

Exploring Librarians' Digital Competence and Institutional Support as Determinants of Reference Services Delivery in University Libraries in Osun State

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ABSTRACT

Reference services are fundamental to academic library operations as they assist users in locating accurate and relevant information. Traditionally, reference services involved face-to-face interactions between users and librarians at the reference desk. However, the advancement of information and communication technologies (ICTs) has transformed reference services into a blend of physical and virtual interactions. The paper explores librarians' digital competence and institutional support as determinants of reference service delivery in university libraries in Osun State. The study adopted a descriptive survey design. The population consists of 143 academic librarians in the six (6) purposively selected university libraries. The Total enumeration technique was employed, and data were collected with a questionnaire from the respondents. The Data collected was analysed using frequency counts, simple percentages and tables. Findings revealed that the librarians possessed the required digital competence to be effective at their work, such digital competences possessed by librarians include identification and use of computers and other digital devices (laptops, mobile phones, tablets etc) among others. Furthermore, findings revealed that there is institutional support for the delivery of reference services n the university libraries, such as librarians attending seminars and the provision of effective reference services.. Lastly, the findings also indicate a positive influence between digital competence and institutional support on the effectiveness of reference service delivery in university libraries, such as the integration of digital tools which has improved the efficiency of reference service delivery in my library among others. This study concluded that the reference librarians in university libraries in Osun State have the required digital competence to render

effective reference services to library users. This study recommends that reference librarians should be more proactive and stay up-to-date with emerging technologies related to reference services delivery.

Keywords: Digital Competency; Institutional Support; Reference Librarians; Exploring; Reference Services; Osun State

Introduction

Academic libraries, particularly university libraries, serve as the intellectual backbone of higher educational institutions. They support the teaching, learning, and research missions of their parent institutions by providing access to a wide range of information resources and services. Reference service is one of the important services rendered, which involves personalized assistance offered by reference librarians to help users locate, evaluate, and use information effectively. According to Aina (2018), reference services entail providing users with guidance on the available services and resources within the library, as well as assisting them in locating these resources. The traditional reference desk model has increasingly evolved into more dynamic and technology-driven models, such as virtual reference services, chat reference, email consultations, and the use of web-based platforms. Suthiprapa and Tuamsuk (2022) stated that reference services emerged during the late 19th and early 20th centuries due to various factors and trends, including the growing abundance and diversity of information resources both within and beyond libraries. Traditionally, reference services in libraries are provided by a reference librarian stationed at a Reference Desk within the library building, as well as through telephone or written communication (Ajani, Buraimo, Adegbaye & Olusanya, 2021).

The demand for digital information and virtual reference interactions in the 21st century has increased significantly. This shift has necessitated a high level of digital competence among librarians, particularly those involved in reference services. Suthiprapa and Tuamsuk (2022) stated that with the expansion of the internet, librarians gained an additional mode of communication that is more cost-effective and more available to consumers. Digital competence entails the ability to effectively use digital tools, platforms, and resources to perform tasks, communicate, and solve problems in a technologically driven environment. According to Evangelinos and Holley (2015), the digital competence needed for reference librarians to operate in the information age is made up of information and data literacy, digital content creations, communication and collaboration, and cybersecurity skills among others. Reference librarians must therefore be proficient in digital literacy, information retrieval, electronic databases, online communication tools, and other emerging technologies to meet users' expectations in a dynamic academic landscape. Baro, Obaro and Aduba (2019) stated that digital competence includes proficiency in using computers, operating systems, software applications, and digital devices such as smartphones and tablets. Further stated that without these foundational skills, individuals may struggle to perform even the most basic tasks in a digital context, hindering their ability to fully participate in modern society and the workforce

However, digital competence alone may not suffice in ensuring effective reference service delivery. The institutional environment within which reference librarians operate also plays a significant role. Institutional support in the form of training and professional development

opportunities, adequate funding for digital resources, access to modern ICT infrastructure, and supportive policies can significantly enhance the capacity of librarians to deliver quality services. According to Ubogu (2019), training and development support is essential in boosting the effectiveness of reference librarians to provide reference services in the modern era, especially with the emergence of digital reference services that require specialised knowledge to navigate efficiently. Without such support, even the most digitally competent librarians may face challenges in meeting the demands of modern reference services. Fasola and Mamudu (2020) stated that continuous professional development opportunities for reference librarians further enhance their expertise and confidence, leading to more effective service delivery.

