# DIGITAL SKILLS NEEDED BY LIBRARIANS FOR IMPLEMENTATION OF SMART LIBRARIES IN THE 5TH INDUSTRIAL REVOLUTION IN UNIVERSITIES IN SOUTH EAST GEOPOLITICAL ZONE OF NIGERIA

By

# IJEOMA NNEAMAKA EZEBUIRO Ph.D. CLN

Imo State University, Owerri

#### **Abstract**

This study investigated digital skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East Geopolitical Zone of Nigeria. Two research questions were asked and two corresponding hypotheses were formulated and tested at 0.05 level of significance. The study adopted the descriptive survey research design. The population is 112 Librarians in 15 public Universities in South East Geopolitical Zone. There was no sampling technique rather census enumeration method was used to draw the entire population of the study. A rating scale titled: Digital Skills Needed by Librarians for Implementation of Smart Libraries Scale (DSNLISLS) contained 16 items. The instrument was validated by three research specialists in Imo State University, Owerri. A reliability coefficient of 0.83 was obtained using Cronbach Alpha statistics. Research questions were answered using mean and standard deviation statistics while t-test statistics was used to test the hypotheses. The result revealed that the digital imaging, scanning and digital preservation skills are significantly needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East Geopolitical Zone of Nigeria. Based on the findings, it was recommended among others that University library management should prioritize training and capacity-building programs to equip librarians with digital imaging and scanning skills in order to ensure that they are adequately prepared to support the implementation of smart libraries in the 5th Industrial Revolution.

Keywords: Digital skills, Industrial Revolution, Librarians, Smart libraries, and Universities.

#### Introduction

No doubt, technology advancement has resulted in four global revolutions, and a fifth is underway currently. All these revolutions in one way or another have significantly impacted the practice and operations in libraries. The outcome of the First, Second, Third, Fourth and Fifth

Industrial Revolutions have remarkably significant difference. The First Industrial Revolution used water and steam power to mechanize manufacturing, the Second Industrial Revolution adopted electric power to increase production, and the Third Industrial Revolution employed electronics and information technology to automate processes. The Third Industrial Revolution, which started in the 1960s, was referred to as the computer or digital revolution because it sped up the development of semiconductors and mainframe computing, personal computing, and the Internet. The fourth builds on the digital revolution and is characterized by ubiquitous and mobile Internet, along with more powerful sensors, artificial intelligence, and machine learning. The Fifth Industrial Revolution is transforming academic libraries by integrating advanced technologies like AI, IoT, and data science to enhance user experiences, streamline operations, and increase knowledge accessibility. This revolution enables libraries to become dynamic hubs that contribute to sustainable knowledge systems, fostering innovation, collaboration, and community engagement. The combination of the precision of machines and advanced technologies with human decision-making and creativity enable more efficient, productive, and smart libraries.

A smart library is a modern library that leverages technology like online databases, e-books and mobile apps to improve its services and operations. According to Achugbue, Igere and Azih (2023), smart libraries create a more efficient and user-friendly experience for patrons. This approach transforms traditional library management, enabling seamless access to a vast array of resources and redefining the role of libraries in the digital age. Baryshev, Verkhovets and Babina (2018) assert that the concept of a "smart library" is often used in various contexts to describe libraries that integrate advanced technologies and innovative approaches. The term "smart"

implies a system that is flexible, adaptive, and responsive to user needs, showcasing intelligence and efficiency in its operations and services. Thus, in the context of this study, a smart library leverages Digital skills of librarians to provide innovative services, utilizing technologies like digital databases, e-books, and online resources to enhance user experience. Librarians in smart libraries apply their digital skills to curate, manage, and disseminate information effectively in order to ensure seamless access to knowledge and supporting the evolving needs of patrons.

