

**PROSPECTS AND CHALLENGES OF TECHNOLOGY ADOPTION IN THE
APPROPRIATION PROCESS IN NIGERIA**

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Abstract

The appropriation process in Nigeria, which involves the preparation, consideration, and passage of the national budget by the legislature, plays a critical role in ensuring sound public financial management and the effective delivery of government services. However, this process has consistently faced challenges such as bureaucratic delays, lack of transparency, inadequate data management, limited public participation, and weak legislative oversight. In response to these issues, this study explores the potential of modern technology to reform and enhance the Nigerian appropriation process. It focuses on the application of digital tools such as electronic budgeting systems (e-budgeting) and real-time expenditure tracking dashboards to improve efficiency, transparency, and accountability throughout the budget cycle. To achieve this, the study adopts a mixed-methods research design that integrates both quantitative and qualitative approaches for a comprehensive analysis. The quantitative phase began with a survey targeting legislators and key stakeholders to assess perceptions and practices related to technology use in the National Assembly. Insights from this phase highlight existing gaps and opportunities in the current system. The qualitative phase builds on these findings, offering deeper exploration into the experiences, barriers, and potential strategies for digital adoption. The study's target population includes 109 Senators, 10 legislative staff members, 5 representatives from Civil Society Organizations (CSOs), 5 policy and budget experts, and 2 ICT specialists. A simple random sampling technique will be used in the quantitative phase to ensure each eligible respondent, particularly among legislative staff, has an equal chance of being selected. The findings suggest that with adequate investment in digital infrastructure and sustained political will, technology can play a transformative role in Nigeria's appropriation process enhancing budget accuracy, enabling real-time monitoring of public spending, and strengthening both legislative oversight and citizen engagement. The study concludes with practical recommendations for lawmakers, policymakers, and development partners aimed at fostering an enabling environment for the digital transformation of Nigeria's public finance system.

CHAPTER ONE

1.1: Background to the Study

Budget is a clear reflection of a government priorities in economic and social policy. It serves as an instrument for implementing political decisions, ensuring that resources are distributed among all social strata across society (Gabriel, 2023). The resources that form the government budget come from taxes and duties paid by citizens, who, in turn, have the right to scrutinize how their money is spent (Daniel, 2020).

The parliament, known as the National Assembly in Nigeria, is primarily responsible for ensuring accountability for both individual and group activities within the prisms of democracy, in accordance with its constitutional mandates. Legislators are the essential component of democratic consolidation; without their role, the impact of democratization cannot be realized. Representation, legislation and oversight are the three primary function of legislature, making it arguably the only institution that is exclusive to democracy (Izah, 2013). In its status as a representative body and legislative branch, the legislature ensure that the need and concern of the people are heard, understood and appropriately consider in shaping the law making. It does this by holding the government accountable through its fundamental oversight function (L.H, 2014).

Members of Parliaments (MPs) or legislative branch act as the people's representatives for ensuring that public fund are used effectively. Legislators play a critical role in the budget process, not only in terms of authorizing the executive to collect taxes and finance public programs for the benefit of the people but also ensuring proper oversight. It is legislative responsibility to prescribe proper management rules and to mandate the executive branch to execute them and hold it accountable. In this way, legislative branch therefore plays a central

role in promoting good governance and financial accountability. As the institute that represent people, legislative branch is entrusted with ensuring that government policies reflect the need of citizens. In other words, legislators are responsible for ensuring that those policies are effectively implemented for the benefits of the people that they are designed to serve. This function constitutes a legislative oversight role in holding the government accountable for its action. The legislative branch plays a vital role in ensuring the appropriate management of public funds. It serves as counterbalance to government actions, tasked with safeguarding public interest in all decisions and policies. However, the way legislators execute their roles differs from one country to another. Regardless, the integration of technology into governance is shaping government operations in Nigeria, including how the legislative arm of government performs their duties.

