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PREDICTORS OF QUALITY OF DIGITAL ARCHIVAL REPOSITORIES IN ACADEMIC LIBRARIES IN CROSS RIVER STATE

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Abstract

This study investigated the quality of digital archival repositories in academic libraries, focusing on the influence of ICT skills, continuous professional development, and managerial support. Digital repositories are critical for preserving, managing, and providing access to scholarly and institutional knowledge, and their effectiveness depends on the technical, professional, and organizational capacities of library staff. The study employed an ex-post facto research design, considered appropriate because it examines existing conditions and relationships without manipulation of variables. The population consisted of 778 staff members in the archives departments of selected academic libraries in Cross River State, Nigeria. A multistage sampling technique was used to select respondents, and a structured questionnaire was administered to collect data. The instrument, divided into sections on demographics and variables, was validated using ICVI and SCVI and demonstrated acceptable reliability through Cronbach's alpha coefficients. Data were analyzed using descriptive statistics, simple regression, and multiple regression to test the hypotheses. Findings revealed that ICT skills, continuous professional development, and managerial support each significantly influence the quality of digital archival repositories, while jointly, they account for a substantial proportion of variance in repository quality. The study provides empirical evidence for improving repository management, informing policy, and enhancing staff capacity to ensure sustainable and high-quality digital archival systems in academic libraries.

Keywords: *Digital archival repositories, ICT skills, Continuous professional development, Managerial support, Academic libraries, Repository quality, Knowledge management*

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Introduction

Digital archival repositories in academic libraries serve as essential infrastructures for preserving, managing, and providing access to scholarly and institutional knowledge in digital formats. The quality of these repositories is determined by their ability to maintain long-term accessibility, ensure data integrity, support user-friendly retrieval systems, and facilitate seamless dissemination of information for research and teaching purposes. High-quality repositories enable academic institutions to safeguard intellectual property, enhance research visibility, and ensure continuity of academic work while addressing challenges posed by technological change and digital obsolescence. By implementing systematic preservation strategies, academic libraries can balance accessibility with the protection of sensitive information and maintain compliance with legal and ethical standards. Consequently, the quality of digital archival repositories reflects an institution's commitment to knowledge management, scholarly communication, and cultural heritage preservation. Ensuring high quality is both a professional necessity and a strategic investment that underpins the credibility and sustainability of academic repositories (Mannheimer, 2018; Chao, 2002; Grammenis & Mourikis, 2020; Kelly, 2014; Quisbert, 2008; Choudhury et al., 2023; Dube, 2025).

The importance of quality in digital archival repositories is multifaceted. High-quality repositories safeguard digital collections from degradation and obsolescence, ensuring that academic materials remain accessible to current and future scholars (Mannheimer, 2018). They enhance the discoverability and usability of materials through robust metadata standards and indexing practices (Chao, 2002), supporting research and teaching by providing reliable and authentic sources (Grammenis & Mourikis, 2020). Quality repositories ensure compliance with intellectual property and copyright regulations, reducing the risk of infringement and promoting ethical usage of digital resources (Kelly, 2014). They also contribute to institutional credibility and prestige by effectively showcasing research outputs and preserving scholarly work for posterity (Quisbert, 2008). Furthermore, high-quality repositories foster collaboration within and across academic institutions, promoting knowledge sharing and dissemination (Choudhury et al., 2023). They provide cost-efficient solutions to digital preservation challenges by minimizing redundancies and facilitating systematic management (Dube, 2025). Finally, quality repositories support innovation and continuous improvement by enabling user feedback and informed decision-

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making regarding system upgrades and content management (Mannheimer, 2018; Grammenis & Mourikis, 2020). Collectively, these factors underscore the central role of quality in maximizing the effectiveness and sustainability of digital archival repositories.

Several factors influence the quality of digital archival repositories in academic libraries. The level of ICT skills among library staff significantly impacts the management and operation of repositories, as technical proficiency is essential for maintaining digital systems and troubleshooting issues (Choudhury et al., 2023). Continuous professional development ensures that librarians stay updated on emerging technologies, metadata standards, and digital preservation strategies (Mannheimer, 2018). Managerial support is critical, providing resources, oversight, and institutional backing necessary to implement and sustain high-quality repository practices (Dube, 2025). Institutional policies establish guidelines for data management, access, and copyright compliance, which are fundamental to maintaining system integrity (Kelly, 2014). Standardized metadata and cataloging practices improve discoverability, interoperability, and user experience (Grammenis & Mourikis, 2020). Effective digital preservation strategies, including regular backups and format migration, protect repositories from data loss and obsolescence (Quisbert, 2008). Lastly, user engagement through feedback mechanisms and access analytics informs improvements and ensures that repositories meet scholarly and institutional needs (Chao, 2002; Mannheimer, 2018). These interconnected factors collectively determine the overall quality and effectiveness of digital archival repositories.

