

DIGITAL PRESERVATION OF INFORMATION RESOURCES AND UTILIZATION IN UNIVERSITY LIBRARIES IN RIVERS STATE

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Abstract

This study examined digital preservation of information resources and utilization in libraries in Rivers State owned universities. Four objectives and four research questions guided the study. Descriptive research design was adopted for the study. The population of 59 library staff, which comprised 11 professional and 22 paraprofessionals making it a total of 32 library staff from Rivers State University: while 9 professional and 18 paraprofessionals making it a total of 27 library staff from Ignatius Ajuru University of Education. Census sampling technique was used in which the entire population was used as sample size for the study; hence the population was too small. Self-structured instrument titled "Digital Preservation of Information Resources and Utilization in University Libraries (DPIRUULQ) was developed". The instrument was validated by experts. The reliability of the instrument was determined through test-retest method, in which the initial and retest scores were correlated using Pearson's Product Moment Correlation which yielded a reliability co-efficient of 0.81. Mean and Standard Deviation were used to answer the research questions. The findings revealed that the libraries preserve various types of digital resources. A range of digital preservation software such as Dura Cloud, Archives Space, E-Prints, and D-Space are employed to ensure the longevity and accessibility of these resources. It was recommended among others that university libraries should regularly update the range of digital information resources preserved to meet the evolving academic and research needs of users.

Keys: Digital Preservation, Information Resources, Utilization, University Libraries**Introduction**

The holdings of libraries are the priceless heritage of mankind as it preserves facts, ideas, thoughts, accomplishments and evidence of human development in multifarious areas, ages and directions. The past records constitute a natural resource and are indispensable to the present and future generations; therefore, any loss to such materials is simply irreplaceable. Library has continued to evolve over the years from the traditional closed access to the automated, electronic and digital open access libraries. Previously, library used to house mainly printed materials, but in this era of ever evolving. Information and Communication Technologies (ICTs), electronic and digital resources have become the central concern of librarians who want to adequately satisfy the library users. Libraries are migrating from the traditional setting to digital libraries (Nwaigwe & Onwuama, 2017).

Tiwari (2018) noted this digital development has contributed immensely towards the way information is made available to the users especially in digital forms. Alam (2023) reported that the emergence of ICTs has really revolutionized the concept of libraries, and today's Librarians are aware of the new development in digital technology. Currently, most libraries are made up of both print and digital collections, services and infrastructure to support lifelong learning, research, scholarly communication as well as preservation and conservation of the recorded knowledge.

Similarly, the advent of digital technology has revolutionized the way information is created, disseminated, and utilized. University libraries, as primary repositories of

knowledge, have a critical role to play in preserving and providing access to digital information resources (Osburn, 2019). Oyeniyi (2015) defined preservation as all efforts and actions taken to elongate the lifespan of information material. The efforts for preservation may include planning, following principles and practices directed at preventing deterioration, or restoring damaged materials to a usable condition.

Digital preservation of information and resources refers to the processes and activities aimed at ensuring the long-term availability and usability of digital information (Task Force on Archiving of Digital Information, 2016).

Digital preservation also involves series of managed activities necessary to ensure continued access to digital information for as long as necessary. Such activities include planning, resource allocation and application of preservation methods and technologies to ensure that digital information of continuing value remains accessible and usable. It combines policies, strategies and actions to ensure access to reformatted and born digital content regardless of the challenges of media failure and technological change. There is now the practice of digitizing materials originally produced in non-digital formats (print, film) to prevent permanent loss due to deterioration of the physical medium. The goal of digital preservation is to ensure the accurate rendering of authenticated content over time. Utilization is the practical and maximum use of library resources identified and acquired for the consumption of clients for the purpose of solving problem or achieving goals. Utilization is a proponent of access is also not measure on physical presence in the library but what must be done to ensure it is access virtually (Mohammed, Isa, Abu, & Ibrahim, 2021).

The utilization of digital information resources in university libraries in Rivers State is also a major concern. Despite the availability of digital information resources, many students and faculty members in university libraries lack the necessary skills and knowledge to effectively utilize these resources (Echezona & Ugwu, 2015). This has resulted in underutilization of digital information resources, which can hinder academic productivity and research output. It is on that note that this study is set to examine digital preservation of information resources and utilization in university libraries in Rivers State.

Statement of the Problem

Libraries generally exist to meet the information needs of users. University libraries are not left out in this direction hence, it is charged with the responsibility to providing information resources to support teaching, learning and research activities particularly by lecturers and students. Libraries existence is not only to select, acquire, process and organized relevant information resources but also to preserve the resources for the present and future users or in anticipation for users' demand. However, the rise in deterioration of information resources in our university system today can be ascribed to a flaw in our educational institutions, which are not equipped to provide excellent education, particularly in this digital age. The digital preservation of information resources in university libraries in Rivers State, Nigeria, is facing significant challenges. Despite the importance of digital preservation, many university libraries in Rivers State lack the necessary infrastructure, expertise, and resources to effectively preserve digital information resources (Adekunle, 2024). As a result, valuable digital information resources, including theses, dissertations, and research papers, are at risk of being lost forever.