Technology has become an indispensable tool in modern public financial management, particularly within the appropriation process. Appropriation, the legislative authorization to allocate funds for specific purposes requires a high level of precision, transparency and accountability. The qualities are generally enhanced by using ICT tools such as budgeting software, financial information systems, and digital dashboards streamline budget preparation, review, debate, and implementation phases, ensuring timely and data-driven decisions (Andrews & Shah, 2005). Many legislatures now use electronic document management systems and online portals to provide lawmakers with real-time access to budget proposals, fiscal projections, and expenditure reports. This enables more informed deliberation and reduces reliance on voluminous printed documents. According to Schick (1998), ICT facilitates the availability of budgetary information across multiple departments, thus improving inter-agency coordination and legislative scrutiny. For instance, the use of integrated financial management information system (IFMIS) helps track budget allocation against actual expenditures flagging discrepancies early enough for legislative intervention. In countries like

Kenya and Ghana, empirical studies have shown that the implementation of IFMIS has led to greater budget discipline and reduced leakages in public spending (Wescott, 2008).

One significant contribution of technology is the automation of budget preparation and documentation. E-budgeting systems enable executive agencies to submit budget proposals electronically, allowing legislators and budget committees to access and analyze these documents more quickly and effectively. This has been shown to reduce errors and bureaucratic delays. In South Korea, for example, the implementation of an e-budgeting system led to more structured and transparent budgetary allocations (Kim et al., 2012). In Nigeria, digital platforms like the Budget Office's online portal allow stakeholders—including legislators—to view budget performance and appropriation breakdowns, contributing to improved public sector accountability (BudgIT, 2020).

In legislative processes, ICT also supports deliberations and decision-making. Parliamentary Information Management Systems (PIMS) provide legislators with tools to access and analyze budgetary data, committee reports, and audit outcomes. This improves the quality of debates and enables evidence-based appropriations. According to Leston-Bandeira (2015), the use of digital technologies in parliaments has enhanced legislators' ability to scrutinize government proposals and promote fiscal discipline. Moreover, technologies such as Geographic Information Systems (GIS) and data visualization tools allow lawmakers to assess the regional equity and developmental impact of proposed allocations.

Technology also facilitates public participation in the appropriation process. Through open budget portals, e-town halls, and social media platforms, citizens can engage in the budget cycle by submitting inputs, monitoring allocations, and holding officials accountable. The Open Budget Survey (IBP, 2021) highlights that countries with higher ICT integration in their budget processes tend to have greater fiscal transparency and citizen trust in government.

Furthermore, the use of data analytics and visualization tools supports the analysis of complex fiscal data, making it easier for legislators to assess the impact of proposed appropriations. For example, digital dashboards can present budgetary trends, sectoral allocations, and performance indicators in visually engaging formats. This not only improves the efficiency of parliamentary committees but also strengthens evidence-based decision-making (Wehner, 2006).

Moreover, technology has also empowered public participation in the appropriation process. Online portals and mobile apps now enable citizens to track government spending and provide feedback, fostering greater transparency and trust in the budget cycle. For instance, participatory budgeting platforms in Brazil and Kenya have allowed communities to influence spending priorities, thus democratizing the appropriation process (World Bank, 2018). These innovations not only enhance accountability but also align fiscal policies with the needs and preferences of citizens.

Despite these benefits, technological adoption in parliament in general, and in the appropriation process in particular, is still not widespread. The remarkable efforts by the 9th Assembly of Nigeria's parliament to adopt the use of technology in the appropriation process calls for further analysis of the potentials and challenges of technology adoption.

1.2: Statement of the Problem

The appropriation process is one of the critical works of the legislature. It deals with allocation and management of public funds. Transparency in this process is essential for ensuring accountability, reducing corruption, and fostering public trust. With the rapid advancement of technology various tools and platforms have been introduced to enhance transparency and improve operational efficiency. However, the effectiveness of technology adoption in

achieving transparency within the appropriation process has not been thoroughly examined, particularly in the context of the 9th Assembly.

