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THE EFFECT OF MODERN INFORMATION TECHNOLOGY ON SERVICE DELIVERY IN BAYERO UNIVERSITY KANO, NIGERIA

By

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Abstract

Effective public service delivery is paramount in public institutions. Productivity of organizations is always measured with greater considerations of efficiency and quality of services delivered. This is usually achieved through the application of so many resources, methods and technology. Modern information technology has been an effective instrument in modern service delivery which tend to provide increase in efficiency and service effectiveness. The general aim of this study was to examine the role of modern information technology in enhancing service delivery in public organizations with specific reference to Bayero University, Kano. The methodology of the study will be drawn from both primary and secondary sources of data. Questionnaires were used to collect data and were complemented by the data from journals, internet and other secondary sources. The data generated were analyzed using Structural Equation Modelling (SEM).

Keywords; Bayero University, Kano, modern information technology, service delivery

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1.1 Background

The world today is being transformed by continuously evolving technologies that are changing the way we do things at the most fundamental levels. This transformation is precipitated by a number of trends; a shift from manufacturing to a service economy; the usage of information as a resource, factor of production, and commodity; and the propulsion of the current economic growth through technical innovation and scientific discovery (Dickey *et al.*, 1999). In 1960's a famous modern management theorist Peter Drucker stated that knowledge has become the basis of modern economy after the shift of society from the commodity economy to the knowledge economy (Gatautis, R. 2004). Nowadays it is also often stated (Custells, 2003) that people have developed into a society, where knowledge and organization are first and most important creators of welfare.

The human race is full of insatiable taste for goods and services. As these want and needs grow, so do the means of satisfying them. Therefore, every organization, be it government or otherwise, is set up to achieve these objectives. On an individual level, many aspects of our daily lives is subject to technological innovations. We have become dependent on the flexibility, access, and services that they provide us. Computers, fax machines, networks, cable television, fibre optics and Automated Teller Machine (ATM) have all played a pivotal role in the way we communicate, work, play and do business. As the information age progresses we increasingly owe more of our economic and technological progress to the free flow of ideas and knowledge. Consequently, it becomes more important that we have access to superior and timely information.

In recent years, the concepts of government and administration have been transformed. Transformation were caused not only by growing requirements and expectations for ways of governing civil society to reflect modern method of efficiency and productivity, but also the attitude that public administration should be more open to democratic control and accountability (Adamu and Gwarzo, 2002). The above – mentioned processes of changes had a lot of impact on the activity of government. A lot of public institutions have included the Information and communication technology (ICT) dimension into their activities. Many authors like Vigoda, Dougherty and Fang state that e-Government ensures efficiency and democracy in a more economical way than it was forecasted before, and the application of ICT creates opportunities for government to modify the traditional compromise between these two objectives. In information technology the management information system, information resource management, e-Government, office automation etc. are all means through which service delivery could be achieved in public organizations. Hence the core assumption of this research is that, 'with ICT there will be improvement in administration'. But the real problem is how could ICT brings about improvement in public organizations like B.U.K?

Every government conducts it activities through articulation of data, records and information. Both the bureaucrats and public office holders have great concern with generating, disseminating and storage of government data and records. It is on that note that this research is framed in order to see how effective system of data generation, dissemination and storage will improve public service or service delivery. A reliable policy cannot be formulated with insufficient data.

Bayero University, Kano is not an exception to these trends. It was that quest for data, record, and information management, and the need for effective service delivery, that necessitate the establishment of Management information system (MIS) and Centre for information

technology in the university. Most importantly therefore, the research will tend to review the strategic plan of B.U.K on ICT so as to see the level of development or otherwise in that aspect. To also see if it had improved service delivery in the university. An effective analysis of what is on ground will be made. What are the targets, and efforts towards achieving these targets? What has been achieved, if not what are the constraints?

1.2 Statement of Problem

In recent decades, the integration of modern information technology (IT) into institutional operations has transformed how services are delivered in higher education globally. Universities now rely on digital tools to manage academic records, facilitate communication, support e-learning, and streamline administrative processes (Laudon & Laudon, 2020). This shift has been driven by the need for efficiency, accuracy, and responsiveness in handling growing student populations and increasing administrative demands. In developed contexts, institutions have adopted comprehensive IT systems that significantly enhance access to information, improve transparency, and boost user satisfaction (Jisc, 2018). However, in many developing countries, including Nigeria, the application and effectiveness of such technologies remain inconsistent and under-researched, especially within public universities.

