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Digital Information Systems and Administrative Efficiency in Public Tertiary Institutions in Rivers State, Nigeria

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Abstract

This study examined the effect of digital information systems on administrative efficiency in public tertiary institutions in Rivers State, Nigeria. The research was premised on the assumption that digital transformation has become a pivotal tool in the management of educational institutions, particularly for enhancing process responsiveness and record accuracy. Anchored on the Technological Determinism Theory, the study adopted a descriptive survey design. A structured questionnaire was administered to academic and non-academic administrators across five selected tertiary institutions. Data were analyzed using descriptive and inferential statistics. Findings revealed that digital information systems significantly influence administrative efficiency through improved record accuracy and process responsiveness. The study concluded that the adoption of robust digital information systems enhances institutional coordination and transparency in administrative operations. It recommended capacity building, system integration, and consistent policy enforcement to deepen the gains of digital administration in public tertiary institutions.

Keywords: Digital Information Systems, Administrative Efficiency, Record Accuracy, Process Responsiveness, Public Tertiary Institutions.

Introduction

The twenty-first century has ushered in a pronounced digital era in which the efficiency and effectiveness of administrative systems in higher education are increasingly dependent on the integration of advanced information technology. Globally, institutions of higher learning are leveraging digital platforms to streamline operations, enhance service delivery, and promote accountability in governance. In Nigeria, public tertiary institutions have faced mounting pressure to modernize administrative processes through technological interventions, driven both by internal operational demands and external benchmarks of international standards. According to Ikaka, Echadu, Igbang, and Etta (2025), the deployment of digital workflow systems is indispensable for ensuring prompt decision-making, improving document accessibility, and promoting transparency in administrative operations. These systems, ranging from electronic record management to automated workflow solutions, are designed to reduce manual bottlenecks and foster institutional efficiency. In Rivers State, this digital transformation has been further propelled by the recognition that alignment with global standards of institutional governance is necessary to remain competitive and credible in the knowledge economy. However, despite the availability of such systems, many institutions continue to contend with fragmented data structures, inefficient information retrieval mechanisms, and the absence of standardized digital protocols, which collectively hinder smooth coordination and reduce the overall effectiveness of administrative functions.

Administrative efficiency, as conceptualized in the context of tertiary education, refers to the capacity of an institution to achieve optimal organizational outcomes while utilizing minimal resources and simultaneously maintaining high levels of accuracy, speed, and accountability (Akinola & Bestman, 2025). The integration of digital information systems into administrative frameworks enables institutions to automate labor-intensive documentation processes, monitor staff performance through real-time data analytics, and facilitate seamless communication across departments and faculties. As observed by Williams and Atairet (2025), digitalization not only enhances operational responsiveness but also mitigates bureaucratic delays, promotes systematic policy implementation, and supports evidence-based decision-making. Beyond operational gains, digital systems also foster a culture of accountability, as electronic records provide traceable documentation of actions and decisions. Nevertheless, a significant number of Nigerian public institutions continue to encounter persistent inefficiencies in managing core administrative functions, particularly in handling academic records, financial documentation, and interdepartmental correspondences. These inefficiencies often translate into delays in student services, compromised data integrity, and lapses in institutional reporting, which cumulatively weaken governance structures and impede the broader objectives of higher education in the country.

In Rivers State, the challenges associated with achieving administrative efficiency

through digital solutions are particularly pronounced, primarily due to infrastructural deficits and technical limitations. Akinola and Bestman (2025) highlighted that while some tertiary institutions in the state have embraced e-archiving and digital workflow platforms, their operational effectiveness is frequently undermined by erratic power supply, inconsistent network connectivity, and inadequate training of administrative personnel. Such constraints limit the capacity of digital systems to function optimally, resulting in delayed document processing, inefficient record management, and interruptions in administrative communication. Moreover, the lack of a cohesive digital strategy across institutions often exacerbates fragmentation, leaving administrators reliant on hybrid systems that combine both manual and electronic processes, thereby reducing overall productivity. These challenges underscore the urgent need to examine and understand the role of digital information systems in enhancing administrative efficiency, as their successful implementation is critical not only for operational effectiveness but also for the sustainability, credibility, and global competitiveness of tertiary institutions in Rivers State. Enhancing digital adoption within these institutions promises to transform administrative operations, ensuring timely service delivery, improved decision-making, and the development of a robust institutional governance framework that can withstand both internal and external pressures.