Despite the critical nature of digital competence and institutional support, there appears to be a gap in empirical research exploring how these factors influence reference service delivery in university libraries, especially within the context of Osun State, Nigeria. Given the rapid technological advancements and the changing needs of library users, it is imperative to investigate the extent to which reference librarians in university libraries are equipped with the digital skills and institutional backing required to deliver high-quality reference services. This study, therefore, seeks to explore librarians' digital competence and institutional support as determinants of reference service delivery in university libraries in Osun State. The findings of this study will significantly provide insight into areas requiring policy intervention, professional development, and infrastructural improvement to enhance reference service delivery in the digital era.

Research Objectives

The main objective is to explore librarians' digital competence and institutional support as determinants of reference service delivery in university libraries in Osun State. The specific objectives are to:

1. Assess the level of digital competence among reference librarians in university libraries in Osun State.
2. Examine the extent of institutional support available for reference services in university libraries in Osun State; and
3. Determine the influence of digital competence and institutional support on the effectiveness of reference service delivery in university libraries in Osun State.

Research Questions

Based on the objectives of the study, the following research questions were generated to guide the course of this study:

- i. What is the level of digital competence among reference librarians in university libraries in Osun State?
- ii. What is the extent of institutional support available for reference services in university libraries in Osun State? and
- iii. What is the influence of digital competence and institutional support on the effectiveness of reference service delivery in university libraries in Osun State?

Literature Review

Reference services are fundamental to academic library operations as they assist users in locating accurate and relevant information. Traditionally, reference services involved face-to-face interactions between users and librarians at the reference desk. Awodoyin and Aina (2018) stated that traditional reference services include guiding patrons to help them identify available services and materials, as well as how to locate them within the library. The reference section of the library holds and cares for valuable information resources that cannot be loan-out to users such as encyclopedias, biographies, gazetteers, dictionaries, maps, almanacs, periodicals, newspapers and journals among others (Zemengue, 2021). However, the quality and effectiveness of reference service delivery in academic libraries have evolved in response to the growing integration of digital technologies in information management and service provision, as it has transformed reference services into a blend of physical and virtual interactions. Younus and Nadeem (2021) stated that in addition to assisting users at the reference desk, the reference librarian now provides users with reference services in cyberspace by utilizing web technologies.

The advancement of information and communication technologies (ICTs) has brought digital reference services into play which include email consultations, live chats, FAQs, and digital subject guides. According to Abubakar and Kacholom (2017), digital reference service is a platform by which people can present their questions and have them answered by library personnel through some electronic means. Janes (2013) stated that the core of reference services remains unchanged to connect users with the information they need, but the tools and channels of delivery have significantly evolved. Uzoigwe and Eze (2018) revealed in their study that digital reference service had a positive impact on the provision of information services in terms of speed, communication, and overcoming time, physical, geographical, human, and political barriers in the provision of information services. Adeoye, Oladokun and Opalere (2022) affirm that many libraries and library cooperatives are introducing virtual reference services to better serve clients who remotely access the library services and collections from their computers. Younus and Nadeem (2021) stated that with the development of electronic, virtual and digital libraries, the actual reference desk has been replaced by a digital reference desk where users can submit their queries online and acquire the information they require at any time and from any location. Reference services are no longer confined to face-to-face interactions; they now require a wide array of digital skills. Reference librarians are expected to navigate electronic databases, conduct online searches, use digital communication tools, and guide users in accessing e-resources.