At Bayero University Kano (BUK)**,** efforts have been made to incorporate modern IT solutions in administrative and academic service delivery ranging from online registration portals to digital result processing and virtual learning platforms. Despite these initiatives, students and staff often report persistent issues such as system downtimes, poor user interface design, unreliable internet connectivity, and limited digital literacy among both service providers and users (Ayo & Ekong, 2020). These challenges have contributed to delays in service delivery, inefficiencies in communication, and dissatisfaction with administrative processes. Moreover, the full potential of modern IT tools such as automation, real-time feedback systems, and mobile applications—appears underutilized, raising concerns about institutional capacity, infrastructure, and stakeholder engagement.

The lack of empirical evidence on how effectively IT has enhanced or hindered service delivery in BUK presents a critical gap in both academic literature and university policy planning. While various technological investments have been made, there is limited understanding of their actual impact on operational performance, staff productivity, and student satisfaction. Without a clear assessment of what works and what doesn't, the university risks continuing to invest in systems that may not align with user needs or institutional goals. This study therefore sought to examine the effect of modern information technology on service delivery in Bayero University Kano, identifying both the successes and shortcomings of existing practices thereby providing evidence-based recommendations for improvement.

1.3 Objectives of the Study

The general aim of this study is to examine the role of modern information technology in enhancing service delivery. The specific objectives are stated below;

1. To find out the challenges that confronted Bayero University, Kano in her attempt to deliver public service before the creation of the management information system (MIS) unit.
2. To examine the extent to which the creation of MIS could enhance the system of generating, disseminating, storing and analysis of information in Bayero University, Kano.

3. To study the factors impeding the implementation of the strategic plan of B.U.K on ICT.

1.4 Research Hypothesis

1. Modern information technology has no significant effect on service delivery in Bayero University, Kano

2.1 Methodology

This study titled "Enhancing Service Delivery through Information Technology with a case study of Bayero University, Kano." By its nature entails collecting data from both primary and secondary sources. Under this, the population of the study, sample size, sample technique, method of data collection and technique of data analysis will clearly be shown.

2.1.1 The Target Population

The target population for this research includes Directors of CIT and MIS, administrative staff of both CIT and MIS, staff of computer science, past and present staff of BUK, academic staff and past and present students. The choice of this category of people is deliberate because they have the information required by this research.

2.1.2 Sample Size and Sampling Procedure

A total sample size of two hundred and seventy (270) respondents will be drawn for the study. This will made up of two hundred and sixty respondents for questionnaire administration and ten respondents for in-depth interview (IDI).

Multi-stage sampling method will be used for the study. Thus, the seven faculties in Bayero University, Kano will be considered as cluster. Four faculties that include, faculty of sciences, faculty of social and management sciences, faculty of technology and faculty of education will be sampled using simple random sampling (SRS) technique and from the four sampled faculties, two departments that include biological science, computer science, sociology, political science, physical and health education, special education, civil and mechanical engineering departments will be drawn from the sampled faculties using the SRS technique. Thus, thirty students will be sampled from each of the selected department (twenty of which are present, and ten past students to give detailed information of what was obtained before and now). And ten staff each from the CIT and MIS will be drawn using accidental sampling technique for self-administered questionnaires. The respondents are considered to have detailed information on the study and the questionnaires will be administered to the respondents based on immediate availability and ability to give information on the research topic.

The ten key informants for interviews comprised of a director and two senior staff of CIT and MIS each, two past/retired staff of BUK and two lecturers from computer science were purposively selected for in-depth interview (IDI). This is because only those who are resourceful on the research topic were interviewed. The IDIs were designed in English and administered by the researcher and his assistants.

2.1.3 Methods of Data Collection

Both quantitative and qualitative methods will be used to generate data for the study and will be complemented by information from textbooks and journals so as to provide more insights on the study. Thus, self-administered questionnaires and in-depth interviews will be used to generate the data. This is because questionnaires and interview methods are more detail to

have quantitative data as well as qualitative data for the study. The questionnaires will be constructed in English Language and administered to respondents with the help of research assistants. The questionnaires consist of open-ended and close-ended questions. The questionnaire comprise of issues raised on the research topic.