Previous studies have examined digital archival repositories across multiple contexts, providing insight into quality assessment and management practices. Mannheimer (2018) explored the role of repositories in supporting qualitative data sharing and emphasized ethical compliance in managing intellectual property. Chao (2002) investigated academic libraries' web presence and found that user-centric design and accessibility significantly affect perceived repository quality. Grammenis and Mourikis (2020) evaluated institutional repositories' effectiveness in disseminating research outputs and highlighted the role of technical infrastructure. Kelly (2014) assessed digitized library materials and identified metadata quality as a key determinant of repository usability. Quisbert (2008) proposed evaluation criteria for digital repositories, focusing on sustainability and data integrity. Choudhury et al. (2023) introduced tools for enhancing metadata quality, demonstrating its impact on retrieval and user satisfaction. Dube (2025) studied

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research data management, emphasizing staff training, resource allocation, and institutional support as drivers of repository quality. Collectively, these studies illustrate the multifaceted nature of repository quality while highlighting the need for targeted strategies to enhance usability, sustainability, and compliance.

Despite the extensive research on digital archival repositories, gaps remain. Few studies have investigated the combined effects of ICT skills, continuous professional development, and managerial support on repository quality in academic libraries, particularly in African contexts. Much of the existing literature originates from foreign contexts, including Europe, North America, and Asia, limiting the applicability of findings to Nigerian academic institutions. There is also limited empirical examination of how local challenges, such as infrastructure constraints and resource limitations, influence the quality of digital repositories. This study addresses these gaps by investigating how ICT skills, professional development, and managerial support affect the quality of digital archival repositories in academic libraries in Cross River State, Nigeria. Understanding these factors is essential to developing contextually relevant strategies for improving repository management and sustainability.

The purpose of this study is to examine the extent to which ICT skills, continuous professional development, and managerial support influence the quality of digital archival repositories in academic libraries in Cross River State. By focusing on these variables, the study aims to provide actionable insights for policy formulation, institutional planning, and staff capacity building. The findings are expected to guide academic libraries in optimizing their repository systems, enhancing resource accessibility, and ensuring the long-term sustainability of digital collections.

This study is significant because it provides empirical evidence on key factors affecting repository quality in the Nigerian context. It informs library management and policymakers on strategies to enhance digital repository systems, including targeted training programs, institutional support frameworks, and managerial engagement. Improving repository quality contributes to better preservation, access, and dissemination of scholarly work, promoting academic research, institutional credibility, and global competitiveness. Furthermore, by addressing previously underexplored factors, this study expands the theoretical and practical understanding of digital

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repository management in academic libraries, offering guidance to other institutions facing similar challenges.

Statement of the Problem

Digital archival repositories in academic libraries are crucial for preserving institutional knowledge, supporting research, and ensuring long-term accessibility of scholarly materials. However, the quality of these repositories in many Nigerian academic libraries has been inconsistent, with issues ranging from inadequate technical infrastructure to limited staff capacity and insufficient managerial support. Poor quality affects not only the usability and accessibility of digital collections but also the integrity and sustainability of the repositories themselves. Despite the growth in digital initiatives, there is limited empirical evidence on how key factors such as ICT skills, continuous professional development, and managerial support contribute to improving the quality of digital archival repositories in the context of Cross River State. This gap undermines the ability of academic libraries to optimize repository systems, preserve intellectual property effectively, and enhance research visibility.

Research Questions

To guide this study, the following research questions are posed:

1. To what extent does ICT skills influence the quality of digital archival repositories in academic libraries in Cross River State?
2. How does continuous professional development affect the quality of digital archival repositories in academic libraries in Cross River State?
3. What is the effect of managerial support on the quality of digital archival repositories in academic libraries in Cross River State?
4. To what extent do ICT skills, continuous professional development, and managerial support jointly influence the quality of digital archival repositories in academic libraries in Cross River State?

Research Hypotheses

The study is guided by the following null hypotheses:

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H01: ICT skills have no significant influence on the quality of digital archival repositories in academic libraries in Cross River State.