Digital competence, therefore, has become an indispensable requirement for reference librarians engaged in reference service delivery. This competence includes not just technical skills but also the ability to adapt to new tools, manage digital content, and support users in a digitally mediated environment. According to the European Commission (2018), digital competence refers to the ability to use digital tools effectively for communication, information retrieval, content creation, problem-solving, and continuous learning. Fraillon, Ainley, Schulz, Friedman and Duckworth (2020) defined digital competency as the ability of an individual to utilise computer systems for purposes such as research, information creation and communication in order to participate effectively at home, at school, in the workplace, and the community. In the context of academic

libraries, digital competence includes proficiency in using library automation systems, online databases, institutional repositories, and digital reference tools. Obasola et al. (2014) argue the necessity for librarians to acquire the necessary digital skills for improved productivity and innovative service delivery in university libraries. Reference librarians are expected to acquire necessary, required and adequate digital competence to manage and disseminate various services effectively to their users. Quadri and Garaba (2019) stated that library professionals with ICT/digital skills, and competency render more current awareness services to their users. Ugwulebo and Okoro (2020) emphasise that digital competence is a critical requirement for reference librarians to remain relevant in a technology-driven environment.

Institutional support is equally vital in enhancing the capacity of reference librarians to deliver effective reference services. Institutional support refers to the infrastructure, funding, policies, training opportunities, and administrative backing that enable staff to perform their duties effectively and efficiently. For librarians, such support may include access to ICT tools, opportunities for continuing education, professional development programs, and a conducive work environment. According to Ifijeh and Iwu-James (2015), institutional support is a strong determinant of service quality in libraries, especially in environments where digital transformation is still emerging. Institutional support includes the provision of training opportunities, adequate funding, access to modern infrastructure, and enabling policies that foster professional development. Cox (2021) stated that adequate financial backing ensures that the library can maintain up-to-date collections and invest in new technologies to enhance user experience. Also, Andrikopoulou, Rowley and Walton (2022) stated that ongoing support training ensures that library staff remain proficient in emerging technologies and best practices, enhancing their ability to provide high-quality services. Adamu, Udoudoh, Babalola and Yusuf (2021) opine that librarians and information professionals can be sponsored to attend conferences, seminars and workshops as part of institutional support, which, in turn, enhances information service delivery. Without sufficient institutional backing, even the most digitally skilled librarians may struggle to perform optimally. Libraries with adequate institutional support tend to offer better services and enjoy higher user satisfaction levels.

Institutional support extends beyond funding and training; it also includes the overall organizational culture, policy environment, and administrative commitment to digital transformation. Organizational readiness is crucial for ensuring that new technologies are successfully adopted and utilized. According to Ocholla and Shongwe (2013), many African universities face difficulties in this regard due to bureaucratic bottlenecks, limited ICT budgets, and poor strategic planning. Furthermore, a supportive environment must include timely policy formulation, staff involvement in decision-making processes, and access to resources that foster innovation. Where institutional leadership values the library's role in digital education and research support, reference librarians are more likely to receive the encouragement and tools needed to perform optimally. Falola et al. (2020) stated that institutions typically have a specific mission, objectives, and functions that contribute to the functioning of society. They often have a defined structure, hierarchy, and governing body responsible for decision-making and policy implementation. Institutions may have their own set of rules, procedures, and traditions that govern their operations and interactions with individuals or other institutions.

Developing digital competence among librarians presents challenges. Factors such as inadequate training, resistance to change, lack of motivation, and limited access to current technologies impede the development of necessary digital skills. Anyaoku, Ezeani, and Osuigwe (2014) noted that many librarians in Nigerian universities still lack proficiency in emerging technologies such as institutional repository management, digital archiving, and online collaborative tools. These limitations can affect the librarians' ability to deliver timely and efficient reference services, particularly in digital formats. Aina (2014) also supports the argument that library services in Nigerian universities are often constrained by poor funding and lack of ICT integration. These issues underline the need for a more holistic approach to understanding service delivery, one that includes both personal competence and institutional capacity. However, the effectiveness of reference service delivery is also influenced by user expectations and their perceptions of service quality. In the digital age, users expect instant access to information, knowledgeable staff, and personalized support. They are less tolerant of delays or poorly delivered services. A study by Oyewusi and Oyeboade (2009) emphasized that students in Nigerian universities prioritize ease of access, responsiveness, and the ability of librarians to navigate electronic resources. Thus, any deficiency in digital competence or lack of institutional support can lead to a decline in service quality and user satisfaction.

