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NAVIGATING THE DIGITAL SHIFT: THE INTERPLAY BETWEEN LIBRARIAN COMPETENCE, AND SUSTAINABLE DIGITAL PRESERVATION IN KWARA STATE UNIVERSITIES

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Abstract

The evolution of digital resources has redefined how information resources are available in libraries. This study evaluates librarians' competencies for digital preservation in university libraries in Kwara State, Nigeria. Four (5) objectives and questions guided this study. Narrative design of qualitative methodology was adopted. The population was 10 digital librarians who were purposively selected from 10 universities in Kwara State, Nigeria. Semi-structured interviews were held with the respondents. The interview guide was validated using content validity, while inter rater percentage agreement was used to ascertain its reliability, which returned 90.7%. The interviews' responses were analysed using thematic analysis. Findings of this study revealed that the librarians are competent in creating and updating OPAC as well as searching the web, digital resources and library databases. Moreso, findings showed that migration, technology preservation, digital back-up and replication were used for preserving digital resources, while

digital resources are secured through access control, network, database and hardware protections. Findings further demonstrated that the respondents possessed basic digital preservation skills including creating and updating OPAC, managing e-mail and library databases, digital resources security and digitization software (Greenstone/Dspace, etc.) software. This study concludes that the digital proficiencies of librarians in university libraries in Kwara State, Nigeria, helped them in the preservation of digital resources. The study recommend that universities should invest more in the continuous training of librarians among others.

***Keywords*:** Digital competence, Digital preservation, Kwara State, Nigeria, University Libraries.

Introduction

University libraries are information centres established to support the mission of the parent institution to generate knowledge, equip people with knowledge in order to serve the society and advance the well-being of mankind (Ojo et al, 2019). According to Ishola (2014), the central objective of a university library is to support teaching, learning and research in ways consistent with and supportive of the institution's mission and goals. To achieve the goals, university libraries provide organised information resources to enable the university execute teaching, learning and research. University libraries that want to remain relevant in the 21st Century must possess digital information resources. Not only that, the resources must be adequately preserved in order to support the libraries in achieving their goals.

Akussah (2019) stressed that to avoid heavy loss of materials in the library, preservation practice becomes very important and germane. Much more important, Alegbeleye (2018) asserted that digital preservation is becoming a global phenomenon to which university libraries must aggressively respond if the mission of meeting the information needs of their patrons would be achievable in the era of dwindling budgetary allocations to libraries.

Digital preservation is the storage, maintenance, and accessibility of digital objects including any digital material such as a text document, an image file, a multimedia CD-ROM or a database over long term, usually as a consequence of applying one or more digital preservation strategies (Vij, 2017). The key point of this definition is that digital preservation is about ensuring that intellectual contents in digital form remains accessible to the future generations. Digital preservation

combines policies, strategies, and actions that ensure access to digital content over time, a complex undertaking for which digital competence has become an essential skill for 21st-century librarians.

Phuapan, Viriyavejakul and Pimdee (2016) asserted that in light of the rapid and continual development of digital technology, librarians are required to use a growing variety of technical, cognitive, and sociological skills in order to perform tasks and solve problems in digital environments. These skills are brought under one umbrella called digital competence. Phuapan, Viriyavejakul and Pimdee (2015) posited that digital competence is the most recent concept describing technology-related skills. It is the ability to use digital technology and communications tools, and/or networks to access, manage, integrate, evaluate, create and store digital information in order to function in a knowledge society.

Digital competence has overlapping areas with Information literacy, Media literacy, ICT literacy and Internet literacy (Phuapan, Viriyavejakul & Pimdee, 2015). This serves as a premise for David-West (2022) to argue that digital competence is not presented to librarians as a single concept itself; it is an interconnection of cultural and historical understandings and practices regarding the use of information, mediated by digital technologies, on any aspects of library services. It includes technological, attitudinal, and cognitive components, linked to the need of librarians (as individuals and as groups) to express, explore, question, communicate, and understand ideas in digital formats. Possession of digital competence allows librarians to engage with library service and resources using different electronic equipment, devices, systems and materials that produce, store or disseminate information (Tiemo, 2019).

