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ORIGINAL

Students' Attitudes and Experiences with ChatGPT as a Reference Service Tool in a Nigerian University: A Comprehensive Analysis of User Perceptions

Actitudes y experiencias de los estudiantes con ChatGPT como herramienta de servicio de referencia en una universidad nigeriana: Un análisis exhaustivo de las percepciones de los usuarios

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ABSTRACT

The study explores the attitudes and experiences of undergraduate students towards the use of ChatGPT for reference services tool. Findings indicated that there is a growing popularity of ChatGPT on a global scale, while acknowledging its increasing adoption among understudied students. Findings reveal that ChatGPT holds potential advantages, such as time-saving capabilities and expansive knowledge, the study reveals its limitations. Issues surrounding reliability of information, inability to comprehend emotions, and currency of information stand out as constraints to the use of ChatGPT. The study recommends that library websites should be designed and incorporated with Chatbots interface.

Keywords: OpenAI; ChatGPT; Reference Services; Students; Librarians; Technologies.

RESUMEN

El estudio explora las actitudes y experiencias de los estudiantes universitarios hacia el uso de ChatGPT como herramienta de servicios de referencia. Los resultados indican que existe una creciente popularidad de ChatGPT a escala mundial, al tiempo que se reconoce su creciente adopción entre los estudiantes universitarios. Los resultados revelan que ChatGPT tiene ventajas potenciales, como el ahorro de tiempo y la ampliación de conocimientos, el estudio revela sus limitaciones. Los problemas relacionados con la fiabilidad de la información, la incapacidad para comprender las emociones y la actualidad de la información destacan como limitaciones para el uso de ChatGPT. El estudio recomienda que los sitios web de las bibliotecas se diseñen e incorporen con interfaz Chatbots.

Palabras clave: OpenAI; ChatGPT; Servicios de Referencia; Estudiantes; Bibliotecarios; Tecnologías.

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INTRODUCTION

Within the library, a prominent service offered is reference assistance. This service stands as a pivotal element in the library's functioning, delivering essential support to users in their pursuit of locating and tapping into information resources. Adetayo[1] states the significance of reference librarians who aid users in navigating the library catalog, online databases, and the vast expanse of the Internet. They provide valuable instruction on optimal techniques for conducting information searches, aiming to uncover pertinent and trustworthy data. Ultimately, these reference librarians emerge as indispensable touchpoints for users in need of guidance and aid.

Nonetheless, the advent of AI chatbots stands poised to revolutionize the landscape of reference services, presenting an accompanying avenue for virtual support. In line with findings by Panda et al.[2], AI chatbots possess the capacity to introduce a fresh dimension to virtual reference services, furnishing libraries with a dependable alternative to aid users. An exemplar of such a chatbot is ChatGPT. A distinctive hallmark of ChatGPT is its capability to generate responses that closely mimic human conversation, yielding responses that are both pertinent and captivating. This proficiency is hinged on the utilization of an extensive, pretrained transformer model that has undergone training on an extensive corpus of human dialogues. This equips ChatGPT to tap into a wealth of knowledge, facilitating the generation of distinctive narrative replies to user inputs.

As highlighted by Adetayo[3] and Thunstrom[4], ChatGPT holds the promise of becoming an immensely valuable asset for students frequenting academic libraries. It can extend support encompassing problem-solving, essay composition, and constructive feedback on their assignments. While not like search engines such as Google Scholar, ChatGPT's capacity to formulate coherent responses to user inquiries introduces novel applications. These include its role as a simulated reference librarian in reference interactions. The reception of ChatGPT has been notably favorable, with a mounting cadre of experts anticipating its eventual displacement of Google.[5] Thus, it stands as a potentially transformative advancement within the realm of reference services, furnishing libraries with an innovative avenue to offer virtual aid to their patrons.

Besides its capacity to generate responses, ChatGPT presents an array of essential functionalities catering to chatbot creators. These encompass the flexibility to adjust the model's response style and demeanor, along with its adeptness in executing customary chatbot responsibilities like recognizing user intent and managing conversational flow. Through the adept handling of numerous straightforward reference queries, ChatGPT can also contribute to lightening the workload of human librarians. This shift would permit librarians to dedicate their efforts to more intricate reference inquiries, subsequently enhancing the caliber of reference services. Reference librarians additionally undertake the crucial task of selectively disseminating information services, a pivotal aspect in assisting users in remaining abreast of their chosen subjects. By apprising users of the latest research pertaining to specific topics, reference librarians play a pivotal role in aiding users to navigate the overwhelming realm of information.[6] With its capability to propose pertinent content based on user profiles, ChatGPT holds the potential to participate in the selective distribution of information. This presents an added value service for library users.

