

Digital Transformation as a Correlate of Effective Management in Public Universities in Benue State, Nigeria

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Abstract

The study investigated digital transformation as correlate of effective management in public universities in Benue State, Nigeria. Two research questions guided the study and two hypotheses were tested at 0.05 level of significance. Correlational research design was adopted for the study and the area of the study was Benue State. The population consisted 2,734 academic staff from 4 public universities in Benue State Nigeria while a sample of 191 academic staff representing 7% of the study population was used for the study. Proportionate and simple random sampling techniques were used to select the sample for the study. The instruments used for data collection were two set of questionnaires titled

“Digital Transformation Questionnaire (DTQ)” and Effective Management Questionnaire (EMQ). A trial test was conducted and the reliability of the instruments were ascertained using Cronbach Alpha which yielded reliability coefficient of 0.87 and 0.89 respectively. A total of 191 copies of the questionnaire were taken to the field and administered to the respondents by the researcher with the help of two research assistants. However, only 176 copies were returned. Data collected were analysed using Pearson Product Moment Correlation to answer the research questions and also to test the hypotheses at 0.05 level of significance. The findings of the study showed that data security and Management Information System

have significant positive correlation with effective management in public universities in Benue State. The study concluded that digital transformation has significant strong positive correlation with effective management in public universities in Benue State. It was recommended among others that university administrators should strengthen data security frameworks by investing in advanced cybersecurity tools, periodic system audits and staff training on data protection practices.

Keywords: Digital Transformation, Effective Management, Data Security, Management Information System

Introduction

Effective university management is characterized by strategic leadership, efficient resource utilization, accountability and innovation in advancing teaching, research and community service. However, challenges such as poor coordination, bureaucratic bottlenecks and limited responsiveness to emerging trends could stem from weak adoption of digital transformation systems. In advanced countries, issues like cyber insecurity and resistance to digital change have hindered management efficiency in some institutions (OECD, 2021). Similarly, in Nigeria and particularly in Benue State, public universities face problems such as delayed decision-making, manual record keeping, poor communication flow and inefficient data management, all of which

impede effective management. These challenges highlight the need for comprehensive digital transformation to streamline administrative processes, enhance transparency, improve data-driven decision-making and foster university management. Therefore, embracing digital technologies could offer a viable pathway toward achieving effective university management.

A university is an institution of higher learning dedicated to teaching, research and community service with the aim of producing skilled manpower and advancing societal development (Yawe & Ivagher, 2019). It serves as a hub for knowledge creation and dissemination through academic programmes that foster critical thinking, innovation and intellectual growth (Okebukola, 2020). Modern universities also play a pivotal role in national development by driving technological advancement and policy innovation (Olatunji & Yusuf, 2021). Beyond academics, universities promote civic engagement, global collaboration and social transformation (Adeoye, 2019). The quality of management and governance structures within universities significantly influences their ability to fulfill the foregoing mandates effectively (Akpan, 2023). Consequently, to sustain their relevance in the 21st century, universities must align their management practices with emerging digital technologies that enhance efficiency, transparency and accountability. This growing

need for modernization brings to focus the concept of digital transformation in university management.

Digital transformation refers to the comprehensive integration of digital technologies into institutional operations, fundamentally altering how universities function, deliver services and create value (Maha & Mbam, 2024). It involves leveraging tools such as artificial intelligence, cloud computing, digital record systems and e-learning platforms to improve administrative efficiency and academic quality (Ogunode & Musa, 2022). According to Nwosu and Okafor (2020), digital transformation enhances data management, facilitates remote collaboration and streamlines decision-making processes. Furthermore, it promotes transparency and accountability through real-time information access and automated workflows (Eze & Chinedu, 2021). In universities, digital transformation supports effective communication, financial management, research dissemination and student support services (Adigun, 2019). However, its successful implementation depends on institutional leadership, digital literacy and adequate infrastructure (Onyema, 2022). Therefore, understanding digital transformation provides the foundation for assessing how technology adoption contributes to effective management in universities.

