Utilization of Digital Library Resources and Services among LIS Students: Case Study of Federal University Dutsin-Ma, Katsina State

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Abstract

The study focused on the utilization of digital library resources and services among LIS students at Federal University Dutsin-Ma, Katsina State. Survey research method was used for the study. A self-structured questionnaire was used to collect data for the study. The respondents of this study covered only the Library and Information Science students from level 2 - 4. Findings from the study explores the frequency of use, challenges faced, and possible solutions to enhance accessibility. The findings reveal that most students frequently use the digital library for academic research, accessing e-books, e-journals, and research databases. However, challenges such as poor internet connectivity, lack of awareness, limited ICT skills, and difficulty in navigating digital platforms hinder effective utilization.. To address these issues, respondents strongly advocated for improving internet connectivity, conducting awareness campaigns, providing regular training, enhancing platform navigation, and offering incentives to encourage digital usage. Hence the study concludes that addressing these challenges will significantly improve students' access to and engagement with digital resources, ultimately enhancing their academic performance and research productivity.

Key words: Utilization; Digital Library; Resources; Services, Academic Library

Introduction

The integration of Information and Communication Technology (ICT) has significantly transformed academic libraries globally, shifting from traditional models to digital platforms that enhance information storage, access, and management. This evolution has led to the development of digital libraries, offering users immediate access to a vast array of academic resources, thereby improving research efficiency and learning experiences (Ogbomo, 2019).

Academic library is an essential component of any university system. It is a vital component of any educational institution in advancing information service delivery in order to keep up with

the fast-moving technological train. The library gradually integrated ICT services, leading to the establishment of a digital library.

In Nigeria, university libraries have increasingly adopted digital services to support academic activities. However, the extent of utilization of these resources varies, influenced by factors such as digital literacy, internet accessibility, and awareness of available resources. A study by Manjack (2019) revealed that while electronic resources are available in Nigerian university libraries, their effective use is often hindered by challenges like inadequate search skills and infrastructural deficiencies.

Focusing on Federal University Dutsin-Ma in Katsina State, recent studies have assessed the utilization of digital library resources and services. For instance, research indicated that Library and Information Science students face challenges in accessing digital materials, impacting their research output (Kumar, 2023). Additionally, an appraisal of e-library resources at the university suggested the need for improved services such as e-books and e-journals to enhance user satisfaction (Usman, 2023). Researchers note that ICT has transformed traditional libraries into digital ones, changing how information is stored, accessed, and managed (Dang, 2018).

Statement of the problem

The adoption of digital library resources has significantly improved access to academic materials in universities worldwide. However, despite the availability of digital library services at Federal University Dutsin-Ma, Katsina State, their utilization by students and faculty members remains uncertain. Several factors may hinder effective use, including a lack of digital literacy skills, inadequate awareness of available resources, poor internet connectivity, and infrastructural challenges (Ojedokun & Owolabi, 2022).

Studies have shown that many university students in Nigeria struggle to effectively search for, retrieve, and utilize digital library resources due to limited training and orientation (Adeleke & Olorunsola, 2021). Additionally, technical issues such as network failures and system downtimes further limit seamless access to e-books, journals, and research databases (Eke, 2023).

Given the critical role digital libraries play in enhancing research and learning, it is essential to assess how well these resources are utilized at Federal University Dutsin-Ma. This study seeks to identify the challenges, patterns of use, and possible solutions to improve the effectiveness of digital library services at the institution.

Research Questions

The following research questions guided the study:

1. To what extent do students and faculty members at Federal University Dutsin-Ma, Katsina State utilize digital library resources and services?
2. What are the major challenges affecting the effective use of digital library resources in the university?

3. What strategies can be implemented to improve access to and utilization of digital library resources for academic research and learning?