Problem Statement

Administrative inefficiency has continued to pose a significant and enduring challenge for public tertiary institutions in Rivers State, manifesting in various operational bottlenecks that compromise governance and decision-making. Traditional manual record-keeping remains widespread, resulting in slow data processing, frequent errors, and inconsistent documentation that undermine the credibility and reliability of institutional records. These inefficiencies often impede timely decision-making, create backlogs in academic and administrative processes, and reduce the responsiveness of institutional management to the needs of students, staff, and other stakeholders. While several institutions have initiated the integration of digital tools such as enterprise resource planning (ERP) software and electronic document management systems, many have yet to realize the full potential of these technologies in enhancing administrative productivity. According to Ikaka et al. (2025), partial or fragmented implementation of digital systems often produces data inconsistencies, limits access to real-time information, and constrains the ability of administrators to make prompt and evidence-based decisions. These challenges are compounded by infrastructural deficiencies, inadequate staff capacity, and the absence of cohesive digital policies, which collectively hinder the transformation of administrative practices in the state's tertiary institutions.

Similarly, Williams and Atairet (2025) argued that the lack of comprehensive digital frameworks frequently leads to redundant administrative procedures, excessive reliance on manual intervention, and the inefficient allocation of institutional resources. Such redundancies not only slow down critical processes but also increase operational costs and reduce overall institutional effectiveness. The inefficiency in record management, delayed

response to administrative requests, and the inability to maintain accurate and up-to-date records create systemic weaknesses that affect both internal governance and external accountability. In many cases, attempts to digitize operations without adequate planning, training, and infrastructure support exacerbate rather than alleviate administrative bottlenecks, leaving institutions trapped in a hybrid system that neither achieves the speed of digital operations nor the reliability of traditional processes. These recurring challenges illustrate the complex interplay between technology adoption and administrative efficiency, emphasizing the need for targeted strategies that go beyond mere acquisition of digital tools to include capacity building, system integration, and consistent monitoring of outcomes.

In light of these challenges, this study is designed to examine the extent to which digital information systems contribute to administrative efficiency in public tertiary institutions in Rivers State, with particular emphasis on process responsiveness and the accuracy of records. By investigating how digital systems influence the speed, reliability, and coherence of administrative operations, the study seeks to provide empirical insights into the mechanisms through which technology can enhance institutional performance. Understanding this relationship is crucial for formulating practical interventions that optimize the use of digital platforms, strengthen administrative accountability, and ensure timely decision-making within the Nigerian higher education sector. The findings of this study are expected to inform policy frameworks, guide institutional strategies for digital transformation, and contribute to broader discussions on the modernization of public tertiary institutions in contexts characterized by infrastructural and operational constraints.

Research Objectives

Main Objective:

To examine the effect of digital information systems on administrative efficiency in public tertiary institutions in Rivers State, Nigeria

Specific Objectives:

1. To determine the effect of digital information systems on process responsiveness in public tertiary institutions in Rivers State.
2. To examine the effect of digital information systems on record accuracy in public tertiary institutions in Rivers State.

Research Questions

1. How do digital information systems affect process responsiveness in public tertiary institutions in Rivers State?
2. How do digital information systems affect record accuracy in public tertiary institutions in Rivers State?

Research Hypotheses

H_{01}: Digital information systems have no significant effect on process responsiveness in public tertiary institutions in Rivers State.

H_{02}: Digital information systems have no significant effect on record accuracy in public tertiary institutions in Rivers State.

