

Virtualization of References Services for Enhancing Users Experience in Nigeria Libraries: Strategies for Policymakers

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Abstract

The virtualization of reference services in Nigerian libraries has the potential to significantly improve user experience through enhanced accessibility and convenience. However, the successful implementation of virtual reference services requires policymakers to address certain challenges. This qualitative research study conducted in-depth interviews with 14 Nigerian library stakeholders to gain insights into their experiences with virtualizing reference services. The study findings indicate that while virtual reference services offer numerous benefits, there are also concerns related to technology, staffing, and service quality. Collaborative efforts involving librarians, IT professionals, and other stakeholders are crucial in addressing these challenges and ensuring the success of virtual reference services. To optimize virtual reference services, policymakers are advised to prioritize infrastructure development. This includes investing in robust internet connectivity, reliable hardware, and appropriate software to ensure seamless service delivery. Additionally, addressing challenges such as staff competence and readiness, as well as formulating policies and regulations to guide the implementation of virtual reference services, is necessary. While recognizing the concerns raised by stakeholders, it is important to strike a balance and not overlook the potential advantages of virtualizing reference services. Mitigating concerns related to security, privacy, and confidentiality is essential for building user trust. This study provides valuable insights for policymakers in Nigeria's library sector, emphasizing the need to consider the unique challenges and opportunities associated with virtual reference services. By implementing strategies that address infrastructure

limitations, staffing issues, and user expectations, policymakers can optimize virtual reference services and enhance the overall user experience in Nigerian libraries.

Keywords: Virtual References Services, Users Experience, Nigerian Libraries, Policymakers.

Introduction

Libraries are vital resources for education, research, and community development. They play a critical role in the acquisition and dissemination of knowledge, serving as a bridge between information sources and users. With the advent of technology, libraries have evolved from traditional physical spaces to digital environments that provide easy access to information resources. This evolution has prompted Nigerian libraries to consider the virtualization of their reference services. However, the question remains: is virtualizing reference services in Nigerian libraries worth it? In Nigeria, access to information resources is still a major challenge, particularly in rural areas. The limited number of libraries and the inadequate funding of existing ones means that many Nigerians are unable to access the information resources they need. While the virtualization of reference services may be seen as a solution to this problem, it is important to assess its effectiveness and efficiency in meeting the needs of library users.

The virtualization of reference services in libraries is a global trend that has been on the rise in recent years. This trend has been driven by several factors, including the increasing use of technology in libraries, the need to reach out to remote users, and the desire to improve the efficiency and effectiveness of library services (Dawson, 2021). Many libraries around the world have already virtualized their reference services, providing users with access to online reference tools, virtual reference desks, and chat and email reference services. For example, the British Library has implemented a virtual reference service that provides users with access to reference librarians via email and online chat (The British Library, 2022). Similarly, the National Library of Canada has implemented a virtual reference service that provides users with access to reference librarians via telephone, email, and online chat (National Library of Canada, 2022).

In the United States, many academic libraries have virtualized their reference services, providing users with access to online databases, e-books, and virtual reference desks. For example, the University of California Berkeley Library offers a virtual reference desk that provides users with access to reference librarians via chat, email, and telephone (UC Berkeley Library, 2022). In Africa, the virtualization of reference services is still relatively new, but some libraries have already implemented virtual reference services. For example, the University of Pretoria in South Africa has implemented a virtual reference service that provides users with access to reference librarians via email and online chat (University of Pretoria, 2022). However, there is still a need for more libraries in Africa to embrace the virtualization of their reference services to improve access to information for their users. No doubt, Nigerian libraries are faced with the challenge of meeting the diverse needs of their users. These users include students, researchers, and the general public, each with unique information needs (Etim, Etor & Udofia, 2021).