Management entails the systematic planning, organizing, coordinating and controlling of human, financial and material resources to achieve institutional goals efficiently (Bua, 2020). It involves participatory leadership, strategic decision-making and accountability to ensure academic excellence and institutional sustainability (Olaniyan, 2020). According to Ivagher and Gire (2021), effective management promotes teamwork, innovation and goal alignment among academic and non-academic staff. Moreover, effective management ensures proper supervision, policy implementation and feedback mechanisms that enhance institutional productivity (Okeke & Maphalala, 2020). In the context of university management, adopting digital systems enhances these managerial functions by enabling evidence-based decisions, improving communication flow and fostering transparency (Mbam, Ivagher & Bua, 2025). Hence, integrating digital transformation such as data security and information management system into university management can strengthen effective management, making institutions more adaptive, accountable and globally competitive

Data security refers to the protection of digital information from unauthorized access, corruption, or theft throughout its lifecycle (OECD, 2021). It involves the implementation of policies, technologies and procedures that

safeguard institutional data from breaches, cyberattacks and misuse (Ogunode & Musa, 2022). In public universities, data security ensures the confidentiality of student records, financial information and research data, thereby maintaining institutional integrity and stakeholder trust (Okebukola, 2020). According to Eze and Chinedu (2021), weak data protection systems often result in data loss, reputational damage and administrative inefficiency. Conversely, strong data security frameworks enhance decision-making and accountability by ensuring accurate and reliable information management. In Benue State public universities, effective data protection seems to promote smooth administrative operations and supports evidence-based management. Thus, data security forms the technological foundation for a robust Management Information System (MIS) that drives effective university management.

A Management Information System (MIS) is an integrated digital framework that collects, processes, stores and disseminates information to support managerial decision-making and organizational control (Maha & Mbam, 2024). MIS facilitates real-time access to academic, financial and personnel data, enabling efficient planning, coordination and evaluation in universities (Olatunji & Yusuf, 2021). According to Onyema (2022), an effective MIS enhances transparency, reduces

redundancy and improves communication among administrative units. In public universities in Benue State, MIS contributes to effective management by streamlining admissions, monitoring staff performance and tracking resource utilization (Mbam, Bua, & Ivagher, 2025). However, the effectiveness of MIS depends heavily on the reliability and security of data within the system (Adebayo & Musa, 2021). Therefore, the integration of strong data security measures with MIS ensures sustainable digital management and institutional efficiency.

Despite the recognized benefits of digital transformation, recent observations by the researcher in Benue State public universities reveal a troubling situation where administrative delays, missing records and weak data protection systems are becoming increasingly common. Students' results are often lost due to manual handling, decision-making remains slow and management struggles with transparency. If these challenges persist, institutional efficiency and public confidence may deteriorate hence the urgent need for this study; digital transformation as a correlate of effective management in public universities in Benue State, Nigeria.

Statement of the Problem

Effective university management is anchored on strategic leadership, efficient resource utilization, transparency, innovation

and responsiveness to emerging educational and technological trends (UNESCO, 2022). However, educational stakeholders such as university staff, students and parents have continued to express concern over the persistent managerial inefficiencies in public universities in Benue State, particularly in areas such as decision-making, information dissemination, staff coordination, financial accountability and research administration. The researcher's observation reveals that most universities in the state still rely on manual record keeping, face frequent delays in administrative communication, exhibit poor data management practices and lack real-time monitoring systems, which collectively impede timely decision-making and institutional efficiency. These challenges may be linked to adoption of digital transformation tools such as Management Information Systems (MIS), cloud-based data storage and automated administrative processes that could otherwise enhance accountability and performance. Although efforts have been made by government agencies such as the National Universities Commission (NUC) and the Tertiary Education Trust Fund (TETFund) to promote ICT integration and digitalization in university administration (Ogunode & Musa, 2022), the level of implementation and institutional adaptation remains minimal in Benue State. Consequently, issues such as data loss, duplication of functions, slow

administrative processes and lack of transparency persist. This worrisome situation underscores the urgent need to investigate digital transformation as a correlate of effective management in public universities in Benue State, Nigeria.