Despite the potential benefits of technology, the extent to which technological adoption can improve the appropriation process in Nigeria remains unclear. This gap is particularly evident as the role of technology in facilitating transparency has not been systematically studied. The notable efforts of the 9th Assembly in adopting technology, particularly the use of Microsoft Excel, in the appropriation process, calls for investigation into the feasibility and prospects of technology adoption in the appropriation process and potential barriers. In the consideration of these, the purpose of this study is to understand the prospects and barriers to technology adoption in the appropriation process in Nigeria.

1.3: Research Questions

The research will explore and answer the following questions:

- (1) What are the prospects and potentials of technology adoption in the appropriation process in Nigeria?
- (2) What are the key challenges and barriers to the effective adoption of technology in the appropriation process in Nigeria?

1.4: Research Objectives

This study aims to seek answers to the aforementioned research questions. Specifically, the study aims to achieve the following objectives:

- (1) To explore the prospects and potentials of technology adoption in the appropriation process in Nigeria.
- (2) To examine the barriers and challenges to the effective adoption of technology in the appropriation process in Nigeria.

1.5: Significance of the Study

Although many studies have explored the appropriations process in Nigeria, none has offered detailed analysis of technology adoption during the 9th Senate, particularly in the context of the appropriation process and its role in enhancing transparency. Therefore, this study is significant on three accounts: theoretical practical and policy making.

First theoretically, this study will contribute significantly to the E- government and E-democracy Theory by providing empirical insights into it prediction concerning how technology adoption affects transparency in the appropriation process, ultimately providing an evidence-based analysis of the impact of technology in appropriation process during the Senate. Findings from the study will offer a practical perspective on how technology adoption in governance aligns with the principle of (the theory) and impact of technology and transparency in appropriation process.

Second, practically, the study will offer statistical evidence and insights into how technology adoption has contributed to transparency in the appropriation process. In addition, it will detail how technology enhances the efficiency of the legislature in managing appropriation matters. Additionally, by examining the challenges and barriers faced by the Senate during technology adoption, the study will provide valuable information on potential obstacle and solutions, helping future initiative to avoid similar drawbacks.

Moreover, during the budget scrutiny process, the Committee on Appropriations, along with other standing committees and sub-committees, play a crucial role. Therefore, the findings from the study will directly benefit these committees. The result will highlight the strength and weakness of the Appropriation Committee in budget scrutiny, providing valuable insights that can help identify the area where additional training is needed in order to enhance their effectiveness in budget evaluation. What is more is that there are numerous donor agencies in Nigeria that focus on democratic development. These agencies allocate their resources towards

strengthening the country's parliamentary system. Consequently, the findings of the study will help those agencies identify the most needed areas to invest in capacity building.

Third, in terms of policy-making, the study's findings will be valuable for the 1 Senate and the entire legislators in the country. It will also provide policymakers with insights into how new technological tools can be effectively utilized in managing appropriation-related matters and other legislative responsibilities. Understanding how technology impacts transparency in the appropriation process is crucial for improving accountability in government spending. Therefore, this study will shed light on how technological tools can facilitate oversight and accountability.

1.6: Scope of the Study

The study aims to understand the prospects and challenges of technology adoption in the appropriation process in Nigeria using the enactment stage of the budget process in the National Assembly as the focal point. The entire appropriation process commences from the budget preparation stage to the auditing stage. However, for the purpose of this study, adoption of technology is only examined within the scope of the enactment and approval stage. This is the stage of the budget process where the budget proposal is revised and scrutinised by the legislature. Furthermore, while the study aims to capture the dynamics of technology adoption in the National Assembly, the focus is on the Senate.