Furthermore, the utilization of digital information resources in university libraries in Rivers State is also a major concern. Many students and faculty members in Rivers State university libraries lack the necessary skills and knowledge to effectively utilize digital information resources (Echezona & Ugwu, 2015). This can hinder academic productivity and research output. The problems of digital preservation and utilization of information resources in university libraries in Rivers State are further compounded by inadequate funding, lack of government support, and poor internet connectivity (Igwe, 2024). These challenges can have serious implications for the development of a robust digital scholarship ecosystem in libraries. It is against these backdrops that this study is set to determine the digital preservation of information resources and utilization in university libraries in Rivers State.

Research Questions

The following research questions were constructed to guide the study.

1. What are the types of digital information resources being preserved by university libraries in Rivers State?
2. What is the various software used in digital preservation of information resources in university libraries in Rivers State?
3. What are the factors influencing the utilization of digital information resources in university libraries in Rivers State?

Literature Review

One of the primary types of digital information resources in university libraries is ebooks. E-books are digital versions of print books that can be accessed online or downloaded to a device. Many university libraries have begun to acquire e-books, which provide users with convenient access to a wide range of texts. Digital repositories are another type of digital information resource in university libraries. Digital repositories are online platforms that store and provide access to digital content, such as thesis, dissertations, and research papers. University libraries have begun to establish digital repositories to provide access to local research output. For example, the University of Port Harcourt has established a digital repository that provides access to theses, dissertations, and research papers. Open Access Resources (OARs) are also an essential type of digital information resource in university libraries. OARs are digital resources that are freely available online, without any subscription or access fees (Suber, 2012). Digital media resources are increasingly being used to support teaching, learning, and research in university libraries. Okiy and Asiru (2018) state that digital media resources are widely used by students and faculty in Nigerian university libraries.

Kobayashi (2018) opined that online videos as a type of digital information resources in university libraries are digital recordings that are distributed over the internet and can be played back on a variety of devices, including computers, smartphones, and tablets. Online videos can be used for a variety of purposes, including educational instruction, entertainment, and marketing. In academic libraries,

online videos can be used to support teaching and learning by providing students with access to video lectures, tutorials, and other educational content.

Online videos can be accessed through a variety of platforms, including YouTube, Vimeo, and library databases such as Films on Demand and Kanopy (Hart, 2018). The use of online videos in academic libraries has been increasing in recent years, as more libraries recognize the potential of video to support teaching and learning (Kobayashi, 2018). However, there are also challenges associated with the use of online videos in libraries, such as ensuring accessibility and addressing copyright and licensing issues. Despite these challenges, online videos have the potential to play an increasingly important role in academic libraries in the future. Iannella (2017) further opined that Audio recordings as a type of digital information resources in university libraries are digital files that contain sound, such as music, lectures, or podcasts. Audio recordings can be an effective way to engage students and promote learning, as they can provide a more interactive and dynamic learning experience than traditional text-based materials (Palmer, 2017).

Lynch (2017) asserts that images as a type of digital information resources in university libraries are digital files that contain visual information, such as photographs, diagrams, and illustrations. Images can be accessed through a variety of platforms, including library databases such as ARTstor and Getty Images, as well as online image sharing services such as Flickr and Instagram. In academic libraries, images can be used to support teaching and learning by providing students with access to visual materials that can enhance their understanding of course materials. Images

can be an effective way to engage students and promote learning, as they can provide a more interactive and dynamic learning experience than traditional text-based materials (Ryan, 2017). Images can also be used to support students with disabilities, such as visual impairments, by providing an alternative format for accessing educational content.

The use of images in academic libraries has been increasing in recent years, as more libraries recognize the potential of images to support teaching and learning (Lynch, 2017). However, there are also challenges associated with the use of images in libraries, such as ensuring accessibility and addressing copyright and licensing issues. Despite these challenges, images have the potential to play an increasingly important role in academic libraries in the future. In a nutshell, university libraries in Nigeria, provide access to a wide range of digital information resources, including e-books, online databases, digital repositories, Open Access Resources, and digital media resources. These resources have transformed the way students, faculty, and researchers' access and utilize information, and they are essential for supporting teaching, learning, and research in university libraries. Digital preservation of information resources is a critical issue for libraries, as it ensures the long-term accessibility and usability of digital content (Lee, 2018).

