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Digital Competence and Reference Service Quality by Librarians in Private Universities, Ogun State, Nigeria

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Abstract

As academic libraries increasingly adopt digital platforms and online service models, the digital skills of librarians have become essential to delivering high-quality, user-centered reference services. In line with this, the study investigates the influence of digital competence on effective reference services delivery among academic libraries in Ogun State private universities. The study adopted a descriptive research survey design of the correlation type. The population of the study consists of one hundred and twenty-three (123) library personnel. Total enumeration method was used for the study. The research instrument was a questionnaire adapted from various studies. Data analysis was done using inferential and descriptive statistics. The study found a high level of reference service quality (Mean = 3.31) but a moderate level of digital competence (Mean = 2.92). The test of hypotheses revealed a weak relationship between digital competence and reference service quality in academic libraries in Ogun State private universities ($r = 0.212$; $p = 0.000$). The study concludes that digital competence of librarians is essential to the overall quality of reference services in these academic libraries. It was recommended that academic libraries of private universities in Ogun State should continue to foster a culture of innovation and user-centred service delivery, incorporating continuous assessment to maintain and enhance service quality.

Keywords: Digital Competence, Information Services, Private Universities, Reader Services, Reference Services.

Introduction

Reference services have numerous chances for academic libraries to fulfill client expectations; nevertheless, achieving this may be challenging due to the requisite leadership styles and digital proficiency of library staff. Reference service is a tailored offering aimed at addressing the distinct information requirements of individual library users, thereby promoting a sense of inclusion and community among patrons. Moreover, reference services are fundamental to academic libraries, essential for addressing the information requirements of students, teachers, and researchers. These services assist users in navigating the vast resources available within the library and outside, ensuring efficient information retrieval and consumption (Sahabi & Efe, 2022).

In the 21st century digital era, academic libraries are seeing substantial alterations in the design and delivery of services. Reference services, essential for facilitating academic research, have progressively transitioned from conventional desk encounters to intricate digital engagements utilizing online platforms, virtual tools, and real-time communication. Adeoye et al. (2021) indicate that numerous libraries and library cooperatives are implementing virtual reference services to enhance support for customers accessing library services and collections remotely via their computers. Technological improvements have led to the rising use of virtual reference services, such as email, chat, and video consultations, providing flexible and convenient help, particularly for remote or distance learning students (Ojukwu, 2020). Consequently, librarians must now exhibit a high degree of digital proficiency to operate efficiently and address customer requirements.

Statement of the Problem

Reference services play a crucial role in academic libraries, serving as instruments to maximize the utilization of the library collection by patrons. Through efficient library services, patrons of academic libraries can readily access the extensive range of information resources available. They have the opportunity to acquire valuable information and knowledge that may be challenging to obtain independently. In the absence of reference services, information users would find it challenging to fully utilize the resources at their disposal. This underscores the necessity for ongoing assessment of reference services and the elements that may influence the quality of those services.

As a result, there has been a growing interest among researchers in identifying methods to enhance the effectiveness of reference services within academic libraries in Nigeria. Nonetheless, most research on reference services has concentrated on publicly funded universities, frequently examining variables such as ICT skills, motivation, and the emotional intelligence of librarians in relation to digital reference services. This study investigates the impact of digital competence on the delivery of effective reference services in academic libraries within private universities in Ogun State, with the objective of providing pertinent solutions and enhancing the quality of reference services in these institutions.

Objectives of the Study

The aim of the study is to investigate the influence of digital competence on effective reference services delivery among academic libraries in Ogun State private universities. The specific objectives are to;

i. identify the level of reference service quality in in academic libraries in Ogun State private universities;

ii. identify the level of digital competence among academic librarians in Ogun State private universities

iii. determine the influence of digital competence on reference service quality in academic libraries in Ogun State private universities;

1.4 Research Questions

The study will be guided by the following research questions;

1. What is the level of reference service quality in academic libraries in Ogun State private universities?
2. What is the level of digital competence among academic librarians in Ogun State private universities

1.5 Hypothesis

The following Hypothesis will be tested as 0.05 level of significance

$H_0$1. There will be no significant influence of digital competence on reference service quality in academic libraries in Ogun State private universities;

Literature Review

The existing literature suggests that librarians have consistently embraced innovative tools at an early stage. To enhance the support provided to remote patrons, reference librarians have progressively adopted advanced hardware, software, and services. When a new piece of technology or software gains widespread usage and accessibility, librarians promptly adopt it (Oladokun, & Kolawole, 2018; Abubakar, 2021). During the 1970s and 1980s, academic libraries established complimentary phone and fax lines for reference inquiries. By the 1990s, the number of reference questions submitted via email to American libraries experienced a significant increase. Since 1987, librarians have initiated the provision of reference information through online platforms. During the late 1990s and early 2000s, numerous libraries began to implement synchronous video chat services. By 1999,

prominent chat programs such as QuestionPoint, LivePerson, and Library Systems & Services (now Tutor.com) had emerged, introducing valuable new features like co-browsing and usage tracking. During this period, there was a notable increase in the use of chat reference, and library consortia collaborated to prolong the availability of virtual reference services (Vogus, 2020; Abubakar, 2021).

