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The Need for Digitalization of Institutional Staff Records in Port Harcourt Polytechnic

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ABSTRACT

The digitalization of institutional staff records has become a critical requirement for educational institutions in the twenty-first century. This study examined the need for the digitalization of staff records at Port Harcourt Polytechnic, Rivers State, Nigeria. Using a mixed-methods approach that involved surveys and interviews with 250 staff members and 15 administrative personnel, the study identified major challenges associated with the existing manual record-keeping system and proposed comprehensive strategies for digitalization. The findings revealed that 78% of staff experience delays in accessing their records, 65% report inaccuracies in staff data, and 82% support the transition to a digital record management system. The study recommends the immediate implementation of an integrated digital staff record management system, the introduction of structured staff training programmes, and the adoption of robust data security measures in order to improve operational efficiency and service delivery.

Keywords: Digitalization; Staff Records; Record Management; Port Harcourt Polytechnic; Institutional Efficiency

1.0 INTRODUCTION

The digital transformation of educational institutions has become a global phenomenon, fundamentally reshaping the manner in which academic and administrative processes are conducted (Becker et al., 2020). In Nigeria's tertiary education sector, the adoption of digital technologies for institutional management has gained increasing attention, largely driven by the need to improve efficiency, transparency, and accountability (Okafor & Ejiogu, 2021). Port Harcourt Polytechnic, established in 1992 as a leading technical institution in Rivers State, is under growing pressure to modernize its administrative systems in order to meet contemporary educational standards and the expectations of stakeholders.

Staff record management constitutes the foundation of human resource administration in any educational institution. Such records include personal information of employees, academic and professional qualifications, employment history, performance appraisals, training records, and other essential data required for effective personnel management (Kumar & Singh, 2019). Although traditional paper-based record-keeping systems were previously adequate, they have become increasingly insufficient in addressing the complex demands of modern institutional administration (Adebayo & Mohammed, 2020).

The global shift toward digitalization has been further accelerated by rapid technological advancements and the outbreak of the COVID-19 pandemic, which exposed the limitations of manual systems in supporting remote operations and ensuring institutional continuity (UNESCO, 2021). Consequently, educational institutions worldwide have recognized that digital record management systems offer

numerous benefits, including improved data accuracy, enhanced accessibility, reduced storage costs, improved security, and more efficient administrative processes (Chen & Liu, 2022).

Within the Nigerian context, several tertiary institutions have begun to implement digital solutions for administrative functions. For example, the University of Lagos successfully deployed an integrated student information system that improved data management practices and reduced processing time by approximately 60% (Adeleke et al., 2021). Similarly, Covenant University's adoption of enterprise resource planning systems resulted in notable improvements in administrative efficiency and stakeholder satisfaction (Ogbonna & Ibeh, 2020).

Despite these developments, many polytechnics in Nigeria, including Port Harcourt Polytechnic, continue to rely heavily on manual staff record-keeping systems that are increasingly proving ineffective. The institution currently manages staff records through a mixture of physical files, uncoordinated digital documents, and multiple database systems that lack proper integration (Port Harcourt Polytechnic Annual Report, 2023). This fragmented approach has led to operational inefficiencies, inconsistencies in staff data, and difficulties in generating accurate and comprehensive reports for managerial decision-making.

The theoretical foundation of this study is based on the Technology Acceptance Model (TAM) proposed by Davis (1989) and further refined by Venkatesh and Davis (2000). TAM explains how users come to accept and use new technologies, emphasizing perceived usefulness and perceived ease of use as the primary determinants of technology adoption. In addition, the study incorporates aspects of the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003), which highlights the roles of social influence, facilitating conditions, and behavioural intention in technology adoption within organizational settings.

2.0 Statement of the Problem

Port Harcourt Polytechnic currently operates a predominantly manual staff record management system that poses numerous challenges to institutional efficiency and service delivery. The existing system relies extensively on physical documents stored in filing cabinets across various departments, thereby creating significant barriers to information accessibility and data integrity (Nwosu, 2022). This fragmented approach has resulted in several critical issues that undermine the effective administration of staff records within the institution.

One of the major challenges associated with the current system is limited data accessibility. Staff members and administrative officers frequently experience considerable delays when attempting to retrieve, update, or verify personnel records. A preliminary assessment conducted by the Registry Department revealed that routine staff record requests require an average of five to seven working days for processing, while more complex record-related enquiries may take up to three weeks to resolve (Port Harcourt Polytechnic Internal Audit Report, 2023). Such delays not only frustrate staff but also negatively affect institutional decision-making processes that depend on timely and accurate personnel information.

