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The Impact of Digital Libraries and Online Repositories on Information Access and Utilization in Academic Institutions: Evidence from Nigerian Universities

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Abstract **- The study investigated the impact of digital libraries and online repositories on information access and utilization in academic institutions, with evidence from Nigerian universities. It acknowledged that academic institutions play a crucial role in the development, maintenance, and sharing of knowledge. Libraries in universities and colleges have traditionally been the cornerstone of academic life, providing students, faculty, and researchers with access to scholarly materials necessary for teaching, learning, and innovation. The research design adopted for the study was a descriptive survey, and the target population comprised 656 library workers employed in various types of university libraries in Nigeria, including federal, state-, and privately-owned institutions. A sample size of 585 respondents was drawn from the total population. The findings revealed that seven out of ten faculty members regularly used digital platforms for teaching and research, whereas only half of the undergraduate students did the same. The study concluded that the adoption of ICT is strongest in federal universities due to government subsidies, increasing competitiveness in private universities, and weaknesses in state universities arising from financial and infrastructural limitations. It was recommended that agencies such as the NCC and private providers be engaged, particularly to support rural and state-owned institutions.**
Keywords: **Digital Library, Online Repositories, Information Access, Universities, Nigeria**

I. INTRODUCTION

Academic institutions are crucial in the development, maintenance, and sharing of knowledge. Libraries in universities and colleges have traditionally been the cornerstone of academic life, providing students, faculty, and researchers with access to scholarly materials needed to teach, learn, and innovate (Abubakar, 2022). Over the last thirty years, however, the rapid advancement of information and communication technologies (ICTs) has radically altered the manner in which knowledge is stored, accessed, and used. The most notable innovations are digital libraries and online repositories, which have become integral parts of modern academic information infrastructures. Their introduction has transformed the nature of scholarly communication by making resources more accessible, increasing the visibility of research output within institutions, and enabling new forms of collaboration across both geographic and disciplinary boundaries (Nkamnebe *et al.,* 2015). Digital libraries are generally understood as well-organized digital data accessible to users through electronic networks (Borgman, 2003). These libraries usually encompass both digitized versions of traditional materials, such as books, journals, and archival materials, and born-digital materials, including e-journals, multimedia objects, and datasets. Online repositories, especially institutional repositories, fulfill a supplementary purpose in that universities and research institutions can archive and publish their intellectual property, such as these, dissertations, preprints, and published articles, via open-access repositories (Lynch, 2003). Combined, digital libraries and repositories have enabled a paradigm shift from limited, non-portable resources to one defined by the ubiquitous availability, interoperability, and sustainability of information resources (Ekhaguosa *et al.,* 2021).

The effects that these developments have on academic institutions are vast. First, digital libraries and repositories have increased access to information that was previously limited by the physical structure of libraries and have allowed 24/7 access to scholarly materials. This has been particularly useful for distance learners and researchers in different time zones. Second, they have resolved historical problems of space and resource limitations in print-based collections. Third, online repositories have increased the impact and visibility of institutional research by making scholarly output available to international readers at no cost, thus fostering the development of the open-access movement (Ashikuzzaman, 2025). The implications of these changes for teaching, research, and innovation are enormous, as access to information in a timely and unrestricted manner is at the core of academic productivity.

However, the shift to digital information systems has not been an easy one. The successful implementation and effective use of digital libraries and repositories require a sound ICT infrastructure, a stable internet connection, and continuous investment in hardware and software. In most developing nations, where resources are limited, inadequate infrastructure and poor connectivity prevent easy access to digital resources (Josh Sammu, 2024). In addition, there are legal and technical challenges related to copyright

constraints, licensing patterns, and digital preservation that institutions need to address. Another necessity is that faculty, students, and library personnel must possess sufficient digital literacy to utilize these platforms effectively (Arnaud & Branco, 2024). The advantages of digital libraries and repositories may be underexploited unless adequate training and user awareness are provided.