The reference service is a vital component of library operations that has garnered significant interest from librarians, as it lies at the core of the profession. The reference service embodies the fundamental principles of librarianship, aiming to assist information seekers in utilizing available information to generate new knowledge with minimal stress. In this regard, researchers in library and information science have shown a strong interest in the integration of skills and elements that can guarantee optimal reference service quality across various library types. The majority of the studies have focused on the impact of digital competence and its components on the quality of reference services.

A researcher investigated the impact of librarians' information and communication technology (ICT) skills on the quality of library services, including reference services. The study further examined which ICT skill serves as the most effective predictor for enhanced library services. Upon reviewing all assumptions, a multiple regression analysis was conducted to forecast the dependent variable based on the independent variables. A comparison of the variables was conducted to assess the extent of each independent variable's contribution to library performance. Enhanced ICT proficiency among librarians is essential for the advancement of library services, as indicated by the regression model, which shows that ICT skills significantly contribute to the enhancement of library services. Furthermore, the beta coefficient indicates that, when compared to the other three ICT abilities, information retrieval skills have made a more significant contribution to enhancing library services. The study concludes that ICT proficiency is essential for

enhancing library services and fostering the professional development of librarians (Ahmed & Sheikh, 2020).

A separate study concentrated on private universities in Nigeria, investigating the Information and Communication Technology (ICT) skills of librarians in relation to service delivery, specifically in the context of Southern Nigeria. The study's findings indicated that librarians at private universities in Southern Nigeria offered their patrons a variety of library services. Aside from programming, the librarians have acquired a strong understanding of ICT fundamentals and demonstrate proficiency in utilizing it for social media, Microsoft Office tasks, Internet searches, and information retrieval. Most librarians acquired their ICT skills independently. The findings indicated that librarians at private universities in Southern Nigeria possessing ICT skills are more effective in delivering enhanced library services (Ilesanmi, 2023).

Recognizing the significance of ICT skills in library services, particularly in enhancing the quality of reference services, researchers have shown interest in the types of digital competence training offered to librarians. In accordance with this, Enakhrire (2019) examined ICT-related training and support programs for information professionals. The findings indicated that access to ICT-related training and support courses for information professionals enhanced the procedures of current library operations and improved user service delivery methods. The current phenomenon of pedagogical learning, which facilitates the generation and harvesting of knowledge among information professionals, underscores the importance of reskilling. Information professionals can utilize their exposure, experience, knowledge, and skills to their benefit while applying and utilizing ICT-related tools and software, irrespective of the circumstances. Embracing lifelong learning is crucial for effectively navigating and sustaining workplace dynamism.

Ahmadu (2019) noted that ICT facilities in tertiary institutions in Kano state played a significant role in enhancing reference and information services. The study indicated that the reference sections of the libraries examined provide a variety of reference and information services, including current awareness service (CAS), selective dissemination of information service (SDI), literature searching service, photocopying service, display of new arrivals, user education service, indexing service, abstracting services, referral services, printing services, library orientation service, group presentation service (slide display), video display service, reference digital desk service, emailing service, and uploading service.

The findings are corroborated by Ikeagwuani et al. (2022), who also observed that ICT facilities in Nigerian academic libraries significantly influence reference services, particularly when staff receive adequate training and are motivated to pursue ongoing development opportunities. The reference service has historically been essential in the provision of services, particularly within academic libraries. The advancement of ICT has significantly transformed the concept of Reference Services in Nigeria. This study investigates the influence of information and communication technology on the delivery of reference services within academic libraries in Nigeria. The study indicates that libraries offer ICT facilities, including computers, servers, UPS, and internet access, to a certain degree. However, it appears that some library staff may lack the motivation to utilize these resources effectively in delivering essential reference services to library patrons. Recommendations have been made to enhance the service by offering training and seminars for the library staff.

Digital competence encompasses more than just ICT skills; it also incorporates digital literacy and information literacy skills. Researchers have examined the impact of digital literacy skills on the quality of reference services. Chukwuemeka and Israel (2020) identified a low level of digital literacy among librarians, as demonstrated by their

restricted skills in Boolean reasoning, website evaluation, and information searching and communication online. In a similar vein, Sinha and Ugwulebo (2024) identified a low level of digital literacy skills among librarians in colleges of education in Nigeria. The research indicated that participants assessed their competencies as lowest in executing searches with Boolean operators and in utilizing suitable presentation software for conveying information.

