



THE INFLUENCE OF PROFESSIONAL LIBRARIANS' DIGITAL LITERACY SKILLS ON THE UTILIZATION OF ONLINE RESOURCES IN FEDERAL UNIVERSITIES ACROSS NORTH CENTRAL NIGERIA

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Abstract

This study investigated influence of professional librarians' digital information literacy skills on the utilization of online resources in federal universities across North Central Nigeria. Specifically, the study sought to identify the types of Online Resources available, assess librarians' digital literacy skills, examine the extent of digital platform utilization, and determine the challenges affecting effective use. An explanatory correlation research design was adopted. The population comprised 493 registered professional librarians in federal universities across North Central Nigeria, from which 316 valid respondents were selected using a survey approach. Data were collected through structured online questionnaires and analyzed using descriptive statistics (means) and inferential statistics (Pearson's Product Moment Correlation). Findings revealed that WhatsApp (mean=3.65), Zoom (mean=3.57), and Twitter (mean=3.49) were the most utilized platforms (grand mean=3.35). Librarians demonstrated competence in social networking (mean=3.12), computer fluency (mean=2.97), electronic mailing (mean=2.89), and internet search skills (mean=2.85), with an overall literacy mean of 2.58. Utilization of Online Resources for service delivery was high, particularly in online user education (mean=3.54) and cloud-based collaboration (mean=3.45). Major challenges included internet instability (mean=3.29), erratic power supply (mean=3.10), and inadequate ICT infrastructure (mean=3.08). A very strong positive relationship was found between digital literacy skills and digital platform use ($N=316$; $r=0.990$; $p<0.01$). Theoretically, the findings validate the Technology Acceptance Model and Digital Literacy Theory. The study concluded that improved digital literacy enhances platform utilization and recommended improved ICT infrastructure, stable internet access, continuous training, and increased institutional support.

Keywords: Information Literacy, Digital Knowledge, IT Skills, Social Networking, Professional Librarians

Introduction

The rapid growth of digital technologies has significantly transformed information management and service delivery in academic libraries worldwide. Academic libraries are no longer limited to print collections; instead, they now rely heavily on Online Resources such as online databases, institutional repositories, electronic journals, library management systems, and virtual reference tools. These platforms have expanded access to scholarly information and improved the efficiency of teaching, learning, and research. In this digital environment, professional librarians play a critical role as facilitators of information access and guides to digital knowledge resources (Shaikh, 2019).

Digital literacy has therefore become a core competency for professional librarians. Digital literacy goes beyond basic computer skills to include the ability to locate, evaluate, manage, and ethically use digital information across various platforms. Librarians with strong digital literacy skills are better positioned to support users, manage online resources, and adapt to emerging technologies. Studies from developed countries show that digitally skilled librarians contribute significantly to increased utilization of online resources and improved user satisfaction in academic institutions (Zhu et al., 2020).

Globally, academic libraries make use of diverse Online Resources to deliver information services. These include subscription-based databases, open-access resources, e-books, digital archives, learning management systems, and social media tools for library outreach. The availability and effective use of these platforms depend largely on institutional support and the digital competence of librarians. Perrine (2020) observed that where librarians are adequately trained and supported, Online Resources are more effectively utilized to meet the information needs of users.

In the Nigerian context, particularly within federal universities, significant investments have been made in digital information resources through initiatives such as electronic libraries and consortium-based database subscriptions. However, the extent to which these resources are fully utilized remains uneven. Research indicates that while Online Resources may be available, their effective use is often constrained by limited digital skills among librarians, inadequate training opportunities, and infrastructural challenges (Buba et al., 2021). This situation raises concerns about the optimal use of online resources provided at considerable cost to universities.

Professional librarians in North Central Nigeria face additional challenges that may affect their utilization of Online Resources. These include unstable internet connectivity, irregular power supply, limited access to continuous professional development, and resistance to technological change. Adetayo and Williams (2021) noted that such challenges can reduce librarians' confidence in using digital tools and limit their ability to provide effective electronic information services to users. As a result, students and researchers may not fully benefit from available online resources.

Despite these challenges, the role of professional librarians remains central to the success of digital library services. Librarians are expected to support users in navigating Online Resources, promote awareness of online resources, and provide training on information literacy. Shaikh (2019) emphasized that improving librarians' digital literacy skills is essential for enhancing access to online resources and sustaining the relevance of academic libraries in the digital age.