Purpose of the Study

The purpose of this study was to investigate digital transformation as a correlate of effective management in public universities in Benue State, Nigeria. Specifically, the study sought to determine;

1. the correlation between data security and effective management in public universities in Benue State, Nigeria.
2. the correlation between Management Information System and effective management in public universities in Benue State, Nigeria.

Research Questions

The following research questions guided the study.

1. What is the correlation between data security and effective management in public universities in Benue State?
2. What is the correlation between Management Information System and effective management in public universities in Benue State?

Hypotheses

The following null hypotheses are formulated to be tested at 0.05 level of

significance.

1. There is no significant correlation between data security and effective management in public universities in Benue State.
2. There is no significant correlation between Management Information System and effective management in public universities in Benue State.

Methodology

Correlational research design was adopted for the study and the area of the study was Benue State. The population consisted 2,734 academic staff from 4 public universities in Benue State Nigeria while a sample of 191 academic staff representing 7% of the population from 4 public universities in Benue State Nigeria was used for the study. Proportionate and simple random sampling techniques were used to select the sample for the study. The instrument used for data collection was two set of questionnaires titled “Digital Transformation Questionnaire (DTQ)” and Effective Management Questionnaire (EMQ). A trial test was

conducted and the reliability of the instrument were ascertained using Cronbach Alpha which yielded reliability coefficient of 0.87 and 0.89. A total number of 191 copies of the questionnaire were taken to the field and administered to the respondents by the researcher with the help of 2 research assistants. However, only 176 copies were returned. Data collected were analysed using Pearson Product Moment Correlation to answer the research questions and also to test the null hypotheses at 0.05 level of significance. The Pearson Product Moment Correlation statistical tool was used because it enabled the researcher to determine the correlation between the independent variable (digital transformation) With indices of Data security and Management Information System and dependent variable (effective management).

Results

Research Question 1: What is the correlation between data security and effective management in public universities in Benue State?

Table 1: *Correlation Between Data Security and Effective Management in Public Universities in Benue State*

Variables	N	\bar{X}	SD	R	Decision
Data Security	176	2.81	0.78	0.78	Strong Positive Correlation
Effective Management	176	2.66	0.82		

* Correlation coefficient is strong at 0.5 to 1.0 (or -0.5 to -1.0)

Source: *Researcher's Field Survey Results 2025*

The result in Table 1 revealed that the correlation coefficient of 0.78 falls within 0.5 to 1.0, which indicates a strong correlation. This implies that there is a strong positive correlation between data security and the effective management of public universities in

Benue State.

Research Question 2: What is the correlation between the Management Information System and effective management in public universities in Benue State?

Table 2: *Correlation Between Management Information Systems and Effective Management in Public Universities in Benue State*

Variables	N	\bar{X}	SD	R	Decision
Management Information System	176	2.81	0.78	0.82	Strong Positive Correlation
Effective Management	176	2.93	0.91		

* Correlation coefficient is strong at 0.5 to 1.0 (or -0.5 to -1.0)

Source: *Researcher's Field Survey Results 2025*

The result in Table 2 shows that the correlation coefficient of 0.82 falls within 0.5 to 1.0 which indicate a strong correlation. This implies that there is a strong positive correlation between Management Information System and effective management in public universities in Benue State. In simple terms, this means that the better public universities in

Benue State use information systems to manage their activities, the more effective their overall management becomes.

Hypothesis 1: There is no significant correlation between data security and effective management in public universities in Benue State.

Table 3: *Correlation between Data Security and Effective Management in Public Universities in Benue State*

Variables	N	\bar{X}	SD	r	P	Decision
Data Security	176	2.81	0.78			
				0.78	0.000	Significant Strong Positive Correlation
Effective Management	176	2.66	0.82			

* Correlation coefficient is significant at $p < 0.05$; level (2-tailed).

Source: *Researcher's Field Survey Results 2025*

The result in Table 3 shows a significant correlation between data security and effective management in public universities in Benue State. The result revealed that $r = 0.78$; $p\text{-value} = 0.000 < 0.05$. Since the $p\text{-value}$ was less than 0.05, the null hypothesis, which states that there is no significant correlation between data security and effective management in public universities in Benue State, was therefore rejected. This implies that

data security has a significant positive correlation with effective management in public universities in Benue State.