In addition to accessibility challenges, the manual record management system is characterized by significant data integrity issues. Multiple versions of staff records are often maintained in different departments, resulting in inconsistencies and discrepancies when information is required for official purposes (Okoro & Eze, 2021). The absence of a centralized data validation and update mechanism allows errors to persist undetected for extended periods, with potential consequences for salary administration, promotion exercises, and retirement benefit calculations.

The cost implications of maintaining the existing manual system also constitute a serious concern. As the staff population continues to grow, the volume of physical records increases, thereby escalating storage and maintenance costs. The polytechnic currently maintains over 15,000 physical staff files distributed across several storage locations, requiring substantial space and continuous maintenance to prevent deterioration (Facilities Management Department, 2023). Furthermore, the risk of record loss due to fire, flooding, theft, or human error remains high, and the institution has experienced two significant incidents of record loss within the past five years.

Security challenges further compound the problems associated with the manual system. Physical staff records are highly vulnerable to unauthorized access, alteration, and theft, with limited mechanisms for

monitoring who accesses particular files or when modifications are made (Cybersecurity Research Institute, 2022). The lack of audit trails and access controls makes it difficult to ensure accountability and maintain the confidentiality of sensitive staff information.

The COVID-19 pandemic exposed additional weaknesses in the manual record management system. During periods of lockdown and remote work, staff members were largely unable to access their records or complete essential administrative processes, thereby disrupting routine institutional operations (International Labour Organization, 2021). This situation underscored the urgent need for a digital staff record management system capable of supporting flexible work arrangements and ensuring continuity of operations during emergencies.

Furthermore, the current system does not adequately support modern data analytics and reporting requirements. Management decisions are often based on incomplete or outdated information due to the time-consuming nature of manual data compilation and analysis (Akinola & Bamidele, 2020). This limitation adversely affects strategic planning, resource allocation, performance evaluation, and policy formulation within the institution.

Given these persistent challenges, there is a clear need to examine the digitalization of staff records at Port Harcourt Polytechnic in order to improve efficiency, data accuracy, security, and overall administrative effectiveness.

3.0 Objectives of the Study

The main objective of this study is to examine the need for the digitalization of institutional staff records at Port Harcourt Polytechnic and to propose strategies for effective implementation. Specifically, the study seeks to:

1. Assess the challenges and limitations associated with the existing manual staff record management system at Port Harcourt Polytechnic.
2. Examine staff perceptions and levels of readiness regarding the adoption of a digital staff record management system.
3. Identify the key requirements and critical success factors necessary for the effective implementation of a digital staff record management system at the institution.

4.0 Research Questions

In line with the stated objectives, the study seeks to provide answers to the following research questions:

1. What are the major challenges and limitations associated with the current manual staff record management system at Port Harcourt Polytechnic?
2. What are the perceptions and readiness levels of staff members toward the adoption of a digital staff record management system?
3. What key requirements and success factors are necessary for the effective implementation of a digital staff record management system at Port Harcourt Polytechnic?

5.0 Literature Review

The digitalization of record management systems in educational institutions has received considerable attention in recent academic research, with scholars consistently emphasizing the transformative role of digital technologies in enhancing administrative efficiency and service delivery (Bakari et al., 2021). Digital record management systems are commonly defined as integrated electronic platforms designed to capture, store, organize, manage, and provide secure access to institutional records. In contemporary organizational environments, these systems have become essential tools for effective information management and institutional governance (International Records Management Trust, 2020).

5.1 Theoretical Framework

5.1.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) provides a strong theoretical basis for understanding the adoption of new technologies within organizational settings. Davis (1989) identified perceived usefulness and perceived ease of use as the two primary factors influencing users' acceptance of information technology. Perceived usefulness refers to the degree to which an individual believes that using a

particular system will enhance job performance, while perceived ease of use relates to the extent to which the system is perceived as free of effort.

Subsequent empirical studies have validated the applicability of TAM across diverse contexts, including educational institutions in developing countries (Teo, 2011). The relevance of TAM to digital staff record management systems lies in its emphasis on user perceptions as key drivers of successful technology adoption. When staff members perceive digital record systems as useful and easy to use, their willingness to adopt and effectively utilize such systems is significantly enhanced.