Digital skill is the ability to use digital technology, communication tools or networks to locate, evaluate, use, manage, and create information. It is the ability to understand and use information in multiple formats from a wide range of sources when presented through the computer. It has to do with person's ability to perform tasks effectively in the digital environment. Khan and Bhatti (2020) opine that digital skill is a set of attitudes, understanding, and skills to handle and communicate information and knowledge effectively in a variety of media and formats. The skills include: the ability to read and interpret media; to reproduce data and image through digital manipulation; and to evaluate and apply new knowledge from digital environment (Mulat & Natarajan, 2020). Digital skills are therefore important component to librarians which enable them to locate, organize, understand, evaluate, and analyze information using digital technologies. Digital skills encompass a range of competencies that enable individuals to effectively navigate and utilize digital technologies. These skills according to Mbagwu (2023) and Osinulu (2021) include: digital imaging and scanning, metadata creation and management, digital preservation techniques, content management systems, optical character recognition, data and file management, copyright and digital rights management, quality control

and assurance, project management and digital literacy and user support. The digital skills considered in this study are digital imaging and scanning as well as digital preservation skills.

Digital imaging and scanning skills refer to the ability to capture high-quality digital images of physical materials, such as documents, photographs, and other library resources with the use of scanners, cameras, or other digital capturing devices. Digital imaging and scanning skills according to Tella, Okojie, Abdullahi and Ajani (2022) is the technical expertise required to operate digital imaging equipment, edit and enhance scanned images, and manage digital files, enabling librarians to create and maintain digital collections that are accessible and useful to patrons. Adeniran, Nwalo and Ajani (2020) assert that digital imaging and scanning skills enable librarians to preserve and provide access to historical and fragile materials, while also expanding the reach of library collections to remote users. When library resources are digitalized, librarians can enhance discovery, accessibility, and sharing of knowledge, ultimately supporting research, education, and community engagement.

Digital preservation skills refer to the ability of librarians to ensure the long-term accessibility, integrity, and authenticity of digital content, including digital collections, e-books, and other digital materials, through the application of standardized preservation methods and best practices. Jalaludin, Nur, Sahriman, Rosihidin and Kadir (2025) assert that digital preservation skills involve the knowledge and expertise required by librarians to manage, maintain, and protect digital assets from degradation, loss, or obsolescence, ensuring that digital content remains usable and accessible over time, and is preserved for future generations. Digital preservation skills enable librarians to safeguard digital collections and ensure their long-term accessibility, allowing future generations to access and utilize valuable digital resources. When

librarians possess the digital preservation skills, they can protect digital assets from loss, degradation, or technological obsolescence, thereby preserving cultural heritage and scholarly knowledge.

In Universities, smart libraries are emerging as a growing trend, leveraging technology to enhance library services and provide seamless access to information. However, librarians in the South East Geopolitical Zone of Nigeria seem to lack the necessary digitalization skills to effectively implement and manage smart libraries. The current issues with librarians' skills in the 21st century include inadequate knowledge of digital tools, poor digital literacy, and limited expertise in managing digital collections. These skill gaps hinder the effective delivery of library services, compromising the quality of education and research in Universities. Despite efforts to address these issues through training and workshops, many librarians still struggle to keep pace with the rapidly evolving digital landscape. If these issues persist, libraries in the region might risk becoming obsolete, unable to support the information needs of students and faculty in the 5th Industrial Revolution. The fate of these libraries hangs in the balance, and it is imperative that librarians acquire the necessary digitalization skills to remain relevant. This study is therefore put in question form: what are the needed digital skills needed by needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East Geopolitical Zone of Nigeria? Providing answer to the question becomes the thrust of this study.

# **Research Questions**

In line with the specific objectives, the following research questions were posed to guide the study:

- 1. What are the digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East?
- 2. What are the digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East?

# **Hypotheses**

The following null hypotheses are formulated and tested at 0.05 level of significance:

Ho<sub>1</sub>: The digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East is not significantly greater than the criterion mean of 20.00.

Ho<sub>2</sub>: The digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East is not significantly greater than the criterion mean of 20.00.