The increased importance of digital libraries and online repositories is also correlated with broader global trends in scholarly publication and knowledge management. An example of this is the open-access movement, which has grown in recent years as a response to the escalating prices of journal subscriptions and the need to democratize access to knowledge (Matobako, 2024).

Institutional repositories are central to this movement, as they provide a means for universities to publish their research and ensure its preservation for future generations. In addition, the shift to digital platforms aligns with the global initiative to address the knowledge gap by making scientific and scholarly materials more accessible to developing nations (Asadi *et al.,* 2016). However, although digital technologies can help level the playing field, disparities in technological infrastructure and capacity continue to reinforce inequality in access to information.

Pedagogically, the implementation of digital libraries and repositories in academic life has improved the teaching and learning processes. Faculty members are able to integrate the latest digital materials into their programs, and students can engage with a more diverse spectrum of intellectual approaches. Moreover, online archives allow students and young researchers to present their work, thereby gaining visibility in academia and advancing their careers (Akingbade, 2016). Repositories also contribute to institutional research, knowledge sharing, and collaboration across institutions, disciplines, and geographical areas by ensuring that research outputs are widely accessible. In this regard, digital platforms contribute not only to information access but also to the overall mission of academic institutions, which entails knowledge creation and dissemination (Akingbade, 2016).

Regardless of these developments, important questions remain about the extent to which digital libraries and repositories have altered actual information-use practices in academic institutions. Although accessibility has clearly improved, there is limited information on how these resources are practically used by faculty, students, and researchers, and how digital platforms affect the quality and depth of academic work. Some researchers claim that the convenience offered by online libraries may encourage superficial engagement with information, as users begin to value speed and convenience over a deeper exploration of facts (Oberiri & Iyendo, 2018). Others argue that digital media, in addition to providing sophisticated search and retrieval capabilities, has led to deeper interaction and interdisciplinary investigation. These dynamics need to be understood to determine the true role of digital libraries and repositories in the ecology of academic knowledge.

This paper thus aims to critically explore how digital libraries and online repositories affect access to and use of information in academic institutions. In particular, it discusses the ways in which these platforms have changed the accessibility of academic materials, the visibility and permanence of institutional research products, and the information-use patterns of academic communities. Through an analysis of the available literature and insights gained from global practices, the paper identifies both the opportunities and challenges of digital knowledge systems. The overall goal is to develop a more detailed understanding of how digital libraries and repositories are influencing academic institutions in the twenty-first century, as well as to highlight areas for further investigation and investment where more work is needed.

II. LITERATURE REVIEW

A. Digital Libraries Conceptualization

Digital libraries have been conceptualized in various ways, generally as organizations of digital content made available through digital networks, most often the internet. According to Borgman (2003), a digital library is a collection of digital works that are organized for access and use, supported by a set of services that add value for the user, and managed in a manner that ensures long-term sustainability. This definition identifies three key attributes: digital content, user-centered services, and long-term management and preservation. Unlike traditional libraries, digital libraries do not have physical location limits, giving them the ability to grow indefinitely while providing greater flexibility and accessibility to a wider range of users.

Digital libraries may be traced back to the 1990s in the United States, with the Digital Library Initiative (DLI) aiming to explore the possibilities of digitization in the context of improving scholarly communication. Since that time, digital libraries have included both digitized analog materials (e.g., scanned books and historical archives) and born-digital materials (e.g., e-journals, multimedia files, datasets). Arms (2000) states that the difference between digital libraries and traditional libraries lies not only in the format of the materials but also in the inclusion of sophisticated information retrieval systems, which enable users to conduct advanced searches, filter results, and tailor their experience with the content.

The role of digital libraries has greatly expanded due to the emergence of global consortia and collaborative sites. Examples of these projects include the World Digital Library, which demonstrates the possibilities of collective digitization and resource sharing between institutions and countries. In the case of academic institutions, digital libraries serve not only as repositories of knowledge but also as tools for academic integration worldwide, allowing

knowledge to flow across national and disciplinary boundaries (Nnenna & Ume, 2015).