Digitally competent librarians are skillful in metadata/tag use, installation and managing library software, creation of intuitional repositories, managing library consortium, library networking and barcode and radio frequency identification (RFID) technology use (Arango-Morales, Tamayo-Salcedo, & Delgado-Cruz, 2021). Librarians that possessed the aforementioned skills have the abilities to manage library technology infrastructure and online resources. They also make informed decision relative to technology adoption, preservations, social networking, searching the Internet, instant messaging, blogging and other digital related oriented activities (Izuagbe et

al., 2019). Having that digital competence of librarians holds enormous potential to the preservation of digital resources justifies designing this study to explore the significance of digital competence on digital preservation in university libraries in Kwara State, Nigeria.

Statement of the Problem

Universities produce a vast amount of digital content, including digital theses and dissertations, e-journals, academic websites, administrative records, and digitized special collections. The core goal of any library is to provide access to these information. Digital preservation is the means by which this is achieved in the digital world. Digital preservation as a managed activity in university libraries is necessary to ensure continued access to digital materials for as long as necessary, even beyond the limits of technological obsolescence and media degradation. For a university library, digital preservation is not a peripheral technical task but a core strategic function essential to fulfilling its mission in the 21st century. It is far more than just backing up, it is a comprehensive framework of strategies, standards, technologies, and actions designed to maintain the authenticity, integrity, reliability, and long-term accessibility and usability of digital objects.

The successful implementation of digital preservation framework is entirely dependent on a specialized set of digital competencies within library workforce. These competencies extend beyond basic technical skills to include advanced ones such as metadata standards, digital curation, refreshing, replication, migration techniques, and emulation strategies**.**

Despite the critical strategic importance of digital preservation for safeguarding academic heritage and research, a significant gap exists in the digital competence of librarians required to implement and manage these practices effectively in university libraries in Kwara State, Nigeria. Preliminary investigations revealed constraining factors such as insufficient resources, lack of specialised training, outdated skills, unstable power, internet connectivity, as well as hardware and software obsolescence. A combination of these skill gaps and infrastructural limitations seem to work together to demotivate librarians in this region from pursuing digital preservation initiatives consistent with global best practices. Consequently, this deficit put born digital and digitized special collections at risk of obsolescence and loss thereby undermining the libraries'

core mission of ensuring longevity, authenticity, and accessibility of invaluable digital academic assets.

Previous studies have adopted quantitative method to unravel what and how much of the nature of the problem (Ikenwe & Udem, 2023; Izuagbe et al., 2019; Kowalczyk, 2018; Tiemo, 2019; Udo-Anyanwu & Mezieobi, 2020). Such exercises end up in measuring the statistical relationships in the research variables. However, this qualitative study is well designed to address this topic, arguably to understand the why and how behind the problem and what is believed as the most effective way to solve it, all in the words of the study participants.

Research Objectives

The general objective is to explore the significance of digital competence on digital preservation in university libraries in Kwara State, Nigeria. The specific objectives are to:

i. examine the strategies for preserving available digital resources in university libraries in Kwara State, Nigeria;
ii. assess the digital competence possessed by librarians in university libraries in Kwara State, Nigeria;
iii. identify the security techniques adopted for the preservation of digital resources in university libraries in Kwara State, Nigeria; and,
iv. examine the relevance of digital competence on preservation of available digital resources in university libraries in Kwara State, Nigeria.

Research Questions

This study will aim to answer the following questions:

i. What are the strategies for preserving available digital resources in university libraries in Kwara State, Nigeria?
ii. What are the digital competence possessed by librarians in university libraries in Kwara State, Nigeria?

iii. What are the security techniques adopted for the preservation of digital resources in university libraries in Kwara State, Nigeria?

iv. What are the relevance of digital competence on preservation of available digital resources in university libraries in Kwara State, Nigeria?