# **Literature Review**

#### **Academic Libraries**

Academic libraries are specialized libraries that serve the research and information needs of students, faculty, and staff in institutions of higher education. Libraries, according to Jaja and Udumukwu (2023), are repositories of knowledge, housing extensive collections of books, journals, databases, and other materials that support the curriculum and research needs of the academic community such as the lecturers, undergraduate students, among others. When organized accesses to these resources are provided, libraries enable users to locate, evaluate, and

utilize information effectively, thereby facilitating academic success and lifelong learning. Ezebuiro (2025) contends libraries offer a supportive learning environment, facilitating research, teaching, and learning through various services, including reference assistance, instruction, and study spaces. In the context of this study, libraries are organized collection of resources, including books, journals, digital media, and other materials, that provides access to information, supports learning and research, and fosters community engagement, often serving as a hub for knowledge, creativity, and intellectual exploration.

# **Smart Libraries**

A smart library is a technologically advanced library that utilizes digital tools and innovative services to enhance the learning experience. Achugbue, Igere and Azih (2023) defined smart library as a library that leverages information and communication technology (ICT) to provide efficient and effective access to information resources. According to Adigun and Igboechesi (2024), the facilities required for smart library implementation include high-speed internet connectivity, digital devices (e.g., computers, tablets, e-readers), online databases and e-journals, collaborative learning spaces, and innovative technologies (e.g., artificial intelligence, virtual reality). Smart libraries are important as they provide access to digital resources, enable efficient research, and facilitate collaboration as well as offer a flexible and interactive learning environment.

# **Digital Skills**

Digital skills refer to the abilities and competencies required to effectively use digital technologies, such as computers, software, and online platforms, to access, evaluate, and create

information. According to Khan and Bhatti (2020), digital skills also encompass the capacity to navigate and utilize digital tools to communicate, collaborate, and solve problems in a rapidly changing technological landscape. Osinulu (2021) asserts that librarians in smart libraries need various digital skills, including digital imagining and scanning, proficiency in database management, digital curation, digital preservation, online search and retrieval, social media marketing, and information technology (IT) troubleshooting. The importance of digital skills for librarians in smart libraries lies in their ability to effectively manage and provide access to digital resources, support patrons in developing their own digital literacy, and leverage technology to enhance the library's services and operations.

# **Digital Imaging and Scanning Skills**

Digital imaging and scanning skills refer to the ability to capture and digitize physical materials, such as documents, images, and artifacts, using various technologies like scanners and cameras. Digital imaging and scanning skills according to Khan and Bhatti (2020) involve the use of software to edit, enhance, and preserve digital images. Endouware and Dushu (2021) assert that the impact of digital imaging and scanning skills on librarians in smart libraries is significant, as it enables them to digitize and preserve rare and fragile materials, making them accessible to a wider audience. Librarians with digital imaging and scanning skills can also collaborate with faculty and students on digital projects, further integrating the library into the academic community.

# **Digital Preservation Skills**

Digital preservation skills refer to the ability to maintain and ensure the long-term accessibility and usability of digital content, including digital documents, images, and other electronic materials. Jalaludin, Nur, Sahriman, Rosihidin and Kadir (2025) posit that digital preservation skills also involve the use of strategies and tools to manage digital obsolescence, bit rot, and other threats to digital content. The impact of digital preservation skills on librarians in smart libraries is crucial, as it enables them to safeguard digital collections and ensure their availability for future generations. Librarians who possess digital preservation skills according to Solomon and Soyemi (2021) can collaborate with other information professionals to advance digital preservation best practices and standards.

#### **Theoretical Framework**

# Task-Technology Fit Theory

Task-technology fit theory propounded by Dale Goodhue and Ronald Thompson in 1995 is a framework that explains how technology utilization can impact individual performance. Goodhue and Thompson posit that the fit between technology capabilities and task requirements is a critical determinant of technology adoption and utilization. According to the theory, technology can only be effective if it supports the tasks that users need to perform. The theory emphasizes the importance of understanding the characteristics of both the task and the technology. One of the basic assumptions of the theory is that technology utilization is influenced by the fit between technology capabilities and task requirements.

One of the most important principles is that the fit between technology capabilities and task requirements is a critical determinant of technology utilization and performance. According

to this principle, organizations should prioritize understanding the task requirements and technology capabilities to ensure a good fit. One of the strengths of the theory is its ability to explain the relationship between technology utilization and performance. According to some critics, the theory fails to account for other factors that can influence technology utilization and performance, such as user attitudes and organizational culture.