One of the key components of digital preservation is the use of software tools that can manage, preserve, and provide access to digital content. Various software tools are available for digital preservation, each with its own strengths and weaknesses. One of the most widely used software tools for digital preservation is

DuraCloud. DuraCloud is a cloud-based preservation platform that provides a scalable and flexible solution for managing and preserving digital content (Lee, 2018). DuraCloud is a cloudbased digital preservation platform that provides a scalable and flexible solution for managing and preserving digital content. It was designed to help institutions and organizations preserve their digital assets for long-term access and use. DuraCloud provides a range of features, including data ingestion, data storage, data dissemination, and data preservation, making it an attractive solution for institutions looking to manage their digital collections.

The utilization of digital information resources in libraries is influenced by a variety of factors. One of the most significant factors is the level of awareness and knowledge of digital information resources among library users (Adeyinka & Adeniran, 2016). The level of awareness and knowledge of digital information resources among library users is a critical factor that influences the utilization of these resources. Awareness refers to the extent to which library users are informed about the existence and availability of digital information resources, such as e-books, online journals, and databases (Adeyinka & Adeniran, 2016). Knowledge, on the other hand, refers to the understanding and familiarity that library users have with digital information resources, including how to access, use, and evaluation. A high level of awareness and knowledge among library users is essential for the effective utilization of digital information resources.

Methodology

This study adopted descriptive survey research design. This is because the researcher is interested in observing what is happening to the sample subject without manipulating them. Oyedun and Oyeboade (2018) noted that a descriptive survey research design is one in which data collected from a relatively large number of people or items is considered to be representative of the entire group; it is adopted because it helps the researcher gather detailed information about the phenomenon as well as provide a snapshot of the current state of affairs allowing the researcher to identify patterns, trends and characteristics of the study. The population of the study consisted of professional librarians and paraprofessionals librarians in Rivers State owned universities. Statistical information from the University for 2025/2026 academic session indicated that there are 11 professional and 22 paraprofessionals making a total of 32 library staff from Rivers State University, whereas there are 9 professional and 18 paraprofessionals making a total of 27 library staff from Dame Patience Jonathan Automated Library Ignatius Ajuru University of Education. Therefore, 59 library staff became the population of the study. Census enumerative sampling technique was adopted; therefore, 59 formed the sample size for this study. This allowed the entire staff from the Central Library of the Rivers State University as well as that of Dame Patience Jonathan Automated Library Ignatius Ajuru University of Education to be studied; this is because the population was not large enough; hence, it is manageable and handy to control.

The research instrument used for this study was a self-structured questionnaire titled "Digital Preservation of Information Resources and Utilization in University

Libraries (DPIRUUL)". The instrument was used to elicit information on the objectives of the study from the entire respondent, which was used to answer the research questions. The instrument for the study was subjected to face and content validity by experts. The reliability of the instrument was determined through test-retest method. The initial and retest scores were correlated using Pearson Product Moment Correlation which yielded a reliability co-efficient of 0.81, thereby making the instrument reliable for the data collection. The questionnaire was administered directly to the respondents by the researchers. The researchers gave 5 days to the respondents before retrieving the administered questionnaire for data analyses. Fifty-nine (59) copies were distributed, while 48 copies were retrieved, representing 81 % returned for data analyses. Mean and standard deviation were used to answer the research questions. In analyzing the data obtained from the questionnaire, the frequencies of responses for each questionnaire items were calculated. The scores of responses were converted to frequency counts, and the mean scores were computed based on the values assigned to the four response categories: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1.

Thus, $\frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.5$.

Therefore, the 2.5 was referred as mean criteria (mean off cut point, decision point to

accept or reject).

Data Presentation Analysis and Discussion of Findings

The data and result of research questions were presented in different tables with mean and standard deviation.

Research Question One: What are the types of digital information resources being preserved by university libraries in Rivers State?

Table 1: Mean and Standard Deviation of the Types of Digital Information Resources being Preserved by University Libraries in Rivers State

Criterion Mean = 2.5; N= 48

S/N	Items	4 SA	3 A	2 D	1 SD	$\bar{x}$	Std	Remark
1	E-books	30	10	5	3	3.40	1.34	Accepted
2	Online databases	28	9	6	5	3.25	1.19	Accepted
3	Digital repositories	20	15	9	4	3.10	1.04	Accepted
4	Open Access Resources	25	10	10	3	3.19	1.13	Accepted
Average Mean						3.24	1.18	Accepted

Table 1. revealed the types of digital information resources being preserved by university libraries in Rivers State. The table revealed that items (1, 2, 3, 4) were accepted because their criterion mean was above 2.5. The table also revealed that item (1) has the highest mean score of (3.40) while item (3) has the lowest mean score of (3.10). Again, an average mean score of (3.24) was gotten which indicates that Rivers State owned university libraries preserved different types of digital information. Table 3 revealed that Rivers State owned university libraries preserved different types of digital information such as e-books, online databases, digital repositories and open access resources. This finding agrees with the study of Oladipupo and Hart (2024) who

found that public universities in Rivers State preserve different types of digital resources which is consistent with the present study.