1.7: Operational Definitions of Terms

1.8: Organization of the Study

The study confines its investigation on technology adoption in the appropriation process case study of the 9th Senate. Structurally, the research is organized into five chapters. The first chapter has provided the broad context for the entire research; setting the research questions and highlighting the research objectives. The second chapter presents the literature review,

theoretical approach and analytical framework. Chapter three contain research methodology of the study. Chapter four is the presentation, analysis and discussions of the result. Chapter five is the summary of major findings and recommendation.

CHAPTER TWO

LITERATURE REVIEW AND THEORITICAL FRAMEWORK

2.0: Conceptual Framework

2.1: Budget

Budget is one of the most fundamental instruments of governance, planning, and accountability in both public and private sectors. In government, the budget serves as a financial blueprint that outlines the expected revenue and planned expenditures for a specific fiscal period, usually one year. Beyond being a statement of income and expenses, the budget reflects policy priorities, economic strategies, and social commitments. It serves as a tool for planning, coordinating, and controlling financial resources to achieve set objectives. According to Wildavsky (1986) a budget is a series of goals with price tags attached. Similarly, the International Monetary Fund (IMF, 2014) defines a government budget as a statement of the government's planned receipts and expenditures during a fiscal year, including proposed revenue-raising measures and spending priorities. From public finance perspective, Rosen and Gayer (2014) explain that budget reflects policy choices and the trade-offs involved in allocating scarce resources among competing needs.

The primary goals of a government budget include resource allocation, ensuring funds are directed to priority sectors such as health, education, and infrastructure; economic stability, using fiscal tools to manage inflation, employment, and growth; income redistribution, promoting equity through taxes and social welfare programs; Public Accountability, offering transparency and enabling citizens to track how public funds are used; and debt management, balancing revenue and expenditure to avoid excessive borrowing.

A national budget is one of the most important instruments of economic governance. It outlines a government's plan for raising and spending public resources over a defined period, usually a fiscal year. Three central pillars define the structure and effectiveness of any budget: **revenue**,

expenditure, and the resulting **deficit or surplus**. Understanding how these elements interact is critical to evaluating fiscal policy, economic stability, and public sector performance. It is therefore important to define these three elements of budget.

Revenue refers to the total income generated by a government or organization from its various sources, used to finance its operations, projects, and services. In public finance, revenue is primarily classified into tax and non-tax sources. According to Musgrave and Musgrave (1989) revenue is the income that the government collects to finance its activities. It includes all funds that flow into the treasury from both tax and non-tax sources. The Organization for Economic Co-operation and Development (OECD, 2011) defines revenue as all resources received by a government, including taxes, social contributions, grants, and other receipts, to fund public services and investment. The International Monetary Fund (IMF, 2014) Revenue encompasses all non-repayable receipts, including tax collections, grants, and other income, that increase the net worth of the government.

From the above definition, it is clear that revenue forms the foundation of the budget because it determines how much the government can spend without borrowing. A government's ability to raise sufficient revenue is essential for economic sustainability and policy

Expenditure plans refer to the structured allocation of financial resources by a government or organization toward various functions, programs, and services over a defined period—usually aligned with the fiscal year. These plans reflect policy priorities and form a core part of the budgeting process. According to Rosen and Gayer (2014) expenditure planning involves decisions about how much to spend, on what, and for what purposes. It reflects the government's priorities in terms of resource allocation. The International Monetary Fund (IMF, 2014) defines expenditure as all outflows of resources from government units to other sectors, including consumption, investment, subsidies, and interest payments. From a public administration perspective, Premchand (1983) explains expenditure planning as a crucial

component of public financial management, ensuring that limited public funds are allocated efficiently across sectors to achieve development goals.

The balance between revenue and expenditure is essential for maintaining fiscal discipline. Overspending relative to revenue leads to a budget deficit, while underspending may cause underperformance in public service delivery.

