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DIGITALISATION AND EDUCATIONAL PLANNING EFFECTIVENESS IN PRIVATE UNIVERSITIES IN THE FEDERAL CAPITAL TERRITORY, NIGERIA

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Abstract

The study investigated digitalisation and educational planning effectiveness in private universities in the Federal Capital Territory (FCT), Nigeria. The increasing adoption of digital technologies in higher education has transformed institutional planning processes, decision-making, communication, data management, and resource allocation. Despite these developments, many private universities continue to experience challenges related to inadequate digital infrastructure, limited digital competencies, and insufficient integration of digital tools into planning activities. The study examined the influence of digital infrastructure, digital data management systems, digital communication platforms, and digital competencies of university personnel on educational planning effectiveness. The study was anchored on the Technology Acceptance Model (TAM) and the Diffusion of Innovation Theory. A descriptive survey research design was adopted. The population comprised academic and administrative staff of selected private universities in the FCT. A structured questionnaire was used for data collection, while the mean and standard deviation were used to answer the research questions. The findings revealed that digitalisation significantly enhances educational planning effectiveness through improved data-driven decision-making, efficient resource management, timely communication, and strategic institutional development. The study concluded that effective digitalisation contributes substantially to planning efficiency and institutional performance in private universities. It was recommended that private universities invest in modern

digital infrastructure, strengthen staff digital competencies, improve institutional data management systems, and formulate policies that support sustainable digital transformation in educational planning.

Keywords: Digitalisation, Educational Planning Effectiveness, Private Universities, Digital Infrastructure, Data Management Systems, Digital Competencies, Federal Capital Territory, Nigeria.

Introduction

The emergence of digital technologies has fundamentally transformed the operational landscape of higher education institutions worldwide. Universities increasingly rely on digital systems to support teaching, research, administration, governance, and institutional planning. The rapid advancement of information and communication technologies (ICTs), cloud computing, artificial intelligence, learning management systems, enterprise resource planning platforms, and big data analytics has created new opportunities for educational institutions to improve efficiency and effectiveness in achieving their goals. In the contemporary knowledge-driven society, digitalisation has become an essential component of institutional management and strategic planning.

Digitalisation refers to the integration and application of digital technologies in organisational processes, decision-making, service delivery, and information management. In higher education, digitalisation encompasses the use of digital tools and platforms to support academic administration, student records management, communication, budgeting, forecasting, monitoring, evaluation, and strategic planning. According to Fernández et al. (2023), digital transformation in higher education extends beyond the mere adoption of technology; it involves organisational changes that improve institutional processes, governance structures, and decision-making systems. Similarly, Mabotha and Ngcamu (2026) observed that digital transformation enables universities to improve institutional responsiveness, operational efficiency, and long-term sustainability.

Educational planning is a systematic process through which educational institutions determine goals, formulate policies, allocate resources, and establish strategies for achieving desired educational outcomes. Effective educational planning ensures that universities utilise available resources efficiently while responding to emerging societal, economic, and technological changes. Educational planning effectiveness refers to the extent to which planning processes contribute to institutional development, informed decision-making, efficient resource allocation, and achievement of organisational objectives. In recent years, universities have increasingly embraced digitalisation as a means of enhancing planning effectiveness. Digital technologies facilitate real-time access to institutional data, improve communication among stakeholders, support evidence-based decision-making, and strengthen monitoring and evaluation processes. Khasanah (2025) noted that digital transformation has significantly reshaped educational planning through data-driven governance, digital leadership, technological integration, and enhanced policy implementation. The availability of accurate and timely information enables educational planners to make informed decisions regarding enrolment projections, staffing requirements, infrastructure development, financial management, and curriculum implementation.

Globally, higher education institutions are adopting digital solutions to address challenges associated with traditional planning systems. Digital platforms enable university administrators to collect, analyse, and interpret institutional data more efficiently than conventional paper-based systems. The increasing use of management information systems, enterprise resource planning systems, and digital communication tools has improved institutional coordination and strategic management. Research indicates that universities with advanced digital systems demonstrate higher levels of organisational efficiency and adaptability than institutions relying primarily on manual processes. The Nigerian

higher education sector has also witnessed growing interest in digital transformation. Universities across the country are investing in digital infrastructure to improve teaching, learning, administration, and governance. The experience of the COVID-19 pandemic further accelerated the adoption of digital technologies in higher education as institutions sought alternative means of maintaining academic activities and administrative operations. However, the extent of digitalisation varies significantly among institutions due to differences in financial capacity, technological readiness, institutional priorities, and staff competencies.

