

User Experience with ChatGPT in a Nigerian University Library: Exploring Users' Satisfaction and Feedback

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Abstract

Given the integration of ChatGPT and similar AI-based solutions in academic libraries and the increasing emphasis on user-centred services, it is crucial to evaluate the user experience with ChatGPT. Given this, this study investigated users' satisfaction levels and gather feedback from library patrons who have interacted with ChatGPT at the Federal University of Technology, Ikot Abasi (FUTIA), Akwa Ibom. Three objectives guided the conduct of this study while a descriptive research design was employed. The population for this study was 107 registered students who are active users of the FUTIA Library and have interacted with ChatGPT for information retrieval and support. The data collection instrument was a structured questionnaire and data were analyzed using descriptive statistics to calculate means and standard deviations. Findings show that ChatGPT offers a range of benefits, including accurate responses to user queries ($\bar{x} = 3.54$), instant and round-the-clock availability ($\bar{x} = 3.28$), assistance with resource discovery ($\bar{x} = 3.04$), and

research guidance ($\bar{x} = 2.91$). Moreover, the availability of ChatGPT as a virtual assistant for answering queries has proven to be highly advantageous. One of the key strengths of ChatGPT, as revealed by the study, is its ability to save time by providing quick responses. However, the study has also highlighted certain challenges and concerns related to ChatGPT which include: it can sometimes be unreliable ($\bar{x} = 3.51$), lacks the emotional intelligence of human librarians ($\bar{x} = 3.41$), and, in some cases, may provide deceptive responses ($\bar{x} = 3.14$). The study, recommends that libraries should invest in developing more robust personalization features for ChatGPT, strengthen their data privacy and security measures to ensure that interactions with ChatGPT are confidential and protected.

Keywords: ChatGPT, AI technology, library services, users' experience, academic library satisfaction, feedback.

INTRODUCTION

Academic libraries have long been at the forefront of embracing innovative technologies to enhance the user experience and provide efficient access to information resources. In this age of digital transformation, academic libraries have integrated various digital tools and services into their systems to meet the evolving needs of their users. One such technological advancement that has gained prominence in recent years is the utilization of AI-based virtual assistants, such as ChatGPT, to provide personalized and responsive support to library patrons. As the digital landscape continues to evolve, it becomes imperative for academic libraries to assess the impact of these AI-driven solutions on user satisfaction and gather valuable feedback to improve service quality. Academic libraries have undergone a remarkable transformation in the digital age. Owolabi et al. (2022) state that the traditional model of libraries primarily serving as repositories of physical books and journals has been augmented and, in many cases, replaced

by a dynamic and technology-driven approach. Digital catalogues, electronic resources, and online access to vast collections of academic materials have become commonplace, and academic libraries are now tasked with providing seamless access to these resources. Consequently, librarians and library administrators are embracing technological solutions that enhance user experience and provide timely and efficient access to information.

Artificial intelligence (AI) and natural language processing (NLP) technologies have paved the way for intelligent automation in various sectors. Within academic libraries, AI-driven solutions have the potential to revolutionize user services. Among the AI applications, chatbots and virtual assistants are gaining traction as tools to address user queries, assist in resource discovery, and offer 24/7 support. ChatGPT, powered by advanced machine learning algorithms, is a prominent example of a chatbot/virtual assistant that can understand and generate human-like

text responses. It has been integrated into various domains, including customer service, e-commerce, and healthcare, to enhance user engagement and streamline information delivery (Oladokun et al., 2023). In academic libraries, ChatGPT presents a promising solution to address user inquiries and provide real-time assistance, offering a personalized and responsive approach to users.

Given the integration of ChatGPT and similar AI-based solutions in academic libraries and the increasing emphasis on user-centred services, it is crucial to evaluate the user experience with ChatGPT. This study investigated users' satisfaction levels and gather feedback from library patrons who have interacted with ChatGPT in an academic library context. By analyzing users' experiences, their perceptions of ChatGPT, and their feedback, this study will contribute to a better understanding of the impact of AI-driven solutions on academic library services. Additionally, it will offer insights into how libraries can enhance the functionality and user-friendliness of such tools based on user feedback.

