only. Also, respondents' names were not disclosed, and each had the right to decline to participate or withdraw, as participation was voluntary.

### 4 Findings of the study

#### 4.1 State of library marketing in academic libraries

Librarians who were interviewed identified social media pages as a way they used to market library resources. Most libraries have Instagram and Facebook pages that update information resources acquired, services provided, training offered, and subscribed electronic resources. During interviews, Librarian 1 noted:

*...I have dedicated one library staff to deal with social media pages. The library officer was sponsored to undertake a graphic design course to facilitate the preparation of attractive and engaging posts for the library's Instagram and Facebook pages to attract university students to library services.*

On the other hand, Librarian 2 added: *"...We have social media pages, but at times, posting becomes very challenging as we do not have a graphic designer. Ultimately, we post pictures of library activities using*

phones with high-resolution cameras. On that note, Librarian 3 further pointed out:

*...We could not create social media pages for the library because the institution notified us that it has a marketing department and social media for the whole institution. Therefore, instead of opening library social media pages, the library could notify the marketing department and the public relations officer what posts they need, and they create them and post them on institutional pages, which felt bureaucratic.*

Additionally, most librarians noted that they have websites linked to the institutional website for posts and sharing coupled with links to the Library Management System Online Public Access Catalogue (OPAC) and Institutional Repository (IR), in addition to indicating library service hours. However, content generation emerged as a challenge, as Librarian 4 lamented:

*...The library has a webpage where we post links and other important information to users, such as links to subscribed electronic resources, instructions on registering for ORCID and training the library will conduct. However, content generation is hard. How do we write an engaging post suitable for the audience? Sometimes, the webpage goes on for six months without any updated information.*

The Tanzania Commission for Universities (TCU) also organises various initiatives to market library resources, including displaying university journals and staff-published books and promoting innovative library initiatives at events like the Research Week, symposiums, the Dar es Salaam International Trade Fair, and University Exhibitions.

Literature shows that librarians are not aggressive enough in marketing initiatives. In Kenya, Muema-Kavulya (2004) studied selected university libraries and noted that despite librarians' appreciation of the role of marketing, most are still hampered by poor funding and need to aggressively market library services and resources to university decision-makers first with a view and intention of obtaining budgetary support. On the other hand, Kaur (2009) notes that there needs to be increased efforts to improve the visibility of the library through its websites, while Vasileiou and Rowley (2019) found that most libraries had no marketing communication strategy relating to e-books, something that was echoed by Muema-Kavulya (2004) observation that lack of marketing education in LIS schools and library policies results in shortage of professional library marketing human resources to manage and coordinate strategic and marketing planning limiting librarians to come up with forward-looking programmes aimed at providing adequate services to their target population based on sound marketing approaches.

#### **4.2 Utilisation of AI for marketing library services and resources**

Artificial Intelligence has added advantages to marketing by facilitating content generation by producing natural-sounding text and opening up new possibilities for customer engagement and algorithms for targeted services. Asifor and Idiodi (2024) note that the ability of



librarians to utilise AI tools effectively for content creation can impact the success of the library's marketing initiatives. By leveraging AI tools, library staff can create compelling content that resonates with their audience, whether through social media posts, newsletters, blogs, or multimedia presentations, thereby redefining the roles of librarians to include digital content creation, aligning with the demands of the Fourth Industrial Revolution developments for survival and maintaining relevancy. During interviews, it was noted that most librarians are not well-versed with AI tools that can be leveraged to enhance and facilitate library marketing. Librarian 8 noted thusly:

*"...We do not use AI tools for marketing because our social media page, particularly Instagram, contains pictures of library activities taken through the phones. These activities include students reading, library computer area, and staff serving users."*

Librarian 11 was surprised during interviews and noted that:

*"...We do not have enough skills to utilise AI for marketing. I do not know any librarian who uses AI for marketing. However, what AI tools can I use to market library resources and services?"*

It was also noted by librarian 13, who alluded that:

*"...I do not use AI for marketing. It is hard for me to do activities I was not taught during my degree to apply for the job. Maybe if I attend on-the-job training prepared by COTUL, then I might be able to gain skills to apply."*

During the interview, Librarian 6 added:

*"...AI for marketing library resources and services...how is that done? Is it used for designing or for something else?"*