Also, the in-depth interviews will be conducted with the key informants to generate qualitative data for the study. The interviews will be conducted with the aid of interview-guide.

2.1.4 Method of Data Analysis

The quantitative data were processed, presented and analyzed using the Structural Equation Modelling (SEM). The qualitative data that will be generated through the IDI will be discussed based on the research objectives and analyzed to support the quantitative data.

3.0 Literature Review and Theoretical Review

3.1 Public Administration and Information Technology

In recent years, the strategic, coordinated use of information and communication technologies (ICT) in public administration and political decision making – commonly referred to as *"electronic government"*- has attracted ever more attention. Today, the majority of developing countries have formulated national e-government strategies. Governments and international organizations are spending considerable amounts of money to enhance public sector ICT capabilities. Everyday new technological solution for public policy and administration enters the markets. This make it possible for many organization to adopt E-government.The term itself is used as a cipher for modern, efficient, transparent, participation and people oriented government.

By way of conceptualizing the meaning or e-governance, Fatile, (2012) tries to provide a conceptual meaning of "governance" and then "e-governance." The concept of "governance" as rightly put by Fatile (2012) is as old as human civilization. In essence, the term "governance" refers to the process of decision–making and the process by which decision are implemented (or not implemented). The word "governance" can be used in several contexts, such as corporate governance, international governance, national governance and local governance. Governance is not the exclusive preserve of the government. It extends to civil society and the private sector. It covers every institution and organization from family to the state. It involves exercise of political, economic and administrative authority to manage the affairs in and the manner in which power is exercised in the management of a country's economic and social resources for development (Symonds, M. 2000). It can be better understood as the complex machanisms, processes, relationships and institutions through which citizens and groups articulate their interests, exercise their rights and obligations and mediate their differences (World Bank, 1992).

Governance is conventionally conceptualized, as the process by which a political system achieves such values as accountability, participation, openness (or transparency) and respect for the rule of law and due bureaucratic process. It also includes, according to Boeninger (1992), the capacities of a system to exercise authority, win legitimacy, adjudicate conflicts as well as carry out programme implementation. In other words, the bottom line of governance is its ability to responds to the needs, aspirations and yearnings of majority of the citizenry. And once a political system is able to achieve these, it is referred to as responsive, accountable and effective governance (Obasanjo, 2004).

On the other hand, E-governance concept as argued by Fatile (2000) originated at the beginning of the 21st century, mostly as a copy of e-commerce into public sector. All intentions were directed towards the presence of the public services on the internet. In the early years of its development, e-governance follows the evolutionary e-business evolving model, which in particular means that in the early days of e-governance involvement, primary focus of the e-services was simple appearance of graphic user interfaces with no interactions (Brannen, 2001). Early enthusiasm during the mean time weakened but such experiences brought crucial acknowledgements (United Nations, 2008).

Today, because of those acknowledgements, the focus is on coordination and effective assessment of the needs, efficiency and public benefits for such services. The development of electronic public services enters in the new phase, which is mostly determined by reengineering of existing processes of public government. Public sector by its nature (based on information and communications) is ideal for international increase of efficiency and quality (Mario, *et al.* 2009).

The term E-governance is of recent origin and there is no commonly accepted definition (Fatile, 2012). The term was perhaps coined about a decade ago after the success of electronic commerce to represent a public sector equivalent of e-commerce (Moon, 2011). Definitions of e-governance abound. The definition of the concept of e-governance and its evolution in time has been the focus of a large body of research (Fang, 2002; Hu *et al.*, 2009). More or less restrictive definitions of e-governance have been given, but there is still no unique definition of the term (Yildiz, 2004). Nevertheless, it has been generally recognized that e-governance offers a huge potential to increase the impact of government activities for citizens (Fang, 2002). This shows that the interpretation of e-governance is quite broad and divergent.

The term is used in a loose manner to describe the legacy of any kind of use of information and communication technology within the public sector (Yildiz, 2004). For those who see it as some form of extension of e-commerce to the domain of the government, it represents the use of internet to deliver information and services by the government (Bhatnagar, 2007). The Department of Economics and Social Affairs of the United Nations defines e-governance as utilizing the internet and the world-wide-web for delivering government information and services to citizens (United Nations, 2008). General definition describes e-governance as the use of information and communication technologies (ICT) to transform government by making it more accessible, effective and accountable.