Problem Statement

In an era characterized by the rapid evolution of information technology and an increasing reliance on digital resources, academic libraries are confronted with the challenge of adapting to meet the evolving needs of their user communities. The integration of AI-driven virtual assistants, such as ChatGPT, into academic library services presents a potential solution to address user inquiries, enhance resource discovery, and provide personalized, real-time support. However, while these

AI technologies hold great promise, the effectiveness and impact of ChatGPT on user satisfaction and the quality of library services remain relatively unexplored within the academic library context. The problem at hand is the need to comprehensively assess the user experience with ChatGPT in academic libraries, focusing on users' satisfaction and feedback. Understanding the degree of user satisfaction with ChatGPT, as well as collecting and analyzing user feedback, is essential for several reasons:

Research Objectives

The primary objective of this empirical research was to evaluate the user experience with ChatGPT at the Federal University of Technology Library Ikot Abasi, with a specific focus on users' satisfaction and feedback. To achieve this objective, the study was guided by the following specific purposes:

1. To assess user satisfaction levels with ChatGPT in FUTIA library.
2. To gather user feedback regarding their interactions with ChatGPT.
3. To identify areas for improvement in the implementation of ChatGPT in FUTIA library.

Literature Review

User experience in academic libraries has gained increasing attention as libraries adapt to the digital age and the evolving needs and expectations of their patrons. As academic libraries transition from traditional print-centric models to digital ones, a central focus has been on improving user experiences in accessing and utilizing

digital resources. Lefeet and Mairaj (2023) underscore the importance of seamless access to e-resources, emphasizing that user experience is critical for meeting the needs of modern library patrons. Research has shown that academic library users are more likely to engage with library resources when they find them easily. Adetayo and Oyeniyi (2023) discuss the usability of library systems and their impact on user satisfaction. The physical design and layout of library spaces also significantly influence user experiences. Academic libraries have been reimagining their physical environments to enhance learning and collaboration. Joudrey and Taylor (2017) explore library space design as a critical element in improving user experience. Mobile technologies and apps are increasingly integrated into academic library services to provide users with convenient access to resources. Studies have emphasized the role of mobile applications in delivering personalized and responsive services, which are central to enhancing user experiences (Okey et al., 2023). Libraries have adopted a user-centred approach to tailor services to meet the specific needs and preferences of their patrons. The integration of AI-driven technologies, such as chatbots, in academic libraries has the potential to enhance user experiences. Chatbots and virtual assistants have gained prominence in the library sector as tools to enhance user support and streamline information access. Chatbots have emerged as efficient tools for addressing user queries and assisting with resource discovery. Foroughi et al. (2023) discuss the various functions that chatbots can perform in libraries, including reference

assistance, resource recommendations, and general information provision. Virtual reference services have evolved with the integration of chatbots and virtual assistants. Studies, such as Prajapati et al. (2024), have examined how virtual assistants can enhance reference services and provide real-time assistance to library users. Research has indicated that users generally respond positively to chatbots in libraries. Lateef and Mairaj (2023) discuss user perceptions and acceptance of chatbots, suggesting that when designed effectively, chatbots can enhance user satisfaction. Chatbots have the potential to improve resource discovery by providing personalized recommendations. Omane and Alex-Nmecha (2020) explore how chatbots can assist users in finding relevant resources based on their preferences and needs. AI-powered chatbots utilize machine learning and natural language processing to offer intelligent and context-aware responses. Jo (2023) delves into the technical aspects of AI-powered chatbots and their impact on library services.

The integration of artificial intelligence (AI) in library services has transformed the way users interact with libraries and access resources. AI-based library services are often designed with a user-centric approach. A study by Ayoola et al. (2023) highlight the significance of user-centric design in AI-driven systems, emphasizing the importance of aligning AI technologies with user needs and preferences. AI technologies have significantly improved the search and discovery of library resources. Research by Budhwar et al. (2023) focus on user satisfaction

with AI-powered search systems, demonstrating that users appreciate the efficiency and accuracy of AI-driven search. Also, virtual assistants and chatbots have been widely adopted in libraries to provide real-time support and assistance. A study by Lee and Park (2023) investigate user satisfaction with chatbots, revealing that users value the immediate and responsive help provided by these AI-driven systems. AI-driven recommender systems have been employed to personalize resource recommendations for library users. Researchers, including Subaveerapandiyana (2023), have explored user satisfaction with AI-based recommender systems, indicating that users appreciate personalized recommendations for books, articles, and other resources. AI technologies, including have contributed to the automation of routine library tasks. A study by Hota and Hota (2023) emphasize the efficiency gains associated with AI in libraries, which can lead to increased user satisfaction by reducing wait times and improving access to information. While user satisfaction is often high, some studies, such as Hussain et al. (2024), have explored concerns related to the use of AI in libraries, including issues of privacy and user data security.