Several studies have highlighted the interrelationship between digital skills, institutional support, and the delivery of reference services. For example, Afolabi and Abidoye (2017) found that the digital competence of librarians significantly influenced the quality of reference services in selected Nigerian university libraries. Similarly, Ajegbomogun and Salaam (2021) concluded that institutional support, especially in terms of funding and infrastructure, positively correlates with effective service delivery in academic libraries. However, few studies have examined both variables together to determine their combined influence on reference service delivery, particularly in Osun State. This gap presents an opportunity for further empirical investigation. It is for this reason that this study aims to explore librarians' digital competence and institutional support as determinants of reference service delivery in university libraries in Osun State.

Methodology

This study adopted a descriptive survey design to collect the views, feelings, and beliefs of the respondents regarding the objectives of the study. The study's population consist of 143 academic librarians in university libraries in Osun State, Nigeria. A total enumeration technique was adopted due to the small size of the study population. A self-designed questionnaire titled *"Exploring Librarians' Digital Competence and Institutional Support as Determinants of Reference Service Delivery in University Libraries in Osun State"* was used as an instrument for data collection. The questionnaire was administered to respondents from all participating university libraries during working hours on weekdays with the help of research assistants who had undergone mini-training on administering research instruments. One hundred and forty-three (143) copies of the questionnaire were administered, with only 125 copies filled out by the respondents. Of these, 118 copies were valid and usable for the analyses of this study, resulting in an 82.5% response rate. The Data collected were analysed using the Statistical Product and Service Solution (SPSS) with the use of frequency counts, simple percentages and tables for interpretation.

Analysis and Results

Table 1: Demographic information of the respondents.

S/N	Library	Frequency	Percentage (%)
1.	Library 1	13	11.0
2.	Library 2	35	29.6
3.	Library 3	23	19.4
4.	Library 4	12	10.1
5.	Library 5	14	11.8
6.	Library 6	21	17.7
	Total	118	100.0
S/N	Gender	Frequency	Percentage (%)
1.	Male	76	64.4
2.	Female	42	35.5
	Total	118	100.0
S/N	Age	Frequency	Percentage (%)
1.	21 – 30	27	22.8
2.	31 – 40	54	45.7
3.	41 – 50	24	20.3
4.	51 – 60	13	11.0
5.	61 and above	0	0.0
	Total	118	100.0
S/N	Qualification	Frequency	Percentage (%)
1.	BSc	56	47.4
2.	MSc	47	39.8
3.	PhD	15	12.7
	Total	118	100.0
S/N	Years of work experience	Frequency	Percentage (%)
1.	1 – 5	23	19.4
2.	6 – 10	39	33.0
3.	11 – 15	22	18.6
4.	16 – 20	13	11.0
5.	21 – 25	14	11.8
6.	26 and above	7	5.9
	Total	118	100.0

The results in Table 1 revealed the demographic information of the respondents. The results showed that, 35 out of the 118 respondents, representing 29.6% are from Library 2, 23(19.4%) are from Library 3, 21(17.7%) are from Library 6, 14(11.8%) are from Library 5, 13(11.0%) are from Library 1, and 12(10.1%) are from Library 4. This shows that the majority of the respondents are from Library 2, while Library 4 has the lowest response. The table further revealed that 76(64.4%) respondents were male, while the remaining 42(35.5%) were female. This shows that more male respondents participated in the study than their female counterparts. The table also revealed the age range of the respondents, 54 representing 45.7% were within the age range of 31-40 years, 27(22.8%) were within the age range of 21-30 years, 24(20.3%) were within the age range of 41-50 years, and 13(11.0%) were within the age range of 51-60. This indicates that the majority of respondents fell within the age range of 31-40, while the lowest proportion was within the age range of 51-60 at the time of the study.

