

DIGITAL LIBRARY IN KNOWLEDGE ORGANIZATION IN NIGERIA: OPPORTUNITY AND CHALLENGES

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Abstract

The study investigated the opportunities and challenges in having digital libraries in knowledge organizations. It aimed at establishing these by adopting a survey research design, with the 170 librarians from Federal University Libraries in Southwest Nigeria as the study population. The study had a sample size of 115, using the Krejcie and Morgan (1970) sample size determination table. The research instrument was the questionnaire, and data analyses were by means of tables, frequency, and Mean values. The findings reveal that digital libraries significantly enhance access to scholarly resources, support academic research, and promote open access and institutional visibility. However, persistent challenges like inadequate funding, limited ICT infrastructure, low digital literacy, and insufficient staff capacity are undermining their optimal functionality. Despite these limitations, digital libraries offer considerable opportunities for innovation, resource sharing, and professional development within the knowledge economy. The study underscored the need for strategic investment in digital infrastructure, and capacity building for librarians and library users to enable knowledge organizations in Nigeria to fully leverage digital libraries.

Key words: Academic research, Digital library, Digital literacy, Information access, Infrastructure, Knowledge organization.

Introduction

In the contemporary information era, digital libraries have emerged as transformative tools for organising, preserving, and disseminating knowledge across sectors. In Nigeria, the adoption of digital libraries has become increasingly critical in addressing the limitations of traditional library systems, especially in response to growing demands for access to up-to-date, reliable, and diversified information resources. Afolabi and Abolaji (2022) noted that digital libraries integrate information and communication technologies (ICTs) to facilitate the storage, retrieval, and sharing of digital contents, thereby enhancing access to knowledge beyond the confines of physical infrastructure.

Knowledge organizations are known for the systemic arrangement and categorization of information resources, and they remain central to the functions of digital libraries. Through metadata, indexing, classification scheme, and subject headings, digital libraries support efficient information retrieval and user access. In Nigeria, Owolabi and Okafor (2021) opined that universities, research institutions, and public agencies are increasingly relying on digital library platforms for the curation of scholarly outputs, digitization of indigenous knowledge, and facilitation of academic collaboration.

However, the deployment and optimization of digital libraries in Nigeria face significant challenges, including inadequate ICT infrastructure, poor funding, limited digital literacy, and inconsistent policy support. Despite these constraints, Onyancha (2023) noted with array of hope that progressive strides have been recorded through national and institutional initiatives aimed at building digital repositories such as the Nigerian Virtual Library Project and open access mandates in several universities.

As Nigeria aspires to become a knowledge-driven economy, digital libraries are indispensable in shaping equitable access to information, fostering innovation, and enhancing the quality of education and research. Their role in knowledge organizations not only support academic productivity but also contributes to national development by ensuring that knowledge is systematically curated and made accessible for use and re-use. To this end, this study is set out to investigate the opportunities and challenges in establishing and operating digital libraries in knowledge organization, with particular reference to university libraries in Federal Universities in Southwestern Nigeria.

Research Questions

The aim of the study is to investigate opportunities and challenges of having digital libraries in Knowledge Organizations. The research questions are:

- i. What are opportunities in having digital libraries in knowledge organizations?
- ii. What are the challenges in having digital libraries in knowledge organizations?