ChatGPT has found applications in various domains, including academic libraries. Panda (2023) discusses how ChatPDF serves as a virtual assistant in academic libraries, offering real-time responses to user queries, resource recommendations, and general information provision. ChatGPT can assist library users in resource discovery by providing recommendations based

on their preferences. Research by Ray (2023) focuses on ChatGPT's role in recommending relevant academic resources, thereby enhancing the research and study experience of library patrons. ChatGPT has been employed to assist users in finding information and answering queries. Yamson (2023) examines how ChatGPT improves information retrieval in academic libraries and contributes to user satisfaction by offering immediate and contextually relevant responses. Furthermore, ChatGPT has revolutionized reference services in academic libraries. Research by Panda and Kaur (2023) delve into the use of ChatGPT in reference services, showcasing its potential to answer complex queries and support users with their research needs. The integration of ChatGPT in academic libraries also raises ethical and operational challenges. Adetayo (2023) discuss issues related to data privacy, biases, and the need for responsible AI implementation in libraries.

User feedback is a crucial source of data and insights for the continuous enhancement of ChatGPT. User feedback plays a pivotal role in refining AI-driven models like ChatGPT. Halevy et al. (2018) emphasize the importance of collecting user feedback to train AI systems and iteratively improve their performance, especially in natural language understanding tasks. Research by Voita, Sennrich, and Titov (2019) discusses the use of user feedback to identify and rectify errors in machine translation models, which can be adapted to the context of ChatGPT. Bolukbasi et al. (2016) highlight the role

of user feedback in mitigating bias in word embeddings, which can be adapted for ChatGPT to ensure fairness and inclusivity. Barsha and Munshi (2023) advocate for a user-driven approach in the design and enhancement of AI systems, highlighting the role of user feedback in meeting user needs and preferences. Diakopoulos (2016) discusses the role of feedback in making AI decision-making processes more transparent and accountable, which is essential for ChatGPT's responsible use.

Methodology

This study employed a descriptive research design. The design was appropriate because it helped to gather structured data on user satisfaction and open-ended feedback for a comprehensive evaluation of user experience with ChatGPT. The population of the study was 107 registered students who are active users of the FUTIA Library and have interacted with ChatGPT for information retrieval and support. Due to the relatively small population, the study censured the 107 registered students, as this was feasible and provided a comprehensive view of the user experience. The data collection instrument was a structured questionnaire. The questionnaire was

designed to assess user satisfaction with ChatGPT and gather user feedback. Four (4) Likert-scale from 1 (Strongly Disagreed) to 4 (Strongly Agree) was used as the questionnaire items measuring scale. The questionnaire was distributed to the 107 registered students during one of the library orientation programmes held at the library under study. Participants were provided with an informed consent form, outlining the purpose of the study, the use of their responses, and their rights as research subjects. The data collection period lasted for two days and participants were given ample time to complete the questionnaire. Data were analyzed using descriptive statistics to calculate means and standard deviations. The analysis provided a quantitative understanding of user satisfaction levels with ChatGPT. The research adhered to ethical standards, including obtaining informed consent from participants. Participants were assured of the confidentiality and anonymity of their responses. The study's scope was limited to the registered student users of the FUTIA Library, which may not represent the experiences of other user groups.

Findings

This section presents the findings from data gathering and analysis in response to the research objectives.

Table 1: Satisfaction levels of users with ChatGPT in the FUTIA library

S/n	Variables	Total	Mean	Std Dev	Rank	Decision
1.	Instant and round-the-clock services	107	3.28	0.58	2 nd	Accepted
2.	Availability of virtual assistant for answering queries	107	2.67	0.71	5 th	Accepted
3.	Providing research guidance	107	2.91	0.67	4 th	Accepted
4.	Assisting with resource discovery	107	3.04	0.64	3 rd	Accepted
5.	Accurate responses to users' queries	107	3.54	0.53	1 st	Accepted
	Weighted Mean		2.50	<3.08		Accepted

Data in Table 1 indicates the level of satisfaction of users towards the use of ChatGPT in the library understudied. Data further indicates that ChatGPT offers accurate responses to queries (3.54), instant and round-the-clock services (3.28), assists with resource discovery (3.04), provides research guidance (2.91) and availability of virtual assistant for answering queries (2.67). Given the weighted mean of 3.08 which is above the criterion mean of 2.50 indicates that an acceptance of students' satisfaction with ChatGPT.