E – governance refers to the use of information technologies (such as the internet, the world wide web, and mobile computing) by government agencies that can transform their relationship with citizens, businesses, different units of government, and other governments. These technologies help deliver government services to citizens, improve interactions with businesses and industries, and provide access to information (Moon, 2002). E-governance can be defined as the use of emerging information and communication technologies to facilitate the processes of government and public administration (Drucker, 2001). This definition focuses on the use of ICT to assist in the administration or management of government.

From similar dimension, Basu (2004) states that "e-governance refers to the sue of by government agencies of information technologies that have the ability to transform relations with citizens, businesses and other arms of government." In terms of actually using these technologies, the following are some ends; better delivery of government services to citizens, improved interactions with businesses and industries, citizen empowerment through access to

information, or more efficient government management. Benefits resulting from these activities could be less corruption, increase transparency, greater convenience, revenue growth and cost reductions. As Chatfield (2009), argued e-governance refers to the use of information and communication technologies, particularly the internet, to deliver government information and services. E-governance is also understood as the use of ICT to promote more efficient and cost effective government, facilitate more convenient government services, allow greater government access to information, and make government more accountable to the citizens (World Bank, 1992).

According to European Commission Report (2003) e-governance is the use of information and communication technologies in public administrations combined with organizational change and news skills in order to improve public services and democratic processes and strengthen support to public policies. This definition is quite wide and includes aspects that are fundamental for successful use of ICT, such as organizational change and user skills. It does not assign a value to ICT or e-governance *per se*, but relates them to a wider effort to support public policies.

As Drunker (2001) rightly put, the aim of e-governance is to allow the public to initiate a request for a particular government service without going to a government office or having direct contact with a government employee. E-governance comprises of an alignment of ICT infrastructures, institutional reform, business processes and service content towards provision of high-quality and value added services to the citizens and businesses. Wimmer and Traunmuller (2001) contend that the main objectives of e-governance should include the following;

i. Restructuring administrative functions and processes;
ii. Reducing and overcoming barriers to coordination and cooperation within the public administration and
iii. The monitoring of government performance.

While discussing on the general scope of e-governance, Moon (2002) argued that e-governance services extend from posting general requested information on a website to providing and processing online requests such as electronic payment of taxes or other fees. The main rationale of e-governance initiatives is to put together services focused on citizen's needs. E-governance involves novel forms of delivering and tailoring information and services connecting communities and businesses locally and globally and reforming us towards digital democracy. E-governance offers flexible and convenient access to public information and services with the view of providing citizens an improved services (Moon, 2002).

According to Fatile (2012), a major goal of e-governance projects in developed economies is to enhance productivity of both public and private sectors through the leveraging of ICT. E-governance has captured the interest of developing countries.

There has been a considerable demonstration effect of the constructive difference that e-governance has made in advanced economies in the delivery of services, provision of information and internal administration of the public sector. A country's ICT infrastructure and its openness to public sector reform play an important role in determining the type of applications and kind of goals for which e-governance is implemented (Bhatnagar, 2007).

A country's willingness to adopt basic public sector reform must determine the breadth and scope of e-governance applications. Many times e-governance applications are

used as a catalyst and enabler to further reform. E-governance projects are funded with the expectation that these applications will increase efficiency, and bring about more transparency and accountability to citizens (Fatile, 2012).

At this point therefore, while scholars have been identifying the significance and use of E-governance in public organizations, yet it has been questioned on the basis of undermining the sovereignty of nations. Many countries like Switzerland reject e-governance on the fact that it does not guarantee security and national sovereignty. Other criticism were from the notion of the threat pose by international hacking which brake the security codes of complex bureaucratic organization and damage the data system.

3.2 Theoretical Framework

3.2.1 Technology Acceptance Model (TAM),

This study considered TAM as its theoretical underpinning. Developed by Davis (1989). TAM explains how users come to accept and use a technology based on two primary factors: perceived usefulness (the degree to which a person believes that using a system would enhance their job performance) and perceived ease of use (the degree to which a person believes that using the system would be free of effort). In the context of Bayero University Kano, these constructs are essential for understanding how students, academic staff, and administrative personnel engage with IT systems designed to facilitate tasks such as course registration, results processing, and online communication. Interestingly, the application of TAM in this study allows for a systematic evaluation of user behavior and attitudes toward various technological tools used within the university. For instance, if staff members perceive IT systems as useful and easy to use, they are more likely to adopt them fully in service delivery processes. Conversely, resistance may arise if the systems are seen as overly complex or ineffective. Therefore, TAM provides a relevant framework for identifying both the enablers and barriers to successful IT adoption in BUK.

