

EVALUATING THE READINESS OF DIGITAL REFERENCE SERVICES IN PUBLIC UNIVERSITY LIBRARIES OF NIGER STATE, NIGERIA

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Abstract

Digital reference services (DRS) are essential for providing remote access to information and supporting users with academic inquiries. Despite their potential, DRS adoption has been limited in university libraries in Nigeria. This study assesses the readiness of DRS in public university libraries in Niger State, focusing on available digital infrastructure, librarians' digital skills, challenges, and strategies for improvement. The study used descriptive research design and the population comprised 75 professional librarians from the two public university libraries in Niger State. The findings revealed that these libraries possess basic digital infrastructure for DRS such as the computers, internet access, WhatsApp, Facebook, website, email, and online databases. The study also revealed that the librarians possess basic digital skills for DRS like using digital devices, searching online databases, and using social media platforms. However, the study revealed that the challenges such as inadequate funding, lack of institutional policies, low digital literacy, poor internet connectivity, and unreliable electricity supply hinder the full implementation of DRS. The study, therefore, recommended that increasing funding for DRS, training librarians on DRS tools, providing reliable internet connectivity, providing steady electricity power supply, developing institutional policy, and using social media platforms for DRS is important to enhance the readiness of DRS in public university libraries in Niger State, Nigeria.

Keywords: *Digital reference services, Digital infrastructure, Digital skills, University libraries, Niger State.*

Introduction

The term "reference service" refers to personal assistance provided by librarians to help library users find the information they need. These services include answering questions, assisting with searches, providing bibliographies, disseminating current awareness, and other services within and outside the library (Madu et al., 2020; Cordell, 2013). Reference service is as old as the library itself because librarians have always found it necessary to provide



personal assistance to users in one way or another. Historically, reference services have been provided through physical interaction at reference desks, using print materials like encyclopedias, dictionaries, almanacs, handbooks, gazetteer, abstracts, indexes, and yearbooks (Mariano, 2024; Serwaa et al., 2022; Ademola, 2019).

However, the rapid advancement of information and communication technologies (ICTs) has transformed traditional reference services into digital formats, known as Digital Reference Services (DRS). DRS, sometimes referred to as virtual or online reference services is an advanced system of traditional reference assistance which enable librarians to offer assistance remotely through digital platforms such as email, text messaging, live chat, video conferencing, social media, and web portals (Mawhinney, 2020; Mehta & Wang, 2020). These services allow users to interact with librarians in real-time or asynchronously, providing quick responses regardless of time or location (Khan et al., 2017; Adeoye et al., 2022; Serwaa et al., 2022; Madu et al., 2020). DRS has become increasingly important in higher education where students, faculty, and researchers demand quick, reliable, and convenient access to information resources regardless of time, location or distance.

In Nigeria, the importance of DRS is increasing, especially with the growing demand for online learning, distance education, and the rising need of 24/7 access to library resources. University libraries are expected to harness these services to remain responsive and relevant in the digital age. However, the success of DRS depends largely on the readiness of university libraries in terms of infrastructure, digital literacy of librarians, institutional support, and user awareness. Readiness, therefore, involves ensuring that both technological tools and human resources are adequately prepared to support DRS effectively.

Although university libraries in developed countries have made significant progress in implementing DRS into their operations (Tsang & Chiu, 2022; Yu et al., 2022), many libraries in developing countries, including Nigeria, still grapple with persistent challenges such as inadequate funding, poor digital infrastructure, low digital literacy among librarians, and weak institutional support (Madu et al., 2020; Adeoye et al., 2022; Adamu&Iliyasu, 2019; Abubakar, 2021). These challenges raise questions about the readiness of Nigerian university libraries to implement DRS effectively. It is, therefore, important to evaluate the readiness of these libraries to identify gaps, challenges, and opportunities for improvement.

This study aims to assess the readiness of DRS in public university libraries in Niger State, Nigeria. It examines the available digital infrastructure, librarians' digital skills, challenges, and strategies to enhance DRS readiness. By addressing these factors, the study offers a comprehensive understanding of the current state of DRS in Niger State university libraries and provides recommendations for successful implementation.