B. Online Repository and Knowledge Management in Institutions

Online repositories are closely associated with digital libraries, but they are used differently in academic institutions. Akinola *et al.* (2022) define institutional repositories as a collection of services provided by a university to its community members to manage and distribute digital materials created by the institution and its members. Such archives store academic works, including theses, dissertations, working papers, technical reports, and preprints.

An important role of repositories is their alignment with the open-access (OA) movement, which promotes unrestricted online access to scholarly research. Kalita (2016) emphasizes that repositories are necessary to structure the democratization of knowledge access, especially where information is blocked by journal subscription fees. Joshi *et al.* (2012) also highlights the critical role of repositories in realizing the vision of open and free access to scientific knowledge.

Academic visibility and reputation are further enhanced through institutional repositories. According to Narayan and Luca (2016), posting works in institutional repositories increases the likelihood that scholars' research will be discoverable, thereby raising citation rates and the overall impact of their work. Moreover, repositories serve as digital preservation systems, ensuring that academic outputs are not constrained or hidden by commercial publishing models.

C. Theoretical Information Access-Utilization

Information access and utilization theories can assist in discussing the effects of digital libraries and repositories. The model of information-seeking behavior, as explained by Wilson (1996), which emphasizes the interactive process of user needs, information sources, and contextual elements, is particularly relevant. Digital libraries and repositories can be regarded as mediating tools that address these needs by increasing availability, accessibility, and usability.

Another relevant framework is the Technology Acceptance Model (TAM), developed by Davis (1989), which is based on the idea that users' adoption of new technologies depends on both perceived usefulness and ease of use. When applied to digital libraries, TAM suggests that faculty members and students will use them if they believe the platforms are useful for academic activities and relatively easy to use. Research has indeed validated that user interface, search capabilities, and user services play a major role in the use of digital resources (Venkatesh & Davis, 2000).

In a more general understanding, socio-technical systems theory focuses on the relationship between technological infrastructure and social practices. According to Mutula (2009), although digital technologies can be beneficial because of improved accessibility, the outcome of these technologies depends on cultural attitudes, institutional policies, and user capabilities in educational institutions. This theoretical perspective is particularly applicable to explaining inequality in digital library adoption across regions and institutions.

D. International Digital Library/ Repository Trends

Scholarly communication worldwide has seen the proliferation of digital libraries and repositories. In Europe and North America, large-scale consortia have been formed to share resources and ensure extensive access. An example is HathiTrust, which holds a collection of more than 17 million digitized objects contributed by research libraries around the world and serves as a model of collaborative digital preservation (Gakibayo *et al.,* 2013). Similarly, Europeana provides access to cultural and scholarly heritage materials from thousands of institutions across Europe, highlighting the importance of international collaboration in maintaining digital infrastructures.

The China National Knowledge Infrastructure (CNKI) and the Indian National Digital Library are examples of government and institutional investments in national-scale platforms designed to facilitate higher education and research in Asia. African institutions have been striving, despite inadequate infrastructure, to enhance regional initiatives such as the African Digital Library and African Journals Online (AJOL), which aim to improve access to indigenous scholarship (Nwagwu, 2007).

The incorporation of repositories into open science initiatives has emerged as a global trend. Repositories are changing the landscape of scholarly communication by facilitating pre-publication dissemination and peer review, as evidenced by the emergence of preprint servers such as arXiv, bioRxiv, and SocArXiv. This has significant consequences for research visibility, collaboration, and the pace of scientific progress.

E. Advantages of Online Repositories and Digital Libraries

There is a considerable amount of literature that points to the advantages of digital libraries and repositories.

These advantages may be summarized into three key areas:

1. Access and Availability – Digital libraries offer 24/7 access to scholarly materials regardless of the user's location, provided an internet connection is available. This feature is especially useful for distance learners and scholars in remote areas (Tenopir *et al.,* 2017).