However, in a country like Nigeria, with limited financial resources, it is important to determine whether the cost of virtualizing reference services is justifiable, particularly given the potential

benefits that may accrue. However, assessing the readiness of Nigerian libraries to virtualize their reference services is crucial in determining the feasibility of such a move. Therefore, the availability of necessary infrastructure and resources, as well as trained staff, are essential for effective virtualization. But is the cost of virtualizing reference services justifiable given the potential benefits? Virtualizing reference services may also bring about changes in the role of librarians, requiring them to acquire new skills and competencies. So, are Nigerian librarians ready to adapt to these changes? Finally, it is important to consider the potential benefits of virtualizing reference services in Nigerian libraries. The benefits may include increased accessibility and reach, improved resource management, and enhanced user engagement. But are these potential benefits not come with threats and risks? It is against these rhetorical questions asked that this study seeks to investigate the worthiness of the virtualization of reference services in Nigerian libraries.

Literature Review

The emergence of virtual reference services can be traced back to the late 1990s and early 2000s when libraries started exploring the use of digital technologies to provide reference assistance remotely (Casey, 2021; Kim, 2022). This shift was driven by advancements in information and communication technologies, as well as changing user expectations and preferences. The early stages of virtual reference services were primarily focused on email-based reference, where users could send their questions via email and receive responses from librarians (Radford, 2020). This approach allowed for asynchronous communication and expanded the reach of reference services beyond the constraints of physical library spaces and operating hours. As internet connectivity improved and online communication tools became more prevalent, libraries began adopting real-time chat services as part of their virtual reference offerings (Cook, 2019).

Chat reference services allowed users to engage in instant messaging with librarians, enabling quicker response times and more interactive exchanges. This synchronous mode of communication enhanced user experiences and provided a more personalized approach to reference assistance. Alongside email and chat services, libraries also started incorporating video conferencing technologies into their virtual reference services (Miller, 2021). This enabled users to have face-to-face interactions with librarians, simulating the in-person reference experience while leveraging the convenience of remote access. The emergence of social media platforms and mobile technologies further expanded the scope of virtual reference services. Libraries began leveraging platforms such as Twitter, Facebook, and WhatsApp to engage with users, respond to inquiries, and share information and resources (Tella et al., 2022).

These platforms offered new avenues for communication and allowed libraries to meet users on their preferred social and mobile channels. As virtual reference services continued to evolve, libraries recognized the importance of integrating them seamlessly into their overall reference service framework (McClure, 2023). This meant providing consistent and coordinated support across different communication channels, ensuring that users receive the same level of assistance and quality of service regardless of the virtual platform they choose. Today, virtual reference services have become an integral part of library services worldwide. Libraries of all types and sizes, including academic, public, and special libraries, offer virtual reference options to meet the

needs and expectations of their users (Radford, 2020). The ongoing advancements in technology, such as artificial intelligence and chatbot systems, are also being explored to further enhance and automate virtual reference services (Kim, 2022).

The history of virtual reference services reflects the transformative impact of digital technologies on the delivery of library services (Cook, 2019). It demonstrates libraries' commitment to adapting to changing user behaviours and preferences in an increasingly digital world (Casey, 2021). This evolution has led to the emergence of the virtualization of reference services, which utilize digital technologies and online platforms to enhance the assistance provided to library users (Smith, 2023; Johnson et al., 2023). By embracing virtual reference services, libraries offer improved accessibility, convenience, and flexibility to benefit patrons in their information-seeking endeavours (Jones & Brown, 2023). This transformative approach allows libraries to reach a broader audience, provide round-the-clock assistance, and cater to users who prefer remote access to information resources (Williams, 2023; Lee et al., 2023).

The integration of digital technologies and online platforms has facilitated the seamless delivery of reference assistance, aligning with the evolving needs and expectations of library users. To optimize the user experience in Nigerian libraries through virtual reference services, policymakers have an opportunity to implement strategies that address the specific context and needs of the country. By focusing on infrastructure development, policymakers can allocate resources to enhance technological capabilities, including robust internet connectivity, reliable hardware, and appropriate software (Adams, 2023; Ojo & Adegoke, 2023). This infrastructure investment is essential for providing seamless and reliable access to virtual reference services. Oluwatoyin et al. (2018) focused on the perceptions of academic librarians in Nigerian universities regarding virtual reference services. They found that librarians were aware of virtual reference services and considered them effective in addressing user inquiries and improving access to resources. However, challenges such as inadequate funding, limited training and support, and insufficient technological infrastructure were identified.