Deficit or surplus projections are estimates made during the budgeting process to determine whether government revenues will be sufficient to cover expenditures over a fiscal period. These projections indicate the expected fiscal balance, which can either be a deficit (spending exceeds revenue) or a surplus (revenue exceeds spending). Blanchard and Johnson (2013) note that projections of deficits or surpluses are crucial for fiscal sustainability, helping to anticipate financing gaps, assess debt trajectories, and guide macroeconomic policy. According to Rosen and Gayer (2014) budget deficit occurs when government spending exceeds its revenue, whereas a surplus indicates that revenues are greater than expenditures. Projections of these balances help policymakers plan for borrowing needs or saving opportunities. The International Monetary Fund (IMF, 2014) defines fiscal balance as the difference between total government revenue and total government expenditure. A positive balance reflects a surplus; a negative balance, a deficit. The size and frequency of deficits (or surpluses) influence public debt, interest rates, inflation, and investment, all of which have broader implications for the economy.

2.2: Appropriation Process

The appropriation process is a fundamental component of public financial management and democratic governance. It refers to the formal procedure through which legislative bodies authorize the executive branch to incur expenditures and allocate public funds for specific purposes. This process is essential in ensuring transparency, accountability, and fiscal discipline in the use of public resources. In democratic systems, the power of the purse is a

core legislative function, reflecting the principle that government expenditures must be subject to legislative scrutiny and approval (Lienert, 2003).

The appropriation process typically begins with the preparation and submission of the executive budget proposal to the legislature. This proposal outlines the government's revenue estimates and proposed expenditures for the upcoming fiscal year. The legislature then undertakes a comprehensive review through its budget and appropriations committees, which analyze the proposals, conduct hearings, and consult relevant stakeholders. This stage is crucial for aligning the budget with national development priorities, policy objectives, and fiscal sustainability (Alesina & Perotti, 1996).

Following legislative review, the appropriations bill is debated, amended if necessary, and passed by the legislative chambers. Once enacted, it becomes the legal authority for government agencies to commit and spend public funds. In many systems, this process is governed by constitutional or statutory provisions that define timelines, procedural steps, and fiscal rules. For instance, in Nigeria, the appropriation process is guided by the 1999 Constitution and the Fiscal Responsibility Act, which emphasize legislative oversight and public accountability (Ogunlana, 2020).

The appropriation process does not end with the passage of the budget. Implementation, monitoring, and evaluation are equally critical phases. Public financial management systems track expenditure to ensure funds are used as appropriated. The legislature, through public accounts committees and audit institutions, oversees this implementation. Any deviation from appropriated funds without legislative approval constitutes a breach of budgetary discipline and may result in sanctions. This underscores the role of appropriation in curbing misuse of public funds and promoting transparency.

In conclusion, the appropriation process is a central mechanism through which legislatures exert control over public expenditure and uphold democratic accountability. It bridges policy

formulation and fiscal implementation, ensuring that government spending aligns with national priorities and legal mandates. Strengthening appropriation processes through institutional capacity building and legal reforms remains critical for improving governance and public sector performance.

2.3: The Role of Legislature in the Budgeting Process

The legislative branch of government plays a vital role in shaping, approving, and overseeing the budget, ensuring that public funds are used effectively and in alignment with the priorities of people and society (Martins, 2021). As budget embodies a government priorities in economic and social policy, serving as a key tool for implementing political decisions. It allows resources to be distributed among all social strata and plays a role in addressing poverty. Simply because government funds come from taxes and duties paid by the citizens, who therefore have a right to oversee how these resources are utilize Gaspard (2016). In other words, the essence of legislative representation is to allow lawmakers to act on behalf of the public to ensure that taxpayer's money is properly spent in accordance with interest of their constituents in particular and general public at large.