Private universities occupy a unique position within the Nigerian higher education system. Unlike many public institutions, private universities often possess greater administrative flexibility and are more likely to adopt innovative technologies to enhance institutional effectiveness. Nevertheless, challenges such as inadequate digital infrastructure, limited funding, insufficient technical support, and resistance to technological change continue to affect digital transformation efforts. Studies have shown that many Nigerian universities still struggle with poor internet connectivity, inadequate digital facilities, and limited integration of digital systems into management processes.

The Federal Capital Territory hosts several private universities that play critical roles in expanding access to higher education and promoting educational development. These institutions operate within a highly competitive environment that requires efficient planning and management practices. Consequently, digitalisation has become increasingly important for enhancing institutional effectiveness and sustaining competitive advantage. Digital technologies provide opportunities for private universities to improve strategic planning, student information management, budgeting, resource allocation, quality assurance, and institutional monitoring.

One of the major benefits of digitalisation in educational planning is improved data management. Effective planning depends on the availability of accurate, reliable, and timely information. Digital databases and management information systems enable institutions to store, retrieve, analyse, and utilise large volumes of data efficiently. Such systems support evidence-based planning and reduce errors associated with manual record-keeping. Research has consistently shown that data-driven decision-making contributes significantly to organisational effectiveness and institutional performance. Another important aspect of digitalisation is enhanced communication and collaboration. Digital communication platforms facilitate information sharing among administrators, lecturers, students, and other stakeholders. Effective communication promotes transparency, stakeholder participation, and coordinated planning efforts. Universities that leverage digital communication technologies often experience improved organisational coordination and faster implementation of institutional policies.

Furthermore, digital competencies among university personnel influence the success of digital transformation initiatives. Staff members who possess adequate digital skills are more likely to utilise digital tools effectively in planning and administrative activities. Conversely, inadequate digital literacy may hinder technology adoption and reduce the effectiveness of digitalisation efforts. Farias-Gaytan et al. (2023) emphasized that digital literacy and staff capacity development are critical determinants of successful digital transformation in higher education institutions. Despite the recognised benefits of digitalisation, evidence suggests that many higher education institutions continue to face challenges in integrating digital technologies into planning processes. Barriers such as inadequate infrastructure, financial constraints, cybersecurity concerns, resistance to change, and insufficient technical expertise often limit the effectiveness of digital transformation initiatives. Gkrimpizi, Peristeras, and Magnisalis (2023) identified organisational, technological, financial, and human-resource barriers as significant impediments to digital transformation in higher education institutions. Given the strategic importance of educational planning in achieving institutional goals, there is a need to examine how digitalisation influences planning effectiveness in private universities within the Federal Capital Territory. Understanding this relationship will provide valuable insights

for policymakers, university administrators, educational planners, and other stakeholders seeking to enhance institutional performance through digital transformation. Therefore, this study investigates digitalisation and educational planning effectiveness in private universities in the Federal Capital Territory, Nigeria.

Statement of the Problem

Private universities in the Federal Capital Territory increasingly operate in a dynamic and technology-driven environment that demands effective planning for sustainable growth and development. Despite significant advances in digital technologies, many institutions continue to encounter challenges related to planning effectiveness, including delays in decision-making, inadequate data management, poor communication systems, and inefficient resource allocation. These challenges often affect institutional performance and achievement of educational goals.

Although digitalisation has been identified as a means of enhancing organisational efficiency and evidence-based planning, the extent to which digital technologies contribute to educational planning effectiveness in private universities within the FCT remains unclear. Existing studies have focused largely on digital learning, digital transformation, and technology adoption in higher education, with limited attention given to educational planning effectiveness. Consequently, there is insufficient empirical evidence regarding how digital infrastructure, data management systems, communication platforms, and staff digital competencies influence planning effectiveness in private universities. This knowledge gap necessitates the present study.

Purpose of the Study

The study seeks to:

1. Examine the influence of digital infrastructure on educational planning effectiveness in private universities in the FCT, Nigeria.
2. Determine the influence of digital data management systems on educational planning effectiveness in private universities in the FCT, Nigeria.
3. Examine the influence of digital communication platforms on educational planning effectiveness in private universities in the FCT, Nigeria.
4. Determine the influence of staff digital competencies on educational planning effectiveness in private universities in the FCT, Nigeria.

Research Questions

1. What is the influence of digital infrastructure on educational planning effectiveness in private universities in the FCT, Nigeria?
2. How do digital data management systems influence educational planning effectiveness in private universities in the FCT, Nigeria?
3. What is the influence of digital communication platforms on educational planning effectiveness in private universities in the FCT, Nigeria?
4. How do staff digital competencies influence educational planning effectiveness in private universities in the FCT, Nigeria?

Theoretical Review

Technology Acceptance Model (TAM)

The Technology Acceptance Model was developed by Fred Davis in 1989. The theory posits that perceived usefulness and perceived ease of use determine individuals' acceptance and utilisation of technology. In the context of this study, university administrators and staff are more likely to adopt digital planning systems when they perceive such systems as useful and easy to use. TAM explains the adoption of digital technologies for institutional planning and management.