4.0 Data Presentation and Discussion

4.1 Descriptive Statistics

Table 4.1 Descriptives

	N	Mean	Std. Deviation	Decision
Modern Information Technology	**349**	**3.6098**	**1.2108**	**Agreed**
Service Delivery	**349**	**3.0377**	**1.6794**	**Agreed**

Source: Field Work, 2025

Table 4.1 showed a mean response of 3.6098 for the IV based on the questions raised in the indicators. This shows that majority of the respondents agree to the Modern Information Technology usage in Bayero University, Kano and the policies that promote it. These come with standard deviations standing at 1.21 indicating a degree of varying opinions among the respondents.

The DV gave a mean response of 3.03 based on the questions raised in the indicators. This also shows that majority of the respondents agree that the service delivery in Bayero University, Kano is good as measured by the indicators. This, however, comes with standard deviations standing at 1.68 indicating that high degree of varying opinions amongst the respondents. This implies that modern information technology enhances service delivery in Bayero University, Kano.

4.1.1 Structural Equation Modelling (SEM) Results

The measurement model of the reflective indicators and the loading of each indicator are presented including composite reliability (CR) for internal consistency and Average Variance Extracted (AVE) for construct validity.

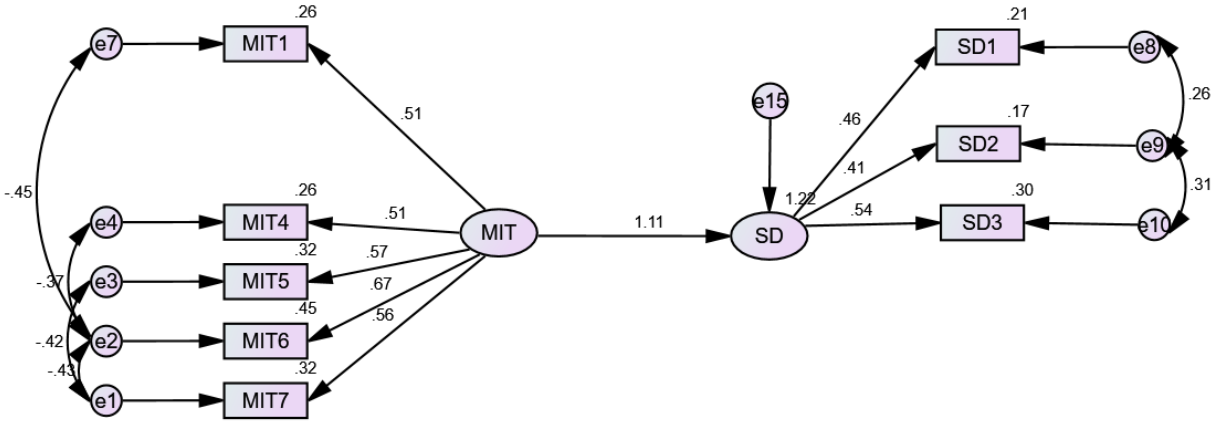


Fig 4.1. Research Model

Where: MIT = Modern Information Technology
SD = Service Delivery

4.1.2 Instruments Reliability & Validity

The process involved a series of iterations until the loadings of items measuring individual constructs stood within the threshold as recommended by in Hair *et al* (2013) which states that reflective indicators with loadings greater than 0.7 should be retained, while those between 0.4 and 0.7 will be retained depending on the average variance extracted, which threshold is 0.5. Quite a number of indicators were expunged from the models leaving the model with the indicators as depicted in the Fig 4.1.

Upon the last iteration that gave rise to the selected indicators the constructs and their measurements are considered valid as they fall within the threshold.