However, it was also noted by Librarian 14 that:

*"...I have learned to use Canva for designing posts. It is easy and has some templates for customisation, so I normally customise them and prepare posts and adverts of library activities and post them on the library's Instagram page. Currently, I am trying to do challenging video editing, but with practice, I might get better."*

In Literature, IFLA (2024), Mabona, Van Greunen and Kevin (2024), and Okwu, Oyighan and Oladokun (2024) show that AI can be beneficial in marketing as it assists in customer segmentation and targeting, predictive analytics, and personalisation and recommendations engines, chatbots and virtual assistants, content generation and optimisation, sentiment analysis and social listening, without forgetting advertisement targeting and voice search optimisation for instance Google Assistants. However, there is a lack of context-specific applications of AI in library marketing as the process of marketing library resources and services is not for profit generation but rather for utilisation of resources and awareness (Vasileiou and Rowley, 2019).

Also, when it comes to librarians' awareness of AI tools for marketing library services and resources in academic libraries, Asifor and Idiodi (2024) found that awareness levels of AI tools for marketing varied significantly and

were influenced by geographical location, institutional support, and access to professional development opportunities. The authors added that librarians in developed countries had higher awareness due to technological resources and training programs than librarians in developing countries, which are hampered by infrastructural challenges, limited access to training, and a lack of exposure to new technologies.

Also, Agha (2004) notes that libraries need an open mind and a flexible attitude coupled with a mixture of imagination, curiosity, and experimentation to achieve desired results without forgetting to encourage and support staff who are comfortable with technology to experiment and innovate. In Malaysian libraries, Sapri, Rashid, and Tarmizi (2024) added that, despite AI benefits in library marketing, concerns about digital inequality, data privacy concerns, and the need for continuous technology adaptation and mastery for libraries and librarians pose a challenge still,

thereby recommending strategic investments in AI infrastructure, staff training, and ethical guidelines to be in place to facilitate integration.

### 4.3 AI tools suitable for library marketing

Marketing library resources and services requires innovative thinking and creative approaches in the digital era. The goal is to capture patron interest and utilise resources that may remain unexplored. Librarians should, thus, craft compelling narratives and engage the academic community online through captivating stories and interactive platforms (Schwartzerb, 2024; Sabat, 2021). Few know AI tools for enhancing marketing, as many are engaged in initiatives to market library resources. Through literature review and challenges stipulated by librarians in marketing library resources, ChatGPT, Chatbots, and voice assistants were identified as AI tools that could best assist librarians in marketing endeavours, as summarised in Table 1:

Table 1: AI Tools for Library Marketing

Role in Marketing	Description	AI Tool
<b>Content generation</b>	Content generation in marketing using AI tools refers to using artificial intelligence-powered software to create and manage digital or textual content efficiently. AI tools in this category can produce blog posts and articles for websites, social media updates, newsletters, research summaries, and creative writing. In the library, AI tools can assist in marketing, particularly in generating promotional content for events, services, and collections.	ChatGPT, Grammarly, Canva AI Content Writer.
<b>Chatbots</b>	These are AI-powered tools designed to interact with users, automate responses, and provide real-time assistance. They are suitable for enhancing user engagement as they assist in improving communication, thereby promoting reference services and library	Libchat

Role in Marketing	Description	AI Tool
	services in general. Chatbots are best used to answer users' queries and frequently asked questions (FAQs).	
<b>Voice Assistants</b>	These are AI-powered software programs that recognise and respond to spoken commands uttered by the user. They use natural language processing (NLP) and machine learning to understand user requests and perform tasks like answering questions, setting reminders, playing music, controlling smart home devices, and more. In libraries, voice assistants can be used for information retrieval and library catalogue access and browsing, and even reserve books, library navigation, and reminders on important library events and training, without forgetting audiobooks and digital resource access while also enjoying the personalised recommendations based on past preferences and requests.	Google Assistants

Content generation refers to digital applications and platforms that facilitate creating, managing, and distributing various types of content to streamline production and engage informative content essential for marketing efforts. In this regard, Idiodi (2024: 234) notes that The Library Information Science (LIS) profession is increasingly utilising digital content creation tools to enhance library resources and services, which include content management systems, graphic design, social media management, and video editing software that facilitate the creation of visually appealing promotional materials and instructional videos. Chen (2023) and Ramabina (2024) further observe that libraries, as traditional knowledge hubs in academic institutions, have been evolving to embrace digital technologies to improve user experiences and services. ChatGPT, with its conversational abilities, presents an intriguing opportunity to help in these domains, particularly in marketing initiatives.