Statement of the Problem

University libraries in Nigeria play a critical role in supporting academic excellence by providing access to information resources and services that meet the needs of students, faculty, and researchers. With the increasing demand for remote access to information and the growing adoption of digital technologies in higher education, DRSs are becoming indispensable. However, the readiness of Nigerian university libraries to implement and sustain such services is still questionable.

Several studies suggest that many Nigerian university libraries face challenges such as inadequate ICT facilities, poor internet connectivity, insufficient funding, insufficient training opportunities for librarians, and weak institutional support (Madu et al., 2020; Akter, 2024; Adeoye et al., 2022; Adamu&Iliyasu, 2019; Ademola, 2019). These issues pose a serious

threat to the effective provision of DRS. Furthermore, there is limited empirical evidence assessing the preparedness of these libraries to deploy such services in a sustainable manner. The absence of such evidence creates a knowledge gap that hinders informed decision-making and policy development for improving library services in the digital age.

Without adequate preparation, Nigerian university libraries may continue to struggle with providing timely and relevant information to users, thereby undermining academic productivity and the overall quality of education. Therefore, this study seeks to evaluate the readiness of DRS in public university libraries in Niger State, identifying available digital infrastructure, librarians' skills, and the challenges that need to be addressed for successful implementation.

Research Objectives

The main objective of this study is to assess the readiness of DRS in public university libraries in Niger State, Nigeria. The specific objectives are:

1. To identify the digital infrastructures available for rendering DRS in public university libraries in Niger State.
2. To examine the digital skills possessed by librarians in rendering DRS in public university libraries in Niger State.
3. To identify the challenges faced in rendering DRS in public university libraries of Niger State.
4. To recommend strategies for enhancing the readiness of DRS in public university libraries in Niger State.

Research Questions

To achieve the study's objectives, the following research questions will be addressed:

1. What digital infrastructure is available for rendering DRS in public university libraries of Niger State?
2. What digital skills do librarians possessed for rendering DRS in public university libraries of Niger State
3. What challenges are faced in rendering DRS in public university libraries of Niger State?
4. What strategies can enhance the readiness of DRS in public university libraries of Niger State?

Literature Review

Digital reference services (DRS) encompass a range of assistance provided by libraries to meet the information needs of users using online platforms such as email, chat, video conferencing, and social media platforms (Sinhbabu& Kumar, 2021). These services enable libraries to offer real-time support to students and researchers, overcoming the limitations of physical reference desks (Khan et al., 2017). The readiness of university libraries to implement DRS varies significantly. Studies revealed that while there is an openness to adopting DRS, many libraries have not fully integrated these services due to various constraints, including inadequate facilities and a lack of skilled personnel (Akter, 2024; Abdulahi, 2017; Ademola, 2019). Similarly, research conducted elsewhere indicated that while some libraries had adopted DRS, others faced significant challenges that hindered their readiness (Khan et al., 2017). Another study found that libraries face significant



disparities in preparedness levels due to varying institutional priorities and budget constraints (Malik & Mahmood, 2014).

The readiness of digital reference services is a multifaceted issue influenced by technological infrastructure, human resource capacity, financial investment, and institutional support (Ademola, 2019; Malik & Mahmood, 2014). For instance, adequate ICT infrastructure is fundamental to effective DRS implementation. However, studies have shown that many libraries in developing countries lack sufficient digital tools, stable internet connectivity, and modern integrated library systems (Khan et al., 2017; Ademola, 2019). In contrast, some well-funded private universities demonstrate higher levels of preparedness due to better investments in ICT facilities (Akter, 2024). Similarly, the digital literacy and ICT proficiency of librarians are crucial determinants of DRS readiness. Yadav (2022) opined that the librarianship profession has gone through many changes with the emergence of digital technologies and librarians must have digital knowledge, skills, and competencies to thrive in the profession. He added that librarians require digital training to effectively manage digital library system such as digital reference services (Yadav, 2022).