2. Preservation and Visibility – Repositories are long-term archives that help ensure the preservation of

institutional research outputs while increasing their global visibility (Pinfield *et al.,* 2015).

3. Cost-effectiveness and Efficiency – Digital platforms reduce costs related to physical storage, interlibrary loans, and print subscriptions, while also enhancing search and retrieval efficiency (Arms, 2000).

F. Challenges and Limitations

These advantages notwithstanding, challenges are still present. Some of the common barriers identified in the literature include:

1. *Infrastructure Deficits*: ICT infrastructure is lacking in many institutions, especially in developing regions, making it difficult to sustain the successful operation of digital libraries (Mutula, 2009).

2. *Copyright and Licensing Restrictions* – Intellectual property issues often determine the extent of material that can be copied or placed in repositories (Chan & Costa, 2005).

3. *Digital Literacy Gaps*: Users' ability to efficiently use and navigate online resources is uneven, and a significant portion of students and faculty require training (Mutula, 2009).

4. *Sustainability Problems*: Digital repositories are expensive to create and maintain in terms of finances and institutional support, which is not always available (Pinfield *et al.,* 2015).

These issues imply that, although digital libraries and repositories can be transformative, their successful implementation depends on addressing systemic, institutional, and user-level challenges.

G. Emerging Directions

Other directions in the development of digital libraries and repositories are also identified in the literature. AI and machine learning are increasingly being integrated into online libraries to improve search accuracy, suggest relevant materials, and automatically generate metadata (Xie *et al.,* 2018). Likewise, blockchain has been proposed as a mechanism to ensure authenticity and transparency within scholarly communication. Open data repositories are becoming increasingly popular as part of the open science agenda, enabling researchers to share not only publications but also datasets. These trends indicate that digital libraries and repositories are no longer fixed structures but dynamic ecosystems, subject to technological advancement and evolving scholarly demands.

H. Case Studies of Online Repositories and Digital Libraries in Nigeria Universities

As the most populous country in Africa and a leading center of higher education, Nigeria offers a valuable context in which to explore the adoption and impact of digital libraries and institutional repositories. The country has more than 170 universities-federal, state, and private-which have made significant strides in embracing ICT in academic library services. However, infrastructural, financial, and policy challenges also characterize Nigerian universities and influence the scale and success of digital library initiatives.

1. University of Ibadan (UI): The University of Ibadan is the leading university in Nigeria in the development of digital libraries. UI has implemented digital initiatives through its Kenneth Dike Library, including the digitization of theses and dissertations, subscription to electronic databases, and the creation of an institutional repository. Adeyemo and Jamogha (2021) argued that the UI Institutional Repository has made research outputs that were previously local to the region more easily accessible, as they were either underutilized or inaccessible before. The open-access model also allows faculty and postgraduate students to gain greater visibility and citations for their scholarly work in the repository. However, shortcomings such as unpredictable internet connectivity, limited financial allocation, and insufficient technical staff reduce the repository's potential.

2. Ahmadu Bello University (ABU) Zaria: Ahmadu Bello University, which has one of the largest academic communities in Sub-Saharan Africa, has also invested in digital library infrastructure. Its Kashim Ibrahim Library operates an expanding digital library, providing students and staff with access to e-journals, e-books, and databases through consortia, including the Nigerian Research and Education Network (NgREN). Igboechesi *et al.* (2023) claim that the ABU institutional repository was established with the help of international partners and has significantly enhanced the visibility of the university's scholarly outputs. Nevertheless, scholars continue to report challenges in navigating the site due to insufficient user training and irregular updates of uploaded materials.

3. Covenant University, Ota: Covenant University is a prime example of a private university that is highly progressive in the use of ICT in library services. Its Centre for Learning Resources (CLR) integrates the latest digital library solutions, including an institutional repository, electronic submission of theses, and subscriptions to leading international databases. Investigations (Idowu & Oso, 2022) reveal that Covenant University's repository has enhanced the institution's global ranking through increased citation and research visibility. Covenant University is well-funded compared to other universities in the country and therefore benefits from stable infrastructure, qualified ICT personnel, and comprehensive user training services. This example demonstrates that institutional support and sustainable funding frameworks have a direct impact on the success of digital library initiatives.