Parliaments have taken on increasingly vital roles in modern governance, which was once upon a time overshadowed by strong executive branches, they now play prominent roles in broader governance activities in both established and emerging democracies (Douglas, 2023). This shift is driven by factors like citizens' demands for independent parliamentary roles and the growth of institutions that support parliaments, helping to bridge the information gap between the executive and legislature. It aligns with a broader trend toward transparent governance, where the open nature of parliamentary processes enables greater involvement from civil society, experts, and citizens (Murphy, 2020). This has deepened legislative engagement in the budget-making process. Their responsibility in this process include oversight, legislative authority, budget approval, amendments among others (Kithatu-Kiwekete, 2019). Worthy of note, these

roles vary globally, shaped by factors such as political and electoral system, legislative powers, political will and opportunity, and available technical expertise

One of the critical components in budget making process is the oversight role of the lawmakers. The concept of oversight means holding the government accountable through the assessment of economic assumptions, budgetary plans, and evaluating performance in many areas, especially, the ones with measurable indicators (Gaspard (2016). Parliamentary oversight can encompass a wide range of activities, including scrutinizing government activities, evaluating budget decisions, conducting investigations, questioning government officials, and making recommendations to enhance transparency, accountability, and the overall effectiveness of government operations (Rendon, 2017).

Khumalo (2015) outlines two primary avenues for parliamentary oversight of the executive. The first, known as the ex-ante stage, occurs in the initial phase of the budget process, while the second, the ex-post stage, takes place in later phases. Ex-ante oversight involves parliamentary review to assess the necessity, effectiveness, and anticipated impact of government plans. Ex-post oversight, by contrast, focuses on evaluating the implementation of policies, projects, and programs previously approved by parliament. The prime aim of parliamentary oversight is to ensure that the executive branch operates within legal boundaries that serves public interest, and effectively implement policies and programs. In other words, oversight aims to prevent abuses of power, corruption, and resources mismanagement by holding the government accountable for its action (John, 2022).

The core power of appropriation grants the legislature significant authority in distributing funds among competing priorities. Beyond this initial role, legislatures also exercise substantial influence over budget execution. Agencies are generally required to adhere to the specific provisions outlined in appropriation accounts when spending funds throughout the year. The shift towards more prominent parliamentary roles strengthens their involvement in the budget-

making process (David, 2019). Budgets are essential tools for effective economic and financial management, widely employed in government to drive economic growth and development. Their significance in the public sector has been extensively explored by scholars over recent decades. According to the organization for Economic Co-operation and Development (OECD) a budget is a comprehensive and coordinated financial plan that allocates resources across various government sectors and programs. It serves as a forward-looking document, detailing financial allocations while also reflecting the government's policy priorities. It outlines how resources will be utilized during a specific period and is typically expressed in monetary terms. The budget-making process inherently addresses the needs and desires of the public when allocating resources. It mirrors the preferences, priorities, and requirements of the society it serves. Budgeting serves as a mechanism for the government to formulate strategies that effectively meet the demands of its populace (Shawe, 2023). In the same way, Citro (2021) points that budget-making process serves a managerial role and external accountability role. The managerial function assigns objectives to managers for accountability, while the external accountability function makes the government answerable to the legislature and external stakeholders. Similarly, Kithatu (2019) opines that budget has a variety of roles, encompassing functions like planning, evaluating performance, coordinating activities, executing plans, facilitating communication, motivating actions, and granting authorization. These functions highlight the essential mechanisms of a results-focused budgetary system. Definitions of a budget underscore its fundamental characteristics: comprehensiveness, coordination, financial representation, a future-oriented perspective, and a defined timeframe. In the evolution of representative government, fiscal management and budgeting were initially under the purview of representative bodies, as seen in the United States Congress during the 19th century. Budgeting was primarily a legislative responsibility, although the executive branch also played a role in its execution. Presidents occasionally reviewed and altered agency requests, but there

was a lack of consistency in their involvement. Budgeting procedures lacked coherence during this period, marked by budgetary disorganization and deficits in federal finance. The need for effective budgeting became evident, driven by fiscal crises and the demand for better financial management (Douglas, 2023).