5.1.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) expands upon TAM by incorporating additional determinants of technology acceptance. Developed by Venkatesh et al. (2003), UTAUT identifies performance expectancy, effort expectancy, social influence, and facilitating conditions as core factors influencing users' behavioural intentions and actual system use. The model also recognizes the moderating effects of age, gender, experience, and voluntariness of use.

UTAUT has been widely applied in studies examining technology adoption in complex organizational environments such as educational institutions. Its relevance to this study lies in its focus on organizational support structures, including training, infrastructure, and technical assistance, which are critical for the successful implementation of digital staff record management systems.

5.2 Benefits of Digital Record Management Systems

Empirical evidence consistently demonstrates that digital record management systems offer substantial advantages over traditional manual record-keeping methods. One of the most significant benefits is improved data accessibility. Studies indicate that digital systems can reduce record retrieval time by up to 80% when compared to manual systems, thereby enabling faster decision-making and improved service delivery (Johnson & Smith, 2021). Electronic search and filtering functionalities eliminate the need for time-consuming manual file searches.

Another key benefit of digital record management systems is enhanced data security. Modern electronic record systems incorporate multiple layers of security, including user authentication, role-based access controls, data encryption, and audit trails that record all system activities (Cybersecurity and Infrastructure Security Agency, 2022). These features provide a higher level of protection than physical filing systems, which are vulnerable to loss, theft, and unauthorized access.

Cost efficiency is also a major driver of digitalization initiatives. According to a comprehensive study by McKinsey & Company (2021), organizations that implement digital record management systems typically achieve reductions of 40–60% in administrative costs within three years of implementation. These cost savings arise from reduced physical storage requirements, lower maintenance expenses, increased staff productivity, and fewer errors associated with manual data processing.

5.3 Challenges in Digital Transformation

Despite the clear benefits of digital record management systems, digital transformation initiatives often encounter significant challenges, particularly in developing country contexts. One of the most prominent challenges is inadequate infrastructure. Unreliable electricity supply, limited internet connectivity, and insufficient hardware resources can significantly hinder the effective deployment and operation of digital systems (World Bank, 2022).

In Nigerian educational institutions, these infrastructural challenges are particularly pronounced and often require substantial upfront investment before digital solutions can be successfully implemented. Without addressing these foundational issues, digitalization efforts are likely to experience operational disruptions and reduced effectiveness.

Resistance to change among staff members represents another major barrier to successful digital transformation. Kotter (2012) reported that approximately 70% of organizational change initiatives fail due to employee resistance and weak change management strategies. In educational institutions, resistance to digitalization may arise from fears of job displacement, limited digital skills, and skepticism regarding the perceived benefits of new systems.

Training and capacity-building requirements further complicate digital transformation efforts. Effective implementation of digital record management systems necessitates comprehensive training programmes that demand considerable time, financial resources, and institutional commitment (Deloitte, 2021). In addition, the need for continuous technical support and system maintenance increases the long-term cost and complexity of digital initiatives.

5.4 Digital Record Management in Nigerian Tertiary Institutions

Several Nigerian tertiary institutions have initiated digital record management projects with varying levels of success. The University of Ibadan's implementation of an integrated student information system in 2019 resulted in improved data accuracy and reduced processing time; however, the initiative faced challenges related to staff training and system integration (Adeyemi et al., 2020).

Similarly, the Federal University of Technology, Akure successfully deployed a comprehensive human resource information system that included digital staff record management features. The system improved data accessibility and reduced administrative workload by approximately 45% (Ogundipe & Adebayo, 2021). Nevertheless, the implementation required substantial investments in infrastructure development and staff training.

Lagos State Polytechnic's experience with digital transformation offers valuable insights for other polytechnics. The institution adopted a phased implementation strategy, beginning with core administrative functions before expanding to comprehensive record management modules. This approach proved more effective than full-scale, immediate implementations attempted by other institutions (Ogundimu & Fasasi, 2022).

6.0 METHODOLOGY

This study adopted a mixed-methods research approach in order to comprehensively examine the need for the digitalization of staff records at Port Harcourt Polytechnic. The research design combined quantitative and qualitative methods to provide a broad and in-depth understanding of existing challenges, institutional readiness, and stakeholder perspectives regarding digital record management.

6.1 Research Design

A descriptive survey research design was employed to assess the current state of staff record management and to evaluate stakeholders' perceptions of digitalization. This design was considered appropriate because it allows for the systematic collection of data from a large population while also enabling the exploration of specific issues through qualitative inquiry (Creswell & Plano Clark, 2017).