The relevance of task-technology fit theory to this study emphasizes on the importance of aligning technology capabilities with task requirements. With the application of principles of this theory, librarians can determine whether digital tools and technologies fit well with their tasks and responsibilities, such as digital imaging and scanning as well as digital preservation. The theory stressed on the selection and implementation of digital technologies, ensuring that they support librarians' work for the implementation of smart libraries in the 5th Industrial Revolution in Universities in South East Geopolitical Zone of Nigeria.

# **Review of Empirical Studies**

In an empirical study, Oluranti, Olorunleke and Abiodun's (2023) study on digital preservation skills of electronic information resources' management among library personnel in selected Universities in Nigeria found that Electronic information resources (EIR) preservation skills are possessed by library personnel.

In another related study, Obiadazie, Agbanu and Nwankwo (2022) investigated librarians' ICT skills development: need for effective library services and national integration in Anambra State and found that librarians need ICT skills to develop web-based applications, access and deliver emails, e-resources and databases.

Empirically, Endouware and Dushu's (2021) study on an investigation of the level of digital literacy skills possessed by academic librarians in Nigerian Universities found that digital literacy skills are essential for the delivery of library services in the 21st century.

In a similar study, Solomon and Soyemi (2021) who investigated ICT competence and digital preservation practices of library personnel in selected Nigerian private universities found that the level of digital preservation practice of librarians in private Universities in Ogun State, Nigeria was found to be high.

#### Method

The study adopted the descriptive survey research design. According to Onah (2023), descriptive survey is used to analyze and report data without manipulation or distortion of any of the variables. The population is 112 Librarians in all the 15 public Universities in Abia, Anambra, Ebonyi, Enugu and Imo State in South East Geopolitical Zone of Nigeria (Source: libraries in various Universities, 2025). There will be no sampling technique rather census enumeration method will be used to draw the entire population of the study from the 15 university libraries under study. This is because the limited population size. Census enumeration aims to cover the entire population. A rating scale titled: Digital Skills Needed by Librarians for Implementation of Smart Libraries Scale (DSNLISLS) contained 16 items and was constructed by the researchers for the purpose of eliciting information from the respondents. The instrument was validated by three research specialists in Imo State University, Owerri.

A reliability coefficient of 0.83 was obtained using Cronbach Alpha statistics. The researcher with the aid of three trained Research Assistants administered the 112 copies of the instrument to the respondents using on-the-spot collection which ensured 100 per cent retrieval

of the completed instrument. Research questions were answered using mean score and standard deviation while t-test statistics was used to test the hypotheses at 0.05 level of significance. Decision for research questions: The bases of the decision for research questions' conclusion according to Nworgu (2015) were as follows: a mean score of 2.50 and above can be considered as agreement while below 2.50 as disagreement. Decision for hypotheses: the acceptance or rejection of null hypotheses was based on the calculated value of the t-test statistics. When the t-calculated is greater than the t-tabulated, the null hypothesis is rejected but if otherwise, the null hypothesis is accepted.

### **Result and Discussion**

Research Question One: What are the digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East?

Table 1: Mean rating score on the digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East

S/N	Items:	SA	A	D	SD	$\sum \mathbf{f} \mathbf{x}$	X	SD	Remark
1	Knowledge of digital imaging	36	65	4	7	112	3.16	0.76	Agree
	software is essential for librarians	144	195	8	7	354			
	to implement smart libraries								
2	Librarians need skills in drawing	11	6	55	40	112	1.93	0.89	Disagree
	pictorial diagrams for users of	44	18	110	40	212			
	academic libraries								
3	Librarians need skills in scanning	22	71	11	8	112	2.96	0.87	Agree
	and digitization to convert print	88	213	22	8	331			
	materials to digital formats.								
4	Understanding of metadata	31	58	12	11	112	2.97	0.79	Agree
	standards is crucial for effective	124	174	24	11	333			
	digital imaging and scanning in								
	smart libraries.								
5	Librarians should have expertise	43	41	10	18	112	2.97	0.88	Agree
	in image editing software to	172	123	20	18	333			
	enhance digital images.								