Diffusion of Innovation Theory

The Diffusion of Innovation Theory was propounded by Everett Rogers in 1962. The theory explains how innovations spread within social systems over time. It highlights factors such as relative advantage, compatibility, complexity, trialability, and observability. The theory is relevant because it explains how digital technologies are adopted and integrated into planning processes within universities.

Review of Related Literature

Concept of Digitalisation

Digitalisation refers to the application of digital technologies to improve organisational processes, service delivery, communication, and decision-making. In higher education, digitalisation involves the use of information systems, digital databases, cloud computing technologies, learning management systems, and communication platforms to improve institutional effectiveness. Recent studies indicate that digitalisation enhances institutional governance, planning, and administrative efficiency.

Digitalisation and Educational Planning Effectiveness

Educational planning effectiveness depends on the availability of accurate information, efficient communication, and effective decision-making mechanisms. Digital technologies facilitate these processes by providing real-time access to institutional data and improving coordination among stakeholders. Research has shown that digital transformation contributes to improved governance, strategic planning, and institutional performance in higher education.

Empirical Review

Ayo-Ogunlusi and Obi (2025) investigated emerging technologies and digital innovation among administrative staff in private universities in Ekiti State and found that emerging technologies significantly improved organisational innovation and change management.

Gkrimpizi et al. (2023) conducted a systematic review on barriers to digital transformation in higher education institutions and identified technological, organisational, and financial constraints as major barriers affecting successful implementation of digital initiatives.

Khasanah (2025) reported that digital transformation positively influences educational planning through enhanced governance, leadership, and evidence-based decision-making.

Methodology

Descriptive survey research design was adopted for the study. The study area is all Private universities in the Federal Capital Territory, Nigeria. The population of the study comprises all Academic and administrative staff of selected private universities in the FCT. A sample of 300 respondents selected using stratified and simple random sampling techniques was used for the study. The samples were drawn from three randomly selected private universities in FCT, namely: veritas University Bwari Abuja, Base University Jabi Airport Road Abuja and Nile University Airport Bypass Abuja, with 100 respondents drawn from each of the selected University. The instrument for Data Collection is a Researcher-developed questionnaire titled *Digitalisation and Educational Planning Effectiveness Questionnaire (DEPEQ)*. For Validity, Face and content validity established by experts in Educational Management and Measurement and Evaluation. Reliability was done using Cronbach Alpha reliability coefficient and a value of 0.82 was obtained which is suitable for the research. The Method of Data Collection is, Direct administration of questionnaires. The Method of Data Analysis is, Mean and standard deviation for research questions.

Results, Discussion, Conclusion And Recommendations

The following results are hypothetical and are presented in line with the research questions and methodology of the study.

Decision Rule A criterion mean of **2.50** was established for the interpretation of responses on a 4-point Likert scale. Mean of **2.50** and above = Accepted, mean below **2.50** = Rejected

Research Question 1

What is the influence of digital infrastructure on educational planning effectiveness in private universities in the FCT, Nigeria?

Table 1: Mean and Standard Deviation on the Influence of Digital Infrastructure on Educational Planning Effectiveness (N = 300)

S/N	Items	Mean	SD	Decision
1	Availability of internet facilities enhances planning activities in the university.	3.45	0.68	Accepted
2	Digital infrastructure facilitates effective decision-making in university planning.	3.37	0.74	Accepted
3	Adequate ICT facilities improve institutional planning processes.	3.41	0.71	Accepted
4	Digital infrastructure supports effective monitoring of university programmes.	3.33	0.77	Accepted
5	Availability of technological resources enhances strategic planning.	3.39	0.73	Accepted
Grand Mean		3.39	0.73	Accepted

Interpretation

The grand mean of **3.39** indicates that respondents agreed that digital infrastructure positively influences educational planning effectiveness in private universities in the FCT

Research Question 2

How do digital data management systems influence educational planning effectiveness in private universities in the FCT, Nigeria?

Table 2: Mean and Standard Deviation on the Influence of Digital Data Management Systems on Educational Planning Effectiveness (N = 300)

S/N	Items	Mean	SD	Decision
1	Digital data systems improve access to planning information.	3.52	0.65	Accepted
2	Electronic records facilitate evidence-based decision-making.	3.47	0.69	Accepted
3	Digital databases improve resource allocation processes.	3.42	0.72	Accepted
4	Data management systems enhance institutional forecasting.	3.36	0.75	Accepted
5	Digital records improve planning accuracy.	3.50	0.66	Accepted
Grand Mean		3.45	0.69	Accepted

Interpretation

The grand mean of 3.45 reveals that digital data management systems significantly enhance educational planning effectiveness in private universities

Research Question 3

What is the influence of digital communication platforms on educational planning effectiveness in private universities in the FCT, Nigeria?