6.2 Population of the Study

The population of the study comprised all academic and non-academic staff members of Port Harcourt Polytechnic, with an estimated total population of 1,200 personnel. This included academic staff, administrative staff, technical staff, and senior management personnel.

6.3 Sample Size and Sampling Technique

The sample size for the study was determined using Yamane's formula at a 95% confidence level and a 5% margin of error, resulting in a calculated sample size of 300 respondents. To account for possible non-response, 350 staff members were initially selected and approached to participate in the study.

A stratified sampling technique was employed to ensure adequate representation of all staff categories. The sample was proportionately distributed as follows: academic staff (45%), administrative staff (35%), technical staff (15%), and senior management (5%). This stratification ensured that perspectives from different organizational levels were appropriately captured.

6.4 Instruments for Data Collection

Two main instruments were used for data collection:

1. **Structured Questionnaire:**

A 35-item structured questionnaire was designed to collect quantitative data on challenges associated with the existing manual record system, staff readiness for digitalization, and preferences regarding system implementation. Most questionnaire items were measured using a five-point Likert scale, complemented by multiple-choice and open-ended questions to capture additional insights.

2. **Semi-Structured Interview Guide:**

A semi-structured interview guide was developed to collect qualitative data from key stakeholders, including departmental heads, registry staff, and information technology personnel. The interviews focused on system requirements, implementation strategies, anticipated challenges, and institutional preparedness for digital record management.

6.5 Data Collection Procedure

Data collection was conducted over a six-week period, from March to April 2024. Questionnaires were distributed through departmental heads and collected after one week to allow sufficient time for completion. Follow-up visits were conducted to improve the response rate.

Interviews with selected stakeholders were scheduled in advance and conducted in their respective offices. Each interview session lasted between 45 and 60 minutes, and participants' consent was obtained prior to data collection.

6.6 Method of Data Analysis

Quantitative data obtained from the questionnaires were analyzed using the Statistical Package for Social Sciences (SPSS), version 28. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. Inferential statistics, including chi-square tests, were applied to examine relationships between categorical variables, while correlation analysis was used to explore relationships among continuous variables.

Qualitative data collected through interviews were transcribed verbatim and analyzed using thematic analysis. Data coding was carried out to identify recurring patterns and themes, which were then interpreted to provide deeper insights into stakeholders' views on the digitalization of staff records and the challenges associated with implementation.

7.0 RESULTS

This section presents the results of the study based on data obtained from the administered questionnaires and conducted interviews. The findings are organized into demographic characteristics of respondents, current system challenges, staff perceptions and readiness, technology infrastructure assessment, and implementation requirements.

7.1 Response Rate

Out of the 350 questionnaires distributed, 250 were completed and returned, representing a response rate of 71.4%. In addition, 15 semi-structured interviews were successfully conducted with key stakeholders across different departments and management levels.

7.2 Demographic Characteristics of Respondents

The demographic profile of the respondents is summarized in Table 1. The distribution reflects balanced representation across staff categories. Academic staff constituted 42.8% of the respondents, administrative staff accounted for 36.4%, technical staff represented 16.0%, while senior management comprised 4.8%.

In terms of gender, 58.4% of respondents were male and 41.6% were female. The age distribution showed that 34.8% of respondents were between 31 and 40 years, 28.4% were between 41 and 50 years, 22.8% were between 21 and 30 years, and 14.0% were above 50 years of age.

Regarding work experience, 32.8% of respondents had between 6 and 10 years of experience, 27.2% had 1 to 5 years of experience, 21.6% had 11 to 15 years of experience, and 18.4% had more than 15 years of work experience.

Table 1: Demographic Characteristics of Respondents

Characteristic	Category	Frequency	Percentage
Staff Category	Academic	107	42.8
	Administrative	91	36.4
	Technical	40	16.0
	Senior Management	12	4.8
Gender	Male	146	58.4
	Female	104	41.6
Age Group	21–30 years	57	22.8
	31–40 years	87	34.8
	41–50 years	71	28.4
	Above 50 years	35	14.0
Work Experience	1–5 years	68	27.2
	6–10 years	82	32.8
	11–15 years	54	21.6
	Above 15 years	46	18.4

7.3 Current System Challenges

Analysis of responses relating to the challenges of the existing manual staff record management system revealed several issues affecting operational efficiency. The frequency and severity of these challenges are presented in Table 2.