Review of Related Literature

Concept of Digital Preservation

Digital preservation is a process by which digital data is protected in order to ensure the usability, durability and intellectual integrity of the information contained therein. Digital Preservation encompasses a broad range of activities designed to extend the usable life of machine-readable computer files and protects them from media failure, physical loss and obsolescence (Hazarika, 2020). Hazarika (2020) posited that technologies have made a huge change and gives a new dimension to preservation of information materials. Digital preservation helps to store and keep information resources safe and secure for future purpose. In the university library, digital preservation plays important roles which make secure and give longevity to the information resources

Vij (2017) explained digital preservation as the storage, maintenance, and accessibility of digital object (including any digital material such as a text document, an image file, a multimedia CD-ROM or a database) over long term, usually as a consequence of applying one or more digital preservation strategies. Digital preservation includes the storage, maintenance and access to digital objects over long-term. The key point here is that digital preservation is about ensuring that intellectual contents in digital form remains accessible to the future generations.

Concept of Digital Competence

Digital competence means the skills associated with using technology to enable users to find, evaluate, organize, create, and store digital information. Digital competence can support or accelerate the acquisition of knowledge and the development of proficiency in a range of academic contexts (Harris, 2015). Digital competence proficiency is needed to fully participate in

the 21st century library operations and management. Digital competence is no longer restricted to the ability to handle computers; it encompasses one's abilities to know how to create, store and protect digital information from all forms of damages (Ouahidi, 2019).

Digital competence is much more than proficiency with discrete computer skills. Certainly, these foundational skills are critical; however, the crux of what is meant by digital competence is the recognition of these skills' relevance in specific contexts and one's ability to creatively apply them (International Society for Technology in Education, 2016; Jacobs & Castek, 2018; Sharma, Patel & Singh, 2023). Possessing these skills and an interpretation of how they are represented in the context of digital competence constitute librarians' critical thinking abilities, communication with digital tools, processing and analysing digital information, librarians; self-awareness with digital resources, navigation system and problem-solving with digital tools.

Digital Competence, Preservation Strategies and Security in University Libraries

The term "digital preservation strategies" refers to ways or patterns of protection of materials that are created originally in digital form and never existed in print or analogue form (also called "born digital") as well as those converted from heritage documents and artefacts (printed documents, pictures, photographs or physical objects) into images using scanners, digital cameras, or other imaging technologies for access and preservation purposes (Rathika, Muthuvennila & Thanuskodi, 2020). Chadha (2014) highlighted bit-stream copying, refreshing, replication, migration, emulation, data abstraction and structuring, encapsulation and cannibalization as the different digital preservation practices.

Digital competence involves any number of digital reading and writing techniques across multiple media forms, including: words, texts, visual displays, motion graphics, audio, video, and multimodal forms. Gbaje (2013) posited that digital skill has become an inevitable quality for librarians in the 21st Century. To effectively work in the digital work environment, librarians require re-training with the skills, knowledge, and experience that will enable them to teach and learn through digital tools.

The need for digital competence among librarians is becoming extremely essential to face this ever-changing technology. The training of librarians to be digitally competent can be required at three levels: baseline, desired and target levels. The baseline competence includes general competence such as turning on the computer, familiarity with the basic operations of computers, turning on printers and adding paper, knowing how to open browsers and use menu bars, sending and receiving emails, and search engines. The desired level includes competence that are a little more advanced than the basic level such as handling email-related issues, navigating the computer interfaces and software. The target level include knowledge of downloading files, cookies and general security issues. These skills include knowledge of metadata, database development, digital archiving and preservation and content management system (Hamada & Stavridi, 2014).

Gbaje (2013) submitted that digital competence includes knowledge and skills that are relevant for librarians to effectively work in the digital environment. The competence must include a certain degree of knowledge and skills in information technology. In order to disseminate knowledge and information available in all current formats: print and electronic, the new era librarians are required to understand the need to learn more about new technologies and be comfortable using them in order to perform their utmost role (Bin Hashim & Mokhtar, 2014). Bin Hashim and Mokhtar (2014) and Gbaje (2013) highlighted e-mail management skills, word processing skills, database management skills, spreadsheet skills, competence to use presentation software and use of portable document format (PDF) software as the basic digital competence. Other digital competencies include web searching skills, searching library databases, using Learning Management System (LMS), installing printer, scanner and computer systems, use of digital camera for digitization and web navigation skills.