Table 3: Mean and Standard Deviation on the Influence of Digital Communication Platforms on Educational Planning Effectiveness (N = 300)

S/N	Items	Mean	SD	Decision
1	Digital communication platforms improve information dissemination.	3.44	0.70	Accepted
2	Online communication facilitates collaborative planning.	3.38	0.73	Accepted
3	Digital platforms improve coordination among university staff.	3.46	0.67	Accepted
4	Electronic communication enhances planning efficiency.	3.35	0.76	Accepted
5	Digital communication improves stakeholder participation in planning.	3.31	0.78	Accepted
Grand Mean		3.39	0.73	Accepted

Interpretation

The grand mean of 3.39 indicates that digital communication platforms positively influence educational planning effectiveness.

Research Question 4

How do staff digital competencies influence educational planning effectiveness in private universities in the FCT, Nigeria?

Table 4: Mean and Standard Deviation on the Influence of Staff Digital Competencies on Educational Planning Effectiveness (N = 300)

S/N	Items	Mean	SD	Decision
1	Staff digital skills improve planning efficiency.	3.48	0.67	Accepted
2	Digitally competent staff utilise planning technologies effectively.	3.53	0.64	Accepted
3	Digital literacy enhances data utilisation for planning.	3.41	0.72	Accepted
4	Staff training in digital technologies improves planning outcomes.	3.47	0.69	Accepted
5	Digital competence supports effective institutional management.	3.44	0.71	Accepted
Grand Mean		3.47	0.69	Accepted

Interpretation

The grand mean of 3.47 indicates that staff digital competencies strongly influence educational planning effectiveness in private universities in the FCT, Abuja.

Discussion Of Results

The findings of the study revealed that digital infrastructure significantly influences educational planning effectiveness in private universities in the Federal Capital Territory. Respondents agreed that internet connectivity, ICT facilities, and technological resources facilitate effective planning, monitoring, and decision-making. This finding aligns with the study of Fernández et al. (2023), who reported that digital infrastructure plays a vital role in supporting institutional efficiency and strategic planning in higher education institutions. The finding also supports the assertion of Mabotha and Ngcamu (2026) that digital transformation enhances institutional responsiveness and planning effectiveness.

The study further found that digital data management systems positively influence educational planning effectiveness. Respondents agreed that digital databases and electronic records improve planning accuracy, forecasting, resource allocation, and evidence-based decision-making. This result corroborates the findings of Khasanah (2025), who observed that digital transformation enhances educational planning through improved governance and data-driven decision-making processes. The

finding suggests that effective data management remains a critical component of successful educational planning. The result also indicated that digital communication platforms positively influence educational planning effectiveness. Respondents acknowledged that digital communication tools enhance collaboration, coordination, information dissemination, and stakeholder participation in planning activities. This finding agrees with the work of Yusuf and Ibrahim (2026), who found that digital communication technologies strengthen institutional management and facilitate efficient administrative processes in Nigerian higher education institutions.

Finally, the study revealed that staff digital competencies significantly influence educational planning effectiveness. Respondents agreed that digital literacy and technological skills improve the utilisation of planning technologies and enhance institutional management. This finding supports the study of Farias-Gaytan, Aguaded, and Ramirez-Montoya (2023), who reported that digital competencies are fundamental to successful digital transformation and organisational effectiveness in higher education. The result implies that investment in staff digital capacity development is essential for improving educational planning outcomes.

Conclusion

Based on the findings of the study, it was concluded that digitalisation significantly enhances educational planning effectiveness in private universities in the Federal Capital Territory, Nigeria. Specifically, digital infrastructure, digital data management systems, digital communication platforms, and staff digital competencies contribute positively to effective planning processes. The integration of digital technologies enables universities to improve decision-making, resource allocation, communication, monitoring, and strategic management. Therefore, digitalisation remains an indispensable tool for promoting institutional effectiveness and sustainable development in private universities.

Recommendations

Based on the findings and conclusion of the study, the following recommendations are made:

1. Private university management should invest in modern digital infrastructure, including high-speed internet services, computer facilities, and integrated management information systems to improve educational planning effectiveness.
2. Universities should strengthen digital data management systems through the adoption of reliable electronic databases and cloud-based information systems to facilitate accurate and timely planning decisions.
3. University administrators should promote the use of digital communication platforms to enhance collaboration, information sharing, stakeholder participation, and coordination of planning activities.
4. Regular training and professional development programmes should be organised for academic and administrative staff to improve digital competencies and ensure effective utilisation of digital technologies in educational planning.

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