Several challenges impede the readiness for DRS in university libraries. Financial constraints remain a major barrier to the successful implementation of DRS in Nigerian university libraries (Akter, 2024; Ademola, 2019). Funding limitations affect the acquisition of necessary digital tools, training programs, and maintenance of ICT infrastructure (Sinhababu & Kumar, 2019; Baro, 2019). Additionally, resistance to change among librarians, inadequate digital skills, and issues with internet connectivity further complicate the effective delivery of DRS (Akter, 2024; Ademola, 2019). Other challenges include poor motivation, technophobia, attitudes of administrators toward the welfare of library personnel, and lack of training of library personnel to manage digital reference services (Ademola, 2019; Malik & Mahmood, 2014).

To improve digital reference services, scholars have recommended that libraries should increase investment in ICT infrastructure such as ensuring stable internet connectivity and power supply (Akter, 2024; Ademola, 2019). Additionally, continuous digital literacy training for librarians is essential to equip them with the skills to manage and deliver digital reference services effectively (Akter, 2024; Ademola, 2019). Moreover, promoting awareness among library staff about the benefits of DRS can encourage higher adoption rates (Dan-Isah & Maidabino, 2020; Alajmi, 2018). Furthermore, establishing a functional library website can facilitate easier access to digital resources and services for students (Dan-Isah & Maidabino, 2020; Alajmi, 2018).

Methodology

The study employed a descriptive research design. The target population consisted of 75 professional librarians from the two public university libraries in Niger State. The libraries are the Federal University of Technology Library, Minna, and Ibrahim Badamasi Babangida University Library, Lapai. The population figures were obtained from the administrative records of the university libraries. Since the population size was small, the entire population was used for the study. This decision was guided by the advice of Gay (1996), who stated that if the population of the study is less than two hundred (200), the entire population should be used for the study. A structured questionnaire was used as the research instrument to gather data for the study. The questionnaire was adapted from previous studies (Adeoye et al., 2022; Adamu & Iliyasu, 2019; Ademola, 2019) and modified to suit the purpose of this study. Likewise, the questionnaire was given to experts for face and content validity. After ensuring

the validity of the instrument, the questionnaire was distributed to the respondents by the researchers. Out of the 75 questionnaires distributed, 70 were received and made up a 93 percent response rate. The data collected was analyzed using SPSS version 23. Descriptive statistics was conducted using frequency count (N) and percentages (%) for easy interpretation and understanding.

Results and Discussion

Respondents' Demographic Information

Table 1 presents the demographic breakdown of the respondents in this study. Out of the participants, 37 (53%) were from the Federal University of Technology (FUT) library, and 33 (47%) were from Ibrahim Badamasi Babangida (IBB) University Library. Regarding gender, 46 (66%) were male, while 24 (34%) were female. The significant gender disparity observed underscores the need for greater efforts to reduce the gender gap in employment opportunities, particularly in the Nigerian context. In terms of professional experience, the majority of respondents (45, or 64%) had over 10 years of experience, while 25 (36%) had fewer than 10 years. Finally, the qualifications of the respondents showed that 26 (37%) had a BLIS, 37(53%) had an MLIS, and 7(10%) had a PhD.

Table 1: Respondents' Demographic Information

Variable	Categories	Frequency	Percentage
Institution	FUT	37	(53%)
	IBB	33	(47%)
Gender	Male	46	(66%)
	Female	24	(34%)
Age	18-30	15	(22%)
	31-50	45	(64%)
	Above 50	10	(14%)
Working Experience	Less than 10 years	25	(36%)
	More than 10 years	45	(64%)
Qualification	BLIS	26	(37%)
	MLIS	37	(53%)
	PHD	7	(10%)

Digital Infrastructures Available for DRS in Public University Libraries in Niger State

Respondents were asked to indicate digital infrastructure available for rendering DRS in their libraries. As shown in Table 2, all respondents (70, or 100%) reported having the following digital infrastructures: computers, internet access, WhatsApp lines, and Facebook accounts. Additionally, 68 (97%) indicated having a library website, 65 (93%) had email addresses for library communication, and 64 (91%) reported having access to online databases and electronic resources. However, fewer respondents reported having institutional repositories (33, or 47%), reference desk telephone lines (30, or 43%), video conferencing tools (10, or 14%), and digital reference robots (5, or 7%). These findings suggest that essential digital tools like computers, internet access, WhatsApp, and Facebook are readily available for delivering DRS in the public university libraries of Niger State. The



results align with previous studies (Adeoye et al., 2022; Ubogu, 2020; Ademola, 2019), which identified these platforms as common channels for providing DRS in university libraries. Additionally, a study by Abubakar et al. (2023) confirmed that WhatsApp and Facebook are the predominant social media platforms used for DRS delivery among librarians in Nigeria.