Security of digital information should also be area of concern to libraries as it is vital in protecting digital preservation and networking systems/services from exposure to external/internal threat. Some of the rigorous security measures applied for digital information sources include ensuring compliance with any legal and regulatory requirements; protecting digital materials from inadvertent or deliberate changes; providing an audit trail to satisfy accountability requirements;

acting as deterrent to potential internal security breaches; protecting the authenticity of digital materials and safeguarding against theft or loss. (Edward, 2018). Several information security techniques may be applied to protect digital materials include encryption, access control, redaction, network security, database security, operation system security, email and preservation of storage media.

The utilisation of computers, e-mails and other cutting-edge digital tools in the libraries have made preservation of digital resources fascinating and entertaining for librarians. Because of this, preservation of digital resources has become more dynamic and engaging by establishing tasks in the preservation process and incorporating technology resources (Haleem, Javaid, Qadri & Suman, 2022). Digital competence combines series of abilities that empower and equip library staff to harness digital tools for preservation of digital materials. Roy (2015), Singh (2016) noted that digital competence is beneficial to digital preservation by helping to understand the protocols surrounding creating and handling of digital contents. Digital competence is essential to understanding the efficient creation and handling of digital contents by enabling librarians know the procedures guiding the use and conditions to be followed when handling digital resources.

Digital competence also equips librarians with the skills required to create and share digital contents. Haleem et al. (2022) stressed that digital competence helps librarians by enabling them to know the right digital tools they can use to create and share digital contents. This will minimise stressing digital tools to perform tasks they are not designed for. Also, being digitally competent allows librarians to collaborate globally and instantaneously, equips them with the skills of collaborating globally in order to be exposed to the trends and practices associated with digital tools and resources used for preservation. Furthermore, digital competence helps to streamline the digital preservation process. This means that less time is spent on repetitive tasks and librarians are freed-up to focus their efforts on higher value work that helps them in achieving higher returns in their preservation tasks. Similarly, digital competence improves librarians' confidence to use technology for work, learning and daily life. Digital competence is beneficial to

librarians by enabling them cultivate the habit of continuous learning. This will help in updating their knowledge on the digital tools that can be adopted and deployed for digital preservation.

Methodology

This study adopted the narrative design of qualitative research. Narrative design was found suitable for this study because it avails the opportunities to interview the specialists in digital preservation, in which their assertions, positions and submissions on nexus between digital resources availability and digital preservation in their libraries were reported. The population for this study is 10 Digital Librarians in universities libraries in Kwara State, Nigeria, namely: Ahman Pategi University, Patigi; Al-Hikmah University; Kwara State University, Malete; Landmark University, Omu Aran; Muhammed Kamaldeen University, Ilorin; Ojaja University, Eiyenkorin; Summit University, Offa; University of Ilorin; University of Offa, Offa, and Thomas Adewumi University, Oko Irese.

Purposive sampling was used to choose the 10 Digital Librarians in universities libraries based on their expertise. Semi-structured interview was held with the respondents for data gathering. Content validity was used to validate the interview guide, while the reliability of 90.7% was ascertained with inter-rater percent agreement. Records taken with SmartNoter.io was used in the thematic analysis of the responses of the interviewees. The transcriptions of the interviews were incorporated in this study by providing the responses of the interviewees, which were later discussed and interpreted.

Interview Responses

What are the strategies of preserving digital resources available in university libraries in Kwara State, Nigeria?

Findings revealed disparities on the digital resources' preservation strategies available in university libraries in Kwara State, Nigeria. The commonest digital resources' preservation strategies available include migration, technology preservation, investment strategies, digital back-up, software engineering and replication. Observations by the researcher showed that only

these six digital resources' preservation strategies were being deployed across the understudied university libraries.

One of the interviewees says, *"Migration is one the major strategies used by us because it allows us to transfer paper document into digital. That's why you see us having different machines that can be used for converting paper resources into digital. Moreso, the use of digital back-up cannot be downplayed because we are leveraging different storage devices and cloud computing tools such as Google and One Drives for preserving our digital information resources."*

Nevertheless, the understudied libraries were not using universal virtual computers, bit-stream copying, refreshing, backwards compatibility, cannibalisation, digital archaeology and emulation. Preliminary findings by the researcher have revealed interconnections between the strategies used for digital resources preservation and the one that will be used would be determined by the digital information resources available. Since the libraries have claimed to possess similar digital resources, it is expected that they adopt the same or similar digital resources' preservation strategies. The reasons for not using the aforementioned strategies could be their poor awareness among librarians or inadequate digital infrastructure. Above all, it can be deduced from the findings that migration, technology preservation, investment strategies, digital back-up, software engineering and replication are the prominent digital resources' preservation strategies used in the understudied university libraries.

