

Digital Preservation and Sustainability of Library and Information Science Research and Practices

Famuyiwa, Shola Temitope
Department of Library and Information Science,
University of Ilorin, Nigeria
famuyiwa.st@unilorin.edu.ng

Abstract

Digital preservation plays a crucial role in ensuring the sustainability of Library and Information Science (LIS) research and practices. This study examines the current state of digital preservation in LIS institutions, the strategies employed to enhance sustainability, and the challenges hindering long-term preservation efforts. Findings reveal that while Nigerian LIS institutions are progressively adopting digital preservation practices, these efforts are often constrained by technological obsolescence, inadequate infrastructure, and financial limitations. The lack of standardized approaches further exacerbates the sustainability concerns, making digital resources vulnerable to loss and inaccessibility over time. Strategies such as institutional policy development, increased funding, and capacity building are identified as essential measures to improve digital preservation outcomes. The study emphasizes the need for a coordinated approach to digital preservation, advocating for investment in emerging technologies, skill development programs, and stronger institutional policies to safeguard LIS research outputs and practices. By addressing these challenges, LIS institutions can ensure the longevity and accessibility of digital resources, fostering a more resilient and sustainable research environment. The findings contribute to the ongoing discourse on digital preservation, providing practical insights for policymakers, LIS professionals, and researchers aiming to enhance the sustainability of digital resources in the field.

Keywords: Digital preservation, Sustainability, Library and Information Science, Research and Practices.

Introduction

The introduction of digital technologies has transformed how knowledge resources are stored in libraries and information centers. It has significantly increased information accessibility, saved time, and reduced expenses. Institutions can not only hold vast volumes of information, but they can also quickly access information from other areas, resulting in substantial changes in library and information science (LIS) research and practices (Connaway et al 2022). These technologies have enabled librarians to fulfill their responsibility of capturing, preserving, and disseminating library and information science research from their respective institutions (Tzanova, 2020). Most

organizations and libraries are finding it increasingly difficult to manage these resources as a steady flow of new resources is developed and generated at a rapid pace.

The increasing application of digital technologies has transformed the modern library into a virtual library. McHaney (2023) noted that the proliferation of digital devices and related applications has collectively altered the traditional academic library beyond recognition. Librarians are now seeing the need to digitize their research output and library materials as Digital information is at great risk of loss if digital preservation is not considered and prioritized (Masenya 2020). Academic institutions in Africa have recognized a need to prioritize the long-term preservation of their fast-growing digital collections and research. Rhima (2023) defined digital preservation as the series of actions and interventions required to ensure continued and reliable access to authenticate digital information resources for as long as they are deemed to be of value. Digital preservation could also be seen as a set of processes and activities that ensure continued access to information and all kinds of records, resources, and scientific and cultural heritage existing in digital formats von (Schorlemer 2020).

Library and Information Science Experts now have serious concerns about how their research outputs can be digitized and preserved, which guarantees their continuous accessibility. To the general Public. Concurrently, the notion of sustainability which includes the capacity to continue digital preservation initiatives over an extended period despite many obstacles has become prominent. To guarantee the durability and dependability of digital resources in libraries and information centers, the convergence of digital preservation and sustainability is essential.

Statement of the Problem

The transition to a digital world has introduced significant challenges in organizing, accessing, preserving, and sustaining library and Information science research Output. As a result of this, many librarians, and libraries risk losing vital information if digital preservation is not prioritized. Studies by Sigauke and Nengomasha (2012) and Ngulube (2012) highlight that outdated software and rapid technological changes render electronic documents unusable within a few years, affecting researchers and publishers. In most African countries, there is a lack of sustainability in digital preservation due to a lack of trained staff, inadequate awareness, poor technological

infrastructure, insufficient resources, and the absence of comprehensive policies and standards. These challenges emphasize the need for robust digital preservation strategies to sustain library and information science research.