Against this background, this study examines the influence of professional librarians' digital literacy skills on the utilization of online resources in federal universities across North Central Nigeria. By identifying the types of Online Resources available, assessing librarians' digital information literacy skills, examining the extent of platform utilization, and identifying challenges faced in digital service delivery, the study seeks to provide empirical evidence that can inform policy, training programmes, and strategic planning. Ultimately, the study aims to contribute to strengthening academic library services and improving access to digital information resources within Nigerian universities.

Literature Review

The transformation of academic libraries from print-based systems to digitally driven environments has led to the widespread adoption of various Online Resources for information service delivery. These platforms include online databases, electronic journals, institutional repositories, library websites, learning management systems, and social media tools. Bhati and Kumar (2020) identified Online Resources such as WhatsApp, Facebook, YouTube, Zoom, Skype, and institutional digital repositories as commonly used tools for communication, information dissemination, and user engagement in academic libraries. Similarly, Brown (2020) reported that libraries in developed countries have expanded their "digital doors" by investing in electronic databases and online access platforms to meet users' evolving information needs.

In academic institutions, Online Resources are used not only to provide access to scholarly resources but also to support reference services, user education, and research collaboration. Perrine (2020) observed a significant increase in the use of online databases following the shift toward digital academic environments, emphasizing that libraries increasingly rely on Online Resources to sustain teaching and research activities. These developments indicate that the availability of Online Resources is now a fundamental requirement for effective academic library service delivery.

Digital information literacy is a critical competence required for effective use of Online Resources in academic libraries. It involves the ability to locate, evaluate, manage, and ethically use information in digital formats. According to Buba et al. (2021), digital information literacy enables librarians to critically assess online information sources and guide users in accessing reliable and relevant scholarly content. Abdullahi et al. (2020) further noted that advancements in information and communication technology (ICT) have significantly changed the behavior of information seekers, thereby increasing the demand for digitally skilled information professionals.

Studies have consistently shown that professional librarians with strong digital literacy skills are better positioned to manage electronic resources, support research activities, and provide effective user education. Adil (2020) emphasized that librarians must possess skills in navigating Online Resources, organizing electronic resources, delivering online information literacy programmes, and managing institutional repositories. Without these

competencies, the presence of Online Resources alone cannot translate into effective utilization of online resources.

The extent to which Online Resources are utilized in academic libraries largely depends on librarians' digital literacy skills and institutional support. Shaikh (2019) highlighted that ICT applications in libraries have expanded service delivery beyond physical spaces, enabling librarians to provide services such as online reference, digital resource access, and virtual user support. In developed academic environments, librarians actively use Online Resources to promote electronic resources, communicate with users, and support teaching and research activities.

In developing countries, however, the utilization of Online Resources by professional librarians remains inconsistent. While platforms such as social media, library websites, and online databases are available, their full potential is often underutilized. Perrine (2020) linked increased utilization of online resources to improved librarian competence and institutional commitment to digital service delivery. This suggests that utilization is not merely a function of availability but also of skills, awareness, and strategic use by librarians.

Despite the growing importance of Online Resources, professional librarians face several challenges that hinder their effective utilization. Infrastructure-related issues such as unstable internet connectivity, erratic power supply, and inadequate ICT facilities remain persistent problems, particularly in developing countries. Ali and Gatiti (2020) identified these challenges as major barriers to effective digital library services in African universities. In addition, limited access to continuous professional development opportunities further restricts librarians' ability to update their digital skills.

Resistance to technological change and lack of institutional support also affect librarians' confidence and willingness to fully embrace Online Resources. Shaikh (2019) emphasized the need for regular training and capacity-building programmes to enable librarians to cope with emerging technologies. Without addressing these challenges, academic libraries risk underutilizing valuable digital resources and failing to meet the information needs of their users.

The role of professional librarians has evolved from custodians of print materials to facilitators of digital knowledge access. Librarians are now expected to create awareness of available electronic resources, support users in navigating Online Resources, and provide timely and reliable information services. Patil and Chingath (2020) demonstrated that effective use of Online Resources significantly enhances information dissemination and user satisfaction. Their study highlighted how digital tools can be leveraged to deliver accurate and up-to-date information efficiently.

This shift underscores the importance of aligning librarians' digital literacy skills with institutional digital goals. As Abdullahi, Buba, and Mohammed (2020) observed, the changing information environment requires librarians to continuously adapt and re-strategize their service delivery approaches. Online Resources, when effectively utilized, can strengthen academic libraries' relevance and impact in higher education.