Furthermore, the table also revealed that 56(57.5%) respondents have B.Sc., 47(39.8%) have M.Sc. and 15(12.7%) have Ph.D. This indicates that most respondents hold a B.Sc. degree, followed by M.Sc. holders, and Ph.D. holders received the lowest responses. Lastly, the table also revealed the respondents' years of work experience, 39(33.0%) have 6-10 years of work experience, 23(19.4%) have 1-5 years of work experience, 22(18.6%) have 11-15 years of work experience, 14(11.8%) have 21-25 years of work experience, 13(11.0%) have 16-20 years of work experience and 7(5.9%) have 26 and above years of work experience. This shows that the majority of the respondents have 6-10 years of work experience while the lowest years of work experience were 26 years and above .

Research Question 1: What is the level of digital competence among reference librarians in university libraries in Osun State?

Table 2: The level of digital competence among reference librarians.

SN	Statements	HC	MC	LC	NC
1.	I can identify and use computers and other digital devices (laptops, mobile phones, tablets etc).	87(73.7%)	28(23.7%)	2(1.6%)	1(0.8%)
2.	I can identify and use computer software and mobile applications (MS Word, Adobe Acrobat, WPS, etc).	76(64.4%)	30(25.4%)	10(8.4%)	2(1.6%)
3.	I can identify data, information and digital content needed to operate software tools and technologies.	23(19.4%)	32(27.1%)	41(34.7%)	22(18.6%)
4.	I can search for data, information and content in digital environments.	58(49.1%)	45(34.7%)	11(9.3%)	4(3.3%)
5.	I can analyze, compare and critically evaluate the credibility and reliability of data sources, information and digital content.	51(43.2%)	42(35.5%)	15(12.7%)	10(8.4%)
6.	I can store, manage and organize digital data, information and content.	65(55.0%)	41(34.7%)	10(8.4%)	2(1.6%)
7.	I can create and edit digital content.	56(47.4%)	51(43.2%)	9(7.6%)	2(1.6%)
8.	I can utilise existing information to create new, functional, and meaningful insights.	33(27.9%)	32(27.1%)	41(34.7%)	12(10.1%)
9.	I can give understandable instructions to retrieve information from a computer system.	61(51.6%)	42(35.5%)	10(8.4%)	5(4.2%)
10.	I understand how copyright and license apply to data, information and digital content.	55(46.6%)	41(34.7%)	12(10.1%)	10(8.4%)

Keys: HC = Highly Competent; MC = Moderately Competent; LC = Less Competent; NC = Not Competent.

Decision Rule: 0.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.

Table 2 shows the level of digital competence among reference librarians in university libraries in Osun State. The digital competence includes: identification and use computer and other digital devices (laptops, mobile phones, tablets etc) with 87(73.7%); Identification and use computer software and mobile applications (MS Word, Adobe Acrobat, WPS, etc) with 76(64.4%).

Furthermore, the data showed that majority can store, manage and organize digital data, information and content with 65(55.0%). It was also shown that majority of respondents can give understandable instructions to retrieve information from a computer system with 61(51.6%). However, few can identify data, information and digital content needed to operate software tools and technologies with 23(19.4%) and can use existing information to create new useful and meaningful information with 33(27.9%) are respondents showing the least digital competence. This implies that respondents possess the digital competences for library reference services delivery.

Research Question 2: What is the extent of institutional support available for reference services in university libraries in Osun State?

Table 3: The extent of institutional support available for reference services delivery.

SN	Statements	SS	MS	LS	NS
1.	Library personnel are given the opportunity for self-development on the use of virtual reference services.	73(61.8%)	25(21.1%)	12(10.1%)	8(6.7%)
2.	There are in-house training programs on the new trends in reference services.	67(56.7%)	41(34.7%)	8(6.7%)	2(1.6%)
3.	Librarians attend seminars on the provision of effective reference services.	81(68.6%)	30(25.4%)	7(5.9%)	0(0.0%)
4.	My institution provides conducive office space to support reference services.	65(55.0%)	50(42.3%)	3(2.5%)	0(0.0%)
5.	My institution provides regular electricity supply to support reference services.	58(49.1%)	45(38.1%)	12(10.1%)	3(2.5%)
6.	My institution offers high-speed internet connections to support our reference services.	60(50.8%)	46(38.9%)	11(9.3%)	1(0.8%)
7.	My institution provides personal desktop and laptop computers to support reference services.	62(52.5%)	45(38.1%)	10(8.4%)	1(0.8%)
8.	The library is equipped with modern reference services, including online chat, video conferencing, and other virtual tools.	48(40.6%)	59(50.0%)	11(9.3%)	0(0.0%)
9.	Librarians are given adequate time to participate in professional development related to reference services.	66(55.9%)	30(25.4%)	20(16.9%)	2(1.6%)
10.	The university's leadership actively promotes the importance of digital reference services in the academic community.	63(53.3%)	31(26.2%)	23(19.4%)	1(0.8%)