What are the digital competence possessed by librarians in university libraries in Kwara State, Nigeria?

Findings revealed varying dimensions of digital competence among librarians in university libraries in Kwara State, Nigeria. Some of the digital competences predominant among the librarians are e-mail and database managements, digital resources security, using word processing package, portable document format (PDF) and digitization software (Greenstone/Dspace, etc.) software. Also, the interviewees are competent in creating and updating OPAC, searching the web and library databases.

The interviewees share similar views on the email and database managements, using digitisation software, creating and updating OPAC, searching the web and library databases. They said: *"In this era driven by technologies, you are aware that there are some basic digital information resources that should be possessed by our libraries. Therefore, if our libraries possessed those information materials, it is dawn on us as custodians of the resources to be competent in utilising them.*

> *"For instance, the gradual transitioning of libraries from the traditional catalogues to OPAC has made it important for us be competent in this area. The need for our competence in OPAC is also applicable to web and library database searching. Also, digital librarian who wants to be above par must have the mastery of digitization software (Greenstone/Dspace, etc.), digital resources security and digital image processing, operating system navigation, e-mail management, word processing package and install printers, scanners and computer systems."*

However, a notable competence that was found not to be prominent among the interviewees is file management. More than average of the interviewees was reluctant to answer yes to this point. Even if eventually, they responded yes, their expressions – body language and the likes – mean otherwise. Thus, relying on their expressions makes this researcher conclude that the only a few of the interviewees are competent in file management. The key digital competences that were found among the interviewees include creating and updating OPAC, searching the web and library databases, managing e-mail and library databases, digital resources security, using word processing package, portable document format (PDF) and digitization software (Greenstone/Dspace, etc.) software. This implies that the librarians possessed basic digital competence, which may not be enough for digital preservation in the 21st Century.

What are the security techniques applied for preservation of digital resources in university libraries in Kwara State, Nigeria?

Findings revealed that the understudied university libraries applied access control, network, operating system (OS), database and hardware securities for preservation of their digital resources. This implies that the understudied university libraries applied different strategies for preservation of their digital resources.

On access control and database security, one of the interviewees explained that his library applied these security strategies in order to avoid unwarranted access to their digital resources. In achieving this, users have to login by using their username (usually matriculation number) and password (usually surname by default and users are always advised to change it). Indirectly, users who do not have these details will not have access to login to the portal where their digital resources are housed.

On the other hand, findings revealed minimal application of encryption and redaction in the understudied university libraries. These are two basic digital resources security preservation strategies applied in libraries, archives and other information centers. Redaction is concerned with ensuring that confidential information such as names, dates of birth, place of birth and others are removed from digital resources to avoid abusing people's privacies, while encryption is concerned with coding digital resources with some algorithms or texts which should be provided before they are accessed.

What are the relevance of digital competence on preservation of digital resources available in university libraries in Kwara State, Nigeria?

Findings point out that the interviewees believed their digital competences are relevant to their preservation of the available digital resources. Basically, the interviewees believed that digital competences equip them with the skills required to create and share digital contents, empower and equip them to harness tools for preservation of digital materials, help to understand the protocols surrounding creating and handling of digital contents and streamline the digital preservation process. Also, digital competences enhanced their skills in collaborating globally for

digital preservation, expose them to the trends and practices associated with digital tools and resources used for preservation, work efficiently in digital environments and enhanced productivity with digital tools for preservation.