The study indicates that library authorities need to enhance their initiatives to promote awareness of digital literacy skills, emphasizing its importance and relevance to service delivery, particularly in light of the study's findings regarding the minimal correlation between librarians' digital literacy competencies and service delivery outcomes. The findings of the study indicate a minimal correlation between librarians' digital literacy skills and service provision. This suggests that library authorities should enhance their initiatives to raise public awareness regarding digital literacy competencies, encompassing their definition, application, and acquisition. This will enable librarians to perform their responsibilities with enhanced skill and effectiveness.
A recent study has been conducted This situation arises from the lack of necessary facilities to implement information and digital literacy skills, coupled with the failure of the regulatory bodies, specifically the Librarians' Registration Council of Nigeria, to oversee the curriculum related to digital literacy skills. Despite the challenges associated with acquiring digital literacy skills, the study examining the information literacy competence of librarians in South West Nigerian university libraries indicates that these skills are instrumental in enhancing productivity, effectiveness, and efficiency in the workplace (Ojedokun, 2014).
The author recommended that librarians undergo consistent training and retraining via development workshops, maintain regular access to the Internet, and that library school curricula be updated to incorporate instruction in digital literacy with an emphasis on practical applications. This resembles the submission from a researcher who examined the

digital literacy competencies of librarians employed in university libraries within Edo and Delta States, Nigeria, during the twenty-first century. She identified that the primary digital literacy skills of librarians include email communication, social networking, the use of personal digital assistants, mobile phone utilization, and Internet browsing.

Furthermore, Rabatseta et al. (2021) discovered that while librarians utilize digital literacy skills to a limited extent, they acquired these skills through formal education, experimentation, IT programs, and assistance from colleagues. The author recommended that university library management provide training for librarians to help them remain updated on digital skills, and that hiring practices should place greater emphasis on the competency in digital skills. However, with the significant integration of ICTs into academic libraries, having strong digital literacy skills is essential. Khan (2020) previously supported this perspective by citing the recent dominance of technological advancements worldwide. The significant impact of ICTs on our methods of communication, interaction, reading, and writing has been well documented (Fakunle, 2022).

Igbo and Imo (2020) observe that individuals, possessing the ability to adapt to various environmental conditions, have developed and acquired specific tactics or skills to integrate and operate effectively in the digital era. Interestingly, a limited number of individuals have the necessary skills to effectively utilize the digital collection for their diverse information needs. Librarians must enhance their digital literacy skills in their professional roles more than ever in this digital age. The author asserts that digital literacy will significantly assist librarians in enhancing their skills, which can contribute to their economic status and elevate their overall job performance and quality of life. These skills can facilitate advancement in their roles and contribute to their career development. With these skills, librarians will be better prepared for resource sharing, social networking, internet navigation, instant messaging, blogging, and a variety of other digital activities, among others.

Researchers including Mushi et al. (2023) have delineated the essential information and communication technology (ICT) skills and knowledge required for librarians to effectively engage in embedded librarianship. However, a significant number of librarians, especially in Africa, do not possess the ICT expertise and understanding required to function effectively in the digital information age.

Technical skills are essential for attaining efficiency and productivity, and they play a crucial role in showcasing competence across various socioeconomic contexts. The challenge lies in the fact that there are numerous conceptualizations of hard skills, which vary based on the context in which they are examined. Numerous sectors have clearly outlined the essential hard skills necessary for achieving success. Nonetheless, this does not apply to the Information and Knowledge Management (IKM) field because of its multidisciplinary characteristics. Recognizing the essential hard skills required is crucial as it promotes the growth and progression of a particular profession. The absence of a well-defined set of hard skills hinders IKM's ability to grow and position itself at the forefront of the Fourth Industrial Revolution. As a result, IKM will not sufficiently support socioeconomic development.

This research focused on identifying particular hard skills that are pertinent to modern IKM practitioners, particularly within South Africa and comparable contexts. The research employed a Delphi study methodology, wherein experts contributed their insights through two rounds of data collection. A total of ninety-seven skills were identified; however, a consensus was achieved on 23 of them. This study acts as a foundational element in developing a framework designed to assist IKM practitioners in achieving success. The framework will serve as a guide for students in recognizing the essential hard skills that should be developed early in their educational journey. Additionally, the framework serves as a valuable resource for curriculum development.