Kashi and Nasiri (2018) examined the challenges and opportunities of virtual reference services in Iranian academic libraries. They found that limited awareness and usage among users, lack of technical infrastructure, and difficulties in providing services in multiple languages were major challenges. However, opportunities such as increased accessibility and efficiency were also identified. The study recommended increasing awareness, improving infrastructure, providing language support, and offering comprehensive training programs to address these challenges. The study by Luna and Moulaison (2015) conducted a systematic review of the literature on virtual reference services. They analyzed 35 articles to explore user needs and service providers' responses in this area. The findings emphasized the importance of understanding user needs and expectations, as well as the role of librarians in delivering satisfactory virtual reference services. The review also highlighted challenges faced by librarians and discussed the use of technology, such as email and chat services, in providing virtual reference assistance. Overall, the study provided valuable insights for improving virtual reference services in libraries.

Literature Gaps

One area that lacks sufficient research is the exploration of the unique challenges and opportunities faced by Nigerian libraries and users in the context of virtual reference services. While some studies discuss general trends and experiences in virtual reference services, there is a need for more focused research that specifically examines the Nigerian context (Oluwatoyin et al., 2018). Nigeria's specific challenges, such as infrastructure limitations, funding constraints, and linguistic diversity, require tailored strategies and solutions (Oluwatoyin et al., 2018; Kashi & Nasiri, 2018). Furthermore, there is a gap in in-depth studies that investigate the long-term impact of virtual reference services on user behaviour and outcomes. While some studies assess user perceptions and satisfaction, there is a need for research that goes beyond immediate experiences and explores the broader effects of virtual reference services on information access, literacy, and learning outcomes (Luna & Moulaison, 2015).

Additionally, the integration of emerging technologies, including artificial intelligence and chatbot systems, in virtual reference services requires further exploration. Although mentioned in the literature as potential enhancements for virtual reference services, empirical studies are needed to evaluate the effectiveness, usability, and user acceptance of these technologies in various library contexts (Kim, 2022). To address these gaps, future research should prioritize empirical studies that specifically examine the challenges and opportunities faced by Nigerian libraries, explore the long-term impact of virtual reference services on users, and evaluate the effectiveness and user acceptance of emerging technologies. By addressing these gaps, researchers and policymakers can develop a better understanding of how to optimize virtual reference services in Nigeria and enhance the overall user experience.

Method

The feasibility of virtualizing reference services in Nigerian libraries was investigated in this study, employing a phenomenological approach that was appropriate for understanding individuals' subjective experiences and the meaning they attach to those experiences. The study used interpretative phenomenological analysis (IPA) to identify both commonalities and differences in the experiences of library stakeholders regarding the virtualization of reference services. Previous studies have demonstrated the effectiveness of IPA in exploring individuals' experiences in various contexts (Smith et al., 2009; VanScoy and Evenstad, 2015). To ensure the diversity of the participants, purposive sampling was used to recruit a group of experienced Nigerian librarians and users. Ethical procedures of the study were approved before the recruitment of participants to ensure the protection of their rights and privacy. Recent studies have emphasized the importance of ethical considerations in research, particularly in terms of informed consent and confidentiality (Saldaña et al., 2021; Wu and Wong, 2021).

Model

The proposed model for this study was a qualitative research design that involved conducting in-depth interviews with stakeholders to collect data on their experiences with virtualizing reference services. To ensure that participants could express their thoughts and feelings freely, open-ended questions were used during the interviews. Thematic analysis was employed to analyze the data,

which involved identifying common themes and patterns that emerged from the participant's responses. To add value to the study, the thematic analysis was guided by relevant literature on the virtualization of reference services and its impact on libraries and information services. This helped to contextualize the participants' experiences within the broader framework of virtualization and provided a deeper understanding of the implications of virtualizing reference services in Nigerian libraries. Recent studies have emphasized the importance of qualitative research in understanding individuals' experiences in various contexts (Braun and Clarke, 2021; Guest et al., 2021). Thematic analysis is a widely used method in qualitative research, known for its ability to identify patterns in complex data sets (Braun and Clarke, 2006). By using this method, the study was able to provide insights into the subjective experiences of Nigerian librarians, users, and stakeholders regarding the virtualization of reference services in their libraries.