Research Objectives

The main objective of the study was to examine digital preservation and sustainability of library and information science research and practices. The specific objectives are to:

1. Identify the current state of digital preservation practices in Library and Information Science institutions
2. Determine the strategies used for enhancing digital preservation and sustainability in Library and Information Science Institutions.
3. Investigate the challenges to the sustainability of library and information science research and practices.

Literature Review

Digital Preservation and Sustainability of Library and Information Science Research

Sustainability in digital preservation is a crucial global issue, but it presents specific challenges and opportunities in Nigerian settings. As digital information becomes more integrated into the intellectual, cultural, and commercial sectors, the necessity to preserve these resources for future use has become critical. Active preservation is another key feature that entails taking proactive actions to extend the life of resources. This involves procedures such as re-boxing, cleaning, de-acidification, and fumigation to safeguard resources from insects and rodents. Restoration, as part of preservation, aims to extend the life of documents while preserving their original shape and integrity, while following aesthetic and ethical guidelines (Szczepanowska 2013). Conservation is the practical use of processes such as binding, restoration, and paper chemistry to efficiently preserve resources (Faber et al 2021). However, research has revealed that, while these procedures are used, they are frequently ineffective, and digital preservation methods, while widely used, are nonetheless inefficient.

Digital preservation is becoming increasingly important as a primary method of creating, storing, and transmitting information. It encompasses the preservation of both born-digital materials (those

created in digital form) and materials transformed from analog to digital formats (Fisher 2020). Digital preservation entails a series of steps taken to ensure ongoing and dependable access to authentic digital material for as long as it is useful (Ndegwa 2023). These practices are critical for ensuring access to digitally stored information, scientific data, and cultural assets. The necessity of digital preservation is highlighted by the need to protect these resources from media failure, physical loss, and obsolescence.

Digitization, often known as the translation of information from analog to digital form, has profoundly altered the operations of libraries, information organizations, and academia (Gabbay 2024). It entails converting numerous sorts of information, such as books, theses, dissertations, and images, into binary digits, which are the fundamental units of data on a computer (Meyer 2023). This procedure is critical for the transition from conventional to digital since it not only improves access to resources but also helps to maintain and sustain original materials or manuscripts by eliminating physical handling. The advancement of information and communication technology (ICT) has accelerated digitalization, enabling the development of digital surrogates that extend the lifespan and increase access to delicate things (Fritz, 2021). It has become an important preservation strategy in libraries, providing a better alternative to traditional procedures such as photocopying. It ensures that digital materials are accessible and usable despite technological changes (Masenya 2018). Digitizing multimedia databases improves access to cultural and scientific knowledge for a wide range of audiences (Nelson 2018). Furthermore, digital reformatting has become a popular preservation approach, particularly for non-paper things, because it helps to regulate the deterioration of physical records and minimizes the amount of physical storage space needed. By allowing the duplicate and backup of digital items, libraries may preserve their collections against loss and extend the usability of their assets.

As technology advances swiftly, digital preservation is a continuous process that necessitates regulated operations to preserve the longevity and accessibility of digital information (Hunter 2020). It entails safeguarding digital assets against hazards such as media degradation and technical obsolescence. This technique is critical to ensuring that digital collections stay accessible and usable in the long run. The broad extent of digital preservation emphasizes its importance in preserving and conserving digital records for future generations.

Digital Preservation Strategy for Sustainable Library and Information Science Research

Digital preservation solutions are crucial for assuring long-term access to digital items by addressing concerns about hardware and software obsolescence (Burda 2013). These techniques can be broadly classified as investment, short-term, and long-term approaches. Investment strategies stress the implementation of standards, such as the widely used PDF/A format, to ensure the durability and support of digital documents over time. Furthermore, normalization entails shifting digital assets to repository systems, which reduces reliance on the original program, whereas encapsulation combines digital objects with metadata to protect critical components for future access.