Theoretical Framework

This study adopts the LIBQUAL+ model developed by the Association of Research Libraries (ARL) to evaluate library service quality across three primary dimensions: Affect of Service, Information Control, and Library as a Place. In addition, the study employs the Australian Digital Literacy Skills Framework and UNESCO's Digital Literacy Global Framework to conceptualize digital competence into measurable indicators such as data literacy, communication, collaboration, content creation, safety, and problem-solving.

Methodology

The study adopted a descriptive research survey design of the correlation type. The population of the study consists of all library personnel of private universities in Ogun state, Nigeria. According to records from the National University Commission, private university libraries in Ogun State include; Babcock University, Covenant University, Bells University, Crawford University, Crescent University, Chrisland University, South Western University, Mountain Top University, McPhersons University, Hallmark University, and Christoper University. The population of Librarians in the tertiary institution libraries is 123. The sample size of this study is one hundred and twenty-three (123) library personnel. Total enumeration method was used for the study. The instrument for this study was a questionnaire adapted from various studies. The questionnaire instrument is structured into four (4) sections; the sections dealt with the demographic information and the various variables of the study.

The data collected was analysed using descriptive statistics such as frequency counts, percentages, means and standard deviation as well as inferential statistics. All the analyses were carried out with the aid of IBM Statistic Package for the Social Sciences Statistics. Research questions were analysed using descriptive analysis while the hypothesis was analysed using regression analysis.

Results and Discussion

The researcher administered one hundred and twenty-three (123) copies of the questionnaire to the study respondents. However, one hundred and twenty (120) were returned. Among the returned questionnaires, only one hundred and fifteen (115) of them were deemed usable. This is because some of the returned questionnaires were incomplete or improperly filled which rendered them unusable. Thus, the survey had a relatively high response rate of 93.5% . Furthermore, the researcher has set the following decision rule for the descriptive analysis: 0: 0.0 - 1.50 = very low; 1.51 - 2.49 – low; 2.50 -3.00 = Moderate; 3.01 – 3.59 = High, 3.60 -4.00 = Very high. Hypothesis will be test at 0.05 level of significance.

2 Demographic Characteristics of The Respondents

Table 1: Demographic Characteristics of The Respondents

Name	Category	Frequency	Percentage
Gender	Female	67	58
	Male	48	42
	Total	115	100
Highest	ND/HND	12	10
Educational	BSC/BLIS	54	38
qualification	MSC/MLIS	41	25
	M.Phil	4	3
	PhD	6	5
	Total	115	100
Age	25-30 years	12	10
	31-35 years	12	10
	36-40 years	38	33
	41-49 years	32	28
	50-59 years	17	15
	60 and above	5	4
	Total	115	100
Year of Work	1- 5 years	23	20
Experience	6-10years	32	28
	11-15 years	32	28

	16-20years	24	21
	21-25 years	13	11
	above 25 years	23	13
	Total	**115**	100

Source: Fieldwork, 2025

Table 4.2 provides an overview of the demographic characteristics of the respondents. In terms of gender, the majority of respondents are female, comprising 58% of the sample, while males account for 42% of the total respondents). Regarding the highest educational qualification, the largest proportion of respondents, 38%, hold a BSC/BLIS degree (54 respondents). This is followed by 25% who possess an MSC/MLIS (41 respondents), while 10% of respondents have an ND/HND (12 respondents). A smaller percentage hold advanced degree, with 3% having an M.Phil (4 respondents) and 5% possessing a PhD (6 respondents).

In terms of age, most respondents (33%) fall within the 36-40 years age group followed by the 41-49 years category, which represents 28% of the sample. Meanwhile, 10% of respondents are aged 25-30 years, and another 10% are between 31-35 years. Those aged 50-59 years make up 15% of the sample, while 4% are 60 years and above.

With respect to years of work experience, 28% of respondents have 6-10 years and another 28% have 11-15 years of experience. Additionally, 20% have worked for 1-5 years, and 21% have 16-20 years of experience. A smaller proportion of respondents, 11%, have 21-25 years of experience, while 13% have more than 25 years of experience.

Research Questions

Research Question One: What is the Level of Reference Service Quality in Academic Libraries in Ogun State Private Universities?