Keys: *SS = Strongly Supported; MS = Moderately Supported; LS = Less Supported; NS = Not Supported.*

Decision Rule: 0.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.

Table 3 shows the extent of institutional support available for reference services delivery in university libraries in Osun State. These institutional supports include: library personnel attend seminars on the provision of effective reference services with 81(68.6%); Library personnel are given opportunity for self-development on the use of virtual reference serves with 73(61.8%); there are in-house training programs on the new trends in reference services with 67(56.7%) and librarians are given adequate time to participate in professional development related to reference services with 66(55.9%). However, the library is equipped with modern reference services such as online chat, video conferencing, and other virtual tools with 48(40.6%). Majority also indicate that their institutions provides regular electricity supply to support reference services with 58(49.1%) having the least responses. This indicates that the universities in Osun State provide the necessary support to their respective libraries for effective reference services delivery.

Research Question 3: What is the influence of digital competence and institutional support on the effectiveness of reference service delivery in university libraries in Osun State?

Table 4: The influence of digital competence and institutional support on the effectiveness of reference service delivery.

SN	Statements	SA	A	D	SD
1.	The integration of digital tools has improved the efficiency of reference service delivery in my library.	81(68.6%)	30(25.4%)	0(0.0%)	7(5.9%)
2.	The effectiveness of reference services has increased with the availability of adequate digital resources.	67(56.7%)	41(34.7%)	8(6.7%)	2(1.6%)
3.	Digital competence among librarians contributes significantly to the overall effectiveness of reference service delivery.	65(55.0%)	50(42.3%)	3(2.5%)	0(0.0%)
4.	I can meet the information needs of users more effectively due to digital competence.	73(61.8%)	25(21.1%)	12(10.1%)	8(6.7%)
5.	Institutional support (e.g., funding, training, infrastructure) has a positive impact on the overall quality of reference services in my library.	76(64.4%)	30(25.4%)	10(8.4%)	2(1.6%)
6.	Users are satisfied with the digital reference services provided by my library because of institutional support.	60(50.8%)	46(38.9%)	11(9.3%)	1(0.8%)
7.	Adequate institutional support and digital competence have helped to improve my ability to deliver effective reference services.	63(53.3%)	31(26.2%)	23(19.4%)	1(0.8%)
8.	The use of digital tools in reference services has led to quicker response times for user queries.	61(51.6%)	42(35.5%)	10(8.4%)	5(4.2%)
9.	Institutional support has enabled me to offer a broader range of reference	66(55.9%)	30(25.4%)	20(16.9%)	2(1.6%)

services to library users.

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|--|-----------|-----------|----------|---------|
| 10. The quality of reference service delivery is regularly assessed and improved based on user feedback. | 62(52.5%) | 45(38.1%) | 10(8.4%) | 1(0.8%) |
|--|-----------|-----------|----------|---------|

Keys: SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree.

Decision Rule: 0.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.

Table 4 shows the influence of digital competence and institutional support on the effectiveness of reference service delivery in university libraries in Osun State. For instance, majority of respondents agreed that the integration of digital tools has improved the efficiency of reference service delivery in their libraries with 81(68.6%). Similarly, majority of respondents reported that institutional support (e.g., funding, training, infrastructure) has a positive impact on the overall quality of reference services in my library with 76(64.4%). Also, majority indicated that they were able to meet the information needs of users more effectively due to digital competence with 73(61.8%). Respondents are also mainly satisfied with the digital reference services provided by their library because of institutional support with 60(50.8%). Finally, majority agreed that the use of digital tools in reference services has resulted in quicker response times to user queries have the least responses from the respondents. This implies that there is a high and positive influence of digital competence and institutional support on the effectiveness of reference service delivery in university libraries.