Table 2: Current System Challenges

Challenge	Frequency of Experience	Percentage
Delays in record access	Very frequent/Frequent	78.0
Data inaccuracies	Very frequent/Frequent	65.2
Lost or misplaced records	Occasional/Frequent	56.8
Difficulty updating records	Very frequent/Frequent	63.2
Limited access during off-hours	Always/Very frequent	80.4
Duplication of records	Occasional/Frequent	53.6
Security concerns	Moderate/High concern	66.8
Storage space limitations	Significant/Very significant	75.6

The results indicate that delays in accessing staff records constitute the most significant challenge, with 78% of respondents reporting frequent or very frequent delays. Limited access during off-hours was reported by 80.4% of staff, while 75.6% identified storage space limitations as a significant or very significant issue.

7.4 Staff Perceptions and Readiness for Digitalization

Respondents expressed generally positive perceptions regarding the adoption of digital staff record management systems. Table 3 summarizes key indicators of staff perceptions and readiness.

Table 3: Staff Perceptions and Readiness for Digitalization

Perception Indicator	Positive Response	Percentage
Support for digitalization	Strongly agree/Agree	82.0
Perceived usefulness	High/Very high	79.2
Willingness to learn new systems	Very willing/Willing	74.8
Confidence in using digital systems	Confident/Very confident	64.8
Expectation of improved efficiency	High/Very high	84.4
Concern about job security	Low/Very low concern	70.4
Need for training	Essential/Very important	89.2
Support from management	Expected/Strongly expected	77.6

The findings reveal strong support for digitalization, with 82% of respondents indicating agreement or strong agreement. A high expectation of improved efficiency was also evident, with 84.4% anticipating

significant performance improvements. Notably, 89.2% of respondents identified staff training as essential or very important for successful implementation.

7.5 Technology Infrastructure Assessment

An assessment of the institution's existing technology infrastructure was conducted to evaluate readiness for digital record management. The results are presented in Table 4.

Table 4: Technology Infrastructure Assessment

Infrastructure Component	Current Status	Adequacy Rating
Computer workstations	340 units	45% adequate
Internet connectivity	50 Mbps shared	38% adequate
Server capacity	2 TB storage	32% adequate
Network infrastructure	Local area network	42% adequate
Backup systems	Manual/irregular	18% adequate
Technical support staff	8 personnel	35% adequate
Software licenses	Limited/outdated	28% adequate
Power supply systems	Irregular/inadequate	25% adequate

The assessment indicates substantial infrastructural gaps that must be addressed prior to implementation. Server capacity, software licensing, and power supply systems were identified as the most critical constraints.

7.6 Implementation Requirements

Based on survey and interview responses, key implementation requirements were identified and prioritized. These are presented in Table 5.

Table 5: Implementation Requirements Priority Ranking

Requirement	Priority Level	Percentage of Respondents
Comprehensive staff training	Very high priority	89.6
Reliable power supply	Very high priority	87.2
Robust data security measures	Very high priority	85.6
User-friendly system interface	High priority	82.8
Adequate technical support	High priority	81.2
System integration capabilities	High priority	78.4

Regular data backup systems	Very high priority	84.8
Mobile access functionality	Moderate priority	67.2
Customization options	Moderate priority	63.6
Vendor support services	High priority	76.8

Training emerged as the highest priority requirement, followed closely by infrastructure reliability and data security measures.

8.0 DISCUSSION

The findings of this study provide strong empirical support for the digitalization of staff records at Port Harcourt Polytechnic, while also revealing critical challenges that must be addressed to ensure successful implementation. The results are consistent with existing literature on digital transformation in educational institutions, particularly within developing country contexts where infrastructural and resource constraints significantly influence technology adoption.

8.1 Inadequacies of the Current Manual System

The challenges associated with the existing manual staff record management system are substantial and multifaceted. The finding that 78% of staff frequently experience delays in accessing their records is consistent with the study by Okafor and Ejiogu (2021), which reported that manual record systems in Nigerian tertiary institutions typically require several days to process routine information requests. In contrast, digital record management systems enable near-instantaneous retrieval of information, thereby enhancing administrative efficiency and decision-making.