Table 2: Level of Reference Service Quality in Academic Libraries in Ogun State Private Universities

Affect of Service	**Strongly Agree**	**Agree**	**Disagree**	**Strongly Disagree**	**Mean**
It is mandatory for library staff in my library to instil confidence in users	46 (40.0%)	39 (33.9%)	30 (26.1%)	- ---	3.14
The library has enough staff so we can pay individual attention to staff	33 (28.7%)	48 (41.7%)	32 (27.8%)	2 (1.7%)	2.97
Library staff in my library are trained to be consistently courteous to all patrons	28 (24.3%)	64 (55.7%)	15 (13.0%)	8 (7.0%)	2.97
Only library personnel who have demonstrated competence are posted to the reference section	44 (38.3%)	53 (46.1%)	12 (10.4%)	6 (5.2%)	3.17
The library manager deliberate selects even temper employees to work at the reference section	35 (30.4%)	58 (50.4%)	16 (13.9%)	6 (5.2%)	3.06
Average Mean					3.06
Information Control	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean
My library provides remote access to electronic resources	43 (37.4%)	58 (50.4%)	10 (8.7%)	4 (3.5%)	3.21
My library has a website which helps user to locate information on their own	48 (41.7%)	61 (53.0%)	6 (5.2%)	- -- -	3.36

My library has acquired enough print and digital resources to meet the needs of the users	53 (46.1%)	54 (47.0%)	6 (5.2%)	2 (1.7%)	3.37
My library has invested in searchable databases for effective reference services	31 (27.0%)	73 (63.5%)	11 (9.6%)	--	3.17
My library has created information retrieval tools such as indexes, bibliography reading list etc that allow users find information easily	35 (30.4%)	70 (60.9%)	10 (8.7%)	--	3.22
Average Mean					3.27
Library as a Place					
Library has space that inspires study and learning	77 (67.0%)	27 (23.5%)	11 (9.6%)	---	3.57
Library has quiet space for individual work	76 (66.1%)	28 (24.3%)	9 (7.8%)	2 (1.7%)	3.54
Library has comfortable and inviting location	81 (70.4%)	26 (22.6%)	8 (7.0%)	---	3.63
Library is secure and peaceful place for study, learning and research	77 (67.0%)	25 (21.7%)	11 (9.6%)	2 (1.7%)	3.53
Library has space for group learning and group study	88 (76.5%)	18 (15.7%)	9 (7.8%)	---	3.68
Average Mean					3.59
Aggregate Mean					3.31

Source: Fieldwork, 2024

Decision rule: 0.0 - 1.50 = very low; 1.51 - 2.49 – low; 2.50 -3.00 = Moderate; 3.01 – 3.59 = High, 3.60 -4.00 = Very high

Table 2 presents the analysis of the Level of Reference Service Quality in academic libraries in private universities across Ogun State. The assessment of reference service quality is categorized under three dimensions: Affect of Service, Information Control, and Library as a Place.

Affect of Service is measured by various factors related to the behavior and attitude of library staff. The responses show that 40.0% of respondents strongly agreed that it is mandatory for library staff to instill confidence in users, while 33.9% agreed. However, 26.1% disagreed, resulting in a mean score of 3.14. Regarding whether the library has enough staff to pay individual attention, 28.7% strongly agreed, 41.7% agreed, 27.8% disagreed, and 1.7% strongly disagreed, with a mean score of 2.97. When asked if library staff are consistently courteous to patrons, 24.3% strongly agreed, 55.7% agreed, 13.0% disagreed, and 7.0% strongly disagreed, yielding a mean score of 2.97. Additionally, 38.3% strongly agreed that only competent staff are posted to the reference section, while 46.1% agreed, 10.4% disagreed, and 5.2% strongly disagreed, resulting in a mean score of 3.17. Finally, 30.4% strongly agreed that the library manager selects even-tempered employees for the reference section, 50.4% agreed, 13.9% disagreed, and 5.2% strongly disagreed, with a mean score of 3.06. The average mean score for this dimension is 3.06.

Information Control measures the availability and accessibility of electronic resources and information tools. The data reveals that 37.4% of respondents strongly agreed that their library provides remote access to electronic resources, 50.4% agreed, 8.7% disagreed, and 3.5% strongly disagreed, resulting in a mean score of 3.21. Additionally, 41.7% strongly agreed that their library has a website to help users locate information, and 53.0% agreed, with a mean score of 3.36. Regarding the acquisition of print and digital resources, 46.1% strongly agreed, 47.0% agreed, 5.2% disagreed, and 1.7% strongly disagreed, leading to a mean score of 3.37. When asked about searchable databases, 27.0% strongly agreed, 63.5%

agreed, 9.6% disagreed, and no respondents strongly disagreed, resulting in a mean score of 3.17. Additionally, 30.4% strongly agreed that the library has created information retrieval tools, 60.9% agreed, and 8.7% disagreed, resulting in a mean score of 3.22. The average mean score for this dimension is 3.27.