Problem Statement

The significance of reference librarians within contemporary libraries cannot be overstated. Functioning as custodians of information, they hold a pivotal position in steering patrons toward pertinent, precise, and practical information that aligns with their distinct requirements. Their proficiency and acquaintance with the extensive spectrum of resources and tools accessible within the library render them indispensable to individuals spanning diverse backgrounds. Be it a student seeking information for an academic assignment, a faculty member engrossed in research, or an individual exploring personal passions, reference librarians stand poised to extend assistance and direction. Furthermore, reference librarians possess a comprehensive familiarity with the extensive spectrum of resources and tools accessible to patrons, encompassing both those within the library's premises and available online. They demonstrate skillful prowess in navigating this intricate expanse of information, proficiently aiding patrons in their quest to swiftly and effectively acquire the desired information. Despite the substantial contributions that reference librarians make to the library system, recent research has highlighted a decline in the utilization of reference services, even in locations such as Nigeria.[7,8] This trend might be ascribed to the physical limitations that come with approaching a reference desk, especially considering that certain patrons in Nigeria might reside at a considerable distance from the library.

Nonetheless, the emergence of novel Artificial Intelligence (AI) chatbots like ChatGPT, capable of emulating the functions of reference librarians in addressing queries, has triggered fresh discourse concerning the potential ramifications of these technological advancements on reference services. As AI continues its progressive evolution, it introduces captivating prospects for augmenting human experiences and reshaping the dynamics of human-technology interaction.[9] While it remains premature to precisely forecast the precise influence these technologies will exert on reference services, it is evident that they hold the capability to fundamentally transform the methods through which individuals obtain and engage with information. Based on this, the study seeks to explore students' perspectives on the use of ChatGPT over traditional reference services in a Nigerian university.

Objectives of the Study

- Determine students' extent of use of ChatGPT
- Determine the types of queries presented by students through ChatGPT.
- Determine the frequency at which students engage with conventional librarians for consultation.
- Evaluate students' future intentions to seek reference support from librarians considering the rising prominence of ChatGPT.
- Determine the possible advantages associated with utilizing ChatGPT for consultation relative to traditional librarian assistance.

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- Determine the potential limitations associated with employing ChatGPT for consultation in contrast to conventional librarian services.

Literature Review

In the contemporary digital age, technology has revolutionized the way we learn, communicate, and gather information. One of the notable advancements in this realm is the advent of AI-powered language models, such as ChatGPT developed by OpenAI. The utilization of ChatGPT in education has been driven by its myriad of benefits. ChatGPT has proven to be a valuable tool for libraries, providing quick and efficient responses to common questions. They are particularly useful in reference services, where they can provide information about library hours, services, and facilities, as well as answer questions about events and library sections. ChatGPT can also store registration information, making the process of accessing information easier and faster.[10] ChatGPT is popular among students and graduates, who appreciate the benefits of fast and remote library access, as well as positive feedback from other users. The implementation of ChatGPT in libraries represents a shift in the approach to accessing information, offering an alternative to traditional methods such as using internet browsers. In addition to answering basic questions, ChatGPT can also be used to perform other functions in libraries and information centers, such as collection development, cataloguing and classification.[3] They can also help to compensate for deficiencies in manpower[11] and support reference services. Overall, the use of ChatGPT in libraries has the potential to improve access to information and make the user experience more seamless and efficient.

The extent of students' use of ChatGPT can have profound implications for their overall learning experience. When used responsibly and judiciously, AI-powered models can complement traditional teaching methods and enhance students' comprehension and engagement. However, an excessive reliance on technology could lead to a passive learning approach, diminishing the active participation and critical thinking skills that traditional education promotes. To strike a balance, educators and institutions should integrate AI tools like ChatGPT as supplements to conventional learning methods. They can provide guidelines on when and how to use these tools effectively, promoting a holistic approach that combines AI-driven insights with traditional research and inquiry.