Short-term digital preservation solutions prioritize preserving the technology infrastructure required to access digital artifacts (Noonan 2020). Technology preservation, which is commonly regarded as a disaster recovery strategy, entails conserving outdated systems, software, and media drives so that future generations can interact with digital things in their original versions. Another short-term method is refreshing, which includes periodically transferring data from outdated storage media to newer copies of the same medium to avoid obsolescence or degradation (Badawy, 2024). Replication, like refreshing, stresses storing copies of digital assets in several locations to protect against data loss or damage. Long-term digital preservation solutions include migration and emulation, both of which strive to ensure that digital items remain accessible as technology progresses (El Idrissi 2019). Migration is the process of transferring data from outmoded or failing medium to newer formats or platforms while retaining the data's fundamental properties and responding to technological improvements (Luna 2024). Emulation, on the other hand, entails developing software or hardware environments that imitate obsolete systems, allowing digital assets to be accessed and used in their original form despite technological advancements (Shibanda 2023). This method is very useful for preserving the historical authenticity of digital resources.

Migration and emulation both have advantages and drawbacks. Migration keeps digital items accessible by upgrading their forms as technology improves, but it may cause modifications to the original object that compromise its integrity (Hussein 2021). Emulation, while providing a very

genuine experience by recreating the original computing environment, has major technical problems in constructing and maintaining reliable emulators over time. Both solutions are critical components of a comprehensive digital preservation strategy, each addressing a unique part of the difficult challenge of long-term digital accessibility.

Digital preservation necessitates a multidimensional approach that includes standard development, short-term methods to sustain access in the face of current technological challenges, and long-term plans to ensure continued usability as technology progresses (Gabbay, 2024). Combining these tactics allows institutions to conserve digital items from obsolescence and degradation, guaranteeing that they are accessible and usable for future generations.

Digital Preservation Software

Digital preservation software is essential for maintaining the longevity and accessibility of digital content. One notable example is the LOCKSS (Lots of Copies Keep Stuff Safe) system, developed by Stanford University Libraries. LOCKSS was initially created to help libraries preserve web content and electronic publications through automated web resource capture. This software supports redundancy by ensuring multiple copies of digital materials are preserved, with a particular focus on web-based publications (Trehub, 2019). LOCKSS aligns with the OAIS (Open Archival Information System) model, ensuring both storage and access and is widely used by libraries and publishers. It includes features like migration on demand and on access, which allow records to be migrated when first opened or created by a user. Additionally, LOCKSS employs a peer-to-peer polling and reputation system to detect and repair any preservation failures, ensuring the accuracy and completeness of preserved content (Mohammed 2023).

Another widely used digital preservation tool is DSpace, an open-source software developed by the Massachusetts Institute of Technology and Hewlett-Packard. D Space is designed to capture, manage, preserve, and provide access to a wide range of digital content, including journals, data sets, theses, reports, and multimedia (Balasubramanian, 2021). It supports the ingestion of materials and metadata, making it easier to list and search for content while ensuring its long-term preservation. DSpace is particularly valuable for academic institutions as it provides a robust

platform for managing and disseminating scholarly research materials. As an open-source solution, DSpace continues to evolve, with new communities and collections being added regularly, expanding its content and utility.

Fedora, or Flexible Extensible Digital Object Repository Architecture, is another significant digital preservation software, developed collaboratively by Cornell University and the University of Virginia Library. Fedora is designed to store and preserve both individual digital objects and the complex relationships among different digital components (Olivier 2022). This software utilizes XML files to store objects and related metadata, which is a standard format for the preservation of electronic records. Fedora's architecture allows it to manage complex digital resources, making it a powerful tool for institutions that require flexible and extensible solutions for digital preservation. It is particularly noted for its ability to maintain the integrity and relationships of digital components, ensuring that complex electronic resources are preserved accurately over time.