Although existing studies have examined digital literacy, ICT use, and Online Resources in libraries, most focus on developed countries or general academic settings. Limited empirical evidence exists on how professional librarians' digital literacy skills influence the utilization of online resources in federal universities in Nigeria. Furthermore, previous studies rarely examine the relationship between available Online Resources, librarians' skills, utilization levels, and challenges within a single integrated framework. This gap necessitates the present study, which seeks to provide context-specific evidence to inform policy, training, and strategic planning for academic libraries in the region.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) developed by Fred Davis in 1986 explains why individuals choose to accept or reject a particular technology. The model was developed to show that users' attitudes toward technology are mainly influenced by two key factors: Perceived Usefulness and Perceived Ease of Use. Perceived usefulness refers to the degree to which a person believes that using a technology will improve job performance, while perceived ease of use refers to how simple and effortless the technology is perceived to be. When users find a technology useful and easy to use, they are more likely to adopt and utilize it effectively.

In academic and library environments, TAM is often used to explain the adoption of digital systems and online resources. For instance, professional librarians are more likely to use online databases, digital repositories, and electronic journals if they believe these tools enhance their professional effectiveness and are easy to operate. Studies on digital literacy and ICT skills suggest that users with higher digital competence tend to perceive technologies as easier to use, which positively influences acceptance and sustained usage (Lau & Yuen, 2014; Kurtz & Peled, 2016).

In relation to the study on professional librarians' digital literacy skills and utilization of online resources, TAM provides a strong explanatory framework. Librarians with strong digital literacy skills are more likely to perceive online resources as useful and manageable, leading to higher acceptance and utilization. Conversely, limited digital skills may increase perceived difficulty, reducing technology acceptance. Therefore, TAM helps explain how digital literacy indirectly influences the utilization of online resources through users' perceptions and attitudes toward technology (Peled, 2020; Porat, Blau, & Barak, 2018).

Digital Literacy Theory

Digital Literacy Theory explains the knowledge, skills, and competencies required to effectively use digital technologies for information access, evaluation, creation, and communication. The theory goes beyond basic technical skills and emphasizes critical thinking, ethical use of information, and the ability to navigate digital environments efficiently. Digital literacy is viewed as a set of evolving skills that enable individuals to function effectively in digital and information-rich societies (Lankshear & Knobel, 2015; Leaning, 2017).

Within educational and professional contexts, digital literacy theory highlights the importance of users' ability to search, evaluate, and apply digital information appropriately. For professional librarians, digital literacy includes skills such as using online databases, evaluating the credibility of digital sources, managing electronic resources, and supporting users in digital information environments. Empirical studies show that higher levels of digital literacy are associated with better use of online resources and improved professional performance (Akayoglu et al., 2020; Porat et al., 2018).

In the context of professional librarianship, digital literacy theory directly explains differences in the utilization of online resources. Librarians with strong digital literacy skills are better positioned to explore, understand, and maximize digital resources available in academic libraries. This theory therefore provides a direct explanation of how digital literacy skills influence the effective use of online resources. It supports the assumption that improving librarians' digital literacy will lead to increased confidence, efficiency, and frequency of online resource utilization (Peled, 2020; Chetty et al., 2018).

Objectives

1. To identify the types of Online Resources available to professional Librarians in North Central, Nigeria
2. To assess the digital information literacy skills of professional Librarians under study
3. To examine the extent of utilization of Online Resources by professional Librarians under study.
4. To identify the challenges faced by professional Librarians in using Online Resources for information service delivery.

Hypothesis

Digital literacy skills of professional Librarians has no significant influence on the Utilization of Online Resources in Federal Universities across North Central Nigeria

Methodology

This study focuses on the digital literacy skills of professional Librarians and their utilization of online resources in universities across North Central, Nigeria. The study is limited to 493 registered professional librarians in these institutions. The study adopted an explanatory correlation research design. Data were collected using structured online questionnaires distributed to registered professional librarians in universities across North Central, Nigeria. A total of 316 valid responses were collected and analyzed using both descriptive (means) and inferential statistics (Pearson's Product Moment Correlation).