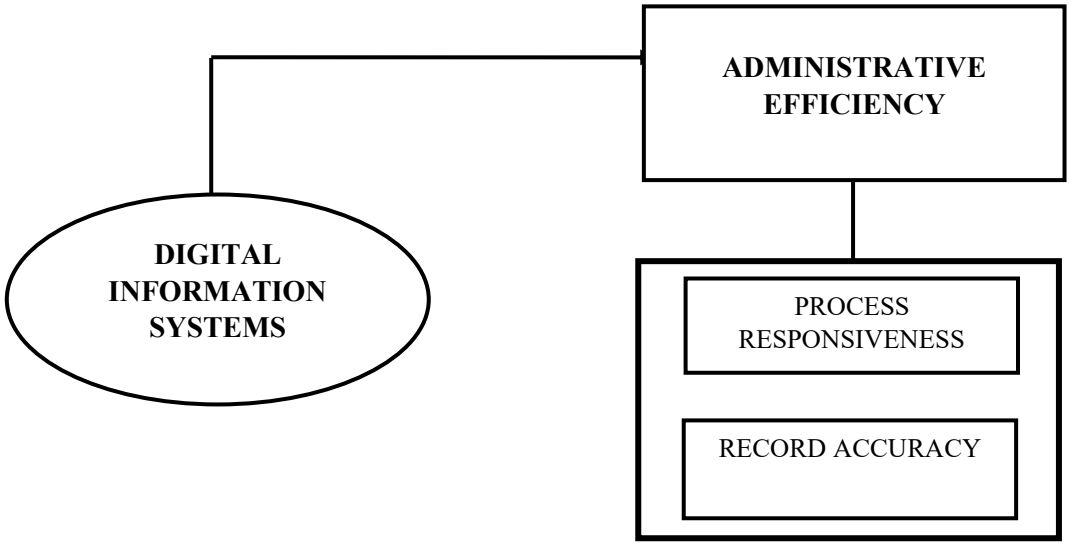


Figure 1: Conceptual framework of digital information systems and administrative efficiency in public tertiary institutions in Rivers State, Nigeria

LITERATURE REVIEW

Conceptual Review

Digital Information Systems

Digital information systems refer to computer-based frameworks deployed within organisations to collect, store, process, and disseminate data in support of administrative functions. Such systems encompass hardware and software platforms, databases, communication networks, and application interfaces that enable institutional actors to perform routine data-driven tasks more efficiently and accurately. In the Nigerian higher education context, these systems have become critical, as administrative operations are increasingly incompatible with wholly manual modes of governance. Nwafor (2024) emphasised that digital platforms enable institutions to streamline information flow, enhance departmental coordination, and improve overall administrative coherence. Similarly, Emere (2025) observed that digital systems facilitate the integration of diverse administrative functions, creating a centralised structure that reduces redundancies and improves operational accountability across tertiary institutions.

Within tertiary education, the scope of digital information systems typically covers student records management, staff administration, financial management, academic planning, and research documentation. These systems are designed to ensure accuracy of records, security

of data through controlled access and backup protocols, and real-time accessibility by authorised users (Hamidu, 2025). The implementation of such systems in Nigerian universities has resulted in significant restructuring of workflows, enhanced transparency in internal processes, and improved coordination between departments (Onyeamaechi Ekeh, Duru, Ojobanikan, Nweke, & Ugwuanyi, 2024). In particular, the post-COVID era has accelerated the adoption of digital platforms, as traditional paper-based administrative procedures proved inadequate to meet the demands of institutional governance, compliance reporting, and timely service delivery.

The integration of digital information systems also enables institutions to synchronise data across administrative functions and reduce transactional delays. Enterprise resource planning (ERP) modules and management information systems (MIS) bring together information from admissions, bursary, examinations, and registry units into a unified platform. This integration ensures that updates in one department, such as student enrolment or financial transactions, are automatically reflected across other units, thereby minimising inconsistencies and duplication (Emere, 2025). Recent studies further indicate that components of digital systems such as automation and data analytics enhance administrative efficiency by reducing manual workload, improving accuracy, and facilitating faster decision-making in Nigerian tertiary institutions (Hamidu, 2025).

Finally, the adoption of digital information systems in Nigerian tertiary institutions must be understood within the broader context of infrastructural and institutional realities. While digital platforms offer the potential for efficiency gains, their effectiveness depends on stable power supply, reliable network connectivity, continuous staff training, and coherent institutional policies (TETFund, 2025; Nwafor, 2024). Without these supporting elements, investments in technology risk underutilisation or failure to deliver the expected improvements in administrative productivity. Hence, the implementation of digital information systems is not merely a matter of platform acquisition but requires strategic planning, human resource development, and process alignment to achieve tangible benefits in institutional administration (Onyeamaechi Ekeh et al., 2024; Emere, 2025).

Administrative Efficiency

Administrative efficiency in the educational context implies the capacity of institutional management to achieve set goals with reduced redundancy and errors. It reflects how well an institution utilises its human, physical and technological resources to deliver services effectively and promptly (Eneh & Nwokah, 2023). This concept is particularly relevant for Nigerian tertiary institutions, where resource constraints, expanding enrolments and stakeholder expectations create a complex operational environment. As such, administrative efficiency refers to the institution's ability to convert inputs into timely, accurate and cost-effective outputs.