Data

The study focused on gathering data from librarians and users who were associated with different libraries in the South-west region of Nigeria, specifically the University of Ibadan Library, Oyo State Library Board, and The African Heritage Research Library and Cultural Center in Ibadan, Oyo State, Nigeria. These libraries included one academic library, one public library, and one special library. To ensure that the selected participants had relevant knowledge and experience regarding the virtualization of reference services in Nigerian libraries, two sampling techniques were utilized: Purposive sampling and snowball sampling. The selection process was coordinated with the assistance of a contact person from each of the selected libraries in Southwest Nigeria. The sample size consisted of two librarians, one electronic librarian, and two library users from each of the selected libraries, resulting in a total of fifteen participants for the study. In-depth interviews were conducted using the Zoom platform, and comprehensive audio recordings and verbatim transcriptions of the interviews were obtained. Thematic analysis was then employed to identify, analyze, and report patterns within the dataset.

Analysis

Research Objectives 1: To assess the cost-effectiveness of virtualizing reference services in Nigerian libraries: The librarians and library users in Nigerian libraries were asked about their experiences with virtualizing reference services, particularly regarding the cost-effectiveness of the technology. Participants were asked if they were aware of the benefits of virtualizing reference services and if they believed that the benefits outweighed the costs. The results of the study thematically showed that:

Cost savings: Participants mentioned that virtualizing reference services could lead to cost savings for libraries, such as reduced expenses on physical infrastructure and maintenance. For example, one librarian stated, "We spend a lot of money on buying and maintaining physical reference materials. With virtualization, we can reduce those costs and allocate resources to other areas."

Improved resource management: Participants also noted that virtualizing reference services could lead to better resource management, such as improved organization and accessibility of

information. For instance, a library user remarked, "With virtual reference services, I can access information from anywhere and at any time, which makes it easier to manage my research."

Increased user engagement: Participants mentioned that virtualizing reference services could lead to greater user engagement, such as increased interaction with library users and improved service delivery. For example, a librarian said, "Virtualization can help us to reach more users who may not have physical access to the library, which can enhance our user engagement."

Staff training and development: Participants highlighted the need for staff training and development to effectively virtualize reference services. For instance, a librarian stated, "Virtualization requires a different skill set from traditional reference services, so we need to train our staff to acquire those skills."

Technological infrastructure: Participants discussed the need for adequate technological infrastructure to support the virtualization of reference services, such as reliable internet connectivity and access to relevant software. For example, a library user remarked, "Virtualization is great, but we need to have reliable internet connectivity and access to relevant software to make it work effectively."

User satisfaction: Participants emphasized the importance of user satisfaction in determining the cost-effectiveness of virtualizing reference services. For instance, a library user said, "If virtualization improves my satisfaction with the library's reference services, then it's worth the investment."

Cost-benefit analysis: Participants suggested conducting a cost-benefit analysis to determine the cost-effectiveness of virtualizing reference services in Nigerian libraries. For example, an e-librarian stated, "We need to conduct a cost-benefit analysis to determine if the benefits of virtualization outweigh the costs."

Collaboration and partnerships: Participants highlighted the need for collaboration and partnerships to effectively virtualize reference services. For instance, a library user remarked, "Libraries can collaborate with technology companies and other stakeholders to develop virtual reference services that are cost-effective and user-friendly."

Accessibility and inclusivity: Participants discussed the potential for virtualizing reference services to improve accessibility and inclusivity in Nigerian libraries. For example, a librarian said, "Virtualization can help us to reach users with disabilities who may not be able to physically access the library."

Sustainability: Participants emphasized the need for sustainability in virtualizing reference services, such as ensuring that the technology used is sustainable and can be maintained over time. For instance, a library user remarked, "We need to ensure that virtualization is sustainable and that we can continue to provide quality reference services in the long run."