DATA ANALYSIS AND INTERPRETATION

Research Objective One (1): To identify the types of Online Resources available to professional Librarians in North Central, Nigeria

Table 1: Online Resources used for information service delivery

S/N	Available Digital Platform	VHE	HE	LE	NA	Mean	Decision
1	CISCO WebEx	64	47	97	108	2.2120	Not Significant
2	Facebook	203	53	34	26	3.4336	Accepted
3	Go-To-Meeting	111	45	94	76	2.9652	Accepted
4	Google Hangouts	45	43	142	86	2.1486	Not Significant
5	Google meet	99	97	74	56	2.8197	Accepted
6	Instagram	174	96	31	15	3.3576	Accepted
7	LinkedIn	123	109	65	19	2.9399	Accepted
8	Microsoft Team	23	73	38	182	1.8051	Rejected
9	Skype	106	154	37	19	3.0981	Accepted
10	Telegram	98	123	65	50	2.9778	Accepted
11	Twitter	199	91	9	17	3.4937	Accepted
12	We-chat	76	45	94	111	2.3354	Not Significant
13	WhatsApp	224	74	18	0	3.6518	Accepted
14	YouTube	166	102	23	25	3.2944	Accepted
15	Zoom	198	101	17	0	3.5728	Accepted
Valid N (listwise) = 290		Mean				3.3522	Significant

Table 1 shows the various Online Resources mostly available to the professional librarians in Nigeria. It is clearly seen that the most used digital platform was WhatsApp (mean=3.65) followed by Zoom (mean=3.57) and Twitter (mean=3.49). The table further showed that the professional Librarians used majority of the Online Resources (mean=3.35). It was however seen from the table that WeChat (mean=2.34), CISCO WebEx (mean=2.21) and Google Hangouts (mean=2.15) were not significantly used while Microsoft Team (mean=1.81) was rejected.

Research Objectives Two (2): To assess the digital information literacy skills of professional Librarians under study

Table 2: Digital Information Literacy Skills possessed by Professional Librarians

	Literacy Skills	VHE	HE	LE	NA	Mean	Decision
16	Blogging	55	76	86	99	2.2752	Not Significant
17	Computer fluency	123	97	61	35	2.9748	Accepted
18	Creating Videos	67	45	92	112	2.3829	Not Significant
19	Designing Web OPAC	87	51	81	97	2.0451	Not Significant
20	Electronic Mailing	117	89	64	49	2.8861	Accepted
21	Internet Search Skills	109	63	133	11	2.8544	Accepted
22	Mobile Phone applications	101	61	132	22	2.7625	Accepted
23	Social Networking	132	110	52	22	3.1139	Accepted
24	Web Conferencing	78	69	131	38	2.5062	Accepted
25	Website designing	45	48	71	152	1.9858	Rejected
Valid N (listwise) = 290		Mean				2.5787	Significant

Table 2 above shows the digital Information literacy skills of profession librarians. The table showed that social networking (mean=3.12), computer fluency (mean=2.97), electronic mailing (mean=2.89), Internet search skills (mean=2.85), mobile phone applications (mean=2.76) and Web conferencing (mean=2.51) were accepted as the digital information literacy skills of the professional librarians. The table showed that the digital Information Literacy skills of the professional librarians is significant at (mean=2.58). The table however showed that Creating Educative Videos (mean=2.38), Blogging (mean=2.28) and Designing Web-OPAC (mean=2.05) were not significant, while Website Designing (mean=1.99) was rejected.

Research Objectives Three (3): To examine the extent of utilization of Online Resources by professional Librarians under study.

Table 3: Utilization of Online Resources

S/N	Items	VHE	HE	LE	NA	Mean	Decision
26	I use the institutional library website to deliver information services to users.	134	142	31	9	3.269	Accepted
27	I use email platforms to respond to users' information requests.	109	63	133	11	2.8544	Accepted
28	I use social media platforms to disseminate information to library users.	174	96	31	15	3.3576	Accepted
29	I use online databases to provide reference and research support services.	129	112	46	29	3.0791	Accepted
30	I use the institutional repository to share and manage scholarly publications.	129	103	47	37	3.0252	Accepted
31	I use virtual reference tools (e.g., live chat, online helpdesk) to assist users remotely.	103	112	64	37	2.8893	Accepted
32	I use digital library platforms to facilitate remote access to information resources.	121	83	69	43	2.8933	Accepted
33	I conduct online user education or information literacy programmes using digital platforms.	211	67	37	1	3.5412	Accepted
34	I use mobile applications to provide library and information services.	111	87	55	63	2.7785	Accepted
35	I use web-based catalogues (OPAC) to enhance users' access to library collections.	134	142	31	9	3.269	Accepted
36	I use cloud-based tools to support collaborative information service delivery.	201	79	13	23	3.4494	Accepted

Table 3 above shows that all eleven digital information service practices recorded mean scores above the decision benchmark and were therefore accepted, indicating a generally high level of digital service utilization among respondents. The highest mean score was recorded for conducting online user education or information literacy programmes using Online Resources (Mean = 3.5412), followed closely by the use of cloud-based tools for collaborative information service delivery (Mean = 3.4494) and the use of social media platforms for information dissemination (Mean = 3.3576). Similarly, the use of the institutional library website (Mean = 3.269) and web-based catalogues (OPAC) (Mean = 3.269) also ranked high, reflecting strong adoption of web-based tools for service delivery. These results suggest that Online Resources are widely integrated into core library operations, especially for instruction, collaboration, and outreach.