Literature Review

Concept of digital resources and services

Digital resources refer to electronic materials that can be accessed, stored, and distributed via digital technologies. These include e-books, online journals, databases, multimedia content, and institutional repositories (Bawden & Robinson, 2022). Digital services, on the other hand, involve platforms and tools that facilitate the discovery, retrieval, and use of digital resources, such as digital libraries, cloud storage, virtual learning environments, and information retrieval systems (Liu & Wong, 2023). According to Smith J. (2021) listed some types of Digital Resources which are: E-books and E-journals, Online Databases, Multimedia Content, and Institutional Repositories

Digital resources and services play a crucial role in modern education by providing students and researchers with instant access to a vast collection of academic materials, including e-books, e-journals, and research databases. They enhance learning, improve research efficiency, support knowledge dissemination, and bridge geographical barriers, making high-quality information readily available for academic and professional growth (Johnson & Brown, 2022)

Academic libraries have increasingly integrated digital resources and services to enhance learning, research, and knowledge dissemination. These digital tools offer numerous advantages, improving accessibility, efficiency, and resource management. Below are some key benefits:

1. Enhanced Accessibility: Digital resources provide 24/7 access to academic materials, enabling students and researchers to retrieve information anytime and from anywhere (Smith, 2021). This eliminates geographical and time constraints, making learning more flexible.

2. Cost-Effectiveness: Maintaining digital collections reduces expenses related to printing, storage, and physical infrastructure (Johnson & Brown, 2022). Academic institutions save costs by subscribing to e-journals and databases instead of purchasing multiple physical copies.

3. Efficient Information Retrieval With advanced search tools and indexing, digital libraries allow users to quickly locate relevant materials. Features like full-text searching, filtering, and citation management improve research efficiency (Liu & Wong, 2023).

4. Increased Storage and Preservation Unlike physical libraries with limited shelf space, digital repositories can store vast amounts of books, journals, and research papers. Digital archiving also ensures long-term preservation of academic materials (White, 2023).

5. Supports Remote Learning and Research Digital services, such as virtual learning environments and open-access repositories, facilitate online education and independent research. Students can access e-books, lecture notes, and scholarly articles from any location (Miller, 2021).

Utilization of Digital Resources and Services in Academic Libraries

Academic libraries play a crucial role in providing access to digital resources and services to support learning, teaching, and research. The adoption of digital technologies has transformed the way students, faculty, and researcher's access and utilize information. Below are the ways students utilize digital resources and services:

a. Institutional Repositories: Universities maintain digital repositories where faculty and students can upload, access, and preserve theses, dissertations, research articles, and conference papers (White, 2023). Examples include DSpace, EPrints, and Zenodo.

b. Online Databases and Research Tools: Academic libraries subscribe to databases such as Scopus, Web of Science, Google Scholar, and PubMed, which offer peer-reviewed journals, books, and research reports (Johnson, 2022). These databases help researchers stay updated with the latest developments in their fields.

c. Open Access Resources: Many academic libraries promote the use of open-access journals and repositories to make scholarly content freely available. Platforms like DOAJ (Directory of Open Access Journals) and arXiv help students and researchers access high-quality academic materials without subscription fees (Liu & Wong, 2023).

d. Virtual Learning and Digital Classrooms Libraries provide access to online learning platforms like Moodle, Blackboard, and Coursera, integrating e-learning with digital library resources. This enhances remote learning and blended education models (Anderson & Simpson, 2023).

e. Multimedia and Interactive Learning Resources Many libraries now include audiobooks, podcasts, videos, and virtual simulations to support diverse learning needs. These materials are accessible via digital library platforms and streaming services (Brown & Green, 2022).

f. Cloud-Based Storage and Access Libraries utilize cloud storage services like Google Drive, Dropbox, and OneDrive to allow users to store, share, and access digital resources from any location (Chen & Wang, 2021). Cloud computing has made digital libraries more scalable and efficient.

Challenges of Digital Resources and Services in Academic Libraries

Despite the numerous benefits of digital resources and services, academic libraries face several challenges in their adoption, implementation, and sustainability. These challenges range from technical and financial constraints to user-related issues.

1. High Cost of Digital Subscriptions: Many academic libraries struggle with the high cost of subscribing to digital databases, e-journals, and e-books. Platforms like Scopus, Web of Science, and IEEE Xplore charge expensive subscription fees, limiting access for institutions with budget constraints (Johnson, 2022).