The high incidence of data inaccuracies, reported by 65.2% of respondents, further underscores the limitations of manual record-keeping systems. This challenge reflects the absence of centralized data management and validation mechanisms, which often results in the existence of multiple, conflicting versions of staff records. Similar findings were reported by Kumar and Singh (2019), who identified data integrity issues as a major drawback of traditional record management systems.

Security concerns, expressed by 66.8% of respondents, highlight the vulnerability of physical staff records to unauthorized access, manipulation, and loss. Unlike digital systems that incorporate access controls and audit trails, manual systems provide limited accountability and weak protection of sensitive personnel information. This vulnerability raises significant concerns regarding confidentiality and compliance with data protection standards.

8.2 Staff Readiness and Technology Acceptance

The overwhelmingly positive staff attitudes toward digitalization observed in this study suggest favourable conditions for the adoption of a digital staff record management system. The finding that 82% of respondents support digitalization aligns with the Technology Acceptance Model (Davis, 1989), which posits that perceived usefulness strongly influences users' intentions to adopt new technologies. The high expectation of improved efficiency (84.4%) further reinforces the perception that digital systems will enhance job performance and administrative effectiveness.

However, the emphasis placed on training requirements, with 89.2% of respondents identifying training as essential, highlights a critical factor for successful implementation. This finding supports the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003), which emphasizes facilitating conditions such as training and technical support as key determinants of technology adoption. The expressed willingness to learn suggests that staff resistance is likely to be minimal if adequate capacity-building measures are put in place.

Interestingly, concerns about job security were relatively low, with 70.4% of respondents expressing minimal concern. This contrasts with findings from some studies in developing countries where fears of job displacement often hinder technology adoption (World Bank, 2022). The low level of concern observed in this study may indicate an understanding among staff that digitalization is intended to enhance administrative processes rather than replace human roles.

8.3 Infrastructure Constraints and Implementation Challenges

Despite positive staff attitudes, the infrastructure assessment revealed significant constraints that could hinder successful implementation. Inadequate server capacity (32% adequacy), unreliable power supply (25% adequacy), and limited internet connectivity (38% adequacy) represent fundamental barriers to the effective deployment of digital record management systems. These challenges reflect broader infrastructural issues within Nigeria's education sector, as documented by UNESCO (2021).

The limited availability of technical support staff (35% adequacy) further compounds implementation challenges. Deloitte (2021) emphasizes that sustained technical support is essential during and after system deployment to address user challenges, maintain system performance, and ensure long-term sustainability. Without sufficient technical personnel, system reliability and user confidence may be compromised.

8.4 Implications for Implementation Strategy

The prioritization of implementation requirements provides valuable insights for developing an effective digitalization strategy. The high priority assigned to comprehensive staff training (89.6%) underscores the need for a people-centered approach to digital transformation. This finding aligns with Kotter's (2012) change management framework, which emphasizes the importance of preparing individuals for change prior to technological implementation.

Similarly, the prioritization of reliable power supply (87.2%) and robust data security measures (85.6%) highlights practical concerns regarding system reliability and data protection. Addressing these issues is essential to building trust in the system and ensuring compliance with information security standards.

The moderate priority assigned to mobile access functionality may reflect concerns about data security or limited mobile infrastructure. However, given the increasing penetration of smartphones in Nigeria (GSM Association, 2023), mobile access capabilities are likely to become increasingly important in future system enhancements.

8.5 Comparison with Similar Institutions

The experiences of other Nigerian tertiary institutions provide valuable benchmarks for Port Harcourt Polytechnic. Lagos State Polytechnic's phased implementation strategy, which focused initially on core administrative functions, proved more effective than immediate full-scale deployment (Ogundimu & Fasasi, 2022). This approach offers a practical model for managing risk and resource constraints.

Similarly, the Federal University of Technology, Akure's reported 45% reduction in administrative workload following digital record system implementation demonstrates the potential efficiency gains achievable through digitalization (Ogundipe & Adebayo, 2021). However, these successes were supported by substantial investments in infrastructure and training, reinforcing the need for adequate preparation.

8.6 Validation of Theoretical Frameworks

The study's findings provide strong empirical support for both the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology. The relationship between perceived usefulness and staff support for digitalization validates TAM's core assumptions. Likewise, the emphasis on facilitating conditions such as training and infrastructure aligns with UTAUT's expanded framework.

Social influence, a key component of UTAUT, appeared less prominent in this study. This may be attributed to the institutional nature of digitalization initiatives, where adoption is largely policy-driven rather than voluntary. Nonetheless, the generally positive staff attitudes suggest that social influence may function as a supportive rather than obstructive factor in this context.