However, comparatively lower mean scores were observed for the use of mobile applications (Mean = 2.7785), email platforms (Mean = 2.8544), virtual reference tools (Mean = 2.8893), and digital library platforms for remote access (Mean = 2.8933), although they were still accepted. The relatively lower ratings in these areas may imply moderate utilization, possible infrastructural limitations, skill gaps, or user preference for more interactive platforms such as social media and cloud-based systems. Overall, the findings infer that while digital transformation in library service delivery is evident and positively embraced, greater attention may be required to strengthen the effective use of mobile technologies, email communication, and virtual reference services to ensure balanced and comprehensive digital service provision.

Research Objectives Four (4): To identify the challenges faced by professional Librarians in using Online Resources for information service delivery.

Table 4: Challenges in using Online Resources by professional librarians

	Challenges in using Online Resources	VHE	HE	LE	NA	Mean	Decision
37	Erratic Power Supply	142	89	60	25	3.1012	Accepted
38	Inadequate ICT infrastructure	129	112	46	29	3.0791	Accepted
39	Instability of Internet Facilities	132	152	24	8	3.2911	Accepted
40	Lack of systematic ICT policy	132	28	43	113	2.5659	Accepted
41	Limited Financial Resources	97	83	98	38	2.7564	Accepted
42	Poor ICT skills	78	64	93	81	2.4398	Not Significant
Valid N (listwise) = 290		Mean				2.8723	Significant

Table 4 above indicates that instability of Internet facilities (mean=3.29), Erratic power supply (mean=3.10), inadequate ICT facilities (mean=3.08) were the biggest challenges to the utilization of Online Resources during the academic shifts. Although Poor ICT Skills (mean=2.44) was not significant, the overall mean of the challenges (mean=2.87) was significant, and shows that although the professional librarians utilize the Online Resources, there are still challenges that hinder the utilization.

Ho. There is no statistically significant relationship between the types of Online Resources used and the Digital Information Literacy skills of professional librarians.

Table 5: PPMCC analysis of digital platform and Digital Information Literacy skills

Correlations		Online Resources	Digital Information Literacy Skills
Online Resources Used	Pearson Correlation	1	.990**
	Sig. (2-tailed)		.000
	N	316	316
Digital Information Literacy Skills	Pearson Correlation	.990**	1
	Sig. (2-tailed)	.000	
	N	316	316

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5.0 represent the Pearson's Product Moment Correlation (PPMC) on the types of Online Resources used and the digital information literacy skills of professional librarians. The analysis revealed that the correlation coefficient for the variables is very strong and positive ($r=0.990$) and is significant at $p<0.01$ for a 2-tailed test. In practice, this translate that Online Resources used is greatly influenced digital information literacy skills.

Accepting or Rejecting the Null Hypothesis of the Study

Digital Information Literacy skills of professional librarians and its impact on the types of Online Resources used is statistically significant with a positive strong linear relationship ($N=316$; $r=.990$; $p=.000$). The direction of the relationship is positive meaning that these variables tend to increase together (that is, increase in digital literacy skills of professional librarians leads to more impact on the use of Online Resources). According to Bornmann and Leydesdoff (2013) if the P value significant level is less than 0.05 ($p<0.05$) the Null Hypothesis of the study will be rejected and if the P value significant level is greater than 0.05 ($p>0.05$) the Null Hypothesis of the study will be retained. Therefore, according to this analysis ($N=316$; $r=.990$; $p=.000$), the H_0 is rejected, because there is sufficient evidence of significant correlation between the types of Online Resources used and digital information literacy skills of professional librarians in Nigeria.

Theoretical Underpinning

The result of a Pearson's Product Moment Correlation (PPMC) analysis conducted to examine the relationship between the types of Online Resources used and the digital information literacy skills of professional librarians shows a correlation coefficient obtained ($r = 0.990$) indicates a very strong and positive linear relationship between

the two variables. This implies that as their digital information literacy skills increase, variety and frequency of Online Resources used by librarians also increase correspondingly. The significance value ($p = .000$) shows that the relationship is statistically significant at the 0.01 level for a two-tailed test, based on a sample size of 316 respondents.