Challenges Faced by the Preservation of Digital Information Resources

The challenges faced by libraries and information professionals in maintaining and preserving their collections, particularly in African countries are numerous. One of the primary issues is the poor maintenance culture concerning infrastructural facilities such as electricity, buildings, and control devices, which contributes to the rapid deterioration of collections (Yayah et al 2022). The importance of preventive preservation is emphasized, which involves regular cleaning of the facilities and the use of restoration techniques like binding and lamination for paper-based information (Johnson 2018). The quality of paper used in the production of library books and archival records is a significant concern, as it poses a serious threat to the long-term preservation and conservation of these materials.

critical need for well-trained manpower in the field of preservation and conservation. Preservation is a specialized area that requires a deep understanding of the physical and chemical properties of the materials held in libraries and archives (Hunter 2020). Despite the importance of this knowledge, many library and archival staff members lack the necessary training and skills to carry out preservation tasks effectively. training programs should include modules on operating

environmental controls and storage, as well as the development of technical skills such as encryption, metadata schema coding, and authentication. This lack of expertise has been identified as a major barrier to the successful implementation of preservation and conservation programs in African countries (Seth 2022)

Many library and records managers focus heavily on providing information services while neglecting the aspect of preservation. This lack of recognition of the importance of preservation, restoration, and conservation harms the long-term sustainability of library and archival collections (Masenya 2028). The absence of adequate policies and procedures for managing digital resources, coupled with insufficient funding, further complicates efforts to preserve these materials.

The challenges of digital preservation are exacerbated by the continuous changes in computer hardware and software, leading to technological obsolescence. This problem is compounded by the lack of standardized metadata, which can result in errors during digitization processes. The article also notes that many traditional librarians and archivists are resistant to adopting new technologies due to generational gaps and a reluctance to abandon old practices. To address these issues, the need for regular updates and re-digitization of archives is emphasized to ensure that digital resources remain accessible despite technological advancements.

Methodology

The study is survey research anchored on qualitative method which focuses on obtaining data through an open-ended questionnaire. Qualitative methods usually give room for in-depth and additional probing and questioning of respondents based on their responses, where the respondents or researcher tries to understand their motivation and feelings. A qualitative method was chosen because it is assumed to help reveal the Digital preservation and sustainability of library and information science research and practices. Purposive sampling was used to select Six public universities from each geo-political zone in the country. The selected public universities are owned by the state and federal governments in Nigeria. Furthermore, six LIS educators were selected from the six purposively selected public universities. The study targeted educators with minimum

qualifications of a Master's degree in librarianship. The items are open-ended surveys that are relevant in capturing data focused on the three objectives of the study.

As a result of the distance barrier and the ongoing security issues going on in the country such as banditry, and kidnapping, the researcher resulted to used an online survey. To make this possible, the researcher contacted each of the university Library schools to get the phone and e-mail contact of each of the LIS educators, to gather data from the respondents. The instrument for data collection was digitized using Google Forms. The survey was mailed out between the period of July to 20th of August, 2024. The respondents were instructed to fill out the online survey at the earliest possible time. Data was collected from all six participants and their responses were deemed suitable for analysis. Qualitative analysis was used to examine the data collected from the participants and the responses were thematically organized while the findings were presented based on the participants' statements. Ethical consideration was taken into account and informed consent was obtained from all participants. They expressed their willingness and eagerness to participate in the study. Additionally, participants were informed of their right to withdraw from the study if they felt their involvement might have any negative implications. From the above Table 1, six copies of open-ended survey responses were properly filled. The data obtained from the survey were sorted, collated, and manually transcribed by the researcher and reported accordingly.

Results

S/N	Geo-political Zone	Public Library	Surveyed received	Participant code
1	North Central	University of Ilorin	1	P1
2	North East	University of Maiduguri	1	P2
3	North West	Amadu Bello University	1	P3
4	South West	University of Ibadan	1	P4
5	South South	Delta State University	1	P5
6	South East	University of Nigeria	1	P6
Total	6	6	6	6

Source: Field Survey

This section presents the results and discussion of the findings and is based on the research questions as reflected in the questionnaire and interview schedule.

Current State of Digital Preservation Practices in Library And Information Science Institutions

All participants highlighted that their institutions have started adopting digital preservation practices. However, the extent of adoption varies, with some institutions having more advanced systems in place than others.