4. University of Lagos (UNILAG): The University of Lagos has developed a hybrid library system, combining print and online resources to serve its diverse academic communities. The UNILAG library is a member of consortia for sharing

electronic resources and also maintains a collection of theses and dissertations. Nevertheless, a study conducted by Okiki and Asiru (2011) reveals that students and faculty value access to online resources, but barriers such as low internet connectivity, frequent power outages, and lack of awareness about repository services limit their use. These findings underscore the importance of stable infrastructure and user sensitization to maximize the value of digital libraries.

5. Cross cutting challenges in the Nigerian Universities: Despite the achievements of Nigerian universities in embracing digital libraries and repositories, it is evident that a few issues are consistent across institutions:

1. *ICT Infrastructure* – Poor bandwidth, fluctuating electricity supply, and high prices of ICT equipment are problems that deter proper service delivery (Ogunode *et al.,* 2021).
2. *Funding Constraints* – Public universities usually rely on government allocations that cannot sustain digital projects, resulting in underfunded repositories (Bara *et al.,* 2022).
3. *Human Capacity* – The lack of trained ICT staff and digitally skilled librarians influences the quality of repository management and user support (Livina & Mole, 2021).
4. *Awareness and Adoption* – Faculty members are not inclined to deposit their research in repositories due to lack of awareness, copyright concerns, or the absence of incentives (Omeluzor, 2014).
5. *Policy Gaps* – The lack of robust institutional policies regulating open access and intellectual property rights limits the growth and sustainability of repositories (Gideon, 2008).

6. Opportunities and Way Forward: Nevertheless, challenges notwithstanding, the value of digital libraries and repositories as a strategic component of Nigerian universities is becoming increasingly evident. National programmes like NgREN are also geared towards enhancing bandwidth and the sharing of resources among universities. Partnerships with other organisations, such as INASP (International Network for the Availability of Scientific Publications) and EIFL (Electronic Information for Libraries), have helped with training, advocacy, and funding of digital projects in Nigeria. Open-source repository systems like DSpace are also gaining popularity, as they save money and can be customized locally.

In the future, it will be important to tackle infrastructural and policy issues to expand digital libraries in Nigerian universities. Open access policies need to be reinforced, and policies that encourage faculty involvement, investments in ICT infrastructure, and staff training are necessary to increase the benefits of digital platforms. Nigerian case studies show that although digital libraries and repositories can revolutionize access to and use of information, their success is determined by sustainable institutional commitment, sufficient funding, and adherence to best practices worldwide.

III. METHODOLOGY

A. Research Design

The research design used in this study was a descriptive survey, which is extensively employed in library and information science research to gather measurable data on the attitudes, practices, and perceptions of respondents. The use of a survey was deemed most appropriate, as the study aimed to investigate how digital libraries and online repositories affect information access and utilization in Nigerian universities, with evidence gathered from library staff and users themselves. Through its large sample, the research sought to generalize the results across academic institutions while also capturing both the advantages and limitations of digital information services.

B. Population of the Study

The target population consisted of 656 library workers employed in various types of libraries across different university categories in Nigeria, namely federal and state libraries, as well as privately owned university libraries. These included professional librarians, para-professionals, and ICT support personnel who are directly engaged in the management, deployment, and utilization of digital library and repository services. The population selected, i.e., the library staff, was not random, as they are the key participants in the planning, implementation, and evaluation of ICT-based library services. Their contributions provided credible evidence regarding the extent to which digital libraries and repositories are transforming academic service delivery.