Research Question Two: What is the various software used in digital preservation of information resources in university libraries in Rivers State?

Table 2: Mean and Standard Deviation of Various Software used in Digital Preservation of Information Resources in University Libraries in Rivers State

Criterion Mean = 2.5; N= 48

S/N	Items	4 SA	3 A	2 D	1 SD	$\bar{x}$	Std	Remark
5	Dura Cloud	20	19	6	3	3.17	1.11	Accepted
6	Archives Space	27	13	7	1	3.38	1.38	Accepted
7	EPrints	23	17	4	4	3.30	1.24	Accepted
8	Dspace	25	14	5	4	3.25	1.13	Accepted
Average Mean						3.27	1.22	Accepted

Table 2. revealed various software used in digital preservation of information resources in university libraries in Rivers State. The table revealed that items (5, 6, 7, 8) were accepted because their criterion mean was above 2.5. The table also revealed that item (6) has the highest mean score of (3.38) while item (5) has the lowest mean score of (3.17). Again, an average mean of (3.27) was gotten which indicates that Rivers State owned university libraries utilized various software in digital preservation of information resources. Table 4 revealed that Dura Cloud, Archives Space, EPrints and Dspace were identified software used in digital preservation of information

resources in university libraries. This finding is in accordance with the study of Abubakar et al. (2024) who found that the types of software used in digital information resources in the university libraries are LOCKSS, Fedora, E-print, D-space and Dura Cloud. Muazu et al. (2022) also revealed that Dura Cloud, Archives Space, E-Prints and Dspace were considered as the major and popular electronic methods of preserving information resources in university libraries.

Research Question Three: What are the factors influencing the utilization of digital information resources in university libraries in Rivers State?

Table 3: Mean and Standard Deviation of Factors Influencing the Utilization of Digital Information Resources in University Libraries in Rivers State

Criterion Mean = 2.5; N= 48

S/N	Items	4 SA	3 A	2 D	1 SD	$\bar{x}$	Std	Remark
9	Level of awareness and knowledge of digital information resources among library users.	31	9	6	2	3.44	1.38	Accepted
10	Access to technology and internet connectivity.	29	14	4	1	3.48	1.40	Accepted
11	A poorly designed user interface and navigation system.	27	13	7	1	3.38	1.32	Accepted
12	The availability and quality of training and support services.	32	10	4	2	3.50	1.42	Accepted
Average Mean						3.45	1.38	Accepted

Table 3. revealed factors influencing the utilization of digital information resources in Rivers State owned university libraries. The table revealed that items (9,

10, 11, 12) were accepted because their criterion mean was above 2.5. The table also revealed that item

(12) has the highest mean score of (3.50) while item (11) has the lowest mean score of (3.38). Again, an average mean score of (3.45) was gotten which indicates that these factors influenced utilization of digital information resources in Rivers State owned university libraries. Table 5 revealed that level of awareness and knowledge of digital information resources among library users, access to technology and internet connectivity, a poorly designed user interface and navigation system, and quality of training and support services as factors influence the utilization of digital information resources in Rivers State owned university libraries. This finding is in harmony with the study of Adeyinka and Adeniran (2016) who found that the level of awareness and knowledge of digital information resources, poorly designed user interface, training and support services as factors influencing preservation of digital information resources in library, which is consistent with the present study

Recommendations

- 1 University libraries should expand and regularly update the range of digital information resources preserved to meet the evolving academic and research needs of users.
- 2 Libraries should adopt and invest in up-to-date and standardized digital preservation software solutions, ensuring adequate training for staff to operate and maintain these systems effectively.

- 3 Awareness campaigns, user education, and improved training and support services should be implemented to enhance library users' digital literacy and encourage effective utilization of preserved digital resources.

Conclusion

The study examined the digital preservation of information resources and utilization in Rivers State owned university libraries. The libraries preserve various types of digital resources including e-books, online databases, digital repositories, and open access materials. Several factors are influencing the effective utilization of digital information resources. These factors significantly determine how well users can access and benefit from preserved digital content. Therefore, it was concluded that the effectiveness of digital preservation and its utilization in Rivers State owned university libraries is dependent on the integration of appropriate technologies, continuous capacity building, user support systems, and the development of standardized digital preservation policies. Addressing these areas is crucial for enhancing access to digital resources and preserving the academic assets of the institutions for future generations.

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