The statistical outcome of the analysis provides strong empirical evidence against the null hypothesis, which stated that there is no statistically significant relationship between the types of Online Resources used and digital information literacy skills of professional librarians. Since the p -value is far below the accepted threshold of 0.05, the null hypothesis is rejected. This confirms that the observed relationship did not occur by chance, but rather reflects a meaningful association between digital platform usage and librarians' digital literacy competence. The positive direction of the relationship further indicates that improvements in one variable are associated with improvements in the other.

From the perspective of the Technology Acceptance Model (TAM), the findings suggest that librarians' increased use of Online Resources is closely linked to their acceptance of digital technologies. According to TAM, users are more likely to adopt and use technologies when they perceive them as useful and easy to use. Librarians who actively engage with diverse Online Resources are likely to develop positive perceptions about their usefulness and usability, which in turn enhances their confidence and willingness to use digital tools more effectively. This reinforces the idea that frequent interaction with Online Resources strengthens technology acceptance and promotes sustained utilization.

In relation to Digital Literacy Theory, the strong correlation supports the assumption that digital literacy develops through continuous exposure and practical engagement with digital tools and platforms. Digital literacy theory emphasizes that skills such as information searching, evaluation, content creation, and ethical use of information are best developed through active participation in digital environments. Therefore, librarians who utilize a wider range of Online Resources are more likely to acquire and refine digital information literacy skills necessary for professional practice, including effective dissemination of cultural heritage resources.

In general, the findings align strongly with both TAM and Digital Literacy Theory by demonstrating that technology use and digital competence are mutually reinforcing. Increased use of Online Resources enhances librarians' digital literacy skills, while improved digital literacy further encourages technology acceptance and utilization. The rejection of the null hypothesis confirms that Online Resources play a significant role in shaping the digital information literacy skills of professional librarians in Nigeria. This underscores the need for institutional support, training, and policy frameworks that promote access to and effective use of diverse digital platforms within the library profession.