Table 4.2. Composite Reliability & Construct Validity

Construct		Estimate	AVE	CR
Modern Information Technology	MIT7	0.762	0.5232	0.7859
	MIT6	0.87		
	MIT5	0.869		
	MIT4	0.513		
	MIT1	0.51		
Service Delivery	SD1	0.962	0.8852	0.7043
	SD2	0.915		
	SD3	0.945		

Source: SPSS Amos v23, 2025

The composite reliability (CR) for internal consistency and Average Variance extracted (AVE) for construct validity are shown in table 4.2 and meet the threshold.

4.2 Test of Hypotheses

A structural equation model generated through SPSS Amos was used to test the relationships. The model fitness and the structural model assessment are discussed below.

Table 4.3 Model Fit Summary

Fit Indices	Threshold	Source(s)	Obtained Value	Decision
CMIN/df	2-5	Greater than 2 (Ullman, 2001) to 5 (Schumacker & Lomax, 2004)	4.354	Fulfilled
GFI	>.9	Har et at (2010)	0.962	Fulfilled
AGFI	>.9	Har et at (2010)	0.901	Fulfilled
CFI	>.9	Bentler (1990)	0.926	Fulfilled
TLI	>.9	Bentler (1990)	0.940	Fulfilled
SRMR	<.08	Hu and Bentler (1998)	0.046	Fulfilled
RMSEA	<.08	Hu and Bentler (1998)	0.077	Fulfilled

Source: SPSS Amos Output v23, 2025

A good fitting model is accepted if the value of the CMIN/df, GFI, TLI, CFI, RSMSEA and Standardised RMR give values that meet the threshold as shown in Fig 4.3. From the obtained value, the tests show that these are all fulfilled that the dataset is fit for the model.

Table 4.4 Structural Model Assessment

Hypothesised Relationship	R^2	Standardised Estimates	t-value	p-value	Decision
MIT→SD	0.425	1.107	6.629	0.000	Reject Null

Source: SPSS Amos Output v23, 2025

4.2.1 Hypothesis I

H_{01} Modern information technology has no significant effect on service delivery in Bayero University, Kano

The R^2 stood at 0.425, which indicates that 42.5 percent of variations in the service delivery in Bayero University, Kano is accounted for by modern information technology. Modern information technology has a positive effect on service delivery in Bayero University, Kano (Standardised $\beta = 1.107$, t-stat = 6.629, p-value < 0.05). The positive beta coefficient implies that an increase in the usage of Modern information technology will lead to an increase in the service delivery in Bayero University, Kano.

The p-value being less than 0.05 indicates that this positive effect is significant at 95 percent confidence level which gives the study enough statistical evidence to reject the null hypothesis, H_{01}, which states that modern inforation technology has no significant effect on the service delivery in Bayero University, Kano; and accept its alternate, H_{11}, which states that modern information technology have a significant effect on the service delivery in Bayero University, Kano.

4.3 Qualitative Analysis

4.3.1 Objective One:To find out the challenges that confronted Bayero University, Kano in her attempt to deliver public service before the creation of the management information system (MIS) unit.

Before the establishment of the Management Information System (MIS) unit, Bayero University, Kano, faced a myriad of challenges that significantly impeded the efficient delivery of public services. One of the primary issues was inefficient data management due to reliance on manual record-keeping, which caused delays in retrieving crucial information needed for decision-making, registration, and reporting (Olorunsola, 1997). This manual system often resulted in data duplication, loss, and inaccuracies, undermining administrative effectiveness and timely service delivery (Management Information System and Institutional Effectiveness of Universities, 2020). The lack of timely and accurate information was further compounded by poor interdepartmental communication, where delays and errors in transmitting information reduced its usefulness for operational planning (Ogundipe et al., 2023). Human resource constraints also played a critical role; the university lacked personnel skilled in information and communication technology (ICT), which limited the adoption of digital tools and reduced the efficiency of data handling processes (Ogundipe et al., 2023). Infrastructure deficits, including unreliable power supply, insufficient hardware, and poor network connectivity, created additional obstacles, making even partial electronic systems difficult to maintain and utilize effectively (Ochai & Onoja, 2025).

Moreover, institutional challenges such as weak coordination between departments, inconsistent policy enforcement, and resistance to change hindered attempts to modernize service delivery (Ogunode, Lawan, & Ajape, 2021). Budgetary constraints and inadequate funding for ICT development further limited the university's capacity to improve its administrative systems (Ogunode, Okwelogu, & Danjuma, 2022). Collectively, these factors created a complex environment where inefficiency and delays were commonplace, underscoring the pressing need for a comprehensive MIS unit to address these longstanding challenges and improve service delivery at Bayero University, Kano (Olorunsola, 1997; Ogundipe et al., 2023; Ogunode et al., 2021).