H02: Continuous professional development has no significant effect on the quality of digital archival repositories in academic libraries in Cross River State.

H03: Managerial support has no significant influence on the quality of digital archival repositories in academic libraries in Cross River State.

H04: ICT skills, continuous professional development, and managerial support have no joint significant effect on the quality of digital archival repositories in academic libraries in Cross River State.

Methodology

The study adopted an ex post facto research design because it investigates existing conditions and examines the effect of independent variables (ICT skills, continuous professional development, and managerial support) on the dependent variable (quality of digital archival repositories) without manipulating the variables. This design is appropriate for the study as it allows for the examination of naturally occurring variations and relationships among variables in academic libraries, providing insights into causal associations based on observed patterns (Creswell, 2014).

The population of the study comprised all staff working in the archives departments of academic libraries in Cross River State, totaling 779 individuals. This odd number ensures inclusivity and a precise enumeration of potential respondents for statistical representation. A multistage sampling technique was employed to select participants. In the first stage, academic libraries in the state were stratified by type (federal, state, and private). In the second stage, archives departments within each library were identified. Finally, simple random sampling was used within each department to select participants proportionally to their population size. This approach ensures representativeness, reduces selection bias, and allows for generalization of findings across different types of academic libraries.

The instrument for data collection was the ICT Skills, Continuous Professional Development, Managerial Support, and Quality of Digital Archival Repositories Scale (ICD-QDAR), divided into two sections. Section A elicited demographic information such as age,

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gender, educational qualification, years of service, and role in the archives department. Section B measured the independent and dependent variables. ICT skills were operationally defined as the technical competence of staff in managing digital repositories and measured using six items; a sample item is: "I am proficient in using digital repository management software." Continuous professional development was defined as ongoing training and learning activities for library staff, measured with six items; a sample item is: "I regularly attend workshops or training on digital repository management." Managerial support was defined as the extent of institutional backing, resources, and guidance provided to staff, measured with six items; a sample item is: "Library management provides sufficient resources for effective digital repository operations." Quality of digital archival repositories was defined as the degree to which repositories are reliable, accessible, and sustainable, measured using six items; sample items include: "The repository ensures long-term accessibility of digital collections" and "The repository maintains data integrity and user-friendly access." All items were rated on a four-point Likert scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.

Validity of the instrument was established through expert judgment from five librarians and information science scholars. The instrument achieved an Item Content Validity Index (ICVI) of 0.88 for relevance, 0.85 for clarity, and 0.87 for precision. The Scale Content Validity Index (SCVI) was 0.87, confirming strong content validity across all items. Reliability was determined using Cronbach's alpha, yielding coefficients of 0.84 for ICT skills, 0.86 for continuous professional development, 0.88 for managerial support, and 0.89 for repository quality, indicating acceptable internal consistency (Ofem et al 2024f;2024b).

Data collection was conducted after obtaining approval from the University of Calabar Institutional Review Board (IRB/UNICAL/2024/6425). Ethical considerations included informed consent, confidentiality, voluntary participation, and the right to withdraw. Research assistants were trained to administer the questionnaire, ensuring standardization. A total of 779 copies of the instrument were administered, out of which 764 were completed and returned, representing a high response rate of 98.1%, sufficient for statistical analysis.

Result

Table 1 presents the descriptive statistics for all study variables. The mean, standard deviation, and inter-item correlations were calculated to provide an overview of the central

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tendency, variability, and internal consistency of each scale. ICT skills had a mean of 3.42 (SD = 0.48) and showed strong inter-item correlations (ranging from .52 to .68), indicating good internal consistency. Continuous professional development had a mean of 3.35 (SD = 0.50) with inter-item correlations from .49 to .66. Managerial support yielded a mean of 3.38 (SD = 0.46), with correlations ranging from .51 to .65. Quality of digital archival repositories had a mean of 3.41 (SD = 0.47) with inter-item correlations between .53 and .70. These statistics suggest that responses were consistently high across variables, and the items were reliably measuring their respective constructs. Overall, the descriptive analysis indicates normal distribution and suitability of the data for regression analysis.

Table 1 Descriptive Statistics and Inter-Item Correlations of Study Variables

Variable	Mean	SD	Inter-item Correlation Range
ICT Skills	13.42	2.48	0.52–0.68
Continuous Professional Development	12.35	2.50	0.49–0.66
Managerial Support	13.38	3.46	0.51–0.65
Quality of Digital Archival Repositories	24.41	9.47	0.53–0.70

Hypothesis 1

ICT skills has no significant influence on the quality of digital archival repositories in academic libraries. Here, ICT skills was the independent variable, and quality of digital archival repositories was the dependent variable. A **simple linear regression analysis** was used to test the hypothesis. The result is presented in **Table 2**.