In operationalising this study, administrative efficiency is measured via two key dimensions: *process responsiveness* and *record accuracy*. Process responsiveness denotes the speed,

adaptability and agility of administrative actions in addressing institutional demands such as student applications, staff correspondences, policy enactments and inter-departmental coordination. Record accuracy refers to the precision, completeness and reliability of data managed through institutional systems, including academic and staff records, financial documentation and other administrative correspondences (Akinola & Bestman, 2025). An institution that exhibits high process responsiveness redirects resources swiftly, adapts to emergent needs and minimises transactional delay. Meanwhile, record accuracy ensures decision-making is based on dependable data, reduces duplication, enhances traceability and supports institutional accountability.

Within Nigerian higher education settings, administrative efficiency is not a mere procedural concern but a strategic governance issue affecting institutional sustainability and capacity to serve academic missions. For example, Nkedishu (2022) found that administrative efficiencies among principals and teachers in Delta State secondary schools significantly influenced teacher productivity, thus underscoring that efficient administrative methods underpin institutional performance. Likewise, Sule (2024) observed that bottlenecks in university administrative structures including poor coordination between academic and administrative units and inadequate technological integration impede operational efficiency. These findings indicate that administrative efficiency intersects with structural, technological and managerial factors, and therefore requires a multidisciplinary lens.

By embedding process responsiveness and record accuracy as evaluative measures, this study positions administrative efficiency as both an outcome and a condition of organisational effectiveness. The focus on responsiveness emphasises temporal and adaptive aspects of administration, while accuracy highlights data integrity and usefulness. In the Nigerian higher education landscape characterised by rapid expansion, resource scarcity and evolving stakeholder demands these two measures provide a pragmatic and empirically sound lens. Accordingly, the study aims not only to determine whether digital information systems influence administrative efficiency, but to articulate how they do so via improvements in responsiveness and accuracy.

Process Responsiveness

Process responsiveness refers to the capacity of administrative systems to act swiftly and adaptively in meeting institutional demands, stakeholder requests and workflow interruptions. In higher education research, responsiveness is conceptualised as a key dimension of administrative efficiency, linking organisational agility with technological adoption. For instance, Adedapo, Bello, Ogunrinde, Oyediran and Adio (2024) developed a workflow management system for a Nigerian university department and demonstrated that automation of tasks, centralised communication and digital tracking reduced process-lags significantly (Adedapo et al., 2024). In the Nigerian context, Akpo Atah and Akeke (2024) examined the availability and accessibility of digital record-keeping among university administrators and found that institutions with higher digital readiness exhibited better administrative

responsiveness (Akpo Atah & Akeke, 2024). From a theoretical perspective, process responsiveness aligns with the concept of structural flexibility in organisations (Burns & Stalker, 1961) and the notion of dynamic capabilities (Teece, Pisano & Shuen, 1997) implying that institutions equipped with digitally-enabled workflows can reconfigure tasks, redirect resources and accelerate responses to evolving demands. In the Nigerian tertiary education milieu, where administrative delays, manual bottlenecks and information silos are commonly reported, the adoption of digital information systems becomes a critical enabler of responsiveness. Thus, literature shows that responsiveness is not simply about speed but about the adaptability of work processes, the integration of digital tools into institutional routines and the alignment of technology with administrative culture.

Record Accuracy

Record accuracy encompasses the precision, reliability and completeness of institutional data and documentation processed and stored within administrative systems. In the higher education domain, accurate records underpin decision-making, institutional accountability and service delivery; inaccurate or incomplete records can compromise governance and erode stakeholder trust. Empirical studies in Nigeria underscore this connection: the study by Ile and Ojohwhoh (2023) on electronic records processing in polytechnics in Edo and Delta States found that extensive adoption of digital processing practices corresponded with significant improvements in data reliability and responsiveness of administrative units (Ile & Ojohwhoh, 2023). Similarly, Benake-Ebide (2025) in the Niger Delta region revealed a significant positive relationship between electronic records management and effective administration in federal universities (Benake-Ebide, 2025). Theoretical foundations from records management literature, such as the Records Continuum Model (Upward, 1996) and the concept of data as an organisational asset (McLeod & Hare, 2007), suggest that when institutions implement digital systems for record capture, storage and retrieval, the risk of duplication, loss and error is reduced and institutional memory is strengthened. In the Nigerian higher education environment – characterised by high volumes of student records, faculty data and regulatory documentation – digital systems that support versioning, audit trails, and retrieval speed become indispensable for maintaining accuracy. Accordingly, the literature demonstrates that record accuracy functions as a mediator between digital adoption and administrative performance, emphasising that technological infrastructure must be paired with governance structures, staff competence and process redesign to realise the benefits of accuracy.