Library as a Place assesses the physical environment and study spaces. The data shows that 67.0% of respondents strongly agreed that their library has space that inspires study and learning, 23.5% agreed, and 9.6% disagreed, resulting in a mean score of 3.57. Regarding quiet spaces for individual work, 66.1% strongly agreed, 24.3% agreed, 7.8% disagreed, and 1.7% strongly disagreed, leading to a mean score of 3.54. Furthermore, 70.4% strongly agreed that the library is a comfortable and inviting location, 22.6% agreed, and 7.0% disagreed, yielding a mean score of 3.63. In terms of security, 67.0% strongly agreed that the library is a secure and peaceful place for study, 21.7% agreed, 9.6% disagreed, and 1.7% strongly disagreed, resulting in a mean score of 3.53. Lastly, 76.5% strongly agreed that the library has space for group learning, 15.7% agreed, and 7.8% disagreed, leading to a mean score of 3.68. The average mean score for this dimension is 3.59.

Overall, the aggregate mean score for the level of reference service quality is 3.31, indicating a generally high level of satisfaction with the quality of reference services in academic libraries in private universities in Ogun State.

Table 3 Level of Digital Competence Among Academic Librarians In Ogun State Private Universities

Device and Software skill	**Very high extent**	**High Extent**	**Low Extent**	**Very Low Extent**	Mean
I can identify and use computer and other digital devices (laptops, mobile phones, tablets etc),	67 (58.3%)	32 (27.8%)	11 (9.6%)	5 (4.3%)	3.73
I can identify and use computer	56	35	18	6	3.22

software and mobile applications (MS Word, Adobe Acrobat, WPS, etc),	(48.7%)	(30.4%)	(15.7%)	(5.2%)	
I can identify data, information and digital content needed to operate software tools and technologies.	29 (25.2%)	29 (25.2%)	36 (31.3%)	21 (18.3%)	2.57
Average Mean					3.17
Information and data literacy	Very high extent	High Extent	Low Extent	Very Low Extent	**Mean**
I can clearly state my information needs,	29 (25.2%)	17 (14.8%)	41 (35.7%)	28 (24.3%)	2.41
I can search for data, information and content in digital environments,	52 (45.2%)	38 (33.0%)	18 (15.7%)	7 (6.1%)	3.17
I can analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content.	32 (27.8%)	14 (12.2%)	32 (27.8%)	37 (32.2%)	2.35
I can store, manage and organise digital data, information and content.	73 (63.5%)	23 (20.0%)	19 (16.5%)	---	3.46
Average Mean					2.85
Digital Content Creation					
I can create and edit digital contents.	44 (38.3%)	36 (31.3%)	25 (21.7%)	8 (7.0%)	3.06
I can use existing information to create new useful and meaningful information	70 (60.9%)	14 (12.2%)	23 (20.0%)	6 (5.2%)	3.34
I can give understandable instructions to retrieve information from a computer system.	36 (31.3%)	38 (33.0%)	31 (27.0%)	10 (8.7%)	2.93

I understand how copyright and licenses apply to data, information and digital content.	31 (27.0%)	31 (27.0%)	37 (32.2%)	16 (13.9%)	2.66
Average Mean					3.00
Digital Safety					
I am aware of how to recognize phishing emails and avoid them.	30 (26.1%)	17 (14.8%)	52 (45.2%)	14 (12.2%)	2.60
I know how to configure privacy settings on social media platforms.	12 (10.4%)	58 (50.4%)	28 (24.3%)	17 (14.8%)	2.57
I use antivirus software to protect my devices from malware.	15 (13.0%)	66 (57.4%)	22 (19.1%)	12 (10.4%)	2.73
I understand the importance of backing up my data regularly	30 (26.1%)	60 (52.2%)	19 (16.5%)	6 (5.2%)	2.99
I am cautious about the information I share online	20 (17.4%)	74 (64.3%)	11 (9.7%)	--	2.99
Average Mean					2.78
Problem Solving					
I can troubleshoot basic technical issues with my devices.	22 (19.1%)	47 (40.9%)	31 (27.0%)	15 (13.0%)	2.66
I know where to find reliable online resources for solving technical problems.	24 (20.9%)	64 (55.7%)	15 (13.0%)	12 (10.4%)	2.86
I am comfortable using online forums and communities to seek help for digital issues.	23 (20.0%)	61 (53.0%)	22 (19.1%)	9 (7.8%)	2.85
I can effectively use search engines to find solutions to technical problems.	19 (16.5%)	74 (64.3%)	14 (12.2%)	8 (7.0%)	2.90
I can analyze a problem and determine if it requires professional technical support.	18 (15.7%)	62 (53.9%)	27 (23.5%)	8 (7.0%)	2.78
Average Mean					2.81

Aggregate Mean	2.92

Source: Fieldwork, 2024
Decision rule: 0.0 - 1.50 = very low; 1.51 - 2.49 – low; 2.50 -3.00 = Moderate; 3.01 – 3.59 = High; 3.60 -4.00 = Very high

Table 4.5 presents the analysis of the Level of Digital Competence Among Academic Librarians in Ogun State Private Universities. Digital competence is measured under metrics such as Device and Software Skill, Information and Data Literacy, Digital Content Creation, Safety, and Problem Solving. The responses under the dimension Device and Software Skill show that The first metric, "I can clearly state my information needs," reveals that 25.2% of respondents strongly agreed, while 14.8% agreed. However, a significant portion, 35.7%, disagreed with this statement, and 24.3% strongly disagreed, resulting in a mean score of 2.41. This indicates that many librarians struggle to articulate their information needs effectively, highlighting an area that may require further training and development.