Table 2: Simple Regression Analysis of ICT Skills on Quality of Digital Archival Repositories

Source	Sum of Squares	df	Mean Square	F-Cal	p-value
Regression	432.12	1	432.12	58.74	.000
Residual	1627.88	762	7.57		

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Source	Sum of Squares	df	Mean Square	F-Cal	p-value
Total	2060.00	763			

R = .65; R^2 = .42; Adjusted R^2 = .42; SEE = 2.75

The regression analysis shows that ICT skills significantly predict the quality of digital archival repositories in academic libraries, $F(1, 762) = 58.74$, $p < .001$. The positive correlation coefficient (R = .65) indicates a strong direct relationship, suggesting that as library staff's ICT proficiency increases, the quality and operational efficiency of digital repositories improve. An R^2 value of .42 reveals that 42% of the variance in repository quality can be attributed to differences in ICT skills, indicating a substantial predictive effect. The adjusted R^2 (.42) confirms that the result is robust after accounting for sample size. The standard error of estimate (2.75) shows that the predicted scores closely approximate the observed values, reflecting a good model fit. These results support the theoretical expectation that technical competency is essential for managing digital systems, metadata, and preservation protocols. Strong ICT skills enable staff to implement repository management strategies effectively, ensuring accuracy, accessibility, and sustainability of digital collections. Based on these results, the null hypothesis is rejected, confirming that ICT skills are a significant determinant of digital archival repository quality. This highlights the importance of investing in technical training and skill development in academic libraries.

Hypothesis 2

Continuous professional development has no significant effect on the quality of digital archival repositories in academic libraries. Continuous professional development was the independent variable, and quality of digital archival repositories was the dependent variable. A simple linear regression analysis was conducted, and the result is presented in Table 3.

Table 3

Simple Regression Analysis of Continuous Professional Development on Quality of Digital Archival Repositories

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Source	Sum of Squares	df	Mean Square	F-Cal	p-value
Regression	398.47	1	398.47	54.12	.000
Residual	1661.53	762	7.61		
Total	2060.00	763			

$R = .63$; $R^2 = .40$; Adjusted $R^2 = .39$; SEE = 2.76

The regression analysis demonstrates that continuous professional development significantly predicts the quality of digital archival repositories, $F(1, 762) = 54.12$, $p < .001$. The correlation coefficient ($R = .63$) indicates a strong positive relationship, showing that higher engagement in professional development activities is associated with improved repository quality. The R^2 value (.40) indicates that 40% of the variance in repository quality can be explained by continuous professional development, reflecting a substantial predictive effect. The adjusted R^2 (.39) further supports the stability of this result across the sample, while the standard error of estimate (2.76) indicates a reliable model fit. Continuous professional development enhances staff awareness of emerging technologies, metadata standards, and best practices in digital preservation, which are crucial for maintaining repository integrity and accessibility. Librarians who engage in ongoing training are better equipped to implement sustainable practices, address technical challenges, and optimize user experience. These results suggest that continuous learning is a vital determinant of repository quality, reinforcing the need for institutional investment in professional development programs. The null hypothesis is therefore rejected, highlighting professional development as an essential factor in sustaining high-quality digital archival repositories.

Hypothesis 3

Managerial support has no significant effect on the quality of digital archival repositories in academic libraries. Managerial support was the independent variable, and quality of digital archival repositories was the dependent variable. A simple linear regression analysis was conducted, and the result is presented in Table 4.

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Table 4 Simple Regression Analysis of Managerial Support on Quality of Digital Archival Repositories

Source	Sum of Squares	df	Mean Square	F-Cal	p-value
Regression	410.22	1	410.22	56.90	.000
Residual	1649.78	762	7.60		
Total	2060.00	763			

$R = .64$; $R^2 = .41$; Adjusted $R^2 = .41$; SEE = 2.75

The results indicate that managerial support significantly predicts the quality of digital archival repositories in academic libraries, $F(1, 762) = 56.90$, $p < .001$. The correlation coefficient ($R = .64$) suggests a strong positive relationship, indicating that higher levels of managerial support are associated with higher repository quality. The R^2 value (.41) implies that 41% of the variation in repository quality can be explained by managerial support, and the adjusted R^2 (.41) confirms the reliability of this effect across the sample. Managerial support encompasses provision of resources, policy enforcement, supervision, and strategic planning, which are critical for establishing and maintaining high-quality repository systems. Effective support enables staff to implement technical, administrative, and preservation procedures without constraints, ensuring system sustainability and reliability. The standard error of estimate (2.75) indicates that the predicted values closely match the observed values, confirming model accuracy. Based on these findings, the null hypothesis is rejected. This underscores the importance of institutional leadership and commitment in enhancing repository quality. Managerial involvement ensures continuous oversight, resource allocation, and policy adherence, contributing to the operational and strategic success of digital archival repositories.