The findings of the study indicate that virtualizing reference services in Nigerian libraries can lead to various benefits, including cost savings, improved resource management, increased user

engagement, and better user satisfaction. However, participants noted that several factors need to be considered to ensure the cost-effectiveness of virtualization. These include staff training and development, adequate technological infrastructure, collaboration and partnerships, accessibility and inclusivity, and sustainability. Many participants mentioned that virtualizing reference services could result in cost savings by reducing expenses on physical infrastructure and maintenance. Additionally, virtualization could lead to better resource management by improving organization and accessibility of information. Participants also noted that virtualization could improve user engagement and satisfaction by reaching more users and providing better service delivery. However, to effectively virtualize reference services, participants emphasized the need for staff training and development, adequate technological infrastructure, collaboration and partnerships, accessibility and inclusivity, and sustainability. Participants suggested conducting a cost-benefit analysis to determine the cost-effectiveness of virtualization, as well as collaborating with technology companies and other stakeholders to develop user-friendly and cost-effective virtual reference services.

Research Objectives 2: To determine the readiness of Nigerian librarians to adapt to changes that may come with virtualizing reference services. To achieve the second research objective, the study focused on exploring the willingness of Nigerian librarians to adapt to the changes that may come with virtualizing reference services. Participants were asked about their level of readiness to learn new skills and competencies that may be required to effectively virtualize reference services. The results of the study thematically showed thus:

Technological Competence: Several participants stated that Nigerian librarians need to improve their technical competence to effectively adapt to virtualizing reference services. For instance, a librarian expressed, "Not all librarians have the technical skills required to handle virtual reference services. Some may require training to develop these skills."

Attitude towards Change: The attitude of Nigerian librarians towards change may impact their readiness to adapt to virtualizing reference services, as noted by some participants. For example, a library user commented, "Some librarians may be resistant to change, which may affect their readiness to adapt to virtual reference services."

Communication and Collaboration: Effective communication and collaboration among Nigerian librarians are essential to adapt to virtualizing reference services, as highlighted by several participants. A librarian said, "We need to work together and share knowledge to effectively adapt to virtual reference services."

Resource Allocation: Adequate resource allocation is necessary to support the adaptation to virtualizing reference services, as discussed by some participants. For example, a library user remarked, "Nigerian libraries need to allocate sufficient resources, including funding and time, to support the adaptation to virtual reference services."

User Needs: Considering the needs of library users is crucial in the adaptation to virtualizing reference services, as emphasized by many participants. A librarian stated, "We need to listen to our users and understand their needs to effectively adapt to virtual reference services."

Training and Development: Training and development are essential to support the adaptation to virtualizing reference services, as noted by participants. For example, a library user stated, "Nigerian librarians need to receive training on how to effectively coordinate virtual reference services."

Infrastructure: Adequate technological infrastructure is necessary to support the adaptation to virtualizing reference services, such as reliable internet connectivity and access to relevant software, as discussed by participants. For instance, an e-librarian commented, "We need to ensure that we have the necessary technological infrastructure to support virtual reference services."

Policy and Regulation: Having policies and regulations to guide the adaptation to virtualizing reference services is crucial, as noted by some participants. A library user remarked, "Nigerian libraries need to have clear policies and regulations to guide the use of virtual reference services. If not, the initiation of the services will just be a waste."

Benefits and Challenges: It is important to consider the benefits and challenges associated with virtualizing reference services to effectively adapt to the technology, as noted by participants. For instance, a librarian said, "We need to weigh the benefits and challenges of virtual reference services to determine if it is a feasible option for Nigerian libraries."

User Acceptance: User acceptance is crucial for the successful adaptation of virtual reference services in Nigerian libraries, as emphasized by participants. A library user remarked, "The acceptance of virtual reference services by library users is crucial for its successful adaptation in Nigerian libraries."

Based on the findings, The results of the study thematically showed that Nigerian library stakeholders have varying levels of readiness to adapt to changes that may come with virtualizing reference services, with some expressing enthusiasm and others expressing concerns about the changes. various factors should be considered to determine the readiness of Nigerian librarians to adapt to the changes that come with virtualizing reference services. These factors include technological competence, attitude towards change, communication and collaboration, resource allocation, user needs, training and development, infrastructure, policy and regulation, benefits and challenges, and user acceptance. The study participants emphasized the importance of enhancing technological competence, having a positive attitude towards change, ensuring effective communication and collaboration among librarians, allocating sufficient resources, considering the needs of library users, providing training and development opportunities, having adequate infrastructure, having clear policies and regulations, and understanding the benefits and challenges of virtual reference services.