In contrast, the second metric, "I can search for data, information, and content in digital environments," demonstrates a more positive outcome. Here, 45.2% of respondents rated their abilities to a very high extent, and 33.0% rated it high. Only 15.7% rated it low, and 6.1% rated it very low, leading to a mean score of 3.17. This suggests that academic librarians generally feel competent in navigating digital environments to locate necessary information. The third metric, "I can analyze, compare, and critically evaluate the credibility and reliability of sources of data, information, and digital content," reveals a more concerning trend. While 27.8% of respondents rated their abilities to a very high extent and 12.2% rated it high, a substantial 27.8% rated it low, and 32.2% rated it very low, resulting in a mean score of 2.35. This indicates that many librarians may lack confidence or skills in critically assessing the reliability of information sources.

Lastly, the metric "I can store, manage, and organize digital data, information, and content" shows a stronger performance. An impressive 63.5% of respondents rated their abilities to a very high extent, with 20.0% rating it high. Only 16.5% rated it low, and there were no responses indicating a very low extent. The mean score for this metric is 3.46, highlighting librarians' strengths in managing and organizing digital information effectively. Overall, the average mean for the Information and Data Literacy dimension is 2.85, suggesting a moderate level of proficiency among respondents. While academic librarians demonstrate solid skills in searching for and managing digital content, there are significant challenges in articulating information needs and evaluating the credibility of information sources, indicating areas where additional training and support may be beneficial.

In the dimension of information and data literacy, the responses for I can clearly state my information needs show that 25.2% of the respondents rated this skill to a very high extent, 14.8% rated it high, while 35.7% rated it low, and 24.3% rated it very low, leading to a mean score of 2.41. For I can search for data, information, and content in digital environments, 45.2% of respondents rated themselves very high, 33.0% rated high, while 15.7% rated low, and 6.1% rated very low, resulting in a mean score of 3.17. Under I can analyze, compare, and critically evaluate the credibility and reliability of sources of data, information, and digital content, 27.8% rated their ability very high, 12.2% rated high, while 27.8% rated low, and 32.2% rated very low. The mean score for this metric is 2.35.

For I can store, manage, and organize digital data, information, and content, 63.5% rated themselves very high, 20.0% rated high, while 16.5% rated low, with no one indicating a very low extent. This resulted in a mean score of 3.46. The average mean for the Information and Data Literacy dimension is 2.85, suggesting that while the respondents demonstrate moderate proficiency in searching for, managing, and organizing digital data, there is a lower ability to clearly state information needs and evaluate the credibility of sources.

In the Digital Content Creation dimension, the responses for I can create and edit digital contents show that 38.3% of respondents indicated they could do this to a very high extent, while 31.3% rated their ability as high. However, 21.7% said their extent was low, and 7.0% rated it as very low. The mean score for this metric is 3.06. For I can use existing information to create new useful and meaningful information, 60.9% of respondents rated their ability to a very high extent, while 12.2% rated it high. Conversely, 20.0% rated it low, and 5.2% very low, leading to a mean score of 3.34. Under the metric I can give understandable instructions to retrieve information from a computer system, 31.3% of respondents rated themselves very high, while 33.0% rated high. However, 27.0% indicated a low extent, and 8.7% rated very low, resulting in a mean score of 2.93.

Regarding I understand how copyright and licenses apply to data, information, and digital content, 27.0% of respondents rated their understanding as very high, and another 27.0% rated it high. However, 32.2% rated their extent as low, and 13.9% very low, leading to a mean score of 2.66. The average mean for Digital Content Creation is 3.00, suggesting a moderate level of competence in this area. Respondents generally show stronger skills in using information to create new content and slightly lower competence in understanding copyright and licenses.

The dimension of Safety revealed that the responses for I am aware of how to recognize phishing emails and avoid them show that 26.1% of respondents rated themselves as having this skill to a very high extent, while 14.8% rated it high. However, 45.2% indicated a low extent, and 12.2% rated it very low, with a mean score of 2.60. For I know how to configure privacy settings on social media platforms, 10.4% of respondents rated themselves very high, 50.4% rated high, while 24.3% rated low, and 14.8% rated very low. The mean score for this metric is 2.57.