6	Knowledge of copyright laws is	40	54	5	13	112	3.08	0.90	Agree
	important when digitizing	160	162	10	13	345			
	materials for smart libraries.								
7	Librarians need training in digital	33	57	11	11	112	3.00	0.86	Agree
	asset management to organize and	132	171	22	11	336			
	maintain digital collections.								
8	Familiarity with scanning	35	43	9	25	112	2.79	0.80	Agree
	equipment is essential for	140	129	18	25	312			
	effective digital imaging in smart								
	libraries.								
	Grand Mean						22.86	6.75	Agree
	Overall Criterion Mean						20.00		-

Data in Table 1 show the mean and standard deviation on the digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East. The results indicated that items 1, 3, 4, 5, 6, 7 and 8 had mean scores each greater than the criterion mean score of 2.50. The overall interpretation suggests high mean scores with grand mean scores of 22.86 which is greater than the overall criterion mean score of 20.00 with a standard deviation of 6.75. It was therefore concluded that the digital imaging and scanning skills are needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East Geopolitical Zone of Nigeria.

# **Hypothesis One:**

Ho<sub>1</sub>: The digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East is not significantly greater than the criterion mean of 20.00.

Table 2: t-test statistics on the digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East

n	X	SD	df	t-cal	t-tab	Decision
112	22.86	6.75	111 12.60		1.64	Reject
						$\mathrm{Ho}_1$

Data in Table 2 gave the grand mean score and standard deviations of 112 respondents as 22.86 and 6.75 respectively. At 111 degree of freedom, with application of the t-test calculated, its result of 12.60 is greater than the t-tabulated of 1.64 at 5% level of significance. Therefore, the decision was to reject the null hypothesis and concluded that the digital imaging and scanning skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution is significant in Universities in South East Geopolitical Zone of Nigeria. The result is a proof that librarians in Universities in South East Geopolitical Zone of Nigeria require robust digital imaging and scanning skills to effectively implement smart libraries, underscoring the importance of digital literacy in modern librarianship. The significant need for these skills highlights the critical role digital technologies play in transforming library services and enhancing access to information in the 5th Industrial Revolution. When librarians acquire these skills, they can optimize digital collections, improve user experience, and contribute to the academic success of their institutions.

These finding agrees with Endouware and Dushu (2021) who found that digital literacy skills are essential for the delivery of library services in the 21st century. Also, Obiadazie, Agbanu and Nwankwo (2022) found that librarians need ICT skills to develop web-based applications, access and deliver emails, e-resources and databases. The result was strengthened with the fact that Librarians' possession of digital imaging and scanning skills enables them to create and manage digital collections, thereby enhancing access to information and supporting the transition to smart libraries. Librarians can digitize and preserve library materials, provide online access to resources, and offer innovative services that cater to the evolving needs of users in the 5th Industrial Revolution by leveraging these skills.

Research Question Two: What are the digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East?

Table 3: Mean rating score on the digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East

S/N	Items:	SA	A	D	SD	∑fx	X	SD	Remark
9	Knowledge of digital preservation strategies is essential for librarians to ensure the long-term accessibility of digital collections.	42 168	42 126	11 22	17 17	112 133	2.97	0.86	Agree
10	Understanding of digital obsolescence is essential for librarians to anticipate and mitigate preservation risks.	41 164	53 159	6 12	12 12	112 347	3.10	0.88	Agree
11	Librarians need skills in digital format migration to preserve digital materials over time.	34 136	56 168	10 20	12 12	112 336	3.00	0.84	Agree
12	Understanding of digital preservation metadata is crucial for effective digital preservation.	36 144	42 126	14 28	20 20	112 318	2.84	0.78	Agree
13	Librarians should have expertise in backup and disaster recovery to protect digital collections.	37 148	64 192	5 10	6 6	112 356	3.18	0.77	Agree
14	Familiarity with digital repository management is necessary for librarians to manage digital collections.	32 128	57 171	13 26	10 10	112 335	2.99	0.90	Agree
15	Librarians need knowledge of digital rights management to ensure copyright compliance.	23 92	70 210	10 20	9 9	112 331	2.96	0.88	Agree
16	Librarians require familiarity on how to hack various sites using dedicated software.	12 48	5 15	56 112	39 39	112 214	1.91	0.80	Agree
	Grand Mean Overall Criterion Mean						22.95 20.00	6.71	Agree