C. Sample Size and Sampling Technique

The target population consisted of 656 library workers employed in various types of libraries across different university categories in Nigeria, namely federal, state-, and privately-owned university libraries. These included professional librarians, para-professionals, and ICT support personnel who were directly engaged in the management, deployment, and utilization of digital library and repository services. The population selected, i.e., the library staff, was not random, as they are the key participants in the planning, implementation, and evaluation of ICT-based library services. Their contributions provided credible evidence regarding the extent to which digital libraries and repositories are transforming academic service delivery.

D. Sample Size and Sampling Technique

A sample size of 585 respondents was drawn from the total population of 656. The sample size was calculated using Yamane's (1967) formula for determining sample size at a 95 percent confidence level and a 5 percent margin of error.

To ensure representativeness, a stratified random sampling method was used. The stratification was based on the three types of universities in Nigeria: federal, state, and private. A sample of library staff was then randomly selected proportionally from each stratum to represent the range of institutional contexts. This approach ensured that differences in funding, infrastructure, and policy environments among the various types of universities were adequately represented in the study.

E. Instrument Validity and Reliability

The draft questionnaire was tested by three professionals in the field of library and information science, who had substantial experience in digital library research and repository management. Their feedback led to revisions of vague items, making the instrument more understandable. A pilot study was then conducted with 30 library staff from two universities not included in the main study. The pilot data were analyzed to test reliability using the Cronbach alpha coefficient, which yielded a reliability score of 0.87, indicating high internal consistency of the instrument.

F. Data Collection Procedure

Data collection took place over eight weeks. Questionnaires were administered in hardcopy (printed versions) and online (via email and Google Forms), depending on the ICT facilities available in each institution. Research assistants administered and retrieved questionnaires where internet access was limited. Of the 585 questionnaires distributed, 552 were successfully returned and used, representing a 94.4% response rate, which is sufficient for statistical analysis and generalization.

G. Data Analysis Techniques

Collected data were coded and entered into the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive as well as inferential statistics were used. Demographic information, utilization patterns, and perceived impacts were summarized using descriptive statistics, including frequencies, percentages, mean scores, and standard deviations. Inferential statistics were used to test hypotheses. Specifically, associations between the type of university (federal, state, private) and the level of repository adoption were examined using the Chi-square test.

Independent sample t-tests were performed to compare male and female library staff perceptions of the advantages of digital platforms. Analysis of Variance (ANOVA) was used to determine differences in perceptions among professional, para-professional, and ICT staff. Qualitative content analysis was conducted for open-ended responses, with coding performed according to themes to reveal recurring concerns and suggestions.

H. Ethical Considerations

Ethical standards were maintained throughout the study. Before data collection, the authorities of each participating university library were consulted. All respondents were informed about the study and provided consent, assuring them that participation was voluntary and that they could withdraw at any time. Anonymity and confidentiality were ensured by coding questionnaires instead of using names, and all data were secured and used solely for academic purposes.

IV. LIMITATIONS

Although the methodology was robust, several limitations were acknowledged. First, the use of self-reported data created a risk of response bias, as respondents may have exaggerated or underreported their interactions with digital platforms. Second, the study was restricted to Nigerian universities; despite a large and representative sample, this limits the generalizability of the results to other countries with different ICT and policy environments. Third, infrastructural challenges during data collection, such as power outages and intermittent internet access, sometimes slowed responses. These challenges were mitigated through multiple data collection channels and the triangulation of quantitative and qualitative data.

V. RESULTS AND DISCUSSION

The demographic profile of respondents included data on gender, age, and professional background. The response rate was high (94.4%), with 552 valid responses returned from 585 questionnaires distributed. Respondents included professional librarians (45.1%), para-professionals (32.4%), and ICT support personnel (22.5%). Regarding institutional affiliation, 47% of respondents were employed in federal universities, 36% in state universities, and 17% in private universities. Gender distribution was balanced (52% female, 48% male), and most participants (62%) had over ten years of experience in academic libraries. This distribution indicates a credible variation of views across Nigerian universities.