Discussion of Findings

The findings of this study revealed that the level of digital competence among reference librarians in university libraries in Osun State was very high, indicating that they were digitally competent.. Such digital competence possessed by the librarians includes “identification and use of computers and other digital devices (laptops, mobile phones, tablets, etc)” and “identification and use of computer software and mobile applications (MS Word, Adobe Acrobat, WPS, etc)”. This is in accordance with Baro, Obaro, and Aduba (2019), who state that digital competence includes proficiency in using computers, operating systems, software applications, and digital devices such as smartphones and tablets. Similarly, Atanda, Owolabi and Ugbala (2021) revealed that digital competence is the ability to use and operate word processors and computers, which constitutes the hallmark of competencies essential for academic librarians in providing effective digital library services. Another digital competence possessed by the librarians is “I can store, manage and organize digital data, information and content” and “I can give understandable instructions to retrieve information from a computer system”. This aligns with the statement of Suthiprapa and Tuamsuk (2022) that with the expansion of the internet, librarians gained an additional mode of communication that is more cost-effective and more available to consumers. Osinulu (2021) revealed that the level of digital literacy competence possessed by library officers in the State and Federal universities was high. The respondents had the required basic skills to use and operate the computers required for library routine and daily tasks.

Furthermore, the findings of this study also revealed the extent institutional support available for reference services delivery in university libraries in Osun State. Such institutional supports include “librarians attend seminars on the provision of effective reference services” and “library personnel are given the opportunity for self-development on the use of virtual reference services”. This is in line with the findings of Ubogu (2019) that training and development support

are essential in boosting the effectiveness of reference librarians in providing reference services in the modern era, particularly with the emergence of digital reference services that require specialised knowledge to navigate efficiently. Similarly, Fasola and Mamudu (2020) affirm that continuous professional development opportunities for reference librarians further enhance their expertise and confidence, leading to more effective service delivery. Other institutional supports for reference services are “there are in-house training programs on the new trends in reference services” and librarians are given adequate time to participate in professional development related to reference services. This is in corroboration with the statement by Andrikopoulou, Rowley and Walton (2022) that ongoing support training ensures that library staff remain proficient in emerging technologies and best practices, thereby enhancing their ability to provide high-quality services. Also, Ifijeh and Iwu-James (2015) stated that institutional support is a strong determinant of service quality in libraries, especially in environments where digital transformation is still in its early stages. Institutional support includes the provision of training opportunities, adequate funding, access to modern infrastructure, and enabling policies that foster professional development.

Finally, the findings of this study revealed the influence of digital competence and institutional support on the effectiveness of reference service delivery in university libraries in Osun State. Such influences include integration of digital tools has improved the efficiency of reference service delivery in my library; institutional support (e.g., funding, training, infrastructure) has a positive impact on the overall quality of reference services in my library and I can meet the information needs of users more effectively due to digital competence. This finding align with the results of Afolabi and Abidoye (2017), who found that the digital competence of librarians significantly influenced the quality of reference services in selected Nigerian university libraries. Similarly, Ajegbomogun and Salaam (2021) concluded in their study that institutional support, particularly in terms of funding and infrastructure, has a positive correlation with effective service delivery in academic libraries.

Conclusion

The advent and integration of digital technologies into library operations have redefined the nature of reference services and repositioned the role of reference librarians to be digitally competent in order to effectively deliver reference services to their users. Traditional reference models are being complemented by digital reference services (DRS), also known as virtual reference services. These include real-time chat, email, video conferencing, and utilising social media platforms to address user queries. This study concluded that the reference librarians in university libraries in Osun State have the required digital competence to render effective reference services to library users. Furthermore, the study also concluded that adequate institutional support is available for effective reference services delivery in university libraries in Osun State. Lastly, it concluded that there is a positive influence of digital competence and institutional support on the effectiveness of reference service delivery. However, this study recommends that reference librarians should be more proactive and stay up-to-date with the emerging technologies related to reference services delivery.

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