Regarding the queries asked by students using ChatGPT for reference, Adetayo[3] reveals that students often ask ChatGPT to explain complex concepts in various subjects. These queries can range from understanding scientific theories to grasping mathematical principles. For instance, a student might ask, "Can you explain the theory of relativity by Albert Einstein?". Also, Oladokun et al.[12] found that students frequently use ChatGPT for assistance with their homework assignments. They might ask for step-by-step solutions to math problems, explanations of historical events, or interpretations of literary texts. Weigert[10] indicates that students seek guidance on writing essays, reports, and other academic papers. They might ask for ideas, structure suggestions, or even entire paragraphs on a given topic. Furthermore, language learners use ChatGPT to practice vocabulary, sentence structures, and language usage.[5] Vincze[11] found that students preparing for exams might ask for key points, summaries, or practice questions related to their subjects. According to UiTM[6], students engaged in research projects might ask ChatGPT for pointers on relevant sources, data analysis methods, or potential research questions.

The frequency at which students engage with conventional librarians for consultation can vary widely depending on factors such as the academic institution, the subject matter, and the level of study. Adetayo[3] indicates that some students might consult librarians more frequently for research-intensive projects or specialized subjects, while others might utilize their services less often. Students tend to seek librarian assistance more frequently during research projects, especially when they need help finding credible sources, refining their research questions, or navigating complex databases. Librarians' expertise in information retrieval and research methods is particularly valuable in these scenarios. Okey et al.[8] found that students may engage with librarians for general assistance, such as guidance on how to use library catalogs, databases, and citation styles. Librarians can provide valuable insights into efficient searching techniques and proper citation practices. With the increasing availability of digital resources and online databases, students might engage with librarians virtually through chat, email, or video conferencing for remote assistance. Weigert[10] found that the shift to online learning and digital resources, especially during the COVID-19 pandemic, might impact how often students engage with conventional librarians. Virtual support and guidance through online platforms become crucial in these circumstances.

The emergence of AI chatbots is set to change the reference services landscape, offering a complementary option for virtual assistance. According to Panda et al.[2], chatbots have the potential to bring a new dimension to virtual reference services, offering a reliable option for libraries to provide assistance to users. One such chatbot is ChatGPT. ChatGPT's ability to produce lifelike and diverse answers to user inputs is its defining feature, enabling it to provide highly relevant and interesting replies to user questions. This is achieved by leveraging a large, pre-trained transformer model that has been trained on a vast dataset of human dialogue, allowing ChatGPT to draw on a wealth of knowledge to generate unique narrative responses to user inputs.

As Adetayo[3] and Thunstrom[4] have noted, ChatGPT has the potential to be an incredibly valuable resource for students visiting academic libraries, offering help with problem-solving, essay-writing, and formative feedback on their work. Although ChatGPT is not a search engine like Google Scholar, its ability to generate narrative responses to user inquiries opens up innovative use cases, such as functioning as a simulated reference librarian in a reference transaction. The response to ChatGPT has been overwhelmingly positive, with growing numbers of experts predicting that the technology will soon replace Google.[5] As such, it represents a potentially game-changing development in the reference services landscape, offering a new option for libraries looking to provide virtual assistance to their users.

In addition to its ability to generate responses, ChatGPT also offers a range of essential capabilities for chatbot creators. This includes the ability to modify the model's answer style and tone, as well as its ability to perform standard chatbot duties such as recognizing and reacting to user intent and controlling the conversation flow. By handling a significant number of straightforward

reference requests, ChatGPT can also help to reduce the workload of human librarians.[12] This would allow librarians to focus on more complex reference requests, further improving the quality of reference services. Reference librarians also provide selective dissemination of information services, which is crucial in helping users stay current on their topics. By informing users about the most recent research on specific topics, reference librarians play a key role in assisting users in navigating the so-called information explosion [6]. With its ability to recommend relevant content to users based on their profiles, ChatGPT has the potential to be used in the selective dissemination of information, offering an additional value-added service for library users.