Research Objective 3: To explore the potential threats and risks of virtualizing reference services in Nigerian libraries. For this research objective, the study aimed to explore the potential threats and risks associated with virtualizing reference services in Nigerian libraries. Participants, including librarians and library users, were asked about their concerns regarding the technology and any potential risks they may perceive. The results of the study thematically showed thus:

The findings thematically showed that participants expressed concerns about several potential threats and risks associated with virtualizing reference services. These concerns included security risks, technological issues, lack of personal interaction, inadequate training, misuse of technology, resistance to change, accessibility issues, legal and ethical issues, and dependence on technology.

Security Risks: Participants expressed concern about security risks associated with virtualizing reference services. For example, a librarian stated, "There is a high risk of hackers and data breaches when we move our services online." A library user also added, "Virtualizing reference services may put our confidential information at risk."

Technological Issues: Some participants highlighted potential technical issues that may arise with virtualizing reference services. A librarian remarked, "Connectivity issues or system crashes could disrupt the services." A library user also noted, "Not everyone may have access to the required technology, which could limit access to the services."

Lack of Personal Interaction: Some participants highlighted the potential loss of personal interaction that comes with virtualizing reference services. For instance, a librarian said, "Virtualizing reference services may lead to a loss of the personal touch that comes with face-to-face interactions." A library user added, "It may also be difficult to establish a rapport with a librarian over a virtual platform."

Inadequate Training: Participants noted that inadequate training could pose a threat to the successful virtualization of reference services. A librarian said, "Not all librarians may be adequately trained to handle virtual reference services, which could lead to inefficiencies in the system." A library user added, "Inadequate training could also result in errors or misinformation being provided to users."

Misuse of Technology: Participants noted the potential for the misuse of technology in virtualizing reference services. A librarian stated, "There is a risk that technology may be misused for unethical purposes, such as the sale of personal information." A library user added, "Misuse of technology could also lead to the spread of misinformation or fake news."

Resistance to Change: Some participants highlighted the potential resistance to change that may occur with virtualizing reference services. A librarian remarked, "Some librarians may be resistant to change and may not be willing to adopt virtual reference services." A library user added, "Resistance to change could lead to the delay or failure of the virtualization process."

Cost: Participants noted the potential cost associated with virtualizing reference services. A librarian stated, "The cost of acquiring the necessary technology and infrastructure could be prohibitive." A library user added, "There may also be ongoing costs associated with maintaining and updating the technology."

Accessibility Issues: Participants noted the potential accessibility issues that may arise with virtualizing reference services. A librarian said, "Not everyone may have access to the internet or

may have limited access to virtual platforms." A library user added, "Accessibility issues could lead to inequities in access to reference services."

Legal and Ethical Issues: Some participants noted the potential legal and ethical issues associated with virtualizing reference services. Ane-librarian stated, "There may be legal and ethical implications of storing and sharing personal information online." A library user added, "There may also be issues related to intellectual property rights and copyright infringement."

Dependence on Technology: Some participants noted the potential dependence on technology that may occur with virtualizing reference services. A librarian said, "We may become too dependent on technology, which could lead to a loss of skills and abilities that come with traditional reference services." A library user added, "Dependence on technology could also lead to a loss of human touch and empathy in reference services."

The study revealed that participants in Nigerian libraries had several concerns regarding the virtualization of reference services. These concerns were grouped into categories including security risks, technological issues, lack of personal interaction, inadequate training, misuse of technology, resistance to change, cost, accessibility issues, legal and ethical issues, and dependence on technology. Participants expressed apprehension about security risks and potential data breaches, as well as technical issues such as connectivity problems and system crashes that could disrupt services. Furthermore, they were worried that virtualizing reference services could lead to a lack of rapport and connection with librarians due to the loss of personal interaction. Inadequate training was identified as a potential risk, and participants were concerned about the potential for errors or misinformation being provided to users. The misuse of technology for unethical purposes, such as the sale of personal information or the spread of misinformation, was also a source of concern. Participants noted that resistance to change and the cost associated with virtualizing reference services could be a threat. Additionally, limited access to the internet or virtual platforms could create accessibility issues leading to inequities in access to reference services. Legal and ethical issues related to storing and sharing personal information online, as well as issues related to intellectual property rights and copyright infringement, were also noted. Lastly, participants expressed concern about the potential dependence on technology that may occur with virtualizing reference services. They feared this could lead to a loss of traditional reference services' skills and abilities, as well as a loss of human touch and empathy in reference services.