Table 2, Digital Infrastructures Available for DRS in University Libraries

Digital Infrastructures available for DRS	Frequency	Percentage
Computers	70	(100%)
Internet service	70	(100%)
WhatsApp line for the library	70	(100%)
Facebook account for library	70	(100%)
Library Website	68	(97%)
Email address for the library	65	(93%)
Online databases and electronic resources	64	(91%)
Institutional repository for digital reference services	33	(47%)
Reference desk telephone line	30	(43%)
Instagram page for library	25	(36%)
Video conferencing tools (e.g., Zoom, Google Meet)	10	(14%)
Digital reference robots	5	(7%)

Digital Skills Possessed by Librarians for Digital Reference Service

As shown in Table 3, librarians demonstrated proficiency in various digital skills essential for delivering DRS. All respondents (70, or 100%) reported using digital devices such as computers, mobile phones, or tablets, and managing email queries for reference services. Similarly, all librarians (70, or 100%) were skilled in using social media platforms like WhatsApp, Twitter, and Facebook. A significant number of respondents (68, or 97%) were proficient in searching and using online databases (e.g., JSTOR, ProQuest, Scopus). Additionally, 65 (93%) were skilled in using video conferencing tools (e.g., Zoom, Google Meet), 63 (90%) in Microsoft Office Suite, 55 (78%) in using institutional repositories for reference services, and 45 (64%) in using reference management software like Zotero or EndNote. These findings suggest that librarians possess the necessary digital skills for delivering DRS in their libraries. This is consistent with the study by Adeoye et al. (2022), which also identified a wide range of digital skills among librarians in Ibadan's academic institutions, including proficiency in video conferencing and digital content creation.

Table 3: Digital Skills Possessed by Librarians for DRS

Digital Skills Librarians Possessed for Rendering DRS	Frequency	Percentage
Using digital devices (computers, mobile phones, or tablets)	70	(100%)
Handling email queries for reference services	70	(100%)
Using social media platforms (WhatsApp, Twitter, Facebook)	70	(100%)
Searching and using online databases (JSTOR, ProQuest, Scopus)	68	(97%)
Using video conferencing tools (e.g., Zoom, Google Meet)	65	(93%)
Using Microsoft Office Suite (Word, Excel, PowerPoint)	63	(90%)
Using institutional repositories for reference service	55	(78%)
Using advanced search options to refine information	50	(71%)
Using reference management software like Zotero or EndNote	45	(64%)

Challenges Faced in Rendering DRS in Public University Libraries of Niger State

As illustrated in Table 4, the primary challenges faced by librarians in delivering DRS include inadequate funding (70, or 100%), poor internet connectivity (70, or 100%), and erratic electricity power supply (70, or 100%). Other significant challenges include the lack of institutional policies for DRS (70, or 100%), insufficient expertise to use digital reference tools effectively (65, or 92%), lack of awareness about the benefits of DRS (65, or 92%), resistance to technology adoption (60, or 86%), technophobia (59, or 84%), unavailability of some digital reference tools (55, or 78%), and technical issues such as software glitches or hardware problems (50, or 71%). These findings are consistent with previous studies (Adeoye et al., 2022; Ubogu, 2020; Ademola, 2019), which identified poor funding, lack of personnel training, lack of documented policies, irregular power supply, slow internet connectivity, and insufficient management support as barriers to effective DRS implementation.