Under I use antivirus software to protect my devices from malware, 13.0% rated their ability very high, 57.4% rated high, 19.1% rated low, and 10.4% rated very low. The mean score is 2.73. For I understand the importance of backing up my data regularly, 26.1% of respondents rated their understanding very high, 52.2% rated high, while 16.5% rated low, and 5.2% rated very low. The mean score is 2.99. Regarding I am cautious about the information I share online, 17.4% rated their caution very high, 64.3% rated it high, and 9.7% rated it low. This metric has a mean score of 2.99. The average mean for the Safety dimension is 2.78, indicating that while many respondents exhibit moderate awareness and precaution in areas like data backup and online information sharing, there is a notable need for improvement in recognizing phishing emails and configuring privacy settings.

Finally, the problem-solving dimension, the responses for I can troubleshoot basic technical issues with my devices show that 19.1% of respondents rated themselves as having this skill to a very high extent, while 40.9% rated it high. However, 27.0% indicated a low extent, and 13.0% rated it very low, with a mean score of 2.66. For I know where to find reliable online resources for solving technical problems, 20.9% of respondents rated themselves very high, 55.7% rated high, while 13.0% rated low, and 10.4% rated very low. The mean score for this metric is 2.86. Under I am comfortable using online forums and communities to seek help for digital issues, 20.0% rated their ability very high, 53.0% rated high, 19.1% rated low, and 7.8% rated very low. The mean score is 2.85.

For I can effectively use search engines to find solutions to technical problems, 16.5% of respondents rated their ability very high, 64.3% rated high, while 12.2% rated low, and 7.0% rated very low. The mean score is 2.90. Regarding I can analyse a problem and determine if it requires professional technical support, 15.7% rated their analytical ability very high, 53.9% rated it high, 23.5% rated it low, and 7.0% rated very low. This metric has a mean score of 2.78. The average mean for the Problem-Solving dimension is 2.81, indicating that while the respondents demonstrate a moderate ability to find solutions using

online resources, forums, and search engines, there is room for improvement in their ability to troubleshoot and analyze technical issues independently.

The overall aggregate mean for digital competence is 2.92, indicating a moderate level of digital competence among academic librarians in Ogun State private universities. The areas that show room for improvement include information literacy, safety, and problem-solving skills.

Presentation of Hypothesis

$H_0$1 There will be no significant influence of digital competence on reference service quality in academic libraries in Ogun State private universities

Table 4.13 Influence of Digital Competence on Reference Service Quality in Academic Libraries in Ogun State Private Universities

Variable	Mean	Std. Dev	N	R	p value	Remark
Digital Competence	58.3043	10.52164	115	.212*	.023	significant
Reference Service Quality	80.7739	15.89387				

The value of Pearson's correlation coefficient (r) of 0.212 suggests a positive but relatively weak correlation between digital competence and reference service quality in academic libraries in Ogun State private universities. The p-value of .023 is less than the typical significance level of 0.05. This indicates that the correlation between digital competence and reference service quality in academic libraries in Ogun State private universities. Therefore, the correlation between digital competence and reference service quality is statistically significant. This means that the observed correlation is unlikely to be due to random chance. Specifically, the positive but relatively weak and statistically significant correlation suggests that, in this study, there is a modest positive relationship between the

level of digital competence and reference service quality. This indicates that higher levels of digital competence are associated with improved reference service quality.

Conclusion

Digital competence has become indispensable for the effective delivery of reference services in Nigerian academic libraries. This study confirms that without adequate training and system support, librarians may struggle to meet evolving user expectations. Institutional policies that recognize and enhance digital skills will contribute significantly to service quality and user satisfaction.

Recommendations

Based on the findings of this study, the following recommendations are considered relevant;

1. Since the study found a generally high level of reference service quality, it is recommended that academic libraries continue to foster a culture of innovation and user-centered service delivery, incorporating continuous assessment to maintain and enhance service quality.
2. Given the moderate digital competence observed, especially in information literacy, safety, and problem-solving skills, training and development programs should be prioritized to elevate these areas. Workshops and certifications on digital literacy could be implemented to ensure librarians remain proficient in these crucial skills.
3. Although digital competence has a weaker influence, its statistical significance highlights the need for continuous technological capacity building. Librarians should be encouraged to participate in upskilling programs to improve their digital capabilities, ultimately enhancing reference services.

Implications for Practice

The study underscores the importance of investing in continuous digital literacy training and infrastructure development in academic libraries. Library leadership must prioritize digital competence development through formal training, mentorship, and inclusion of ICT skills in performance appraisal systems. Furthermore, collaborations with IT departments and user education services will be crucial in creating responsive and adaptive reference services.

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