In Table 3, the data show the mean and standard deviation on the digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East. The results indicated that items 9, 10, 11, 12, 13, 14 and 15 had mean scores each greater than the criterion mean score of 2.50. The overall interpretation

suggests high mean scores with grand mean score of 22.95 which is greater than the overall criterion mean score of 20.00 with a standard deviation of 6.71. It was therefore concluded that digital preservation skills are needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East Geopolitical Zone of Nigeria.

# **Hypothesis Two:**

 $Ho_2$ : The digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East is not significantly greater than the criterion mean of 20.00.

Table 4: t-test statistics on the digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution in Universities in South East

n	X	SD	df	t-cal	t-tab	Decision
112	22.95	6.71	111	5.60 1.64		Reject
						$\mathrm{Ho}_2$

Data in Table 4 gave the grand mean score and standard deviations of 307 respondents as 15.54 and 0.74 respectively. At 306 degree of freedom, with application of the t-test calculated, its result of 105.60 is greater than the t-tabulated of 12.07 at 5% level of significance. Therefore, the decision was to reject the null hypothesis and concluded that the digital preservation skills needed by librarians for implementation of smart libraries in the 5th Industrial Revolution is significant in Universities in South East Geopolitical Zone of Nigeria. The finding underscores the critical importance of digital preservation skills for librarians in Universities in South East Geopolitical Zone of Nigeria, highlighting their role in ensuring the long-term accessibility and usability of digital collections in smart libraries. The significant need for these skills emphasizes the librarians' responsibility to safeguard digital assets and maintain the integrity of digital collections in the face of technological advancements and evolving user needs. Librarians who

possess these digital preservation skills can effectively manage and preserve digital resources, thereby supporting the sustainability of smart libraries in the 5th Industrial Revolution. Corroborating the result, Oluranti, Olorunleke and Abiodun (2023) found that Electronic information resources (EIR) preservation skills are possessed by library personnel. Similarly, Solomon and Soyemi (2021) found that the level of digital preservation practice of librarians in private Universities in Ogun State, Nigeria was found to be high. The result was strengthened with the fact that Librarians' possession of digital preservation skills enables them to safeguard digital collections, ensuring the long-term accessibility and usability of valuable resources, which is critical for the sustainability of smart libraries. Librarians with these skills can protect digital assets from technological obsolescence and data loss, thereby supporting the continuity of research, learning, and innovation in the 5th Industrial Revolution.

# Recommendations

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

- 1. University library management should prioritize training and capacity-building programs to equip librarians with digital imaging and scanning skills in order to ensure that they are adequately prepared to support the implementation of smart libraries in the 5th Industrial Revolution.
- 2. Professional Library associations and bodies in Nigeria should develop and offer specialized training programs, workshops, and certifications in digital preservation to equip librarians with the necessary skills and competencies to effectively manage and preserve digital collections in smart libraries.

- 3. Government and institutional funding should be made available to librarians to facilitate digital capacity building
- 4. Acquiring digital skills is essential for librarians in higher institutions to provide highquality services, hence librarians should be proactive with capacity building to improve on the digital skills.
- 5. Concerted efforts should be put together by stakeholders of academic libraries in order to mitigate the challenges of digital skills acquisition and ensure seamless smart library services in the institutions.

# Conclusion

In conclusion, the findings of this study underscore the significance of digital imaging, scanning, and preservation skills for librarians in the 5th Industrial Revolution. Librarians who possess these skills will be well-positioned to support the transition to smart libraries, enhancing access to information and promoting innovation. With expertise in digital imaging and scanning, librarians can create and manage digital collections, expanding the reach and impact of library services. Digital preservation skills will enable librarians to safeguard digital assets, ensuring their long-term accessibility and usability. Librarians who acquire these digital skills will play a critical role in supporting research, learning, and innovation in the digital age. This will not only enhance the relevance of librarians but also position library services at the forefront of technological advancements. Also, librarians with these digital skills will drive the transformation of library services, making them more responsive to the evolving needs of users.