4.3.2 Second Objectives: To examine the extent to which the creation of MIS could enhance the system of generating, disseminating, storing and analysis of information in Bayero University, Kano.

The creation of the Management Information System (MIS) at Bayero University, Kano, marked a pivotal advancement in enhancing the generation, dissemination, storage, and analysis of institutional information, addressing many inefficiencies inherent in previous manual processes. Firstly, MIS standardized data generation through uniform templates and centralized databases, significantly reducing duplication errors and ensuring consistency across different administrative units (Ogundipe, Anise, Adelana, &Adeniji, 2023). This standardization enabled the university to handle large volumes of student and staff data more efficiently, as observed in similar Nigerian universities where MIS adoption improved data accuracy and operational workflows (Management Information System and Institutional Effectiveness of Universities, 2020). Secondly, MIS enhanced the storage of information by providing secure, digital repositories with backup systems, protecting vital records from physical damage or loss and enabling quick retrieval when needed (Ochai& Onoja, 2025). This digital storage capability facilitated long-term preservation and better organization of

institutional data, which previously faced risks of misplacement or degradation.Additionally, infrastructural elements such as reliable electricity, network connectivity, and hardware availability played a crucial role in supporting the MIS's functionality in Bayero University (Ochai & Onoja, 2025).

Furthermore, the integration of MIS within the university's broader strategic framework was essential for maximizing its benefits. When MIS was aligned with institutional goals and incorporated into routine administrative workflows, it facilitated data-driven decision making and improved accountability (Adeyemi & Ogunyemi, 2020). This integration also helped break down silos between departments, promoting cross-functional collaboration through shared data platforms (Ogundipe et al., 2023). More so, evidence suggests that MIS in Bayero University, is found efficientlyenhancing the system, it substantially improved administrative functions, such as examination management, student registration, and staff appraisal processes, contributing to better service delivery and institutional effectiveness (Management Information System and Institutional Effectiveness of Universities, 2020). Thus, the creation of MIS at Bayero University, Kano, enhanced the generation, dissemination, storage, and analysis of information by introducing digital efficiency, improving data reliability, and supporting evidence-based management, though its full potential depended on adequate training, infrastructure, institutional commitment, and financial investment.

4.3.3 Objective Three: To study the factors impeding the implementation of the strategic plan of B.U.K on ICT.

Several factors have impeded the successful implementation of Bayero University, Kano's (B.U.K) strategic plan on Information and Communication Technology (ICT), reflecting broader challenges faced by many Nigerian universities. One primary barrier is inadequate funding, which limits the acquisition of up-to-date hardware, software, and necessary infrastructure, thereby stalling key ICT initiatives (Ogunode, Okwelogu, & Danjuma, 2022). This financial constraint also affects the maintenance of existing systems and investment in continuous staff training, which are critical for sustaining ICT growth. Secondly, resistance to change among staff and management presents a significant obstacle, often rooted in limited ICT literacy and fear of job redundancy, which slows down the adoption of new technologies and processes (Ogundipe, Anise, Adelana, & Adeniji, 2023). Sadly, effective change management strategies have often been lacking, contributing to this reluctance.Thirdly, institutional and policy-level challenges, such as weak coordination between departments and inconsistent policy enforcement, undermine strategic plan execution (Ogunode, Lawan, & Ajape, 2021). Without a cohesive framework and clear leadership commitment, ICT projects may lack direction and accountability. Fourth, infrastructural deficits, including unreliable power supply and limited internet bandwidth, continue to hinder ICT deployment and effective usage across the campus (Ochai & Onoja, 2025). Finally, insufficient human resource capacity due to a shortage of qualified ICT professionals and inadequate professional development opportunities restricts the university's ability to implement and manage sophisticated ICT systems effectively (Management Information System and Institutional Effectiveness of Universities, 2020). Addressing these challenges is essential for Bayero University to fully realize its ICT strategic objectives and improve service delivery.