Literature Review

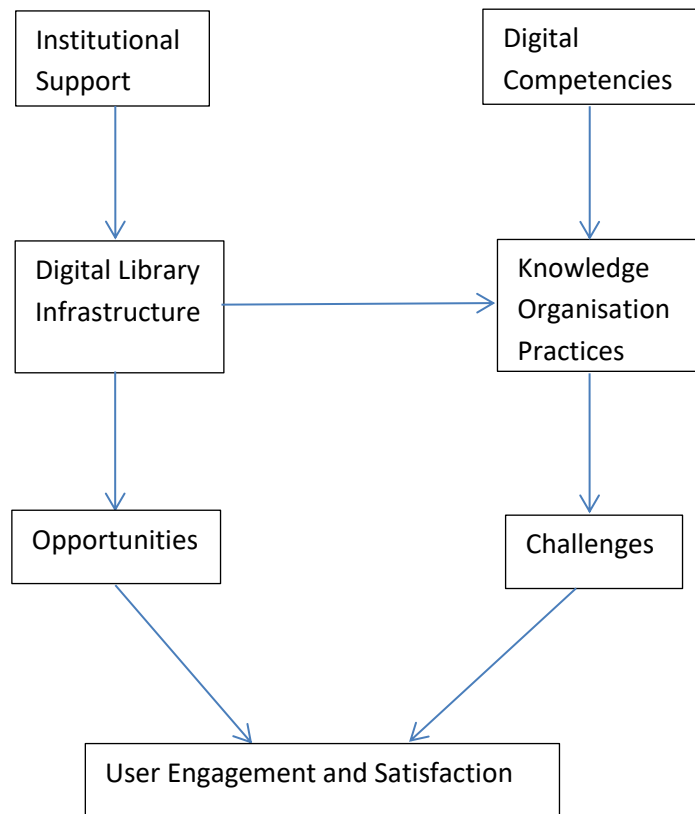
Conceptual Framework

Figure 1: Conceptual Framework

The conceptual framework revealed that the implementation of a digital library system is central to modern knowledge organisation practices in Nigeria. These systems directly influence how knowledge is created, organized, stored, retrieved, and disseminated. However, the successful deployment and impact of digital libraries are mediated by two broad outcomes: opportunities (positive outcomes such as enhanced access and professional development) and challenges (constraints including infrastructure deficits and policy issues).

Empirical Reviews

Several empirical studies have established the pivotal roles digital libraries play in improving knowledge organization practices in Nigerian universities. Afolabi and Abolaji (2022), in a survey of six federal universities, found that 78% of librarians agreed that digital libraries have

significantly improved the classification and retrieval of research materials through metadata and digital cataloguing. They observed that tools like institutional repositories and digital object identifiers (DOIs) have made knowledge more searchable and accessible for scholars and students alike. Similarly, Oduwole and Oyewumi (2020) conducted a case study of the University of Ibadan and found that the digital library significantly enhanced scholarly communication by organizing these, dissertations, and journal articles into accessible repositories. The study concluded that digital libraries help maintain intellectual output and make it visible to the global audience, supporting collaboration and academic integrity.

A study by Oknokwo and Ezeani (2021) focused on the use of knowledge organization tools such as Dublin Core, Library of Congress Subject Headings (LCSH), and classification systems in Nigerian digital libraries. Their findings indicated that while there is a growing awareness and application of these tools, only 42% of libraries use them consistently, citing inadequate training and poor infrastructure as constraints. They recommended continuous professional development and improved ICT funding to maximize the use of knowledge organization systems. Adebayo and Bello (2022) examined digital efforts in Northern Nigeria to digitize cultural knowledge, local agricultural practices, and traditional medicine. Their study revealed that digital libraries facilitate knowledge preservation through structured metadata and content categorization, though challenges like language diversity and lack of documentation persist.

Beyond Nigeria, empirical studies from Ghana and Kenya reinforce similar findings. In Ghana, Mensah and Adjei (2023) found that digital libraries have transformed research visibility in public universities, particularly through the implementation of structured knowledge repositories. Likewise, a study in Kenya by Wambua, et. al (2021) showed that 63% of digital libraries reported improved user satisfaction due to enhanced subject classification and search functionalities.

Empirical findings consistently underscore the role of digital libraries in facilitating effective knowledge organization, improving information retrieval, and enhancing access to scholarly content. However, challenges such as poor infrastructure, limited digital skills, and lack

of standardized tools hinder full optimization. Strengthening capacity, adopting international metadata standards, and fostering digital policy reforms are recommended to ensure that digital libraries fulfill their potential in knowledge-driven societies.

Methodology

The study adopted the descriptive survey research design. The population of the study is the 170 librarians in Federal university libraries in Southwest, Nigeria. The sample size for the study was determined by Krejcie and Morgan (1970) sample size determination. From their Table the sample size is pegged at 115. The number was gotten as the first 115 librarians that responded to the research questionnaire that was hosted on Google Form; which had been subjected to validity and reliability, using a pilot study from the University of Benin to test for the reliability. Collected data were analysed using statistical tools of tables, frequencies, and mean.