However, one of the primary limitations of using ChatGPT for consultation is the issue of accuracy and reliability. AI models, though advanced, can sometimes produce incorrect or incomplete information. Unlike librarians, who are trained professionals with expertise in information curation and verification, ChatGPT cannot critically assess and validate the accuracy of sources. This can lead to misinformation being disseminated to students, which is particularly concerning in academic and research contexts. [13] Conventional librarian services offer the advantage of human expertise that AI tools like ChatGPT cannot replicate. Librarians possess deep knowledge of their field and can provide nuanced insights, resource recommendations, and research strategies tailored to individual student needs. While ChatGPT can provide information based on patterns in its training data, it lacks the contextual understanding and domain-specific expertise that librarians offer.[14] Another limitation lies in the personalized assistance that librarians can provide. Librarians engage in interactive conversations, actively listening to students' queries, clarifying their needs, and adapting their responses accordingly. In contrast, ChatGPT might struggle to interpret ambiguous queries, leading to generic or irrelevant responses. The absence of human empathy and adaptability in AI consultations can hinder effective communication.[15]

ChatGPT's limitations become more apparent when faced with complex and multifaceted queries. Students often require assistance with intricate research projects, which demand a deep understanding of the subject matter, refined search strategies, and guidance on selecting appropriate sources. Conventional librarians can dissect complex queries, identify underlying needs, and provide comprehensive guidance, a task that can challenge AI systems.[12] AI-driven consultation services like ChatGPT raise ethical and privacy concerns. Students might inadvertently share sensitive information while interacting with the AI tool, which could compromise their privacy. Librarians, on the other hand, are trained to handle such situations with discretion and uphold ethical standards in information handling.[16] Consequently, the limitations of employing ChatGPT for consultation highlight the need for a balanced approach in integrating AI tools into educational environments. While technology can enhance accessibility and efficiency, it should not replace the valuable role of human expertise. Overreliance on AI tools might lead to a decrease in critical thinking skills, research capabilities, and the ability to discern credible sources.[8]

Summarily, the body of literature concerning the utilization of AI within library settings has undergone significant expansion. Numerous studies have delved into its application for bolstering library services and elevating user interactions. Among the focal points, the deployment of AI chatbots like ChatGPT within the realm of reference librarianship has garnered substantial attention. However, despite the breadth of this existing literature, a conspicuous gap exists in the examination of student perceptions pertaining to ChatGPT within the context of reference librarianship. While some investigations have explored student attitudes towards AI in other domains, such as education and customer service, these findings cannot be seamlessly extrapolated to the distinct landscape of reference librarianship. This gap within the literature is particularly significant, given that grasping student perspectives on ChatGPT within reference librarianship can furnish valuable insights into the efficacy and acceptability of AI technology within library services. To address this void in the academic discourse, the present research initiative aims to delve into student perceptions concerning ChatGPT, unraveling its comparative merits and limitations vis-à-vis traditional reference librarians. The outcomes of this research endeavor are poised to equip library administrators and policy-makers with informed decision-making tools concerning the assimilation of AI technology into reference services. The insights gleaned from this study hold the potential to foster the development of strategies tailored to enhancing the infusion of AI technology into reference consultations, meticulously tailored to meet the requirements of library patrons. Ultimately, this research undertaking stands as a meaningful contribution towards the ongoing drive to enrich library services and amplify the overall user experience for patrons of these essential institutions.

METHOD

This study employed a descriptive research design, while using a quantitative data collection and analysis method. The study was conducted among students who enrolled in the library users' programme at Ignatius Ajuru University of Education, Port Harcourt, Rivers State. The programme mandates students to participate in lectures and partake in library visits to enhance their learning journey. Moreover, these visits offer students exposure to a variety of library technologies. These visits, organized in small groups and guided by library educators, serve the purpose of facilitating practical interaction with the library's resources and services, thereby enriching the students' understanding. In the context of the users' education course, students are introduced to diverse library technologies. Nonetheless, the surge in ChatGPT's popularity prompted an imperative to inquire about students' familiarity with and utilization of this trending chatbot.

Participant selection was a crucial aspect of this study. In so doing, a group of 103 undergraduate students who had used ChatGPT were identified from the library users' education programme at Ignatius Ajuru University of Education, Port Harcourt, Rivers State. The students belonged to diverse faculties, including humanities, social sciences, educations, management sciences, natural and applied sciences, vocational and technical education. The gender group was almost equal, with 51,5 % males and 48,5 % females, and the age group was also diverse, with 44,7 % below 20 years, 22,3 % between 21-30 years, and 33 % above 30 years. For proper representation of the sample, a purposive sampling technique was employed, considering participants' previous interaction with ChatGPT. The chosen sample size of 103 was considered suitable for this study, taking into account the particular focus of the research question and the targeted population. Participants were provided with information about the study and granted written

informed consent before engaging in the research process.