Conceptual Framework

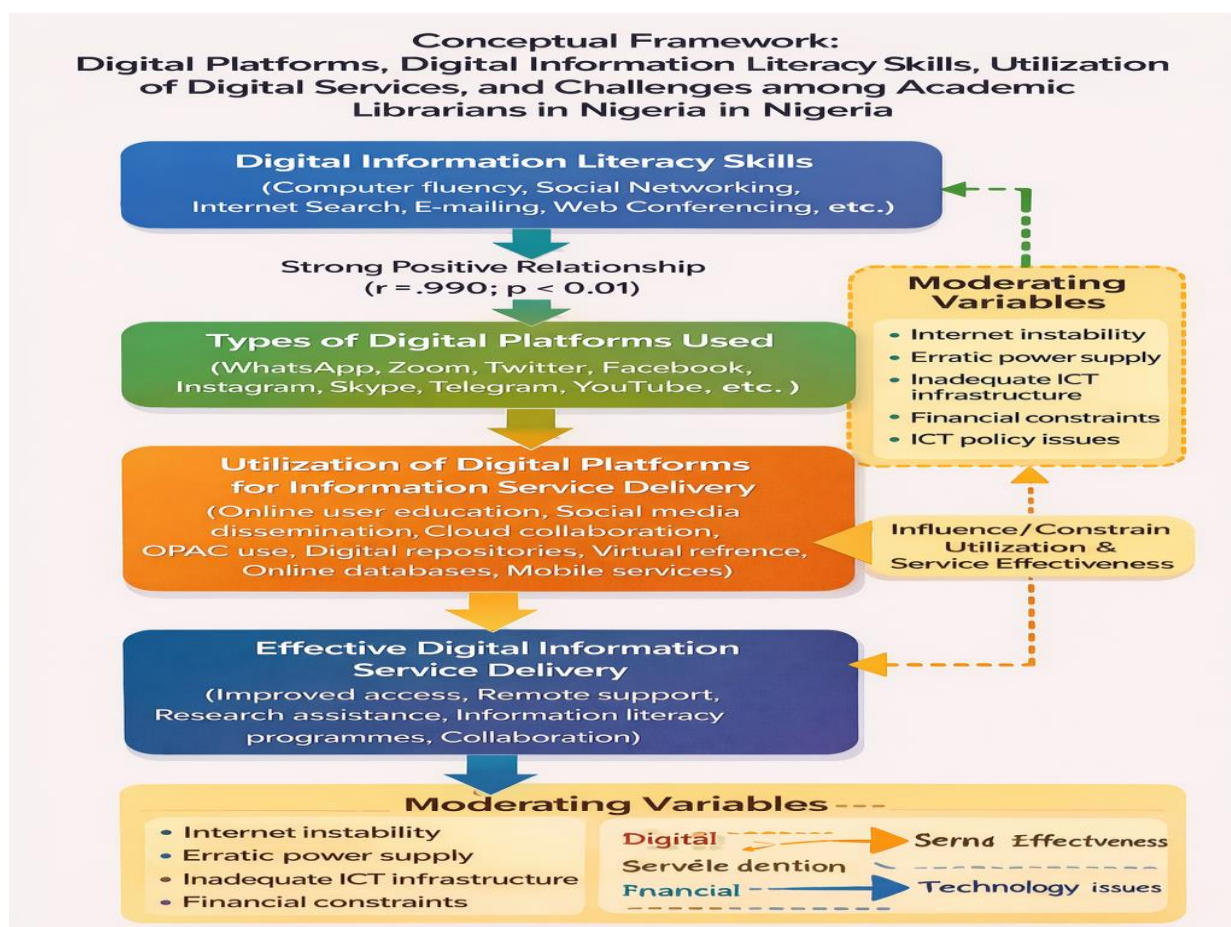


Figure 1.0 Conceptual Framework of Digital Literacy

The framework shows that Digital Information Literacy Skills serve as the foundational independent variable in the study. The Pearson correlation result ($r = .990$; $p < 0.01$) confirms a very strong positive relationship between librarians' digital literacy skills and the types of Online Resources they use. This means that as librarians' competence in computer fluency, internet searching, social networking, electronic mailing, and web conferencing increases, their adoption and variety of Online Resources (such as WhatsApp, Zoom, Twitter, Facebook, etc.) also increase.

The second stage of the framework shows that the Types of Online Resources Used directly influence the Utilization of Online Resources for Information Service Delivery. The more platforms librarians adopt, the more they are able to conduct online user education, provide research support, use OPAC, manage repositories, deliver remote services, and engage in cloud-based collaboration. This leads to the ultimate outcome, Effective Digital Information Service Delivery, which enhances access, outreach, and academic support.

However, the framework also identifies Challenges (internet instability, erratic power supply, inadequate ICT infrastructure, limited funding, and policy gaps) as moderating variables. These factors influence the strength and effectiveness of digital platform utilization. Even when librarians possess strong digital literacy skills and use multiple platforms, these external barriers can hinder optimal service delivery.

Summary of Findings

The findings reveal that professional librarians in North Central Nigeria have access to and actively use a wide range of online resources, with platforms such as WhatsApp, Zoom, Twitter, Facebook, and YouTube being the most prominent and widely accepted. Overall, the availability and usage of these resources were significant, indicating strong integration into library service delivery. In terms of digital information literacy, librarians demonstrated competence in areas such as social networking, computer fluency, electronic mailing, internet

searching, mobile applications, and web conferencing. However, there were notable gaps in more advanced skills like blogging, video creation, and website design. Despite these gaps, the general level of digital literacy was significant and sufficient to support the utilization of online platforms for information service delivery.

Furthermore, the study showed a high level of utilization of online resources for activities such as user education, information dissemination, research support, and cloud-based collaboration, although moderate usage was observed in areas like mobile applications, email communication, and virtual reference services. Key challenges affecting effective utilization included unstable internet connectivity, erratic power supply, inadequate ICT infrastructure, limited funding, and weak policy frameworks. Importantly, the study established a very strong and significant positive relationship between digital information literacy skills and the use of online resources ($r = 0.990$, $p < 0.01$), confirming that improved digital competence leads to increased adoption and utilization of digital platforms. Overall, while digital transformation in library services is evident, addressing infrastructural and skill-related challenges remains essential for optimal performance.

Discussion of Findings

The findings of the study on the use of Online Resources for information service delivery by professional librarians in Nigeria, as presented in Table 1.0, revealed a high level of usage of Online Resources with a mean score of 3.35. This indicates that professional librarians actively utilize Online Resources for delivering information services to their users. The result suggests that Online Resources have become integral tools for information dissemination, communication, and engagement in Nigerian libraries. This finding corroborates earlier studies by Bhati and Kumar (2020), which identified a range of Online Resources commonly adopted by librarians for information service delivery in academic and research environments.