Theoretical Review

Technological Determinism Theory

This study is anchored on the Technological Determinism Theory originally advanced by Thorstein Veblen and later popularised by Marshall McLuhan. The theory proposes that technological advancement acts as a primary determinant of social and institutional behaviour (Hauer, 2017; Jan, Shakirullah, Naz, Khan, & Qayum, 2020). Within educational

administration, the theory posits that the adoption of digital technologies compels institutions to restructure managerial processes to achieve efficiency, transparency, and accountability. The introduction of digital information systems in tertiary institutions is therefore viewed not merely as an addition of tools, but as a transformative force capable of reshaping administrative structures and workflows (Hauer, 2017; The Comm Spot, 2025).

Technological determinism can be classified into two variants: hard and soft. Hard determinism holds that technology inevitably drives social and institutional change, meaning that technological innovation determines administrative transformation regardless of human intervention (Hauer, 2017). Soft determinism asserts that technology is a strong influence but not the sole determinant, and that social, cultural, and institutional factors mediate its impact. For this study, the soft variant is most appropriate given the realities of Nigerian public tertiary institutions, where infrastructure and human capacity may moderate the effect of digital information systems on administrative efficiency.

The theory has faced critiques from scholars who emphasise that technology does not act independently but is shaped by human agency, interests, and institutional power relations. Raymond Williams and other scholars argue for the concept of mutual shaping, which recognises that society and technology influence each other in a continuous process (Wu, 2014; Wikipedia, 2025). These critiques highlight that the transformational effect of digital information systems is conditional on contextual factors such as leadership, policy frameworks, and staff competency, rather than being automatic. Applying the theoretical lens to public tertiary institutions in Nigeria, and specifically in Rivers State, suggests that digital information systems introduce infrastructural affordances such as real-time access to records, automated workflows, and integrated data streams. These affordances compel institutional actors to reorganise administrative workflows, reallocate roles from manual to digital record-keeping, and streamline decision-making processes. Consequently, these structural changes can lead to improved administrative outcomes, including enhanced process responsiveness and higher record accuracy.

The framework also allows for the recognition of moderating factors. In Rivers State institutions, infrastructural deficits such as unstable power supply, limited network coverage, and inadequate staff training may influence the degree to which digital information systems translate into efficiency gains. Therefore, the research considers both the potential of technology to drive administrative change and the institutional conditions that enable or constrain this transformation. In this study, the technological determinism theory provides the conceptual foundation to examine how digital information systems influence administrative efficiency. By focusing on process responsiveness and record accuracy, the theory offers a lens to understand the pathways through which technological interventions transform administrative practices and outcomes in Nigerian tertiary institutions.

Empirical Review

Alikornwo and Adiele (2024) analyzed *Electronic Administrative Indicators as Corollary for Sustaining Manufacturing Businesses in Rivers State* and established that the adoption of digital administrative systems improved operational transparency, reduced redundancy, and enhanced record accuracy. Though focused on the industrial sector, their conclusions resonate strongly with educational administration by underscoring that digital tools streamline documentation processes and promote institutional accountability.

Similarly, Adiele and Alikornwo (2025) explored *Artificial Intelligence Tools and Organizational Success in the Financial Technology Sector* and found that the integration of intelligent systems enhanced administrative accuracy and decision precision. This perspective extends to educational management, where intelligent information systems can revolutionize routine administrative tasks through predictive analytics, error minimization, and data-driven governance.

Ikaka, Echadu, Igbang, and Etta (2025) examined the impact of digital workflow systems on administrative efficiency at the University of Calabar. Their findings revealed that the adoption of workflow automation enhanced timeliness, reduced redundancy, and improved the traceability of administrative procedures. The study emphasized that automated workflows are indispensable in ensuring real-time documentation and accountability within higher education institutions.