Moreover, bureaucratic bottlenecks within the university's administrative structure often slow down decision-making processes related to ICT initiatives. Complex approval procedures and hierarchical management systems delay the procurement and deployment of necessary

technologies, causing setbacks in project timelines (Adeleke & Salami, 2023). Such procedural inefficiencies also affect collaboration between various units responsible for ICT, resulting in fragmented efforts rather than a unified approach to digital transformation. This is consistent with findings from studies on Nigerian public universities, where slow bureaucratic processes were identified as a significant hurdle to implementing ICT reforms (Adewale, 2021).

Additionally, the lack of a comprehensive monitoring and evaluation framework impairs the university's ability to track progress and assess the impact of ICT projects, which diminishes accountability and reduces motivation for continuous improvement (Eze, 2022). Without systematic feedback mechanisms and performance indicators, it becomes difficult to identify gaps or adjust strategies promptly. This gap echoes broader challenges reported in ICT policy implementation in higher education across developing countries, where weak oversight structures compromise the sustainability of ICT investments (Kalu & Madu, 2020). Ultimately, to overcome these obstacles, Bayero University must prioritize stronger governance frameworks, streamline administrative procedures, and institutionalize monitoring systems to enhance the efficacy of its ICT strategic plan.

4.4 Discussion of Findings

The study investigates the effect of modern information technology has no significant effect on service delivery in Bayero University, Kano. A number of findings were arrived at which are stated as follows:

It was revealed that Modern Information Technology has positive and significant effects on service delivery in Bayero University, Kano. This implies that the adoption and effective utilization of modern IT tools such as digital record systems, communication platforms, and automated administrative processes enhance the speed, accuracy, and efficiency of service delivery within the university.

It was also revealed that the introduction of the MIS unit marked a significant improvement over the previously manual and fragmented administrative processes at Bayero University, Kano. This implies that, compared to earlier limitations in data handling, interdepartmental coordination, and service response time, the university now has an opportunity to build upon a more organized and efficient framework for delivering public services.

It was therefore, revealed that the establishment of the MIS unit has substantially enhanced the university’s capabilities in generating, disseminating, storing, and analyzing information. This implies that the adoption of digital systems has created a foundation for streamlined operations, improved communication, and enhanced service delivery.

It was also revealed that while some constraints such as funding, skills, and infrastructure persist, Bayero University, Kano has made commendable strides in articulating and initiating its ICT strategic plan. This implies that with ongoing investment, capacity building, and policy support, the university is well-positioned to overcome existing barriers and fully harness ICT for improved governance and service delivery.

5.0 Conclusions and Recommendations

This study has demonstrated that the adoption and effective utilization of modern information technology have significantly enhanced service delivery at Bayero University, Kano, leading

to improved speed, accuracy, and efficiency in administrative processes. The establishment of the Management Information System unit has addressed many previous challenges related to manual data handling, fragmented communication, and delays, thereby fostering a more streamlined and responsive public service environment. However, to fully realize the potential of IT in transforming university services, continuous investment in infrastructure, capacity building, and supportive policies is essential. With continued commitment to ICT development and capacity building, the university has the potential of further enhance its efficiency, transparency, and responsiveness in line with global standards in higher education management

Based on the findings from the study, the following recommendations are proposed to support and enhance the ongoing impact of Modern Information Technology on service delivery at Bayero University, Kano:

1. To sustain and further enhance the positive impact of modern information technology on service delivery at Bayero University, Kano, it is recommended that the university invests continuously in staff training and capacity building to ensure effective and efficient utilization of IT tools across the university.
2. The university should build on the improvements made by the MIS unit by further integrating it across all administrative departments. This involves regular system upgrades, ensuring synchronization between departments, and expanding digital services to cover additional areas such as finance, staff welfare, and research management to improve overall efficiency.
3. To maintain the accuracy and security of data handled by the MIS, Bayero University needs to establish a comprehensive data governance framework. This includes standardizing data entry procedures, conducting periodic data audits, and appointing data stewards responsible for maintaining data integrity and preventing loss or breaches.
4. To overcome challenges hindering the implementation of Bayero University Kano's ICT strategic plan, the university should secure sustainable funding, invest in training and retaining skilled ICT personnel, upgrade its infrastructure, and streamline administrative processes to reduce bureaucratic delays, thereby enabling effective use of technology for improved governance and service delivery.

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