Table4: Challenges Faced in Rendering of DRS in Public University Libraries of Niger State

Challenges in Rendering Digital Reference Service	Frequency	Percentage
Inadequate funding for digital reference services	70	(100%)
Poor internet connectivity	70	(100%)
Erratic electricity power supply	70	(100%)
Lack of institutional policy for digital reference services	70	(100%)
Lack of awareness about the benefits of digital reference services	65	(92%)
Lack of expertise in using digital reference tools effectively	65	(92%)
Resistance to technology adoption by reference service librarians	60	(86%)
Technophobia: fear of using emerging technology	59	(84%)
Unavailability of some digital reference tools	55	(78%)
Technical issues like software glitches, or hardware problems	50	(71%)



Strategies for Enhancing the Readiness of DRS in University Libraries

Table 5 highlights several strategies for enhancing the readiness of DRS in public university libraries in Niger State. Key strategies identified include increasing funding for DRS (70, or 100%), training librarians on digital reference tools (70, or 100%), providing reliable internet connectivity (70, or 100%), ensuring a steady electricity supply (70, or 100%), raising awareness about the benefits of DRS (70, or 100%), developing institutional policies for DRS (65, or 92%), using social media platforms to promote DRS (60, or 86%), and adopting user-friendly digital reference platforms (55, or 78%). These findings align with recommendations from prior studies (Adeoye et al., 2022; Ubogu, 2020), which emphasize the importance of reliable internet connectivity, steady electricity supply, and management support in enhancing DRS readiness in libraries.

Table 5: Strategies for Enhancing the Readiness of DRS in Public University Libraries

Strategies for Enhancing the Readiness of DRS	Frequency	Percentage
Increasing funding on DRS	70	(100%)
Training librarians on digital reference tools	70	(100%)
Providing reliable internet connectivity	70	(100%)
Providing steady electricity power supply	70	(100%)
Raising awareness about the benefit of DRS	70	(100%)
Developing institutional policy for DRS	65	(92%)
Using social media platforms to promote DRS	60	(86%)
Adopting user-friendly digital reference platforms	55	78%

Conclusion

This study aimed to assess the readiness of DRS in public university libraries in Niger State, focusing on the availability of digital infrastructure and the digital skills of librarians. The findings indicated that these libraries have some basic digital infrastructure for DRS such as the computers, internet access, social media platforms like WhatsApp and Facebook, library websites, email addresses, and online databases. Additionally, librarians were found to have basic digital skills for DRS such as using digital devices, conducting online database searches, and managing social media platforms. However, the study also highlighted several challenges hindering the full adoption of DRS, such as insufficient funding, lack of institutional policies, limited digital skills, poor internet connectivity, and inconsistent power supply. To address these issues, the study recommended that public university libraries in Niger State should increase funding for DRS, provide training to librarians on using digital reference tools, improve internet connectivity and ensure reliable electricity supply, develop and implement institutional policies supporting DRS, and utilize social media platforms to enhance DRS accessibility.

These findings have contributed significantly to the academic literature by providing empirical data on the current state of DRS readiness in Niger State's public university libraries. It serves as a valuable reference for future studies on DRS in academic libraries, particularly in developing countries. The findings have also provided a comparative framework for other nations facing similar challenges in implementing digital reference

services. Furthermore, university librarians and management can leverage these findings to identify gaps in their current systems and develop strategies for improvement. Policymakers can use the results to formulate effective strategies and allocate resources for the digital transformation of university libraries in Niger State.

Although this study contributes meaningfully to the body of knowledge, its scope was limited to professional librarians in public university libraries in Niger State. Future research could replicate this study in other types of university libraries to validate the findings. Additionally, comparative studies between public and private university libraries in Nigeria would provide further insights into variations in funding, infrastructure, and service delivery. Lastly, future research could explore the role of artificial intelligence in enhancing digital reference services in Nigerian university libraries.

Recommendations

Based on the findings, the following recommendations are proposed:

1. Public university libraries in Niger State should prioritize the enhancement of their technological infrastructure, including ensuring reliable internet connectivity, upgrading hardware, and implementing software solutions to support effective digital reference services.
2. Public university libraries in Niger State should provide regular training programs to staff to enhance their digital skills and familiarity with digital reference tools and technologies.
3. Public university libraries in Niger State should actively seek additional funding and support from university administrations while also exploring alternative funding sources to aid in the development and maintenance of digital reference services.
4. Public university libraries in Niger State should establish institutional policies to ensure the sustainability of digital reference services.
5. Public university libraries in Niger State should leverage various communication platforms such as social media, live chat, and email to increase user engagement and accessibility. Offering multiple communication channels will allow users to choose their preferred method of interaction.

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