2. Digital Divide and Accessibility Issues: Not all students and researchers have equal access to digital resources due to disparities in internet connectivity, availability of digital devices, and IT infrastructure (Smith, 2021). Rural and underprivileged institutions often suffer the most from these accessibility gaps.

3. Technological Obsolescence: The rapid evolution of technology requires constant upgrades in software, hardware, and digital storage systems. Many libraries struggle to keep up with emerging technologies, making some digital resources outdated or incompatible with new systems (Liu & Wong, 2023).

4. Copyright and Licensing Restrictions: Many digital resources come with strict copyright laws and licensing agreements, limiting how libraries can use and share them (White, 2023). Some publishers restrict the number of simultaneous users or prevent downloading and printing of materials.

5. Limited Digital Literacy: Among Users some students, faculty, and researchers lack the necessary skills to effectively search, evaluate, and use digital resources (Brown & Green, 2022). This leads to under-utilization of available digital services in academic libraries.

6. Data Security and Privacy Concerns Digital libraries store large amounts of sensitive academic and research data, making them vulnerable to cybersecurity threats, hacking, and data breaches (Chen & Wang, 2021). Ensuring robust security measures is a major challenge for institutions.

7. Poor IT Infrastructure and Technical Support: Many academic libraries, especially in developing countries, lack the necessary servers, bandwidth, and power supply to support extensive digital resources (Miller, 2021). Additionally, the shortage of trained IT professionals affects system maintenance and troubleshooting.

Opportunities and Prospects of Digital Resources and Services in Academic Libraries

The advancement of digital technologies presents numerous opportunities for academic libraries to enhance their services, improve accessibility, and support research and learning. As digital transformation continues, libraries can leverage emerging technologies to expand their reach and effectiveness. Some of the prospects of digital resources and services stated by (Smith, 2021) are: Enhanced Accessibility and Global Reach, Artificial Intelligence (AI) and Machine Learning in Libraries, Expansion of Open Access Initiatives, Digital Preservation and Cloud Storage Solutions, Mobile Access and E-Learning Integration, Collaboration and Resource Sharing, Improved Digital Literacy Programs, and Big Data and Analytic for Library Management

Methodology

Survey design was used to conduct the study. The population of this study comprised of 590 LIS students from level 2 - 4 in Federal University Dutsin-Ma, Katsina State. The source of data was from the Management Information System of the university. However, due to the largeness of the population, the researcher used the random sampling techniques which is 20% out of the total population for the study.

Results

To what extent do LIS students and faculty members at Federal University Dutsin-Ma, Katsina State utilize digital library resources and services?

The researcher was aimed at identifying to what extent do LIS students and faculty members at Federal University Dutsin-Ma, Katsina State utilize digital library resources and services. In order to achieve this, a list of extent of utilization digital library resources and services was outlined for the respondents to tick as many as available in their institution. Below is Table 1 showing the extent to which LIS students and faculty members utilize digital library resources and services

Extent of utilization of digital library resources and services

Option	Response option	Frequency	Percentage
I use the university's digital library for academic research	Very frequently	59	50%
	Frequently	32	27%
	Occasionally	14	11%
	Rarely	5	4.5%
	Never	8	7.5%
Total		**118**	**100%**
I access e-books and e-journals through the digital library	Very frequently	46	39%
	Frequently	37	31%
	Occasionally	13	11%
	Rarely	15	13%
	Never	7	6%
Total		**118**	**100%**
I use research databases (e.g., JST or Science direct) for coursework and projects	Very frequently	33	28%
	Frequently	42	36%
	Occasionally	17	14%
	Rarely	6	5%
	Never	20	17%
Total		**118**	**100%**
I receive training or guidance from librarians on how to use digital resources effectively	Very frequently	64	54%
	Frequently	17	14%
	Occasionally	22	19%
	Rarely	7	6%
	Never	8	7%
Total		**118**	**100%**

From the table above, it was discovered that most of the respondents 59 (50%) indicated that they use the university's digital library for academic research very frequently. On the contrary, 5 (4.5) of them rarely used it. 46 (39%) of the respondent's access e-books and e-journals through the digital library very frequently, while 7 (6%) of them never used it. 42 (36%) of the respondents used research databases (e.g., JST or Science direct) for coursework and project frequently, whereas 6 (5%) of them rarely used it. 64 (54%) of the respondents receive training or guidance from librarians on how to use digital resources effectively very frequently, whereas 8 (7%) of them never used it respectively.