Table 2: Feedback regarding students' interactions with ChatGPT

S/n	Variables	Total	Mean	Std Dev	Rank	Decision
1.	Easily accessible than librarians	107	3.44	0.56	2 nd	Accepted
2.	It has a vast knowledge of different fields	107	2.86	0.69	5 th	Accepted
3.	Saves time by responding to questions quickly	107	3.14	0.62	4 th	Accepted
4.	ChatGPT cannot read emotions like a librarian would	107	3.41	0.59	3 rd	Accepted
5.	Information on ChatGPT is sometimes not reliable	107	3.51	0.55	1 st	Accepted

Data in Table 2 indicates the feedback responses regarding students' interaction with ChatGPT. Data reveals that the feedback from students regarding the use of ChatGPT ranged from information on ChatGPT is sometimes not reliable (3.51), easily accessible than librarians (3.44), ChatGPT cannot read emotions like a librarian would (3.41), saving time by responding to questions quickly (3.14) and it has a vast knowledge of different

Table 3: Areas for improvement in the implementation of ChatGPT

S/n	Variables	Total	Mean	Std Dev	Rank	Decision
1.	Providing user training on how to use ChatGPT technology	107	3.48	0.56	2 nd	Accepted
2.	Libraries should have clear ethical guidelines for the use of ChatGPT	107	3.01	0.67	5 th	Accepted
3.	Collaborations between libraries and AI experts can help address complex issues	107	3.12	0.62	4 th	Accepted
4.	Libraries must strengthen their data privacy and security measures to ensure that user interactions with ChatGPT are confidential	107	3.29	0.59	3 rd	Accepted
5.	Implementing more robust personalization features that will meet individual user needs	107	3.53	0.52	1 st	Accepted

Data in Table 3 indicates the areas for improvement in the implementation of ChatGPT in the library under study. Data reveals that the areas for improvement include: implementing more robust personalization features that will meet the individual user needs (3.53), providing user training on how to use ChatGPT technology (3.48), libraries must strengthen their data privacy and security measures to ensure that user interaction with ChatGPT are confidential (3.29), collaborations between libraries and AI experts can help address complex issues (3.12) and

libraries should have clear ethical guidelines for the use of ChatGPT (3.01).

Discussion of Findings

Regarding the level of satisfaction of users with ChatGPT, findings indicated a strong level of satisfaction with the usage of ChatGPT. The study further discovered that ChatGPT offers accurate responses to queries, instant and round-the-clock services, assists with resource discovery, and provides research guidance and availability of virtual assistants for answering queries. This finding is supported by Westfall's

(2023) report, which shows that 89% of surveyed students used the AI-powered chatbot to assist with their homework assignments. Additionally, other queries encompass work-related and research inquiries. The results indicated that ChatGPT saves time by responding to questions quickly, which is in line with the findings of Lin (2023) who noted that the technology's ability to generate responses quickly allows for faster conversations. This also validates the findings of Lin (2023).

While discussing the feedback responses regarding students' interaction with ChatGPT, the study observed that feedback from students regarding the use of ChatGPT ranged from information on ChatGPT is sometimes not reliable, easily accessible than librarians, ChatGPT cannot read emotions like a librarian would, saves time by responding to questions quickly and it has vast knowledge of different fields. This observation is in alignment with Davis (2023) and Lappalainen and Narayanan (2023), who underscored the potential peril of ChatGPT intentionally producing deceptive responses. Furthermore, an additional challenge emerges in ChatGPT's inability to perceive users' emotions, a contrast to the perceptive nature of traditional librarians.

The study also revealed the areas for improvement in the implementation of ChatGPT in the library and discovered the following: implementing more robust personalization features that will meet individual user needs, providing user training on how to use ChatGPT technology, libraries must strengthen their data privacy and security measures to ensure that user interaction with

ChatGPT is confidential, collaborations between libraries and AI experts can help address complex issues and libraries should have clear ethical guidelines for the use of ChatGPT. This is in line with the study of Panda and Kaur (2023) and Oladokun et al. (2023) who found that ChatGPT has the potential for increased personalization and improved user experience.