Additionally, Ramabina (2024) adds that ChatGPT represents a cutting-edge development in natural language processing, and understanding its integration within the library setting is crucial for innovative library services.

In the context of marketing, Singh, Arora, and Singh (2024) found that ChatGPT technologies can enhance decision-making in content creation, matching the quality and speed of human creators while also facilitating the automation of customer services and enhancing demographic research, which can lead to substantial time and cost savings for businesses:

ChatGPT contributes to library programme promotion by assisting librarians in crafting compelling promotional content. It helps to generate engaging descriptions, event summaries, and marketing materials for library programmes, events, and workshops. This functionality enhances the effectiveness of marketing efforts, attracting the

interest and participation of library patrons and thereby fostering community engagement and participation in library activities (Ramabina, 2024: 53)

As an experiment, the author prompted ChatGPT for a library orientation poster mock-up design using the following prompt:

Author: *Create a library orientation programme poster for marketing and awareness of library services and resources for university students, highlighting key issues such as electronic resources subscribed, e-books platform available, library opening and closing hours, and how to ask for help.*

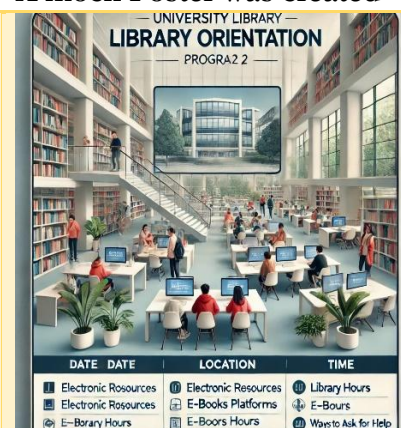
ChatGPT: *Here is a **Library Orientation Programme Poster** designed for marketing and raising awareness of university library services and resources. It includes key details such as electronic resources, e-book platforms, opening hours, and how to ask for help.*

Table 2: ChatGPT response and the mock-up poster for library marketing

### ChatGPT Library Orientation Poster

UNIVERSITY LIBRARY ORIENTATION PROGRAMME  
Discover, Learn, and Succeed with Your Library!  
Join Us for an Exciting Library Orientation! 📅 Date: [Insert Date]  
📍 location: [Library Name/Room]  
🕒 time: [Insert Time]  
What You Will Learn:  
✔️ How to access electronic resources (journals, databases, research papers)  
✔️ Explore the e-books platform and digital collections  
✔️ Understand library opening and closing hours  
✔️ Learn how to ask for help and connect with librarians  
✔️ Tour of the library facilities and study spaces  
✔️ Tips on efficient research and referencing  
Key Library Services & Resources:  
📖 Electronic Resources: Access scholarly databases like [Insert Examples]  
📚 E-Books Platform: Discover thousands of books available for online reading  
🕒 Opening Hours: [Insert Opening & Closing Times]  
💬 Need help? Visit the help desk, email us at [Insert Contact], or chat with a librarian online.  
🏠 Do not Miss Out! This session is your gateway to making the most of your university library!  
🔗 Register Now: [Insert Registration Link]  
For more information, visit our website: [Insert Library Website]  
📱 Follow Us: [Insert Social Media Handles]  
Your Library, Your Success! See You There!

### A mock Poster was created



### Library Orientation Poster

*The poster is ready! Let me know if you want any modifications, such as adding images, university branding, or specific contact details.*

Author: *Can the poster have a picture of the library, books, and students reading in the background?*

ChatGPT: *Yes! The poster can have a background image featuring the library, books, and students reading. You can achieve this by:*

1. **Adding a background image** of your university library with bookshelves and students studying.
2. **Overlaying the text** on a semi-transparent background to ensure readability.
3. **Using university branding** (logos, colour scheme) to make it visually appealing.

*Would you like a digital design created with these elements? I can generate a design mock-up for you.*

Author: *Yes. Create a mock-up for me.*

Table 2 presents the findings of the ChatGPT response and the mock-up poster for editing and posting to social media pages.