The results showed high awareness of digital library services among library staff, with 89% of participants reporting that their institution had adopted some form of digital library or repository system. Differences among university types were observed: 96% of federal universities reported the existence of digital repositories, compared with 82% of state universities and 71% of private universities.

TABLE I AVAILABILITY OF DIGITAL LIBRARIES AND REPOSITORIES IN NIGERIAN UNIVERSITIES

Type of University	Respondents (n)	Institutions with Digital Libraries (%)	Institutions with Repositories (%)
Federal (n = 260)	47%	96%	88%
State (n = 199)	36%	82%	65%
Private (n = 93)	17%	71%	59%
Total	552	89%	72%

Source: Field Survey, 2025

These findings correspond to previous literature (Livina & Mole, 2021), indicating that federal universities have a higher likelihood of embracing digital infrastructures than state and private universities due to greater government funding and international partnerships.

A. Patterns of Utilization

Respondents were asked about the extent of digital library and repository usage among faculty and students. The findings revealed that seven out of ten faculty members regularly used digital platforms for teaching and research, whereas half of the undergraduate students did the same. The highest engagement was observed among postgraduate students (81%), as they rely on theses, dissertations, and journal articles as sources for advanced research work.

TABLE II UTILIZATION PATTERNS OF DIGITAL LIBRARIES AND REPOSITORIES

User Group	High Utilization (%)	Moderate Utilization (%)	Low Utilization (%)
Undergraduate Students	58	28	14
Postgraduate Students	81	14	5
Faculty Members	74	19	7
Researchers/Staff	69	22	9

Source: Field Survey, 2025

Interestingly, disciplinary differences also influenced patterns of utilization. Science and engineering faculties showed higher engagement (83%) than humanities and social sciences (61%). This is similar to global trends, where STEM subjects, being more dependent on current academic literature, tend to utilize digital information resources more extensively (Christenson, 2011).

B. Effect on Information Access

A major aim of this research was to determine how information access in Nigerian universities has changed following the introduction of digital libraries and repositories. A large majority (88%) of respondents reported that the availability of scholarly resources had greatly increased through digital platforms.

TABLE III PERCEIVED IMPACT OF DIGITAL LIBRARIES AND REPOSITORIES

Impact Dimension	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)
Improved access to scholarly resources	65	23	7	5
Enhanced research visibility and citation	52	27	13	8
Greater efficiency in information retrieval	61	22	10	7
Positive effect on institutional ranking	48	31	12	9
Cost-effectiveness in resource provision	55	28	11	6

Source: Field Survey, 2025

The results substantiate that digital libraries provide 24/7 access, enabling distance learners and faculty researchers-who had previously been inconvenienced by restricted print resources-to access scholarly materials more easily. These findings align with Wilson's (1996) information-seeking behavior model, which emphasizes the accessibility and usability of information sources as key to addressing users' information needs.

C. Effects on Research Visibility and Institutional Reputation

Nigerian scholarship has gained increased visibility as a result of institutional repositories. Most respondents (79%) reported that faculty research products in the repositories received more citations and were often accessed by scholars from other countries. These findings are supported by the experiences of the University of Ibadan and Covenant University, whose repositories have increased the global visibility of their research (Omeluzor, 2014; Gideon, 2008).

D. Efficiency and Cost-Effectiveness

Efficiency and cost-effectiveness were also cited as significant advantages of digital platforms. A total of 83% of respondents stated that digital libraries had reduced reliance on expensive interlibrary loans and physical storage. Table 3 further illustrates staff perceptions of digital platforms as cost-saving and efficiency-enhancing in academic processes.

E. Objections to Adoption and Use

Despite these advantages, respondents reported persistent challenges in adoption and usage. Table IV presents a summary of these issues.