Discussion of Findings

The findings of the study mentioned seem to suggest that virtualizing reference services in Nigerian libraries can have significant benefits, it's important to note that there may also be some drawbacks and challenges associated with this process. For instance, Kashi and Nasiri (2018) examined the challenges and opportunities of virtual reference services in Iranian academic libraries. The study found that while virtual reference services can improve accessibility and convenience for users, there are also several challenges related to technology, staffing, and service quality. The study suggests that a collaborative approach involving librarians, IT professionals, and other stakeholders is needed to address these challenges and ensure the

success of virtual reference services. The findings of this study highlight the importance of considering various factors when assessing the readiness of Nigerian librarians to adapt to changes that come with virtualizing reference services. However, it is important to note that these findings do not necessarily mean that virtualizing reference services should not be pursued. Rather, they underscore the need to carefully consider the challenges and concerns that may arise and to address them through appropriate measures. Oluwatoyin et al. (2018) study provides a counterpoint to these findings. The study found that academic librarians in Nigeria were generally positive towards the adoption of virtual reference services, with most expressing a willingness to adopt the technology. However, they also identified several challenges that need to be addressed, including inadequate technological infrastructure, limited staff competence and readiness, and lack of policies and regulations to guide the implementation of virtual reference services. The concerns raised by the participants in the study regarding the virtualization of reference services are valid and need to be addressed. However, these concerns should not overshadow the potential benefits of virtualizing reference services. It is important to find ways to mitigate these concerns while reaping the benefits of virtualization. A study by Luna and Moulaison (2015) found that while virtual reference services have several benefits, there are also potential risks and challenges associated with the technology. The authors note that concerns related to security, privacy, and confidentiality are among the most significant barriers to the adoption of virtual reference services.

Conclusion

In conclusion, the study highlights both the benefits and challenges associated with virtualizing reference services in Nigerian libraries. While there are concerns related to technology, staffing, and service quality, the potential benefits of virtualization cannot be ignored. The findings suggest that a collaborative approach involving librarians, IT professionals, and other stakeholders is needed to address these challenges and ensure the success of virtual reference services. It is important to carefully consider the challenges and concerns that may arise and to address them through appropriate measures. The study provides valuable insights that can guide the development of policies and regulations to guide the implementation of virtual reference services in Nigerian libraries. By addressing the concerns raised by stakeholders, virtual reference services can improve accessibility and convenience for users and ultimately enhance the quality of library services in Nigeria.

Strategies for Policymakers

Based on the findings discussed, there are several implications for policymakers in Nigeria regarding the virtualization of reference services in libraries:

1. Policymakers should assess the cost-effectiveness of virtualizing reference services in Nigerian libraries. While the benefits of virtual reference services are evident, it is essential to determine whether the investment required for this technology will provide significant returns.
2. Policymakers should also evaluate the readiness of Nigerian librarians to adapt to changes that come with virtualizing reference services. This assessment should include an

evaluation of the current technological infrastructure, staff competence, and readiness, as well as the availability of policies and regulations to guide the implementation of virtual reference services.

3. Policymakers should explore the potential threats and risks of virtualizing reference services in Nigerian libraries. Issues related to security, privacy, and confidentiality are among the most significant barriers to the adoption of virtual reference services. Therefore, policymakers should consider measures to mitigate these risks.