Source: Poster advert generated by the Author through ChatGPT prompts (2025)

However, Christou et al. (2024) caution against using ChatGPT for content generation by pointing out its shortfalls, which include its potential for generating misleading or inaccurate information, limited understanding of patron needs and preferences, and ethical concerns, particularly regarding data security and privacy. Hence, this necessitates a more conscious adoption and authentication of information provided to suit library needs.

On the other hand, Ehrenpreis and DeLooper (2022) define Chatbots as a form of AI where a computer program generates responses to inquiries based on its existing knowledge base and can be placed on websites to engage with users, preferably on a homepage or contact page. Fatouh and Hamam (2024) further contend that chatbot application in libraries enhances library services such as reference services, research assistance, and circulation management as Chatbots can facilitate round-the-clock access to library resources, catering to the diverse needs of users regardless of time and location thereby extending library services beyond the four walls. According to Stoilova (2021), chatbots are tools for digital marketing to enhance marketing campaigns and push notifications for new promotions.



Fig 1: Image of a library chatbot generated by the author using DALL-E (2025)

In this regard, Stoilova's (2021) case study analysed the Municipal Library integration of chatbots in service provision in Bulgaria; the main challenge that necessitated the integration was the unavailability of library staff 24/7 to answer customer queries, with emails, online chats, and messenger taking unusually long for the librarians to handle them, which also interrupted daily tasks and affected their performance. To restructure the work process and optimise performance, an AI chatbot, as a digital librarian, focused on providing information on topics most widely used in the communication "reader/user-librarian-reader user" that was hitherto in place before automation in addition to performing searches in the library database.

Similarly, Ehrenpreis and DeLooper (2022) provided an in-depth analysis of the implementation of Ivy- a proprietary educational software chatbot on its website- the first of its kind for an academic library. The chatbot assisted users in finding information and provided librarians with insights on the



topics students searched via the library website. Chatbots in Tanzanian academic libraries could be beneficial as Muneja (2023) explored the effectiveness of online e-resources marketing tools in university libraries and found that only fifty per cent (50%) of marketing messages on library websites were active and currently necessitating frequent updates.

Chatbots can be used on a library website as a reference marketing tool to familiarise users with various library resources and services, especially if the link between chatbots and different library resources is established. Chatbots also increase the use of library websites and the visibility of the library among the user community (Vincze, 2017; Sanji, Bahzadi, and Gomroki, 2022:18).

Though chatbots offer potential in library marketing, Aboelmaged et al. (2024) note that cost is a significant challenge associated with developing and maintaining the chatbot, including hosting charges, maintenance, and updates. Chatbots may also collect user data and browsing history, raising concerns about data privacy and security.

Another AI marketing tool that libraries could consider is voice assistants. Vijaykumar and Sheshadri (2024) define voice assistant technology as a revolutionary form of artificial intelligence that provides a hands-free way to interact with digital devices. These voice assistants utilise natural language processing (NLP) for various tasks, including playing

music, setting reminders, giving weather updates, and answering questions.



Fig 2: Image of a library voice assistant generated by the author using DALL-E (2025)

Smith (2019), in an article titled *Your Library Needs to Speak to You* notes that Amazon virtual assistant, Alexa, and voice assistants on the phone, namely, Siri and Google Assistant, have necessitated libraries to explore ways to build their presence on voice platforms that can allow the virtual assistant to answer queries and find information in specialised ways for people with disabilities and the elderly. Additionally, Vijaykumar and Sheshadri (2024) note that Alexa and Google Assistants are becoming increasingly popular in libraries as they enhance access to library materials by finding and reserving books through access to the library catalogue, offering recommendations based on user's past selections and personal preferences; moreover, they provide hands-free access to library materials, hence saving librarians time and



energy expended in face-to-face interactions with users:

Google Assistant is quickly becoming an invaluable tool for library patrons to access information. With its voice recognition and natural language processing capabilities, Google Assistant can help patrons rapidly and easily find the resources they need. At the library, patrons will be able to ask Google Assistant to help them with a variety of tasks. From finding books to accessing databases to finding library events and programs, Google Assistant can provide the information patrons need. Google Assistant can also answer questions about library services, suggest books tailored to patrons' interests, and provide personalised recommendations. Patrons can access this helpful service through the library's website and devices (Vijaykumar and Sheshadri, 2024:276)