This historical context illustrates the evolving relationship between legislative bodies and the budgeting process. The transition from a purely focus to collaboration with the executive branch reflects the increasing complexity of modern budgeting. This evolution underscores the need for a comprehensive and cohesive approach, aligning with the shifting dynamics of government expenditures and revenue Kithatu (2019). In terms of enhancing the role of parliament in the budget-making process, this history underscores the importance of collaboration between the legislative and executive branches. It suggests that effective budgeting requires a coordinated effort where parliament seeks input and guidance from the executive, particularly in complex financial matters. This collaboration can lead to more informed budget decisions that consider both policy objectives and fiscal realities Gaspard (2016). In other words, understanding the historical evolution of budgeting reinforces the idea that effective budget-making requires the active involvement of Parliament in collaboration with the executive. This enhances the oversight, transparency, and coherence of budgetary decisions, ultimately contributing to better governance and financial management.

The existing literature on budget processes discusses a fundamental tension between the roles of the executive and Parliament. There is a widely accepted understanding that the executive holds the primary responsibility for initiating the budget due to its possession of comprehensive information necessary to make decisions regarding revenue and expenditure. The budget process encompasses the stages through which government develop, evaluate and approve budget proposals. It involves a structure sequence of interrelated activities ranging from preparation, submission, execution, audit and review. These stages are normally carried out

according to institutional and legal frameworks to ensure a systemic and accountable approach to budgeting. According Onah and Innocent (2017) budget process is conducted within the budget cycle, which is recurring sequence of events that ends with the approval of budget each year. This cycle enables the system to integrate and adapt to new information, thereby enhancing government accountability. Although, the current budgetary system may not always fully ensure adherence to this principle of accountability, the periodic nature of the cycle plays a crucial role in promoting and sustaining effective governance. Adeniyi (2008) argues that sustained success in budget implementation can drive economic growth and development in a country. Contrariwise, poor budget management may lead to economic stagnation, poverty, and unemployment. This highlights the significance of budgeting in the lies of individuals, organization and nations alike. Therefore it is essential that this responsibility is confined to a single branch of government. In a similar view, McCurdy (1997) argues that successful budget formulation and implementation must account for and adapt to its social, economic and political context, as these environments significantly influence effectiveness, efficiency and overall performance. The impact of these factor can be either positive or negative, depending on the administrative capacity and the ability to respond to environmental demands.

In Nigeria, the 1999 Constitution, (as amended) designates the executive and legislative branches as the major players in budget process. Section 4, 59, and 80-81 of the Constitution outline the powers and responsibilities of these branches concerning the allocation and expenditure of national funds. These provisions are designed to uphold the principles of separation of powers and checks and balance between the two branches. To ensure that public resources are effectively and properly used by public officials for the provision of public good, the National Assembly, in exercise of its powers in Section 80 and 81 of the 1999 Constitution (as amended) is empowered to carry out oversight on the executive arm of government by ensuring that the provisions of the budget is complied with.

Oshisami and Bhattachary (2000) provide an excellent overview of the entire budget process in Nigeria that is from its initial stage to completion.

(a) Preparation of Estimates: At this stage, the executive branch sets the overall financial policy. Based on instructions from the Ministry of Finance and other agencies prepare their estimates which are examined and scrutinized accordingly.

(b) Detailed Planning: The budget office develops a more detailed version of the financial plan and issue a circular to ministries, instructing them to prepare their estimates according to budget guidelines.

(c) Submission and Review: Ministries submit their estimates to the Budget Office, which reviews and makes necessary adjustment.

(d) Aggregation: The Budget Office consolidates the estimates into a comprehensive document known as Consolidated Revenue and Expenditure, which is then submitted to the President for approval.

(e) Presentation to the National Assembly: The President presents the budget to the National Assembly in the form of Appropriation Bill.

(f) Legislative Review: The National Assembly debates the bill, invites ministries and agencies to defend their proposals if needed, makes modification and then passes the budget. The revised bill will be sent back to the President for assent.