What are the major challenges affecting the effective use of digital library resources in the university?

The researcher was aimed at identifying the major challenges affecting the effective use of digital library resources in Federal University Dutsin-Ma, Katsina State. In order to achieve this, a list of challenges was outlined for the respondents to tick as many as possible. Below is Table 2 showing the major challenges affecting the effective use of digital library resources.

Challenges	Response option	Frequency	Percentage
Poor internet connectivity affects access to digital library resources	Strongly agree	77	65%
	Agree	15	13%
	Neutral	12	10%
	Disagree	12	10%
	Strongly disagree	2	2%
Total		**118**	**100%**
Lack of awareness about available digital library resources and services	Strongly agree	43	36%
	Agree	41	35%
	Neutral	18	15%
	Disagree	6	6%
	Strongly disagree	10	8%
Total		**118**	**100%**
Limited ICT skills among students and faculty members hinder usage	Strongly agree	44	37%
	Agree	39	33%
	Neutral	14	12%
	Disagree	6	5%
	Strongly disagree	15	13%
Total		**118**	**100%**
Difficulty in navigating digital library platforms	Strongly agree	12	10%
	Agree	65	55%
	Neutral	14	12%
	Disagree	7	6%
	Strongly disagree	20	17%
Total		**118**	**100%**
Preference for traditional (print) library materials over digital resources	Strongly agree	11	9%
	Agree	28	24%
	Neutral	8	7%
	Disagree	47	40%
	Strongly disagree	24	20%
Total		**118**	**100%**

From Table 2 above, it was discovered that most of the respondents 77 (65%) indicated that they strongly agreed on poor internet connectivity affects access to digital library resources. On the contrary, 2 (2%) of them strongly disagreed. 43 (36%) of the respondents strongly agreed on lack of awareness about available digital library resources and services, while 6 (6%) of them disagreed. 44 (37%) of the respondents strongly agreed on limited ICT skills among students and faculty members hinder usage, whereas 6 (5%) of them disagreed. 65 (55%) of the respondents agreed on difficulty in navigating digital library platforms as a challenge, whereas 7 (6%) of them disagreed. 28 (24%) of the respondents agreed on preference for traditional (print) library materials over digital resources as a challenge, while on the contrary 8 (7%) of them were neutral respectively.

What strategies can be implemented to improve access to and utilization of digital library resources for academic research and learning?

The question was asked to identify the strategies that can be implemented to improve access to and utilization of digital library resources for academic research and learning. In doing this, list of strategies was outlined for the respondents to tick as many strategies as applicable. **Table 3** below presented the responses of the respondents:

Proposed strategies	Response option	Frequency	Percentage
Improve internet connectivity and bandwidth for faster access to digital resources	Strongly agree	66	56%
	Agree	28	24%
	Neutral	24	20%
	Disagree	-	-
	Strongly disagree	-	-
Total		**118**	**100%**
Conduct regular awareness campaigns to educate students and faculty on available digital library resources	Strongly agree	58	49%
	Agree	38	33%
	Neutral	12	10%
	Disagree	10	8%
	Strongly disagree	-	-
Total		**118**	**100%**
Provide training workshops and tutorials on how to effectively use digital library platforms	Strongly agree	62	53%
	Agree	46	39%
	Neutral	10	8%
	Disagree	-	-
	Strongly disagree	-	-
Total		**118**	**100%**
Enhance user-friendly navigation of digital library platforms to make access easier	Strongly agree	31	26%
	Agree	74	63%
	Neutral	12	10%
	Disagree	1	1%
	Strongly disagree	-	-
Total		**118**	**100%**
Provide incentives for students and faculty to encourage the use of digital library resources in research and learning	Strongly agree	39	33%
	Agree	41	34%
	Neutral	16	14%
	Disagree	8	7%
	Strongly disagree	14	12%
Total		**118**	**100%**

From Table 3 above, it was discovered that most of the respondents 66 (56%) indicated that they strongly agreed improve internet connectivity and bandwidth for faster access to digital resources.