Table 1: Study Population

Federal University in Southwestern Nigeria	Number of Librarians
Federal University of Agriculture, Ogun State	24
Federal University of Technology, Ondo State	26
Federal University, Ekiti State	12
Obafemi Awolowo University, Osun State	28
University of Ibadan, Oyo State	60
University of Lagos	20
Total	170

Presentation of Results and Discussion of Findings

The total number of responses to the questionnaire that was hosted online was 115. This made up for 100% response rate. The analyses of the research are based on the returned copies of the questionnaire.

Table 2: Opportunities Digital Libraries offer Knowledge Organization

Opportunity in Digital Libraries	Mean	StdD	Ranks	Decision
Preservation of academic and research outputs	3.38	0.08	5th	Accepted
Improved visibility and accessibility of local knowledge	3.17	0.06	7th	Accepted
Support teaching, learning, and research	3.57	0.1	1st	Accepted
Provision of friendly user interface	3.0	0.05	9th	Accepted
Allows for multiple access by different people	3.3	0.07	6th	Accepted
Enhancement of access to diverse information resources	3.5	0.94	2nd	Accepted
Support long-term archiving of knowledge	3.45	0.88	4th	Accepted
Support open access and knowledge sharing	2.81	0.03	10th	Accepted
Bridging the knowledge gap in developing countries	2.74	0.02	11th	Accepted
Preservation of cultural heritage and indigenous knowledge	3.5	0.94	2nd	Accepted
Support decision-making through organized knowledge	3.14	0.06	8th	Accepted
Average Mean	3.23			Accepted
Criterion Mean	2.5			
N	115			

Table 2 showed the opportunities that digital libraries offer to knowledge organizations. The study revealed that these opportunities include preservation of academic and research outputs (Mean = 3.38), support teaching, learning, and research (Mean = 3.57), enhancement of access to diverse information resources (Mean = 3.5), preservation of cultural heritage and indigenous knowledge (Mean = 3.5), support long-term archiving of knowledge (Mean = 3.45), allows for multiple access by different people (Mean = 3.3), improved visibility and accessibility of local knowledge (Mean = 3.17), support decision-making through organized knowledge (Mean = 3.14), provision of friendly user interface (Mean = 3.0), support open access and knowledge sharing (Mean = 2.81), and bridging the knowledge gap in developing countries (Mean = 2.74). The Average Mean is 3.23, showing that the above Table presents opportunities that can be offered by digital libraries to knowledge organizations in Federal Universities in Southwest Nigeria.

The findings revealed that digital libraries significantly improve access to information resources. Respondents acknowledged that digital libraries provide seamless access to a broad spectrum of digital content. This enhanced access facilitates timely and efficient retrieval of relevant materials, supporting the needs of students, researchers, and faculty members. This finding aligns with the views of Mutshewa and Kekwaletswe (2022), who argue that digital libraries serve as gateways to equitable access to knowledge, particularly in resource-constrained environments. The use of standardized metadata and classification schemes further enhances information discoverability and retrieval. Another prominent role identified is the preservation of institutional knowledge. Participants noted that digital libraries serve as preservative for research and academic outputs. This long-term preservation function safeguards institutional memory and ensures the sustainability of academic outputs. Onyegbule and Odu (2023) support this view, emphasizing that digital repositories in Nigerian universities play a crucial role in documenting and preserving intellectual capital. The digital format reduces the risk of physical deterioration and enables global access.

The study also found that digital libraries promote open access by providing unrestricted availability of academic content. Respondents observed that open access initiatives foster collaboration, reduce information inequality, and promote the dissemination of local research to a wider audience. This aligns with Edewor, Oghenetega, and Emeka (2021), who highlight that digital libraries enhance scholarly communication and visibility, especially in the context of Nigerian higher education. By supporting open access publishing, institutions contribute to global knowledge exchange. A significant finding of the study is the role of digital libraries in academic development. Respondents emphasized that digital libraries support research by providing up-to-date resources and analytical tools. They also enhance teaching and learning by supplying relevant learning materials and supporting blended learning environments. These findings are corroborated by Igwe and Nwegbu (2022), who noted the positive impact of digital libraries on educational outcomes and research productivity. Therefore, this study showed that access to electronic resources empowers faculty and students to engage in informed academic activities.