Williams and Atairet (2025) investigated digitalization and administrative service delivery in Akwa Ibom State College of Education and discovered that the adoption of digital applications significantly improved institutional responsiveness and communication speed. However, their findings also highlighted that sustained technical support and periodic staff training are essential for the long-term success of digital systems. This aligns with the argument that technology-driven administrative systems demand continuous capacity development to optimize functionality.

Similarly, Akinola and Bestman (2025) explored the adoption of electronic archiving systems in tertiary institutions across Rivers State. They reported substantial improvements in data accuracy, ease of retrieval, and record preservation. Their study demonstrated that e-archiving is a critical component of digital administration, particularly in enhancing institutional memory and reducing loss of critical documentation.

Nwafor (2024) assessed the impact of data analytics and automation tools on administrative coordination across tertiary institutions in southeastern Nigeria. The study concluded that digital integration not only improved accountability but also strengthened managerial decision-making through real-time data interpretation and reporting.

In another investigation, Alikornwo, Echendu, and Adiele (2024) examined *Hybrid Work-Models and Agility of Indigenous Oil and Gas Firms in Rivers State* and revealed that digital platforms enhanced workflow responsiveness and strategic coordination. Their study demonstrates how technology fosters organizational adaptability—an attribute equally vital in

university administrative systems where timely responsiveness to academic and managerial demands is critical.

Furthermore, Alikornwo, Adiele, and Omunakwe (2024) investigated *Employee Development and Information Success of Tertiary Institutions in Rivers State*, finding that digital skills training significantly improved institutional information flow, communication efficiency, and record management. This evidence establishes a direct link between staff digital competence and administrative efficiency, reinforcing the necessity for continuous capacity-building in Nigerian tertiary institutions.

Taken together, these studies affirm that digital information systems play a transformative role in improving administrative responsiveness and record accuracy across diverse institutional contexts in Nigeria. The evidence highlights that while infrastructural and technical challenges persist, the alignment of digital initiatives with staff development and systemic accountability frameworks remains crucial for sustaining administrative efficiency within public tertiary institutions in Rivers State.

Gaps in Literature

Although these studies highlight the relevance of digital systems in higher education, none specifically focused on the holistic assessment of digital information systems and administrative efficiency within Rivers State public tertiary institutions. There is also limited empirical evidence examining process responsiveness and record accuracy as specific measures of administrative efficiency. This study therefore fills this gap by providing localized empirical data and contextual analysis relevant to Rivers State.

METHODOLOGY

The study adopted a descriptive survey design to investigate the influence of digital information systems on administrative efficiency in public tertiary institutions in Rivers State. The population comprised administrative staff across Rivers State University, Ignatius Ajuru University of Education, Ken Saro-Wiwa Polytechnic, Captain Elechi Amadi Polytechnic and the University of Port Harcourt, selected due to their prominent roles in adopting digital administrative initiatives. A stratified random sampling technique was employed to select 210 respondents proportionally across departments, ensuring representation from units involved in exams and records, bursary, establishment, and academic planning. Data were collected using a structured questionnaire measuring key constructs, including digital information system utilization, process responsiveness, and record accuracy, with responses recorded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Reliability of the instrument was confirmed through a pretest, yielding a Cronbach's Alpha coefficient of 0.89, indicating high internal consistency. Collected data were analyzed using descriptive statistics (mean and standard deviation) to summarize trends and inferential statistics (multiple regression) to examine the predictive relationship between digital information systems and administrative efficiency, with hypotheses tested at a 0.05 significance level. This

methodology ensures a rigorous, statistically valid assessment of how digital technologies enhance administrative outcomes while accounting for departmental diversity and contextual factors across the selected institutions.

RESULTS

Table 1: Regression Analysis on Digital Information Systems and Administrative Efficiency

Variable	B	t-value	Sig.	Decision
Process Responsiveness	0.487	5.621	0.000	Significant
Record Accuracy	0.431	4.962	0.000	Significant
$R^2 = 0.617$	F-value = 26.372	Sig. = 0.000		

Table 1 presents the regression analysis examining the predictive influence of digital information systems on administrative efficiency. The model yielded an R^2 value of 0.617 and an F-value of 26.372 ($p < 0.001$), indicating that approximately 61.7% of the variance in administrative efficiency is explained by the combined effects of process responsiveness and record accuracy. Individually, process responsiveness exhibited a significant positive effect on administrative efficiency ($\beta = 0.487$, $t = 5.621$, $p < 0.001$), while record accuracy also demonstrated a significant positive effect ($\beta = 0.431$, $t = 4.962$, $p < 0.001$). These findings indicate that the adoption and effective utilization of digital information systems substantially enhance operational timeliness and the precision of institutional records, confirming that improvements in digital infrastructure directly contribute to administrative performance.