The above points were found in the narrations of the interviewees where they asserted that being digitally competent has enabled them to know the different digital resources that can be preserved in the library. Not only that, they also stressed being digitally skillful has enhanced their abilities to collaborate with digital preservators in other parts of the world in order to be acquainted with trending digital preservation practices and work efficiently in digital environment, leading to their productivity with digital tools used for preservation. One of the interviewees, who acknowledged the importance of digital competence on digital resources preservation remarked that *"I can categorically tell you that digital competence has been highly invaluable to handling of digital resources both for myself and for preserving the library information resources."*

Another interviewee succinctly put it that:

> *"The importance of digital competence to the effective delivery of my roles and services as a digital librarian cannot be overemphasised. Digital competence enabled me to understand the different processes, procedures and strategies that can be deployed in digital preservation. This, at the end of the day, allows me to be adopting realistic approaches in improving the outputs of my services. For instance, I have been using some cloud computing tools such as Google and Microsoft One Drives to preserve some digital resources. This has not only saved us cost, but also reduced the physical spaces the digital resources should have been occupied had it been they are in physical format."*

The key point that could be deduced from the whole narration is that digital competence is relevant to the interviewees' digital preservation practices in several ways and has enabled them perform their duties efficiently and effectively.

Discussion of Findings

It is appaling to discover that the respondents' competence has not transformed to the adoption of basic, proven and popular digital resources preservation strategies. Though, the understudied university libraries are using migration, technology preservation, investment strategies, digital back-up, software engineering and replication, but the non-use of strategies like bit-stream copying, refreshing, emulation, cannibalisation and backwards compatibility is disturbing. Particularly since it has been found that the libraries' available digital resources cut across different platforms.

Bit-streaming, which is also known as "backing-up data" is one of the commonest digital resources preservation strategies. What makes it common is because it entails making an exact duplicate of a digital object (Rathika, Muthuvenilla & Thanuskodi, 2020). Scholars recommend this strategy for preserving ephemeral data because the major problems associated with it are its question of data loss due to hardware and media failure, whether resulting from normal malfunctioning and decay, malicious destruction or natural disaster.

If the problems associated with bit-streaming should be assumed as the bases for not using it by the librarians, what would be said of refreshing, which addresses both decay and obsolescence issues related to the storage media? UKOLN (2017) appraised refreshing as a necessary component of any successful digital preservation project because it allows copying digital information from one long-term storage medium to another of the same type, with no change whatsoever in the bit-stream (e.g. from an older CD-RW to a new CD-RW).

In the same vein, the non-usage of cannibalisation by the librarians revealed their non-compliance with the principles of digital preservation which emphasised the need for maintaining the integrity of the digital resource being preserved. Cannibalisation will allow the librarians to determine whether the essential characteristics of the documents they are preserving are intact through a conversion from one format to another (Chadha, 2014). Also, the non-use of emulation by the librarians implies that they will be needing new software or hardware when they are copying their documents to different platforms. By using emulator, the librarians will only need

an emulator to translate instructions from original software to execute on new platforms (Akin-Fakorede, Ottong & Ottong, 2017).

Insightfully, the digital resources available in the understudied university libraries have been better handled because the librarians are competent in creating and updating OPAC, searching the web and library databases, managing e-mails, securing digital resources, installing hardware and software, using word processing package as well as portable document format (PDF) and digitization software (Greenstone/Dspace, etc.) software. Possession of different digital competence by the librarians confirmed the suggestion of Akussah (2019); Marin and Castañeda (2023); Ogaji et al. (2017) that for university libraries to effectively preserve their digital resources, librarians must be digitally competent.

First and foremost, the librarians' competence in creating and updating OPAC, searching the web and library databases confirm their broad consensus on the availability of OPAC and databases in their libraries. This means that the librarians tend to direct the digital services of their libraries towards showcasing themselves and demonstrating the skills they possessed. This point aligns with the claims of Chama and Subaveerapandiyan (2023); Hazarika (2020) that libraries record significant improvement in the operations and services their librarians are competent. Also, it substantiates the claim of Lankshear and Knobel (2016) that digital competence enables librarians to match the medium they use for the kind of information they are presenting, the audience they are presenting it to and preserve the information effectively.

Furthermore, findings showed that the librarians are competent in installing hardware and software used for digital preservation. Being competent in this area by the librarian has covered some other competences such as securing digital resources, using word processing package as well as portable document format (PDF) and digitization software (Greenstone/Dspace, etc.) software. For instance, the installation of software/hardware usually comes with the use of codes to authenticate access to the software/hardware being installed. This is applicable to word processing package and digitisation software. The hallmark of this competence is that the librarians are competent in managing digital infrastructure used for digital resources

preservation. The findings confirm the point of Izuagbe et al. (2019) that librarians' possession of basic digital skills for preservation is inevitable.