On the contrary, none of them disagreed or strongly agreed. 58 (49%) of the respondents strongly agreed on conduct regular awareness campaigns to educate students and faculty on available digital library resources, while none of them strongly disagreed. 62 (53%) of the respondents strongly agreed on provide training workshops and tutorials on how to effectively use digital library platforms, whereas 10 (8%) of them were neutral. 74 (63%) of the respondents agreed on enhance user-friendly navigation of digital library platforms to make access easier, whereas 1 (1%) of them disagreed. 41 (34%) of the respondents agreed on provide incentives for students and faculty to encourage the use of digital library resources in research and learning, while on the contrary 8 (7%) of them disagreed respectively.

Summary of Major Findings

Based on the data collected and analyzed for this study, the following are the major findings:

1. The study revealed that the majority of respondents (59) frequently utilize the university digital library for academic research, while only a few (5) rarely use it. Similarly, a significant number (46) access e-books and e-journals through the digital library very frequently, whereas a small group (7) never use these resources. Additionally, 42 respondents regularly use research databases for coursework and projects, with only 6 rarely doing so. Notably, 64 respondents frequently receive training or guidance from librarians on using digital resources effectively, while 8 have never utilized such support.
2. The findings indicate that poor internet connectivity is a major challenge affecting access to digital library resources, as strongly agreed by 77 respondents, with only 2 strongly disagreeing. Additionally, 43 respondents strongly agreed that a lack of awareness about available digital library resources is a barrier, while 6 disagreed. Similarly, 44 respondents strongly agreed that limited ICT skills among students and faculty members hinder usage, whereas 6 disagreed. Moreover, 65 respondents agreed that navigating digital library platforms is difficult, with only 7 disagreeing. Lastly, 28 respondents acknowledged a preference for traditional print materials over digital resources as a challenge, while 8 remained neutral
3. The study revealed key recommendations for improving digital library usage. A majority of respondents 66 strongly agreed on the need to improve internet connectivity and bandwidth for faster access to digital resources, with no disagreement. Similarly, 58 respondents strongly agreed conducting regular awareness campaigns to educate students and faculty about available digital library resources, with no opposition. Additionally, 62 respondents strongly agreed on the importance of providing training workshops and tutorials on effectively using digital library platforms, though 10 remained neutral. Furthermore, 74 respondents agreed that enhancing user-friendly navigation of digital library platforms would improve accessibility, with only 1 disagreeing. Lastly, 41 respondents agreed on providing incentives to encourage digital library usage, while 8 disagreed.

Recommendation
1. Improve internet connectivity: the university should enhance internet infrastructure to ensure faster and more reliable access to digital library resources, addressing the major challenges of poor connectivity.

2. Conduct awareness campaigns: regular sensitization programs should be organized to educate students and faculty about available digital library resources and services, helping to bridge the gap in awareness
3. Provide training on digital library usage: workshops and tutorials should be conducted to equip students and faculty with the necessary ICT skills for effective navigation and utilization of digital resources

Conclusion

In conclusion, the findings reveal that library and information science (LIS) students at federal university Dutsin-Ma, Katsina State, actively use digital library resources for academic research. However, their access is hindered by challenges such as poor internet connectivity, lack of awareness about available resources, limited ICT skills, and difficult in navigating digital library platforms. Despite these barriers, many students benefit from librarian guidance and training.

To improve digital library usage among LIS students, the university should enhance internet connectivity, conduct regular awareness campaigns, provide hands-on training, simplify platform navigation, and introduce incentive to encourage engagement. Addressing these issues will ensure that LIS students maximize digital resources for academic and research success.

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