Discussion of Findings

The regression analysis of the current study revealed that digital information systems significantly predict administrative efficiency in public tertiary institutions in Rivers State, with an R^2 of 0.617 and an F-value of 26.372 ($p < 0.001$). Individually, process responsiveness ($\beta = 0.487$, $t = 5.621$, $p < 0.001$) and record accuracy ($\beta = 0.431$, $t = 4.962$, $p < 0.001$) were significant positive predictors. These findings indicate that robust digital infrastructure enhances the timeliness of administrative actions and the precision of record management, confirming that improvements in digital systems directly strengthen institutional operational efficiency.

These results corroborate the findings of Ikaka et al. (2025), who reported that digital workflow systems at the University of Calabar improved the timeliness of administrative operations, reduced redundancy, and enhanced traceability of procedures. Similarly, Akinola and Bestman (2025) demonstrated that e-archiving systems in Rivers State tertiary institutions increased data accuracy, minimized duplication, and improved record retrieval, which aligns with the observed effect of digital systems on record accuracy in the current study. Williams and Atairet (2025) further support these outcomes by showing that digital tools in Akwa Ibom

State College of Education enhanced institutional responsiveness and service delivery, although they emphasized the need for continuous technical support and staff training to maintain system efficiency.

The current findings also resonate with the contributions of Alikornwo and Adiele (2024), who found that electronic administrative indicators improved operational transparency, reduced redundancy, and enhanced record accuracy in manufacturing businesses, highlighting that digital systems promote accountability and process efficiency across organizational contexts. Likewise, Adiele and Alikornwo (2025) demonstrated that artificial intelligence tools increased administrative accuracy and decision precision in the FinTech sector, a principle that extends to higher education administration through predictive analytics and error minimization. Alikornwo et al. (2024a) showed that hybrid work-models supported by digital platforms improve workflow responsiveness and organizational agility, reinforcing the present study's finding on the importance of process responsiveness in educational institutions. Additionally, Alikornwo et al. (2024b) established that staff digital skills training enhance information flow, communication efficiency, and record management, supporting the observed link between digital competence and administrative efficiency.

Consequently, the evidence affirms that digital information systems are a critical determinant of administrative efficiency in Nigerian tertiary institutions. By improving process responsiveness and record accuracy, digital systems not only streamline operations but also enhance accountability, decision-making, and overall institutional performance, consistent with Technological Determinism Theory, which posits that technological adoption fundamentally shapes organizational behavior and administrative outcomes.

CONCLUSION AND RECOMMENDATIONS

The study concluded that digital information systems substantially enhance administrative efficiency in public tertiary institutions in Rivers State by improving both process responsiveness and record accuracy. The findings indicate that the effective adoption of digital tools accelerates administrative workflows, reduces redundancy, and ensures the reliability and accessibility of institutional records. This underscores the critical role of technological integration in sustaining effective governance and operational performance in tertiary education, demonstrating that digitalization is not merely a procedural enhancement but a strategic imperative for institutional efficiency and accountability.

Based on these findings, the study recommends the following:

1. Institutional management should invest in digital infrastructure to ensure optimal process responsiveness in administrative operations.
2. Training programmes should be organized regularly for administrative personnel to strengthen their digital competence and record management accuracy.

REFERENCES

Adiele, G. C., & Alikornwo, P. M. (2025). Artificial Intelligence Tools and Organizational Success in the Financial Technology (FinTech) Sector. *International Journal of Financial Research and Management Science, 9*(7). https://doi.org/10.70382/tijfrms.v09i7.020

Akinola, A. B., & Bestman, A. E. (2025). E-Archiving and Information Management Efficiency of Tertiary Institutions in Rivers State, Nigeria. *Academic Journal of Current Research*, 13(2), 25-38.

Alabi Adeyanju, J. (2020). Electronic record management system and efficiency in the University of Lagos, Nigeria. *Sokoto Educational Review*, 19(1), 1-10. https://doi.org/10.35386/ser.v19i1.243 sokedureview.org

Alikornwo, P. M., & Adiele, G. C. (2024). Electronic Administrative Indicators: Corollary for Sustaining Manufacturing Businesses in Rivers State. *Journal of African Innovation & Advanced Studies, 5*(2).