Conclusion and recommendations

This study provided valuable insights into the use of ChatGPT in a library setting and its impact on user experience. The research has shown that ChatGPT offers a range of benefits, including accurate responses to user queries, instant and round-the-clock availability, assistance with resource discovery, and research guidance. Moreover, the availability of ChatGPT as a virtual assistant for answering queries has proven to be highly advantageous. One of the key strengths of ChatGPT, as revealed by the study, is its ability to save time by providing quick responses. This aligns with the need for efficiency in information retrieval, especially in academic and research contexts. However, the study has also highlighted certain challenges and concerns related to ChatGPT. User feedback has indicated that while ChatGPT is valuable, it can sometimes be unreliable, lacks the emotional intelligence of human librarians, and, in some cases, may provide deceptive responses. This underscores the need for quality control and ongoing monitoring to ensure the accuracy and reliability of information provided by ChatGPT. The emotional aspect of user interaction, which is typically addressed

by human librarians, remains a significant limitation. However, this research contributes to the ongoing dialogue about the role of AI in libraries and educational settings and provides valuable insights for future improvements in this area.

In light of these findings, several recommendations can be made to improve the implementation of ChatGPT in library settings:

1. Libraries should invest in developing more robust personalization features for ChatGPT. By tailoring responses to individual user needs, the system can become more reliable and user-friendly.
2. Libraries should strengthen their data privacy and security measures to ensure that interactions with ChatGPT are confidential and protected. Users need to have confidence that their data is handled with care.
3. Collaborations between libraries and AI experts can help address complex issues and improve the technology. By working together, libraries can benefit from cutting-edge AI advancements and insights.

Implications for academic library services

The study demonstrates that ChatGPT can play a valuable role in enhancing user satisfaction. By offering accurate responses, instant service availability, and research assistance, it can cater to a wide range of user needs. This implies that libraries and educational institutions that implement ChatGPT can potentially boost user satisfaction and engagement. The ability of ChatGPT to respond quickly is a substantial benefit. It aligns with the need for efficient and timely information retrieval, particularly in academic and research contexts. This could lead to time savings for both students and researchers, making their work more productive and effective. However, ChatGPT's inability to read emotions or provide the kind of personalized, emotionally intelligent support that human librarians can offer underscores the importance of considering the emotional aspect of user interaction. It suggests that, while AI chatbots can be beneficial, they should be used in conjunction with, rather than as a replacement for, human library services.

References

- Adetayo, A. J. (2023). ChatGPT and Librarians for Reference Consultations. *Internet Reference Services Quarterly*, 1-17.
- Adetayo, A. J., & Oyeniyi, W. O. (2023). Revitalizing reference services and fostering information literacy: Google Bard's dynamic role in contemporary libraries. *Library Hi Tech News*.

- Ayoola, O. O., Alenoghena, R., & Adeniji, S. (2023). ChatGPT impacts on access-efficiency, employment, education and ethics: The socio-economics of an AI language model. *BizEcons Quarterly*, 16, 1-17.
- Barsha, S., & Munshi, S. A. (2023). Implementing artificial intelligence in library services: A review of current prospects and challenges of developing countries. *Library Hi Tech News*.
- Bolukbasi, T., Chang, K. W., Zou, J. Y., Saligrama, V., & Kalai, A. (2016). Man is to Computer Programmer as Woman is to Homemaker? Debiasing Word Embeddings. *Advances in Neural Information Processing Systems*, 4349-4357.
- Budhwar, P., Chowdhury, S., Wood, G., Aguinis, H., Bamber, G. J., Beltran, J. R., ... & Varma, A. (2023). Human resource management in the age of generative artificial intelligence: Perspectives and research directions on ChatGPT. *Human Resource Management Journal*, 33(3), 606-659.
- Davis, P. (2023). Did ChatGPT just lie to me? The Scholarly Kitchen. <https://scholarlykitchen.sspnet.org/2023/01/13/did-chatgpt-just-lie-to-me/>.
- Diakopoulos, N. (2016). Accountability in Algorithmic Decision Making. *Communications of the ACM*, 59(2), 56-62.
- Foroughi, B., Senali, M. G., Iranmanesh, M., Khanfar, A., Ghobakhloo, M., Annamalai, N., & Naghmeh-Abbaspour, B. (2023). Determinants of intention to use ChatGPT for educational purposes: Findings from PLS-SEM and fsQCA. *International Journal of Human-Computer Interaction*, 1-20.
- Halevy, A., Norvig, P., & Pereira, F. (2018). The Unreasonable Effectiveness of Data. *IEEE Intelligent Systems*, 24(2), 8-12.
- Hussain, K., Khan, M. L., & Malik, A. (2024). Exploring audience engagement with ChatGPT-related content on YouTube: Implications for content creators and AI tool developers. *Digital Business*, 4(1), 100071.
- Jo, H. (2023). Decoding the ChatGPT mystery: A comprehensive exploration of