P1 and p2: Respondents from the University of Ilorin and Amadu Bello University mentioned that they have initiated digital preservation to digitize library and information research even though the resources available are limited.

P3 and 4: we use cloud storage solutions for digital preservation to sustain our research output which is now becoming more common, offering scalability and redundancy.

P5 and p6: we have established institutional repositories to store and preserve our research. These repositories are built using platforms like DSpace, Fedora, or Islandora, which offer varying levels of support for digital preservation functions. But for us as an institution, we use Dspace for our preservation

Strategies used for enhancing digital preservation and sustainability in Library and Information Science Institutions

P1 and P4: we are trying to Formulate and adopt formal digital preservation policies that outline the institution's commitment, objectives, and strategies for preserving digital content. This includes guidelines on data selection, retention periods, and access provisions.

P2 and P3: the respondent asserted that preservation with specific metadata standards such as PREMIS (Preservation Metadata: Implementation Strategies) and Dublin Core are crucial strategies for documenting the provenance, authenticity, and technical details of digital objects, enabling future access and understanding.

P5: one of the strategies for enhancing digital preservation is actively seeking funding from government grants, philanthropic organizations, and internal budget allocations to support digital preservation activities to sustain our research outputs

P6: Conduct regular risk assessments to identify potential threats to digital content and develop mitigation strategies, such as disaster recovery plans and backup systems.

Challenges of Digital Preservation and Sustainability of LIS Research

P1: Technological obsolescence is one of the most pressing challenges. Digital formats, software, and hardware evolve rapidly, and what is standard today may be outdated or unsupported in just a few years. This poses a risk to the long-term accessibility of digital content, as future researchers may not have the tools to access today's data. To ensure sustainability, LIS professionals must continuously migrate and update digital content, which is both resource-intensive and technically complex.

P2: Inadequate infrastructure is a significant barrier. Many institutions lack the necessary systems, storage solutions, and technical expertise to effectively preserve digital materials. Without robust infrastructure, there's a risk of data loss, corruption, or inaccessibility over time. Sustainable digital preservation requires not only adequate storage but also reliable backup systems, regular maintenance, and secure environments that can protect against data breaches and natural disasters.

P3: The financial burden of long-term digital preservation is substantial. It involves ongoing costs for storage, software licenses, hardware upgrades, and specialized staff. Many institutions, especially smaller libraries or those in developing regions, struggle to allocate sufficient funding for these activities. The high costs can lead to the prioritization of certain collections over others, potentially leading to the neglect of important but less visible research materials.

P4: Metadata and documentation are crucial for the sustainability of digital resources. Without accurate, comprehensive metadata, it becomes difficult to manage, retrieve, and understand digital content over time. However, creating and maintaining high-quality metadata is challenging, especially for large or complex collections. Inconsistent or incomplete metadata can lead to the degradation of the research value of digital materials, as future users may struggle to interpret or locate the resources they need.

P5: Legal and ethical issues are often overlooked but are critically important. Copyright restrictions, privacy concerns, and the need for ethical stewardship of culturally sensitive materials all complicate digital preservation efforts. Navigating these issues requires a deep understanding

of both the legal landscape and the ethical implications of digital curation. Failure to address these challenges can result in restricted access to important research materials or even legal liabilities for the institutions involved.

P6: The lack of standardized practices across the LIS field presents a significant challenge. While there are guidelines and best practices, there is still considerable variation in how institutions approach digital preservation. This inconsistency can lead to fragmentation, where different institutions adopt incompatible methods, making collaboration and resource sharing difficult. For sustainable digital preservation, there is a need for more cohesive standards and practices that can be widely adopted across the LIS community.

Discussion of the Findings

The findings from the interviews reveal that while there is a growing awareness of the importance of digital preservation in Nigerian LIS institutions, there are significant gaps in implementation. The current state of digital preservation practices shows variability across institutions, influenced by differences in resources and institutional support.