Libraries can incorporate voice assistants by building their skills or hiring a developer to customise and tailor the voice assistant to the specific library needs (Smith, 2019) to reap the marketing benefits that voice assistants offer to the library, including the provision of a more interactive library experience through provision of patrons with tutorials on using the library's services (e.g. navigating electronic resources databases and the library online public access catalogue-OPAC) or provision of audio tours of the library while also providing recommendations based on their interests and preferences. Additionally, voice assistants offer personalised experiences for

patrons while promoting library services and resources (Smith, 2019; Vijaykumar and Sheshadri, 2024).

#### **4.4 Barriers to Integrating AI tools to enhance library marketing**

During interviews, most librarians noted financial constraints as the main impediment. Many noted that their parent institutions had yet to fully support marketing initiatives. Yet, convincing institutions to invest in voice assistants and chatbots to enhance reference services and raise awareness of library services was something that many were sceptical about. Though ICT has evolved, our libraries remain traditional, with priority going to books and e-resources.

Education and training gaps also emerged. Many Library and Information Science (LIS) curriculums are yet to align their courses with emerging technologies, and even professional association efforts, notably the Tanzania Library Association (TLA) and The Consortium of Tanzania University and Research Libraries (COTUL) to provide short courses for library staff. This leaves a gap in expertise to utilise AI tools confidently, while many lack exposure to such tools. This gap makes integrating AI tools in marketing challenging, rendering many at a standstill rather than in adoption.

Also, institutional support remains low as top management of many academic institutions in Tanzania is in a dilemma about using AI, and the lack of clear policies makes decisions more

challenging. This affects budgetary allocation and willingness to adopt these AI technologies in service provision. As a result, any efforts to adopt technology contend with challenges, including infrastructural bottlenecks. Notably, unstable internet connectivity or low bandwidth persists, and computers with low capacity (RAM) and, at times, power outage still loom over many libraries. Such realities discourage efforts to propose other technologies, such as voice assistants and chatbots.

Due to unresolved uncertainties, ethical challenges and implications also cast a shadow over the integration of AI in service provision. Content generation issues, such as plagiarism and fact-checking, are still debatable. In Tanzania, many are still at an impasse regarding whether the use of these AI tools should be encouraged or discouraged. Data privacy and security also add tension to adoption, as many fear breaching personal information that these technologies collect in the long run.

Also, librarians' attitudes present another challenge, as many are still comfortable operating in the traditional sense. Many are not investing in self-learning for personal development and awareness. The truth is that there are many AI tools, and one has to be curious to learn a tool that will add value to the profession, yet many do not. This makes the adoption of AI challenging, as our readiness is still questionable.

## 5 Discussion

This study offers a comprehensive exploration of AI integration in library marketing initiatives of academic libraries in Tanzania, focusing on prospects and challenges. The findings of the study are organised based on the research objectives, that is, the state of library marketing in academic libraries, utilisation of AI for marketing library services and resources, AI tools suitable for library marketing and barriers to integrating AI tools in academic libraries' marketing. Regarding the state of marketing, utilisation of AI for marketing, and barriers, the study discussed them based on themes, while AI tools suitable for library marketing were explored holistically.

Concerning library marketing, it was discovered that library staff engage in marketing initiatives using social media pages such as Facebook and Instagram to showcase library activities, such as library training and electronic resources. Also, it was noted that most libraries have a web page linked to the institutional or university website where links to the Online Public Access Catalogue (OPAC) and subscribed electronic resources are provided. Despite these initiatives, findings also echoed the frustration of library staff in designing engaging posts and keeping the social media pages and websites active with current information.

While artificial intelligence offers benefits to library marketing, including, but not limited to, content generation and algorithms for targeted services, it was discovered that utilisation of this cutting-edge tool in library marketing was low as many library staff were not well-versed with AI tools that can be leveraged to enhance and facilitate library marketing. Many cited a lack of exposure and skills gaps as the impeding reason for not utilising AI tools for library services and resource marketing.