- factors driving AI language model adoption. *Information Development*, 02666669231202764.
- Joudrey, D. N., & Taylor, A. G. (2017). *The organization of information*. Bloomsbury Publishing USA.
- Lateef, S., & Mairaj, M. I. (2023). Librarians' Perceptions toward Virtual Reference Services in Pakistani University Libraries. *Internet Reference Services Quarterly*, 1-22.
- Lee, S., & Park, G. (2023). Exploring the Impact of ChatGPT Literacy on User Satisfaction: The Mediating Role of User Motivations. *Cyberpsychology, Behavior, and Social Networking*, 26(12), 913-918.
- Lappalainen, Y., & Narayanan, N. (2023). Aisha: A Custom AI Library Chatbot Using the ChatGPT API. *Journal of Web Librarianship*, 1-22.
- Lin, Z. (2023). Why and how to embrace AI such as ChatGPT in your academic life. Psyarxiv. <https://psyarxiv.com/sdx3j/download/?format=pdf>.
- Okey, O. D., Udo, E. U., Rosa, R. L., Rodríguez, D. Z., & Kleinschmidt, J. H. (2023). Investigating ChatGPT and cybersecurity: A perspective on topic modeling and sentiment analysis. *Computers & Security*, 135, 103476.
- Omame, I. M., & Alex-Nmecha, J. C. (2020). Artificial intelligence in libraries. In *Managing and adapting library information services for future users* (pp. 120-144). IGI Global.
- Oladokun, B.D., Owolabi, A.K., Aboyade, M.A., Wiche, H.I. & Aboyade, W.A. (2023). Emergence of robotic technologies: implications for Nigerian academic libraries. *Library Hi Tech News*, 40(6), 15-18. <https://doi.org/10.1108/LHTN-02-2023-0031>
- Owolabi, K. A., Okorie, N. C., Yemi-Peters, O. E., Oyetola, S. O., Bello, T. O., & Oladokun, B. D. (2022). Readiness of academic librarians towards the use of robotic technologies in Nigerian university libraries. *Library management*, 43(3/4), 296-305.
- Panda, S. (2023). Enhancing PDF interaction for a more engaging user experience in library: Introducing ChatPDF. *IP Indian Journal of Library Science and Information Technology*, 8(1), 20-25.

- Panda, S., & Kaur, N. (2023). Exploring the viability of ChatGPT as an alternative to traditional chatbot systems in library and information centers. *Library Hi Tech News*, 40(3), 22-25.
- Panda, S., & Kaur, N. (2023). Exploring the viability of ChatGPT as an alternative to traditional chatbot systems in library and information centers. *Library Hi Tech News*, doi:10.1108/LHTN-02-2023-0032/FULL/XML
- Prajapati, J. B., Kumar, A., Singh, S., Prajapati, B., Thakar, Y., Tambe, P. R., & Ved, A. (2024). Artificial intelligence-assisted generative pretrained transformers for applications of ChatGPT in higher education among graduates. *SN Social Sciences*, 4(2), 19.
- Ray, P. P. (2023). ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. *Internet of Things and Cyber-Physical Systems*.
- Subaveerapandiyan, A. (2023). Application of artificial intelligence (AI) in libraries and its impact on library operations review. *Library Philosophy and Practice*, 1-19.
- Voita, E., Sennrich, R., & Titov, I. (2019). When a Good Translation is Wrong in Context: Context-Aware Machine Translation Improves on Deixis, Ellipsis, and Lexical Cohesion. *Association for Computational Linguistics*, 4663-4689.
- Westfall, C. (2023,). Educators battle plagiarism as 89% of students admit to using OpenAI's ChatGPT for homework. *Forbes*. <https://www.forbes.com/sites/chriswestfall/2023/01/28/educators-battle-plagiarism-as-89-of-students-admit-to-usingopen-ais-chatgpt-for-homework/?sh=79f1f802750d>.
- Yamson, G. C. (2023). Immediacy as a better service: Analysis of limitations of the use of ChatGPT in library services. *Information Development*, 02666669231206762.