Hypothesis 2: There is no significant correlation between the Information Management System and effective management in public universities in Benue State.

Table 4: *Correlation between Management Information System and Effective Management in Public Universities in Benue State*

Variables	N	\bar{X}	SD	R	P	Decision
Management Information System	176	2.81	0.78			
				0.82	0.000	Significant Strong Positive Correlation
Effective Management	176	2.93	0.91			

* Correlation coefficient is significant at $p < 0.05$; level (2-tailed).

Source: *Researcher's Field Survey Results 2025*

The result in Table 4 revealed that $r = 0.82$; $p\text{-value} = 0.000 < 0.05$. Since $P\text{-value}$ was less than 0.05, the null hypothesis which states that there is no significant correlation between Management Information System and effective management was rejected. This implies that Management Information System has significant strong positive correlation with effective management in public universities in Benue State. When public universities in Benue State make good use of Management Information Systems, their management processes tend to work much better and more efficiently.

Discussion of Findings

The first findings of the study showed that data security has significant positive correlation with effective management in

public universities in Benue State. This implies that universities with robust data protection systems experience higher levels of management efficiency, transparency and accountability. The finding aligns with that of Eze and Chinedu (2021), which reported that universities with strong data encryption and cybersecurity protocols recorded improved decision-making and reduced cases of data breaches that often compromise institutional integrity. Similarly, Ogunode and Musa (2022) found that effective data security frameworks enhance operational efficiency by ensuring the accuracy, reliability and confidentiality of institutional information used for planning and coordination. The justification for this finding lies in the fact that data serve as the foundation for

managerial decisions in the digital era and when such data are secured, managers can confidently utilize them for evidence-based decision-making, resource allocation and performance monitoring. In the context of Benue State public universities, the positive link between data security and management effectiveness underscores the importance of digital protection in sustaining institutional credibility and operational excellence. These reviewed studies relate closely to the present study as they provide empirical support for the assertion that safeguarding digital assets directly influences the effectiveness of management practices. Therefore, the current study reinforces existing evidence by contextualizing it within Benue State, emphasizing that without adequate data security, digital transformation efforts in university management cannot yield optimal results.

The second finding showed that Management Information System has significant strong positive correlation with effective management in public universities in Benue State. This indicates that the integration and utilization of MIS in administrative operations enhance managerial efficiency, decision-making accuracy and university accountability. The finding supports Adebayo and Musa (2021)

who discovered that universities with well-developed MIS platforms demonstrated improved communication flow, resource management and policy implementation compared to those relying on manual systems. Similarly, the finding agrees with Onyema (2022) who found that MIS facilitates data-driven decision-making and promotes transparency by providing real-time access to institutional information, thereby reducing redundancy and administrative delays. The finding implies that effective management thrives on timely and accurate information, which MIS provides by automating data collection, processing and dissemination. In Benue State, universities that effectively deploy MIS would be better positioned to monitor academic performance, manage finances and evaluate staff productivity. Thus, the present study reinforces findings by contextualizing them within Benue State, showing that strong MIS adoption is essential for achieving responsive, transparent and effective university management in the digital era.

Conclusion

This study establish that digital transformation has significant strong positive correlation with effective management in public universities in Benue State. This implies that data security and Management

Information System enhances to a great extent effective management in public universities in Benue State Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. University administrators should strengthen data security frameworks by investing in advanced cybersecurity tools, periodic system audits and staff training on data protection practices. This approach will minimize risks of data breaches, ensure information integrity and promote transparency and accountability, thereby enhancing the overall effectiveness of management in public universities in Benue State.
2. The National Universities Commission (NUC) should mandate the full integration and utilization of Management Information Systems (MIS) across all administrative units. This can be achieved through capacity-building workshops, digital infrastructure upgrades, and continuous monitoring. The expected outcome is improved decision-making accuracy, enhanced coordination, and greater efficiency

in the management of public universities.

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