Alikornwo, P. M., Adiele, G. C., & Omunakwe, P. O. (2024a). Employee Development and Information Success of Tertiary Institutions in Rivers State. *Nigerian Journal of Management Sciences, 25*(1), 245-251.

Alikornwo, P. M., Echendu, S. I., & Adiele, G. C. (2024b). Hybrid Work-Models and Agility of Indigenous Oil and Gas Firms in Rivers State. *Nigerian Journal of Management Sciences, 25*(1), 88-96.

Ashaolu, O. M. (2023). Use of digital document management system and office management practice of administrators in Lead City University, Ibadan. Lead City International Journal of Library, Information & Communication Sciences.

Emere, O. N. (2025). Enhancing administrative efficiency through data analytics, digital communication, and automation in tertiary institutions in Anambra and Imo States. *Edulead: Journal of Education Management, 7*(2), 34–56.

Eneh, C. E., & Nwokah, N. G. (2023). Digital Governance and Administrative Accountability in Nigerian Public Universities. *Nigerian Journal of Management Sciences*, 11(1), 55-68.

Hamidu, M. (2025). Evaluating the role of ICT in enhancing service delivery in tertiary institutions in Nigeria. *International Journal of Assessment and Evaluation in Education, 7*(8), 77–92.

Ikaka, B. F., Echadu, M. O., Igbang, V. O., & Etta, Q. M. (2025). Digital Workflow Systems and Administrative Efficiency of Non-Academic Staff in the University of Calabar, Nigeria. *Journal of Public Administration, Policy and Governance Research*, 3(1), 1-14.

Ile, C. M., & Ojohwhoh, D. R. (2024). Extent of adoption of electronic records processing practices in polytechnics in Edo and Delta States. *NAU Journal of Technology & Vocational Education*. Retrieved from https://journals.unizik.edu.ng/naujtved/article/view/106 naujtved.com.ng

Nkedishu, V. C. (2022). Administrative efficiencies and teachers' productivity in Delta State secondary schools, Nigeria. *Asian Journal of Education and Social Studies, 26*(3), 1-9. https://doi.org/10.9734/ajess/2022/v26i330627

Nwafor, C. (2024). Digital platforms and administrative coordination in Nigerian universities. *Journal of Nigerian Educational Administration, 18*(1), 112–129.

Okewuche, A. O. (2025). Assessing ICT infrastructure and its impact on academic planning and administrative effectiveness among Nigerian university lecturers. *Education Annals*, 2(7). https://doi.org/10.5281/zenodo.16539560 scholarj.com

Okon, A. E., & Edem, I. A. (2022). Technology and Institutional Management in Nigerian Universities. *Journal of Education and Development Research*, 10(3), 40-58.

Onyeamaechi Ekeh, D., Duru, C. K., Ojobanikan, E. I., Nweke, C. O., & Ugwuanyi, C. S. (2024). Assessment of secondary school administrators' ICT competency level for online school administration. *International Journal of Studies in Education, 20*(1), 42–48.

Princewill, I., De Costa, M. F., & Kasimon, D. N. (2025). Operational dynamics of internal communication in Nigerian public universities: A case study of administrative staff in Owerri, Imo State. *Journal of Communication, Language and Culture*, 5(2), 59-78. https://doi.org/10.33093/jclc.2025.5.2.4 mmupress.com

Sule, J. O. (2024). Optimizing university administrative structures: Strategies for enhancing efficiency and effectiveness in higher education institutions in Nigeria. *World Journal of Advanced Research and Reviews, 24*(1), 278-290. https://doi.org/10.30574/wjarr.2024.24.1.3018

Tertiary Education Trust Fund (TETFund). (2025). TETFund reaffirms commitment to digital transformation in higher education. *The Guardian (Nigeria)*, August 30.

Usman, H. A., & Bolaji, H. O. (2023). Optimizing administrative efficiency: The impact of ICT adoption and change management in educational institutions. *JUMPA: Jurnal Manajemen Pendidikan, 4*(2), 97-108. https://doi.org/10.33650/jumpa.v4i2.9388

Williams, E. M., & Atairet, A. C. (2025). Digitalization and Administrative Service Delivery in Akwa Ibom State College of Education, Akwa Ibom State, Nigeria. *Direct Research Journal of Management and Strategic Studies*, 6(1), 1-10.