Interestingly, the understudied university libraries applied access control, network, operating system (OS), database and hardware securities for preservation of their digital resources. This shows the adoption of various security strategies for digital resources preservation by the understudied libraries. Using different security strategies by the librarians affirmed their claim in the research question that addressed their competence, where they submitted to be competent in securing digital resources.

The use of access control, database and hardware securities confirm the initial findings where it was claimed that websites, OPAC and databases are available in the understudied university libraries. Through the access control and network security, university libraries can be controlling the access users will having to the available digital resources. Similarly, the use of database and hardware securities will allow the libraries to be using security keys like passwords or PIN to protect access to the available digital resources.

However, the minimal application of encryption and redaction in the understudied university libraries is disturbing because they posed to offer enourmous advantages to digital resources preservation. Taking encryption as an example, it can be used to protect digital information materials at many levels by converting them into a scrambled form. The use of key to unscramble the data and convert it back to its original form makes encryption one of the most useful digital information resources preservation strategies (Best & Dunlap, 2018).

Furthermore, redaction also constitute a reliable security strategy that helps in maintaining the integrity of digital resources. Castagne (2018) stressed that the quality of information resources preserved digitally is of no essence if it lacks integrity and the physical and intellectual integrity of digital content are both important considerations in digital preservation. By deploying redaction, libraries can be analysing digital resources, identifying confidential or sensitive information and removing or replacing it. Failure to employ redaction by these libraries means that some confidential or classified information materials have been digitalised or made available on the digital spaces.

Findings point out that the interviewees believed their digital competences are relevant to their preservation of the available digital resources. Basically, the interviewees believed that digital competences equip them with the skills required to create and share digital contents, empower and equip them to harness tools for preservation of digital materials, help to understand the protocols surrounding creating and handling of digital contents and streamline the digital preservation process. Also, digital competences enhanced their skills in collaborating globally for digital preservation, expose them to the trends and practices associated with digital tools and resources used for preservation, work efficiently in digital environments and enhanced productivity with digital tools for preservation.

A deeper analysis of the librarians' responses can be used as a springboard for their position that digital competence is relevant to their digital preservation practices in various ways. The points of the librarians are in consonance with the positions of Akinola et al. (2024); Masenya and Ngulube (2021), as well as Saka et al. (2020) that digital competence gives librarians edge in performing their roles, curating information resources and deliver quality services in this digital-driven era. Noting that digital competence enhanced the librarians' productivity with digital tools for preservation confirmed their points on the use of DSpace and E-Resources Portal for preserving the available digital resources.

Additionally, it is interesting to stress that digital competence helps to understand the protocols surrounding the creation and handling of digital contents and streamlines the digital preservation process by the librarians. The import of this is that being digitally competent enabled the librarians to be conversant with the techniques, processes and protocols to be followed in preserving digital resources. However, if this is so, why are the librarians not using emulation, cannibalisation and practicing redaction in securing their digital resources? These are the basics of digital preservation which any truly digitally competent librarian should know and adhere to.

Conclusion

As the information resources transitioned from the print form to the electronic, it becomes important for libraries to prioritise how the digital information resources will be preserved in order to ensure their safe-keeping and enhance their usage. This study has confirmed the librarians in university libraries in Kwara State, Nigeria, possessed basic digital preservation skills including including the abilities to create and update OPAC, search the web and library databases and use digitisation software (Greenstone/Dspace, etc.). These competences have assisted the librarians in the preservation strategies such as migration, digital back-up, software engineering and replication. Interestingly, the strategies have enhanced access control, network, database and hardware securities in university libraries in Kwara State, Nigeria.

Recommendations

Based on the findings of this study, the following recommendations are hereby made:

1. Management of university libraries in Kwara State, Nigeria, should endeavour to invest in the continuous training of their digital resources' specialists. This will be exposing the specialists to the copyright issues associated with digital resources preservation.
2. Management of university libraries in Kwara State, Nigeria, should implement or review their digital preservation policy to reflect the use of emerging strategies for preserving digital resources.
3. Management of university libraries in Kwara State, Nigeria, should work on making adequate digital infrastructure available. This will help the librarians in using the right digital facilities for the preservation of the available digital resources.

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