The strategies identified for enhancing digital preservations as capacity building, collaborative efforts, and policy development—underscore the need for a more structured and sustainable approach. The emphasis on collaboration suggests a recognition that individual institutions may lack the resources to address these challenges independently, highlighting the potential benefits of regional and national cooperation. However, the challenges identified, particularly those related to technological obsolescence, funding constraints, and inadequate training, suggest that without addressing these foundational issues, digital preservation efforts may be unsustainable in the long term. The discussion also brings to light the importance of developing comprehensive digital preservation policies and securing the necessary funding and resources to support these initiatives. This finding is in line with Zulu (2008) who reported that inadequate power supply makes it impossible to maintain a conducive and sustainable technological environment

Conclusion

The study emphasizes the transformative impact of digital technologies on LIS research and practices, particularly in the context of digital preservation. While there is a clear shift towards adopting digital preservation practices in Nigerian LIS institutions, the efforts are often hindered by challenges such as technological obsolescence, insufficient infrastructure, and financial limitations. The variability in the adoption of these practices suggests that without a more coordinated approach, the sustainability of digital preservation efforts remains at risk. The study concludes that addressing these challenges through comprehensive policy development, increased funding, and capacity building is crucial to ensuring the long-term preservation and accessibility of digital resources in LIS.

Recommendations

It is recommended that LIS institutions formulate and implement comprehensive digital preservation policies that outline clear objectives, strategies, and standards for the preservation of digital content. These policies should address issues such as data selection, retention periods, metadata standards, and access provisions.

Institutions should invest in training programs to equip LIS professionals with the necessary skills for digital preservation. This includes technical training in metadata schema, encryption, and digital preservation software, as well as ongoing professional development to keep pace with technological advancements.

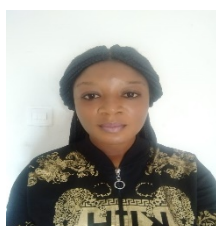
There is a need for substantial investment in the technological infrastructure required for effective digital preservation. This includes reliable storage solutions, backup systems, and secure environments that can protect against data breaches and natural disasters.

Given the resource constraints faced by many institutions, collaboration among LIS institutions at regional and national levels is recommended. Collaborative efforts can help pool resources, share best practices, and develop standardized approaches to digital preservation.

References

- Burda, D., & Teuteberg, F. (2013). Sustaining accessibility of information through digital preservation: A literature review. *Journal of Information Science*, 39(4), 442-458.
- Connaway, L. S., & Radford, M. L. (2021). *Research methods in library and information science*. Bloomsbury Publishing USA.
- El Idrissi, B. (2019, March). Long-term digital preservation: A preliminary study on software and format obsolescence. In *Proceedings of the ArabWIC 6th Annual International Conference Research Track* (pp. 1-6).
- Faber, K. T., Casadio, F., Masic, A., Robbiola, L., & Walton, M. (2021). Looking back, looking forward: Materials science in art, archaeology, and art conservation. *Annual Review of Materials Research*, 51(1), 435-460.
- Fisher, K. (2020). Copyright and Preservation of Born-digital Materials: Persistent Challenges and Selected Strategies. *the american archivist*, 83(2), 238-267.
- Fritz, A. I. (2021). *Sustainable enterprise strategies for optimizing digital stewardship: a guide for libraries, archives, and museums*. Rowman & Littlefield.
- Gabbay, L. K. (Ed.). (2024). *Aspects of Digital Libraries-Digitization, Standards, Open Access, Repositories and User's Skills: Digitization, Standards, Open Access, Repositories and User's Skills*. BoD–Books on Demand.
- Gabbay, L. K. (Ed.). (2024). *Aspects of Digital Libraries-Digitization, Standards, Open Access, Repositories and User's Skills: Digitization, Standards, Open Access, Repositories and User's Skills*. BoD–Books on Demand.
- Hunter, G. S. (2020). *Developing and maintaining practical archives: A how-to-do-it manual*. American Library Association.
- Hussein, A. A. (2021). Data migration need, strategy, challenges, methodology, categories, risks, uses with cloud computing, and improvements in its using with cloud using suggested proposed model (DMig 1). *Journal of Information Security*, 12(01), 79.
- Johnson, P. (2018). *Fundamentals of collection development and management*. American Library Association.
- Masanya, T. M. (2018). A framework for preservation of digital resources in academic libraries in South Africa. *University of South Africa: Pretoria*. Accessed February, 17, 2024.
- Masanya, T. M., & Ngulube, P. (2020). Factors that influence digital preservation sustainability in academic libraries in South Africa. *South African Journal of Libraries and Information Science*, 86(1), 52-63.
- McHaney, R. (2023). *The new digital shoreline: How Web 2.0 and millennials are revolutionizing higher education*. Taylor & Francis.
- Meyer, E. T., & Schroeder, R. (2023). *Knowledge machines: Digital transformations of the sciences and humanities*. Mit Press.
- MOHAMMED, A. A. (2023). Influence of preservation techniques and access to digital resources on research output of academic librarians in federal university libraries in northern nigeria (Doctoral dissertation).
- NDEGWA, H. M. (2023). Efficacy of digital preservation practices in institutional repositories (irs) of selected public universities in Kenya (Doctoral Dissertation, MOI UNIVERSITY).