Furthermore, the study identified AI tools for library marketing. Though there is a proliferation of AI and technology is growing at a fast pace, the study identified content generation tools such as ChatGPT to assist library staff in the creation, management and distribution of various types of content such as blog posts, newsletters, editing of videos to produce engaging posts for social media pages and websites. Chatbots and Voice Assistants, on the other hand, facilitate reference service provision to library patrons and ensure library services are offered around the clock. A chatbot in the library could enhance the marketing of services and resources as it generates responses to inquiries and can be integrated into the library website to engage with users and offer services such as research assistance, manage circulation, provide reference services and ensure library services are offered throughout the day. Regarding voice assistants in libraries, it was noted that a library has to speak to you. That is, voice

assistants offer a hands-free way to interact with digital devices and can offer services such as setting reminders, answering questions, and reference services. Voice assistants such as Google Assistant, Siri and Alexa have necessitated libraries to explore this technology to ensure users can find materials and resources quickly, ask for help accessing databases and books and find library events and programs easily through tutorials and virtual tours.

Despite the benefits and identification of AI for integration, the study identified education and training gaps as the major impeding reason for low adoption. Also, institutional support was noted to be low, while ethical challenges and library staff attitudes were impeding factors identified. These factors are in line with the TOE framework adopted, which focuses on technology, organisational, and environmental factors to identify potential barriers and explore opportunities to ensure the staff are prepared to adopt and utilise the identified technology.

## 6 Conclusion and Recommendations

As the study illustrates, libraries adapt to changes in user behaviour and advancements in ICT and Artificial Intelligence (AI) in the twenty-first century. As a result, they are now extending their services using AI tools to provide services beyond the library's four walls. The findings show that libraries are increasingly using websites and social media

presence to raise awareness and promote library resources. However, integrating AI tools into library marketing in Tanzania is a novel concept, with many citing a lack of awareness and exposure as impeding factors. Also, the study has identified content-generation tools that libraries can use to promote their services and resources. ChatGPT can facilitate content creation and the preparation of blog posts, newsletter posts, captions, and articles for the website. Chatbots can answer queries and offer recommendations to patrons once they are integrated into the library website. Voice assistants, such as Google Assistant, can help people with disabilities and the elderly navigate the library collection using their phones. In short, libraries must reinvent their services and extend their reach beyond the library's four walls to effectively utilise AI tools and enhance their services. By incorporating AI tools into their marketing strategies, they can ensure high user engagement and better service delivery.

Nevertheless, incorporating AI tools into library marketing faces financial, infrastructure, and technological challenges. Most libraries lack the funds for installation, maintenance, and updating, which AI technologies require. The rapid growth of AI technology also necessitates a budget for troubleshooting and upgrading, posing long-term sustainability challenges. Moreover, the education and training gap exists, with many librarians lacking the necessary skills to utilise

AI tools for library marketing effectively. Lack of institutional support and reluctance to invest in AI technologies like chatbots and voice assistants exacerbate these challenges. As such, the study suggests providing continuing education for library staff to prepare them for the digital landscape. Higher learning institutions should focus on library marketing initiatives through policies and strategic plans. Professional associations like the Consortium of Tanzania University and Research Libraries- COTUL and the Tanzania Library and Information Association- TLA should also design short courses aligned with emerging technologies and write proposals to institutions with librarians to encourage participation, thereby enhancing continuous learning and professional skills sharpening. Furthermore, librarians should adopt a learning mindset beyond the library profession, focusing on graphic designing and content creation to enhance library marketing efforts.

## 7 Implications of the Study

The study has valuable insights and contributions to policy, practice and theory as it informs and influences national and university policies by encouraging university administrations to provide more resources and support for integrating AI tools in academic library marketing. Also, the Tanzania Library Service Board (TLSB), a board with authority over the documentation and training of librarians in Tanzania, reviews the

librarianship curriculum to integrate emerging technologies to equip library staff with skills to embrace and utilise AI technology competently. Furthermore, the study provides insights into library practices to adopt a strategic approach to AI tools implementation in library marketing through budget allocation and short course training, thereby facilitating resource availability and capacity building. Lastly, the study utilisation of the TOE framework contributes to the understanding of technology adoption, especially in libraries, by providing insights into how environmental, organisational and technological factors shape the adoption of technology, particularly AI, in marketing library services and resources.

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