References

- Adams, J. (2023). Enhancing Virtual Reference Services: Strategies for Improving Access and User Experience. *Library Management*, 44(1/2), 20-35.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Braun, V., & Clarke, V. (2021). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 13(4), 1-16.
- Casey, A. (2021). A Brief History of Virtual Reference Services. *Library Technology Reports*, 57(5), 26-30.
- Cook, C. (2019). Live Chat Reference: A Review of the Literature. *Reference Services Review*, 47(2), 227-237.
- Dawson, J. (2021). Virtual reference services: A review of the literature. *Journal of Librarianship and Information Science*, 53(2), 351-364. <https://doi.org/10.1177/0961000620967565>
- Guest, G., Bunce, A., & Johnson, L. (2021). How many interviews are enough?: An experiment with data saturation and variability. *Field methods*, 33(1), 59-82.
- Johnson, M., et al. (2023). Transforming Reference Services: Exploring the Virtualization of Library Assistance. *Journal of Librarianship and Information Science*, 55(1), 21-38.
- Jones, R., & Brown, S. (2023). Virtual Reference Services: Meeting User Needs in the Digital Age. *Public Library Quarterly*, 42(1), 72-88.
- Kashi, A., & Nasiri, F. (2018). Challenges and Opportunities of Virtual Reference Services in Iranian Academic Libraries: A Qualitative Study. *Library Philosophy and Practice*, 2018.
- Kim, H. (2022). Artificial Intelligence in Virtual Reference Services: A Review of the Literature. *Journal of Academic Librarianship*, 48(1), 102411.
- Kim, H. (2022). The Integration of Artificial Intelligence in Virtual Reference Services: A User-Centered Approach. *Journal of Academic Librarianship*, 48(4), 102542.
- Lee, S., et al. (2023). Virtual Reference Services: The Impact on User Satisfaction and Information Seeking Behavior. *Library & Information Science Research*, 45(1), 101094.
- Luna, J., & Moulaison, H. (2015). The User-Provider Interface in Virtual Reference Services: A Systematic Review of the Literature. *Reference & User Services Quarterly*, 54(3), 12-20.
- McClure, R. (2023). Seamless Service: Integrating Virtual Reference into Reference Service Delivery. *Reference & User Services Quarterly*, 62(1), 45-49.
- Miller, R. (2021). Video Reference Services: A Review of the Literature. *Journal of Library & Information Services in Distance Learning*, 15(1-2), 100-116.
- National Library of Canada. (2022). Ask Us a Question. Retrieved from <https://www.bac-lac.gc.ca/eng/services/Pages/ask-question.aspx>

- Ojo, O., & Adegoke, Y. (2023). Enhancing Virtual Reference Services in Nigerian Libraries: Strategies for Infrastructure Development. *Journal of Librarianship and Information Science*, 55(1), 89-105.
- Radford, M. L. (2020). Virtual Reference. In *The Library Book* (pp. 195-203). ALA Editions.
- Saldaña, J., Schensul, J. J., Schensul, S. L., & LeCompte, M. D. (2021). Ethical considerations in mixed methods research. *Journal of Mixed Methods Research*, 15(2), 107-126.
- Smith, J. A., Flowers, P. To evaluate the potential factors that may hinder the benefits of virtualizing reference services in Nigerian libraries., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method, and research*. Sage publications.
- Smith, L. (2023). Virtual Reference Services: Expanding Access and Enhancing User Experience. *Library Hi Tech*, 41(2), 195-206.
- Tella, A., Alabi, O., Adewole, S., & Akinsorotan, A. (2022). Exploring the Use of WhatsApp by Libraries in Nigeria for Information Services Delivery. *Journal of Information Science Theory and Practice*, 10(1), 95-108.
- The British Library. (2022). Ask the British Library. Retrieved from <https://www.bl.uk/help/contact-us>
- UC Berkeley Library. (2022). Ask a librarian. Retrieved from <https://www.lib.berkeley.edu/research-support/ask-librarian>
- University of Pretoria. (2022). Ask a Librarian. Retrieved from <https://www.up.ac.za/library/services/ask-a-librarian>
- VanScoy, A., & Evenstad, K. (2015). A phenomenological study of the experience of athletes with eating disorders in Division I and III collegiate athletics. *Journal of Clinical Sport Psychology*, 9(4), 291-311.
- Williams, A. (2023). Virtual Reference Services: Adapting to Users' Changing Expectations. *Reference Librarian*, 64(1), 1-13.
- Wu, Y. M., & Wong, K. K. (2021). Ethical considerations of collecting qualitative data online during the COVID-19 pandemic. *Qualitative Research Journal*, 21(1), 22-37.