Data collection was conducted using a questionnaire administered to the study's 103 participants. The process involved the utilization of several descriptive statistical techniques, encompassing frequency distribution, percentages, mean, and standard deviation scores. Mean values below 2,5 were disregarded, while those surpassing 2,50 were considered valid. The collected data underwent analysis employing the Statistical Package for the Social Sciences (SPSS) software, a reputable and widely employed tool for statistical assessments. The subsequent outcomes of this analysis were presented in clear and concise tables, facilitating the comprehension and interpretation of the study's findings.

RESULTS

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

Table 1. Students' extent of use of ChatGPT

Variables	Frequency (n = 103)	Percent
Rarely	5	4,9
Occasionally	26	25,2
Frequently	65	63,1
Very frequently	7	6,8

The results presented in table 1 indicated the frequency of usage of ChatGPT among surveyed students who reported utilizing the ChatGPT technology. The findings indicate that the usage of ChatGPT among these students is frequent.

Specifically, data indicates that 63,1 % reported students used ChatGPT frequently. On the other hand, data shows that 4,97 % which rarely used ChatGPT. A noteworthy 25,2 % of students occasionally used ChatGPT. These results implied that students used ChatGPT to a great extent.

Table 2. Types of queries presented by students through ChatGPT

S/n	Variables	Total	Mean	Std Dev	Rank	Decision
1	Work queries	103	3,28	0,736	2nd	Accepted
2	Political queries	103	2,67	1,012	5th	Accepted
3	Religious queries	103	2,91	0,992	4th	Accepted
4	Entertainment queries	103	3,04	0,825	3rd	Accepted
5	Academic queries	103	3,54	0,689	1st	Accepted

Table 2 underscores the types of queries presented by students through ChatGPT. Data indicates that academic queries are mostly presented through ChatGPT by students with a mean score of 3,56, indicating that students use ChatGPT primarily for academic enquiry. This highlights the significant role that ChatGPT plays in assisting students with their academic pursuits. Furthermore, other queries in which students present through ChatGPT ranged from work, entertainment, religious and political enquiries. Given the foregoing, data indicates that students recognize ChatGPT as tool that can provide answers to both academic and entertainment-related questions. Overall, the results demonstrate the diversity of inquiries made by students on ChatGPT and the platform's usefulness in catering to their various needs and interests.

Table 3. Frequency at which students engage with conventional librarians for consultation

Variables	Frequency (n = 103)	Percent
Rarely	5	4,8
Occasionally	56	54,4
Often	42	40,8

The findings in table 3 provide information on the frequency of students' engagement with conventional librarians for consultation. The study indicates that 54,4 % of respondents consult with conventional librarians on occasional basis. This was closely followed by a substantial number of students who often consult with librarians, at 40,8 %. Also, 4,8 % students indicated that they rarely consult with reference librarians.

Table 4 sheds further light on the students' future intentions to seek reference assistance from librarians despite the rise of ChatGPT. Data indicates that 84 % of surveyed students responded positively, indicating their intention to continue consultation with conventional librarians in the future. These results indicated the relevance of librarians in the 4th industrial revolution.

Table 4. Students' future intentions to seek reference support from librarians considering the rising prominence of ChatGPT

Variables	Frequency (n = 103)	Percent
Yes	84	81,6
No	19	18,5

Table 5. Possible advantages with utilizing ChatGPT for consultation to traditional reference assistance

S/n	Variables	Total	Mean	Std. Dev	Rank	Decision
1	Easily accessible than librarians	103	3,20	0,703	3rd	Accepted
2	It has a vast knowledge of different fields	103	3,29	0,698	2nd	Accepted
3	Saves time by responding to questions quickly	103	3,46	0,622	1st	Accepted
4	More user's friendly	103	3,13	0,781	4th	Accepted

The findings presented in table 5 indicate the advantages of utilizing ChatGPT for consultation over traditional reference librarians. The findings reveal that the most significant advantage of ChatGPT was its capacity to save time, as evidenced by a mean score of 3,46. Other advantages associated with students' usage of ChatGPT over traditional reference consultation include: ChatGPT has a vast knowledge of different fields; it is easily accessible than librarian and more user's friendly. These findings indicate that ChatGPT holds potential advantages over traditional reference services.