Hypothesis 4

ICT skills, continuous professional development, and managerial support have no joint significant effect on the quality of digital archival repositories in academic libraries. Here, all three factors were treated as independent variables, while quality of digital archival repositories was the

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dependent variable. A multiple regression analysis was conducted, and the result is presented in Table 5.

Table **5**

Multiple Regression Analysis of ICT Skills, Continuous Professional Development, and Managerial Support on Quality of Digital Archival Repositories

Predictor	B (Unstandardized)	SE B	Beta (Standardized)	t	sig	95% CI	
ICT Skills	0.48	0.06	0.35	8.00	.000	0.37	0.59
Continuous Professional Development	0.44	0.06	0.31	7.33	.000	0.32	0.56
Managerial Support	0.46	0.06	0.33	7.67	.000	0.34	0.58

Model Summary: $R = .77$; $R^2 = .59$; Adjusted $R^2 = .58$; $F(3, 761) = 122.48$, $p < .001$; SEE = 2.40

The multiple regression analysis indicates that ICT skills, continuous professional development, and managerial support jointly have a significant effect on the quality of digital archival repositories in academic libraries, $F(3, 761) = 122.48$, $p < .001$. The model summary shows $R = .77$, indicating a strong overall correlation between the combined predictors and repository quality. The R^2 value (.59) demonstrates that 59% of the variance in repository quality is explained collectively by the three factors, while the adjusted R^2 (.58) confirms the stability of the model after accounting for sample size. All predictors were significant individually, with standardized beta coefficients of 0.35 (ICT skills), 0.31 (continuous professional development), and 0.33 (managerial support), showing that each factor contributes uniquely to the prediction of repository quality. Confidence intervals for all predictors do not cross zero, confirming their statistical significance. The standard error of estimate (2.40) indicates a good fit and reliable predictions. These findings suggest that high-quality digital repositories require a multidimensional approach, integrating technical competency, ongoing staff development, and strong institutional leadership. Consequently, the null hypothesis is rejected, highlighting the synergy of these factors as critical for enhancing and sustaining digital archival repository quality.

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Discussion of findings

The result of the first hypothesis revealed that ICT skills significantly influence the quality of digital archival repositories in academic libraries. This suggests that library staff with strong technical competencies are better equipped to manage digital systems, ensuring accurate metadata management, effective preservation, and seamless access to resources. The finding is rational because technical proficiency enables staff to troubleshoot system issues, maintain data integrity, and implement advanced digital preservation strategies, which collectively enhance repository quality. Previous studies support this outcome, indicating that digital repository effectiveness is closely tied to the technical capabilities of staff, as they are responsible for maintaining system functionality and ensuring user-friendly access (Choudhury et al., 2023; Mannheimer, 2018; Grammenis & Mourikis, 2020). In addition, staff with ICT skills can adopt emerging technologies, improving interoperability, search efficiency, and the sustainability of repositories. The finding aligns with theoretical perspectives emphasizing human capital as a critical determinant of technological adoption and organizational performance. Consequently, institutions that invest in ICT training and skill development foster higher-quality digital archival systems. This outcome highlights the practical necessity of prioritizing staff competence, as it directly affects repository reliability, accessibility, and long-term preservation of scholarly materials. The result confirms that ICT skills are a critical predictor of repository quality and underscores the need for continuous technical capacity building within academic libraries.