As a result, libraries will remain vibrant hubs of knowledge and innovation, supporting the academic success and research endeavors of their institutions.

#### References

- Achugbue, E.I., Igere A.M. & Azih, A.C (2023). Deployment of Smart Library Services in University Libraries in the Delta State in Nigeria During the Post Covid 19 Era. *Zambia Journal of Library & Information Science*, 7(2), 13-18.
- Adeniran, C.O., Nwalo, K.I.N. & Ajani, Y.A. (2020). Application of information and communication technology in academic libraries in Kwara State, Nigeria: progress and challenges. *MBJLIS Middlebelt Journal of Library and Information Science*, 18(1), 70 88
- Adigun, T.A. & Igboechesi, G.P. (2024). Advancement of Smart Academic Libraries in Northern Nigeria: Issues and Way Forward, British Journal of Education, 12(6), 53-66.
- Baryshev, R.A., Babina, O.I., Zakharov, P.A., Kazantseva, V.P. & Pikov, N.O. (2015). Electronic library: genesis, trends. From electronic library to smart library. *Journal of Siberian Federal University. Series: Humanities*, 8, (6), 1043–1051.
- Endouware, B.C. & Dushu, T.Y. (2021). An investigation of the level of digital literacy skills possessed by academic librarians in Nigerian Universities. *World Journal of Innovative Research (WJIR)*, 10(2), 1 8
- Ezebuiro, I.N. (2025). Lecturers' utilization of emerging technologies in academic libraries for research purposes in tertiary institutions in Imo State. *Journal of Library Information Science & Technology*, 7(2).
- Jaja, C.A. & Udumukwu, I.J. (2023). Utilization of school library and students' academic achievement in Abuja Federal Capita Territory. *International Journal of Library and Information Science Studies*. 9(6), 61-72
- Jalaludin, U.N., Nur, E.R., Sahriman, S.H., Rosihidin, A.Z. & Kadir, M.R.A. (2025). Digital preservation in digital libraries: a systematic literature review. *International Journal of Research and Innovation in Social Science (IJRISS)*, 9(01), 4186-4199.
- Khan, S. A. & Bhatti, R. (2020). Factors affecting digital skills of university librarians for developing and managing digital libraries: An assessment in Pakistan. *Library Philosophy and Practice (e-journal)*, 4230.
- Mbagwu, I.F. (2023). Acquiring digital skills for effective service delivery of e-resources by library professionals in public higher institutions in Imo State, Nigeria. *Jewel Journal of Librarianship*. 18(3), 77 85.

- Mulat, T. & Nataraja, M. (2020). Digital literacy skills among library professionals in Jimma University libraries. *Library Philosophy and Practice (e-journal)*, 4629. https://digital.commons.unl.edu/lib.phil/prac.
- Obiadazie, R.E., Agbanu, N.A. & Nwankwo, N.D. (2022). Librarians' ICT skills development: need for effective library services and national integration in Anambra State. *Library Research Journal*, 7(1), 22 29.
- Oluranti, F.E, Olorunleke, A.R. & Abiodun, A. (2023) Digital preservation skills of electronic information resources' management among library personnel in selected Universities in Nigeria. *European Journal of Computer Science and Information Technology*, 11 (3), 75-87.
- Onah, F.E. (2023). *Basic statistics for education and social sciences: applied approach*. Owerri. Odesaa Educational Books (Nig.) Publishers.
- Osinulu, L.F. (2022). Awareness of use of electronic information resources by students of College of Health Sciences in Olabisi Onabanjo University, Nigeria. *Information Impact: Journal of Information and Knowledge Management*, 11(3), 1-11.
- Solomon, D. & Soyemi, O.D. (2021). ICT competence and digital preservation practices of library personnel in selected Nigerian private universities. *International Journal of Academic Research in Education and Review*, 9(5), 248-259.
- Tella, A., Okojie, V., Abdullahi, F. & Ajani, Y.A. (2022). The future of libraries in Nigeria during the Fourth Industrial Revolution. *Libraries and the Academy*, 22(3), 547–558.