Table 6. Potential limitations associated with employing ChatGPT for consultation in contrast to conventional librarian services

S/n	Variables	Total	Mean	Std. Dev	Rank	Decision
1	ChatGPT knowledge is not up-to-date	103	2,98	0,971	5th	Accepted
2	ChatGPT cannot comprehend some questions	103	2,68	0,833	4th	Accepted
3	ChatGPT cannot read emotions like a librarian would	103	3,08	0,781	2nd	Accepted
4	Response to questions may be out of context	103	2,77	0,901	3rd	Accepted
5	Information on ChatGPT are sometimes not reliable	103	3,10	0,712	1st	Accepted

Table 6 discusses the potential limitations associated with the usage of ChatGPT for consultation in comparison to traditional librarian services. The results indicate that the limitations associated with the use of ChatGPT for consultation ranged from the evidence that information on ChatGPT are sometimes not reliable; ChatGPT cannot read emotions of users like a librarian; responses to questions using ChatGPT may be out of content; ChatGPT caanot comprehend some questions and ChatGPT knowledge is not up to date. Prevalent among these limitations constraining the use of ChatGPT for consultation ranged from information on ChatGPT are sometimes not reliable and that ChaGPT cannot read user's emotions like a librarian.

DISCUSSION

While ChatGPT has gained worldwide popularity, its adoption among undergraduate students is growing significantly. This study reported the frequency of ChatGPT usage among surveyed students who reported engaging with the technology. and discovered that the utilization of ChatGPT among these students is frequent, with a notable 63,1 % reporting frequent usage. This study validates the findings of Adetayo[3]. Going further, the study suggests a considerable extent of ChatGPT usage among students, implying its integration into their regular routines.

The findings indicate the pivotal role that ChatGPT plays in aiding students' educational pursuits with mean score of 3,54. This finding is supported by Westfall[17] 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, entertainment-based, religious, and political inquiries. The data underscores students' recognition of ChatGPT as a versatile tool catering to both educational and entertainment-related queries. These outcomes underscore the platform's efficacy in accommodating a diverse array of student needs.

The results of this study highlight the significant interest that undergraduate students have in seeking information and knowledge. The findings point to 54,4 % of respondents consulting with conventional librarians occasionally, closely trailed by 40,8 % who often seek their assistance. In contrast, 4,8 % of students indicated rare consultation with reference librarians. This variation in consultation frequency reveals the persistent relevance of conventional librarians in certain students' academic journeys. This validates the findings of Adetayo[3]. Despite the popularity of ChatGPT, an overwhelming 84 % of surveyed students expressed a positive inclination, indicating their intention to continue seeking consultation with conventional librarians. This study collaborates with the findings of Adetayo[3], Lance et al.[18] and Yevelson-Shorsher et al.[9] who found that librarians will continue to be valuable sources of information and guidance on library resources. Meanwhile, this study underscores the evolving dynamics between AI and traditional library services, suggesting a necessity for libraries and librarians to integrate AI tools like Chatbots to align with evolving user preferences.

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The findings of this study also reveal several potential advantages that ChatGPT could have over traditional librarians. The results indicated that ChatGPT saves time by responding to questions quickly, which is in line with the findings of Okey et al.[8] who noted that the technology's ability to generate responses quickly allows for faster conversations. Another potential advantage of ChatGPT is its vastness of knowledge across various fields. Unlike reference librarians, who may have extensive knowledge in different subjects, ChatGPT is trained to understand and generate cohesive text across a broad spectrum of topics, from general knowledge to specific areas such as science and mathematics. This validates the findings of Lin[19]. Additional advantages of using ChatGPT by understudied students include enhanced accessibility compared to librarians, and user-friendliness. This is line with the study of Oladokun et al.[12] who found that ChatGPT has the potential for increased personalization and improve user experience. Supporting this, Aljanabi et al.[20] supported that ChatGPT continues to interact with users, it can learn about their language, tone, and style, allowing it to generate more personalized and accurate responses.