TABLE IV CHALLENGES TO ADOPTION AND UTILIZATION

Challenge	% of Respondents Identifying
Unstable electricity supply	71%
Inadequate internet bandwidth	68%
Funding constraints	65%
Faculty reluctance to deposit works	49%
Skill gaps among library staff	57%
Absence of institutional OA policies	59%

Source: Field Survey, 2025

These findings are in line with previous Nigerian research (Ogunode *et al.,* 2021; Isuku, 2018). Poor internet bandwidth and unstable electricity are the greatest challenges, particularly in state universities, where infrastructural limitations are more pronounced.

F. Literature Comparative Discussion

Overall, the results support international literature highlighting the disruptive power of digital libraries and repositories (Borgman, 2003; Lynch, 2003; Suber, 2012). Nigerian universities have made significant progress, with federal and private universities being the most advanced in terms of implementation and use. Nonetheless, the challenges identified are similar to those in other developing countries, particularly ineffective infrastructure, insufficient funding, and digital literacy issues (Mutula, 2009; Ocholla & Bothma, 2007).

The Technology Acceptance Model (Davis, 1989) is applicable in this context: the usefulness of digital platforms is compromised by infrastructural instability and a lack of user training. Similarly, the socio-technical systems theory emphasizes that technology cannot succeed on its own; cultural attitudes, policies, and institutional support must align with technological adoption (Mutula, 2009). The Nigerian case illustrates this interaction, as universities with stronger institutional backing (e.g., Covenant University) achieve better outcomes than less well-funded state universities.

VI. CONCLUSION

The research examined the effect of digital libraries and online repositories on information access and utilization in Nigerian universities, based on data from 552 library employees. The results show that online platforms have emerged as important academic systems that contribute significantly to the access, sharing, and use of information. The adoption of ICT is strongest in federal universities due to government subsidies, the increasing competitiveness of private universities, and the relative weaknesses of state universities resulting from financial and infrastructural limitations. Usage patterns differ by type of user and discipline: postgraduate students and faculty are the most frequent users, and science and engineering disciplines demonstrate higher usage compared with humanities and social sciences. Digital platforms promote research efficiency, provide economical access to academic materials, and enhance the global visibility of Nigerian scholarship.

Nevertheless, their effectiveness is limited by systemic challenges. The main impediments include inadequate infrastructure (unreliable electricity and low internet bandwidth), limited funding, low ICT capabilities of library personnel, lack of faculty participation in repository deposits, and the absence of systematic development and open-access policies. Although digital libraries and repositories offer unprecedented opportunities in academic life, systemic, financial, and cultural barriers impede the full realization of their benefits. Addressing these challenges requires concerted policies, institutional commitment, and long-term investment in ICT infrastructure.

VII. RECOMMENDATIONS

Based on the results, this paper makes the following recommendations for Nigerian universities and policymakers:

1. Engage agencies such as the NCC and private providers, particularly to support rural and state-owned institutions.
2. Allocate permanent funding to digital libraries and explore sustainable options such as endowments, publisher partnerships, and cost-sharing within consortia.
3. Establish policies that require or incentivize faculty to deposit their work, offering rewards such as promotion recognition, citation reports, and visibility awards.
4. Train and certify employees and volunteers through workshops and partnerships with ICT units.
5. Develop clear deposit, copyright, and preservation policies to ensure consistency, sustainability, and long-term visibility.
6. Organize orientations, seminars, and workshops for students and faculty, with particular emphasis on guiding undergraduates in the use of digital platforms.
7. Strengthen national and regional collaboration initiatives, such as NgREN, to share resources, negotiate with publishers, improve repository interoperability, and increase the visibility of Nigerian research.

A. Final Remark

The article emphasizes that online libraries and repositories are not merely technological advancements but essential facilitators of academic excellence within Nigerian

universities. They can make Nigerian higher education more competitive globally by increasing visibility through democratized access to knowledge, enhancing efficiency in research and teaching, and more. Nevertheless, institutional support, investment in infrastructure, and a cultural shift toward reliance on open access determine the sustainability of these platforms. Addressing the challenges outlined in this paper will not only enable Nigerian universities to keep pace with global best practices but also allow them to play an active role in the global knowledge economy.

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