9.0 CONCLUSION

This study examined the need for the digitalization of staff record management at Port Harcourt Polytechnic, with a focus on identifying existing challenges, assessing staff readiness, evaluating technological infrastructure, and determining key implementation requirements. The findings clearly demonstrate that the current manual staff record management system is inefficient, error-prone, and increasingly unsustainable in the context of modern institutional administration.

Delays in record retrieval, data inaccuracies, limited accessibility, and security vulnerabilities were identified as major operational challenges. These issues not only reduce administrative efficiency but also undermine decision-making processes and staff confidence in record management practices. The persistence of such challenges highlights the urgent need for a transition to a digital staff record management system.

The study further revealed strong institutional readiness for digitalization, as evidenced by positive staff perceptions, high expectations of improved efficiency, and willingness to acquire new technological skills. These factors indicate a favourable environment for system adoption, provided that appropriate support mechanisms are implemented. However, the assessment of existing infrastructure revealed significant gaps, particularly in power supply, server capacity, internet connectivity, and technical support. These deficiencies represent critical constraints that must be addressed to ensure the success and sustainability of digital transformation initiatives.

Overall, the findings confirm that while the digitalization of staff records at Port Harcourt Polytechnic is both necessary and desirable, its successful implementation depends on careful planning, adequate resource allocation, and a strong emphasis on human capacity development.

10.0 RECOMMENDATIONS

Based on the findings and conclusions of this study, the following recommendations are proposed:

Adopt a Phased Implementation Approach

Port Harcourt Polytechnic should implement the digital staff record management system in phases, beginning with core administrative functions such as staff biodata and payroll records. This approach will minimize operational disruptions and allow for gradual system optimization.

Invest in Comprehensive Staff Training

Management should prioritize continuous training and capacity-building programs for all categories of staff. Training should cover system usage, data security awareness, and basic troubleshooting to enhance user confidence and system effectiveness.

Improve Technological Infrastructure

The institution should invest in upgrading critical infrastructure, including reliable power supply systems (such as solar backups), enhanced internet bandwidth, modern servers, and secure networking equipment.

Strengthen Data Security and Privacy Measures

Robust data protection mechanisms, including role-based access control, encryption, regular security audits, and compliance with national data protection regulations, should be integrated into the system design.

Establish a Dedicated Technical Support Unit

A specialized technical support team should be established to manage system maintenance, provide user support, and ensure system reliability. This unit should be adequately staffed and equipped to handle operational challenges.

Develop Clear Digital Record Management Policies

The institution should formulate and enforce comprehensive policies governing data entry, access rights, record retention, and system usage to ensure consistency, accountability, and legal compliance.

Ensure Regular Data Backup and Disaster Recovery Planning

Automated backup systems and disaster recovery plans should be implemented to protect staff records against data loss resulting from system failures, cyber threats, or environmental hazards.

Engage Stakeholders Throughout the Implementation Process

Continuous engagement with staff, management, and ICT personnel should be maintained throughout the implementation process to encourage ownership, address concerns, and incorporate user feedback.

Monitor and Evaluate System Performance

Periodic system evaluation should be conducted to assess performance, user satisfaction, and impact on administrative efficiency. Feedback from these evaluations should inform system upgrades and policy adjustments.

REFERENCES

Adebayo, K. M., & Mohammed, S. A. (2020). Challenges of record management in Nigerian tertiary institutions: A case study approach. *Journal of Information Management*, 15(3), 234-251. https://doi.org/10.1016/j.jim.2020.03.015

Adeleke, T. O., Ogbonna, C. U., & Adesanya, R. P. (2021). Digital transformation in Nigerian universities: Lessons from the University of Lagos experience. *International Journal of Educational Technology*, 28(4), 445-462. https://doi.org/10.1007/s10639-021-10589-7

Adeyemi, B. A., Ogundimu, O. T., & Adebisi, S. O. (2020). Implementation challenges of digital systems in Nigerian universities: The University of Ibadan case study. *African Journal of Library and Information Science*, 36(2), 123-138.

African Development Bank. (2022). *Infrastructure development in sub-Saharan Africa: Progress and challenges*. African Development Bank Group.

Akinola, F. A., & Bamidele, J. O. (2020). Data analytics in educational administration: Current practices and future prospects in Nigerian tertiary institutions. *Educational Management Review*, 18(2), 89-104.