- Nelson, G., & Ellis, S. (2019). The history and impact of digitization and digital data mobilization on biodiversity research. *Philosophical Transactions of the Royal Society B*, 374(1763), 20170391.
- Nengomasha, C. T., Uutoni, W., & Yule, W. (2012). School libraries and their role in promoting a reading culture: A case study of Caprivi, Omusati, Omaheke, Karas and Khomas regions of Namibia.
- Rhima, T. E. (2023). Preservation of Digital Information Resources in Selected University Libraries in Delta State, Nigeria. *Communicate: Journal of Library and Information Science*, 25(2), 187-205.
- Seth, B., Dalal, S., Jaglan, V., Le, D. N., Mohan, S., & Srivastava, G. (2022). Integrating encryption techniques for secure data storage in the cloud. *Transactions on Emerging Telecommunications Technologies*, 33(4), e4108.
- Shibanda, G.G. (2023). Skills and competencies for Digital Information Management in Africa. Paper presented at the 67th IFLA Council and General Conference in Boston, August 16-25. Retrieved on 23/05/2011 from <http://www.ifla.com>
- Szczepanowska, H. M. (2013). *Conservation of cultural heritage: key principles and approaches*. Routledge.
- Trehub, A., Davis, C., Jordan, M., May, C., & Meister, S. (2019). LOCKSS Networks: Community-Based Digital Preservation. *Digital Preservation in Libraries: Preparing for a Sustainable Future (An ALCTS Monograph)*.
- Tzanova, S. (2020). Changes in academic libraries in the era of Open Science. *Education for Information*, 36(3), 281-299.
- von Schorlemer, S. (2020). UNESCO and the challenge of preserving the digital cultural heritage. *Santander Art and Culture Law Review*, 6(2), 33-64.
- Yaya, J. A., Arinola, A. A., & Tubosun, O. E. (2022). Factors Affecting Preservation and Conservation of Educational Resources in African Tropical Countries: A Review of Literature. *FKJOLIS*, 8(1).



Famuyiwa S T. is an Assistant Lecturer in the Faculty of Communication and Information Science, Department of Library and Information Science, University of Ilorin, Ilorin, Nigeria. She joined the service at the University of Ilorin in 2015. She was formerly in the University's Main Library as a Librarian before moving to the current Department. She has been performing excellently well in the teaching of courses assigned to her in the Department. She has published articles and contributed to Chapters in Books in both national and International Journals and Books. She is a member of the Nigerian Library Association and Librarians' Registration Council of Nigeria (LRCN). Her schedule of duties at the University has also taken her to become the pioneer Librarian of the Centre for Cultural Studies and Creative Arts. Her main area of research is Preservation and Conservation of Resource Materials and Record Management.