From the perspective of the Technology Acceptance Model (TAM), the high level of digital platform usage suggests that librarians perceive these platforms as both useful and relatively easy to use. According to Davis' TAM, perceived usefulness and perceived ease of use significantly influence users' intention to adopt and continue using technology. The consistent utilization of Online Resources by librarians implies a positive attitude toward technology acceptance, reinforcing earlier empirical findings that librarians' engagement with digital tools increases when the technologies enhance work efficiency and service quality (Akayoglu et al., 2020; Peled, 2020).

Regarding information literacy skills possessed by professional librarians in the use of Online Resources, the findings indicated a mean score of 2.58, which, although relatively low, remains statistically significant. This suggests that librarians possess basic information literacy skills but may still face limitations in advanced competencies such as critical evaluation, ethical use, and effective management of digital information. This finding aligns with Brown (2020), who emphasized the need for librarians to continuously develop information and digital skills to remain relevant in a rapidly evolving technological environment.

This outcome can be further explained using Digital Literacy Theory, which posits that digital literacy is not a fixed competence but a continuously developing set of skills shaped by exposure, practice, and institutional support. Scholars such as Lankshear and Knobel (2015), Leaning (2017), and Porat, Blau, and Barak (2018) argue that digital literacy develops progressively as individuals interact with digital environments. The relatively low mean score therefore indicates the need for sustained professional development and structured digital literacy programs to strengthen librarians' information handling capacities.

The findings on digital information literacy skills of professional librarians revealed an improved level of competence, with a mean score of 3.06. This indicates that librarians have developed appreciable digital literacy skills, particularly in navigating, accessing, and utilizing digital resources for professional tasks. This finding supports the study by Patil and Chingath (2020), which noted that the increasing shift toward digital environments in education and information services has compelled professionals to acquire and improve their digital literacy skills.

In line with Digital Literacy Theory, this improvement suggests that regular interaction with Online Resources enhances practical digital competencies. Studies by Chetty et al. (2018), Kurtz and Peled (2016), and Perdana et al. (2019a) similarly observed that digital literacy improves when users are consistently engaged in digital tasks. The implication is that exposure to Online Resources acts as a catalyst for skill development, reinforcing the idea that digital literacy is practice-driven and context-dependent.

The study also identified several challenges affecting the effective utilization of Online Resources for information service delivery, as shown in Table 4.0, with a mean score of 2.87. These challenges indicate notable constraints that hinder optimal use of Online Resources by librarians. The findings corroborate those of Ali and Gatiti (2020), who identified erratic power supply, poor internet connectivity, and inadequate digital infrastructure as major obstacles to effective digital service delivery in developing countries. Such challenges negatively affect both technology adoption and skill development.

Finally, the test of the hypothesis revealed a statistically significant and strong positive relationship between the types of Online Resources used and the digital information literacy skills of professional librarians ($N = 316$; $r = .990$; $p = .000$). This result confirms that increased use of diverse Online Resources significantly enhances librarians' digital literacy skills. From the Technology Acceptance Model, this relationship indicates that sustained technology use reinforces acceptance and competence, while Digital Literacy Theory explains how continuous engagement with digital tools leads to skill acquisition and mastery. The finding is consistent with previous studies by Promsri (2019), Porat et al. (2018), and Peled (2020), which established that digital engagement and literacy development are strongly interrelated.

Conclusion

Possessing adequate digital information literacy skills and techniques were the only means to ensure continuity in the process of teaching, learning and research. Living in this digital era it is very important that the library professionals have adequate Digital Information Literacy skills to serve the user community efficiently. Various Online Resources played pivotal roles in reaching out to the library patrons and satisfying their information needs. The study concluded from the findings that WhatsApp, Zoom, and Twitter were the most used Online Resources by professional librarians in reaching out to their clientele. The study also concluded that the professional librarians have upgraded and acquired several digital information literacy skills such as social networking, web conferencing, internet research skills, electronic mailing, computer literacy and mobile phone literacy. The study additionally concluded that there are various challenges mitigating against the utilization of Online Resources for information service delivery by professional librarians. The most prominent among them being Instability of Internet Facilities and Erratic Power Supply. It was further concluded from the study that there is a statistically significant correlation between the use of Online Resources for information services delivery and the digital information literacy of professional librarians. Hence, the more professional librarians use Online Resources, the more they will have digital information literacy.

Recommendations

1. Universities should improve Internet connectivity and ICT infrastructure to support the use of Online Resources.
2. Professional staff should receive regular training to enhance their digital literacy skills.
3. Universities should allocate sufficient budgets for the procurement of electronic resources and digital tools.
4. Librarians should play an active role in promoting the use of Online Resources and online resources among academic staff and students.

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