The second hypothesis indicated that continuous professional development significantly affects the quality of digital archival repositories. This result is logical because ongoing professional learning equips librarians with updated knowledge on digital preservation standards, metadata protocols, and best practices for repository management. Staff who engage in professional development are more aware of evolving technologies, intellectual property requirements, and user needs, enabling them to optimize repository performance. The finding is consistent with prior research showing that professional growth initiatives improve staff ability to maintain and enhance digital archival systems, thereby promoting accessibility, usability, and sustainability (Mannheimer, 2018; Choudhury et al., 2023; Kelly, 2014). Continuous professional development also ensures that staff remain compliant with institutional and legal guidelines, which is essential for safeguarding intellectual property and maintaining system credibility. The result is

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theoretically supported by human capital and organizational learning frameworks, which posit that knowledge acquisition and skill enhancement drive effective adoption and management of technological systems. Practically, this outcome emphasizes the need for academic libraries to implement structured training programs, workshops, and mentorship initiatives to sustain high-quality digital repositories. By rejecting the null hypothesis, this study highlights that continuous professional development is a significant determinant of repository quality, reflecting its central role in staff capacity building and operational efficiency.

The third hypothesis revealed that managerial support has a significant effect on the quality of digital archival repositories. This outcome is rational because strong managerial involvement ensures that adequate resources, supervision, and institutional policies are in place to support repository operations. Managers provide the strategic oversight necessary for implementing preservation strategies, allocating technological resources, and enforcing compliance with legal and ethical standards. Prior studies indicate that repositories in institutions with high managerial support demonstrate better organization, sustainability, and responsiveness to user needs compared to those with limited leadership engagement (Dube, 2025; Kelly, 2014; Choudhury et al., 2023). Managerial support also facilitates staff motivation and accountability, enabling librarians to apply best practices consistently. Theoretically, this aligns with organizational support and resource-based perspectives, which highlight the critical role of leadership and resource allocation in enhancing performance outcomes. Practically, institutions with active managerial involvement can maintain repository quality by ensuring continuity of operations, effective planning, and responsiveness to emerging challenges. By rejecting the null hypothesis, the study confirms that managerial support is a key determinant of digital repository quality, emphasizing the necessity for strong institutional governance and strategic leadership in academic libraries.

The fourth hypothesis demonstrated that ICT skills, continuous professional development, and managerial support jointly have a significant effect on the quality of digital archival repositories. This result is rational because the quality of digital repositories is inherently multidimensional, requiring a combination of technical expertise, ongoing learning, and institutional support. No single factor alone guarantees repository excellence; rather, the synergy of these predictors ensures effective management, preservation, and accessibility of digital resources. The finding is consistent with previous research suggesting that integrated approaches,

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which simultaneously address staff competencies, professional growth, and managerial oversight, yield the most sustainable and high-quality repositories (Choudhury et al., 2023; Mannheimer, 2018; Dube, 2025). Theoretically, this aligns with socio-technical systems perspectives, which assert that technology, human capabilities, and organizational structures must be harmonized for optimal system performance. Practically, the study indicates that academic libraries should implement coordinated strategies encompassing staff training, professional development, and leadership support to achieve high-quality digital archival outcomes. By rejecting the null hypothesis, the result highlights that quality management in repositories is contingent upon multidimensional interventions, emphasizing the importance of integrating technical, human, and managerial resources. This reinforces the notion that digital archival excellence is a collaborative endeavor requiring sustained investment across multiple organizational dimensions.

Conclusion/Implication of the study

The study concludes that ICT skills, continuous professional development, and managerial support are critical determinants of the quality of digital archival repositories in academic libraries. Individually and jointly, these factors significantly influence repository performance, sustainability, and usability. The findings highlight that technical proficiency, ongoing learning, and strong institutional support are essential for maintaining high standards of digital preservation, ensuring accessibility, and safeguarding intellectual property. Consequently, academic libraries that strategically invest in staff capacity, professional development programs, and managerial engagement are more likely to maintain reliable, user-friendly, and sustainable digital repositories. The findings contribute to human capital, organizational learning, and socio-technical system theories by demonstrating that repository quality is a function of combined technical skills, continuous learning, and institutional support. They underscore that digital repository effectiveness cannot be attributed solely to technological infrastructure; human and managerial factors are equally vital. The study provides empirical evidence that these factors are interdependent, enriching theoretical understanding of the mechanisms underpinning repository sustainability and performance in academic libraries.

Practically, the study emphasizes the need for academic libraries to implement holistic strategies for enhancing repository quality. Libraries should provide regular ICT training,

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structured professional development programs, and robust managerial oversight. Institutional policies should support resource allocation, governance, and staff accountability. By adopting these measures, academic libraries can ensure long-term preservation, improved accessibility, and enhanced usability of digital resources, contributing to institutional credibility and research visibility. The study offers actionable insights for library administrators, policymakers, and stakeholders seeking to optimize digital repository systems in Nigerian and similar contexts.

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