Challenges in having Digital Libraries in Knowledge Organization

Challenges in Digital Libraries	Mean	StdD	Ranks	Decision
Inadequate Funding	3.68	0.11	1st	Accepted
Poor ICT Infrastructure	3.6	0.1	2nd	Accepted
Limited internet access	3.38	0.08	4th	Accepted
Low digital literacy among library staff	3.36	0.1	5th	Accepted
Inadequate training for librarians	3.26	0.07	7th	Accepted
Poor user awareness	3.41	0.08	3rd	Accepted
Lack of technical infrastructure	3.32	0.08	6th	Accepted
Average Mean	3.43			Accepted
Criterion Mean	2.5			
N	115			

Table 3 showed the challenges in having digital libraries in knowledge organizations. The study revealed that these challenges include inadequate funding (Mean = 3.68), poor user awareness (Mean = 3.41), poor ICT Infrastructure (Mean = 3.6), limited internet access (Mean = 3.38), low digital literacy among library staff (Mean = 3.36), lack of technical infrastructure (Mean = 3.32), and inadequate training for librarians (Mean = 3.26). The Average Mean is 3.43, showing that the above Table presents challenges that are encountered in trying to establish digital libraries in knowledge organizations in Federal Universities in Southwest Nigeria.

Despite their contributions, digital libraries face several challenges. The study identified issues such as inadequate funding, insufficient ICT infrastructure, lack of skilled personnel, and limited user awareness. These challenges hinder the effective implementation and use of digital libraries for knowledge organization. Nwosu and Alhassan (2023) argue that without proper investment in digital infrastructure and staff capacity, the potential of digital libraries cannot be fully realized. Institutions must address these barriers to enhance the impact of digital libraries.

The findings of this study underscore the vital roles digital libraries play in enhancing knowledge organization. From improving access and preservation to promoting open access and supporting academic activities, digital libraries are indispensable tools for institutional development. However, to optimize their roles, it is imperative to address the infrastructural and operational challenges identified. The next chapter will present the summary, conclusions, and recommendations based on these findings.

Recommendations

Based on the findings and conclusion of the research, the following recommendations are made:

- i. There should be consistent funding and budgetary allocations toward ICT infrastructure, digital resource acquisition, and system maintenance within digital library environments.
- ii. Continuous professional development should be provided for library personnel to equip them with the requisite digital and information management skills.
- iii. Knowledge organizations should engage in targeted digital literacy campaigns to train users in effectively navigating digital library systems.

Conclusion

The integration of digital libraries into knowledge organizations in Nigeria represents a transformative shift in how information is accessed, managed, and disseminated. As revealed in the findings, digital libraries offer numerous opportunities for academic and research institutions, including enhanced access to scholarly resources, support for teaching and learning, preservation of institutional memory, and promotion of open access. They also enable institutions to engage in global knowledge sharing, adopt innovative digital tools, and facilitate lifelong learning. However, these opportunities are tempered by significant challenges such as limited funding, inadequate infrastructure, poor ICT literacy among users, and insufficient technical expertise among library staff. These limitations hinder the full realization of the potential benefits of digital libraries and call for strategic investments in digital infrastructure, capacity building, and user sensitization.

Overall, the development and deployment of digital libraries in Nigerian knowledge organizations present a dual landscape of promise and constraint. Addressing the identified challenges will not only strengthen the role of digital libraries but also enhance the broader goals of knowledge creation, academic excellence, and national development. The findings of the study underscore the vital role of digital libraries in modern knowledge organizations. Digital libraries have become indispensable tools in advancing knowledge organization through their capacity to provide seamless access to academic resources, preserve intellectual assets, and support educational and research activities. In Nigeria, the opportunities presented by digital libraries are considerable, particularly in enhancing global collaboration, improving research visibility, and fostering digital literacy. Yet, these potentials remain underutilized due to systemic challenges.

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