However, the study reveals inherent limitations linked to the utilization of ChatGPT for consultation. An integral constraint in the deployment of ChatGPT is the issue of unreliable information.[21] This observation is in alignment with Davies[15] 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 confirms that students concurred on ChatGPT's incapability to discern emotional nuances or grasp human communication subtleties as adeptly as a librarian. This personalized interaction, a pivotal element within reference interactions, remains a significant aspect that ChatGPT is unable to replicate.

Moreover, the study elucidates that ChatGPT's knowledge lags behind in real-time updates. Students noted a consensus that the information repository of ChatGPT isn't contemporaneous. This discrepancy implies that ChatGPT cannot provide immediate insights on current affairs, a capacity present in librarians who maintain up-to-date awareness to furnish current information. As highlighted by Roose[22], ChatGPT's knowledge is bounded by pre-2021 learnings and doesn't actively explore the web for contemporary information. Consequently, some of its responses might exude a sense of obsoleteness. Other limitations include responses to questions may be out of context, difficulties in comprehending certain queries, and potential lack of up-to-date knowledge. These limitations indicate that although ChatGPT could serve as a valuable complementary tool, it cannot substitute the expertise and human touch offered by reference librarians.[23,24]

CONCLUSIONS

The current research investigated students' perception regarding the possible advantages and limitations of employing ChatGPT as a substitute for conventional librarians. The study underscores the growing popularity of ChatGPT on a global scale, while acknowledging its increasing adoption among understudied students. The diverse array of inquiries spanning academic, work-related, entertainment, religious, and political domains underscores ChatGPT's versatility in catering to a wide spectrum of student needs. While ChatGPT holds potential advantages, such as time-saving capabilities and expansive knowledge, the study reveals its limitations. Issues surrounding reliability, inability to comprehend emotions, and currency of information stand out. These constraints underscore the distinction between AI technology and the invaluable expertise and personalized interaction offered by reference librarians.

In essence, the study underscores the delicate balance between AI technology and human-driven services in the academic realm. While ChatGPT contributes positively by offering convenience and a diverse range of information, it remains clear that it cannot replace the rich human touch and expertise that reference librarians provide. As education evolves, libraries and librarians need to thoughtfully integrate AI tools to complement rather than replace the invaluable human aspect of reference interactions. Given the major findings of this study, the following were suggested:

- Library management should adopt technological solutions to augment librarians' availability to students. Methods such as instant messaging, 24,7 phone support, and engagement on frequently used social media platforms can be employed to facilitate easy access to reference consultations for students. This ensures that students can seek assistance conveniently.
- Library websites should be designed and incorporated with Chatbots interface. This will familiarize students with library resources other than internet sources produced by ChatGPT.

However, it is important to acknowledge certain limitations within the scope of this study. The sample size, consisting of 103 undergraduate students participating in a library users' education programme, is relatively small and constrained. This limited sample size could potentially curtail the extent to which the results can be broadly applied. Moreover, the study was exclusively conducted within a single institution in Nigeria, thus potentially lacking the representativeness required to account for variations across different institutions, student demographics, and resource contexts. To comprehensively address these aspects, future research endeavors could be undertaken to bridge the gaps not covered by this study.

Consequently, the study's findings have significant implications for both policy and practice. The study's outcomes emphasize the urgency of policy adjustments that prioritize students' access to reference consultations, particularly in regions where traditional library services may not be available outside standard hours. To address this, library administrators should consider implementing policies enabling students to connect with librarians around the clock, facilitated by technology. In terms of practice, the study underscores the significance of training librarians to augment their interpersonal competencies, particularly in terms of approachability and emotional intelligence. Equipping librarians with training to bolster their emotional intelligence and communication proficiencies enables them to better address patrons' requirements. This fosters a welcoming and comfortable environment, encouraging users to confidently approach librarians with their reference inquiries. Recognizing libraries' pivotal role in aiding academic and research

pursuits, investing in training that cultivates robust user relationships allows libraries to optimize their reference services' impact and enhance students' academic success.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

AUTHORSHIP CONTRIBUTION

Conceptualization: Bolaji David Oladokun, Kudu Dogara, Muhammed Yusuf.
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Methodology: Writing - original draft: Bolaji David Oladokun, Kudu Dogara, Muhammed Yusuf.
Writing - revision and editing: Bolaji David Oladokun, Kudu Dogara, Muhammed Yusuf.

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