Bakari, J. K., Tarimo, C. N., Kayumbi, G., & Mwanyika, H. (2021). Digital transformation challenges in African higher education institutions. *International Journal of Educational Development*, 82, 102369. https://doi.org/10.1016/j.ijedudev.2021.102369

Becker, S. A., Cummins, M. R., Davis, A., Freeman, A., Hall, C. G., & Ananthanarayanan, V. (2020). *NMC horizon report: 2020 higher education edition*. EDUCAUSE.

Chen, L., & Liu, M. (2022). Digital record management systems: A comprehensive analysis of benefits and implementation strategies. *Information Systems Management*, 39(1), 78-95. https://doi.org/10.1080/10580530.2021.1983808

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Cybersecurity and Infrastructure Security Agency. (2022). *Best practices for securing digital records and information systems*. U.S. Department of Homeland Security.

Cybersecurity Research Institute. (2022). Information security challenges in educational institutions: A Nigerian perspective. *Cybersecurity Quarterly*, 8(4), 67-82.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. https://doi.org/10.2307/249008

Deloitte. (2021). *Digital transformation in higher education: Building organizational readiness*. Deloitte Insights.

Facilities Management Department. (2023). *Annual facilities utilization and space management report*. Port Harcourt Polytechnic.

GSM Association. (2023). *The mobile economy: Sub-Saharan Africa 2023*. GSMA Intelligence.

International Labour Organization. (2021). *COVID-19 and the world of work: Impact on education sector*. ILO Publications.

International Records Management Trust. (2020). *Digital preservation and access: Guidelines for developing countries*. Commonwealth Secretariat.

Johnson, R. T., & Smith, K. A. (2021). Efficiency gains from digital record management: A comparative analysis. *Journal of Organizational Computing and Electronic Commerce*, 31(2), 156-174. https://doi.org/10.1080/10919392.2021.1895675

Kotter, J. P. (2012). *Leading change* (2nd ed.). Harvard Business Review Press.

Kumar, A., & Singh, R. (2019). Record management systems in higher education: Challenges and opportunities in the digital age. *International Journal of Information Management*, 47, 34-48. https://doi.org/10.1016/j.ijinfomgt.2019.01.003

McKinsey & Company. (2021). *The digital transformation of business operations: A comprehensive analysis*. McKinsey Global Institute.

Nwosu, C. O. (2022). Administrative challenges in Nigerian polytechnics: A comprehensive assessment. *West African Journal of Educational Management*, 19(1), 78-92.

Ogbonna, I. M., & Ibeh, C. V. (2020). Enterprise resource planning implementation in Nigerian universities: Success factors and lessons learned. *Computers & Education*, 148, 103801. https://doi.org/10.1016/j.compedu.2019.103801

Ogundipe, A. T., & Adebayo, L. K. (2021). Human resource information systems in Nigerian universities: Implementation outcomes and user satisfaction. *Higher Education Policy*, 34(3), 587-605. https://doi.org/10.1057/s41307-020-00201-4

Ogundimu, F. B., & Fasasi, Y. A. (2022). Phased implementation of digital systems in Nigerian polytechnics: The Lagos State Polytechnic model. *Educational Technology Research and Development*, 70(4), 1245-1262. https://doi.org/10.1007/s11423-022-10112-8

Okafor, N. P., & Ejiogu, A. O. (2021). Digital transformation in Nigerian higher education: Current status and future prospects. *African Educational Research Journal*, 9(2), 156-171. https://doi.org/10.30918/AERJ.92.21.045

Okoro, E. N., & Eze, U. C. (2021). Data integrity challenges in manual record systems: Evidence from Nigerian educational institutions. *Information Development*, 37(4), 532-547. https://doi.org/10.1177/0266666920963644

Port Harcourt Polytechnic. (2023). *Annual report 2022-2023*. Port Harcourt Polytechnic Press.

Port Harcourt Polytechnic Internal Audit Report. (2023). *Assessment of administrative processes and efficiency measures*. Internal Audit Department.

Teo, T. (2011). Technology acceptance in education: Research and issues. Sense Publishers. https://doi.org/10.1007/978-94-6091-487-4

UNESCO. (2021). *Education: From disruption to recovery*. UNESCO Institute for Statistics.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. https://doi.org/10.2307/30036540

World Bank. (2022). *Digital transformation in developing countries: Opportunities and challenges*. World Bank Publications.