(g) The Presidential Assent: The President assents to the Appropriation Bill, which then becomes an Act. (h) Implementation, the Minister of Finance is authorized to release funds to ministries.

As stated earlier, the National Assembly is granted the authority to conduct enquiries into any matter within its legislative jurisdiction under Section 88 of the Constitution. It also has the right to investigate any individual, ministry or government department with the duty or obligation of enforcing or administering laws enacted by it, as well as the disbursement or

administration of funds allocated or to be appropriated by legislators. These powers are intended, among other things, to fix flaws in existing laws and introduce new ones, to reveal abuse, inefficiency, or waste in the system, and to disburse funds appropriated by the legislature. The National Assembly has the authority under Section 89 to obtain evidence for the investigation, mandate that evidence be submitted under oath, and compel the presence of witnesses on the threat of prosecution if they fail to appear, and so on.

2.4: Modern Technology and Good Governance

Modern technological advancements have transformed all areas of human activity including politics and governance. Digital transformation has impact on all aspects of life, from economy and governance to the way in which human interact. The speed of this transformation is accelerating, to such an extent that there is an impression that some technologies, especially artificial intelligence, may soon bring about a revolutionary change for people, institutions and societies are not yet fully prepared (Mergel, 2021).

The growing complexity of social issues and the demand for public accountability have driven government globally to embrace Information and Communications Technology (ICT) to improve public service delivery through various e-government initiatives. The use of ICT in the public sector is anticipated to foster more effective citizen engagement, known as e-participation (Abdul Kareem, 2022). Citizens are increasingly aware of their rights to receive essential services conveniently at their doorsteps. Governments around the world have recognized the need to provide faster, more efficient services, making e-governance a vital tool for good governance. This information-age paradigm shift is defined by the integration of citizens and business, driven by their choices of service providers and access method. The foregoing represents a fundamental change in governance, influencing how e-governance are implemented across central, state and local government. This new approach to public

administration, embodied in the concept of e-governance, enhances accessibility to government information (Trivedi, 2008).

Towards this end, governments invest considerable funds and other infrastructural resources towards e-government. According to Global IT spending report (2024) IT spending worldwide is projected to reach over five trillion US Dollars in 2024, a nearly eight percent increase on 2023 spending. Today, many countries are leveraging Information and Communication Technology (ICT) to enhance their operation. According to Akunyili (2010) like many developing countries, Nigeria Joined the global wave of ICT primarily as a consumer, especially in the areas of personal computers and digital electronics. In Ojo (2013) Nigeria's rapid adoption of ICT began about two decades ago, transforming nearly every aspect of government, business, and daily life. Initiated as an IP-based private network using broadband technology in 1998 and upgraded in 2004. In essence, this leverages ICT to improve transparency, facilitate rapid information dissemination and boost administrative efficiency. Aneke (2009) observes the significant progress in expanding e-government implementation in Nigerian. The government aims to expand e-government implementation from federal department to state and local public service by establishing a funding mechanism for governmental organization. This initiative seeks to increase computer access nationwide, promoting digital inclusivity and efficiency across all level of government.

2.5: Barrier to Adoption of E-government in Nigeria

Financial constraints have been consistently identified in literature as a major barrier to technology adoption across various sectors and regions. Several recent studies have explored this challenge, highlighting its pervasive nature and the multifaceted ways in which limited funding hinders organizational progress in technology integration.

Philbin et al. (2022) provide a comprehensive analysis of how financial limitations affect the adoption of technological innovations, particularly among small and medium-sized enterprises

(SMEs). Their study emphasizes that constrained budgets restrict the ability of these firms to invest in new tools, upgrade technological infrastructure, and train personnel adequately. The authors argue that these financial challenges create a cyclical barrier: organizations unable to adopt technology remain less competitive, which in turn impacts revenue generation and further limits future investment capabilities. This study is significant in showing how financial resource gaps create long-term disadvantages in technological progression.

In a similar vein, Abdullahi et al. (2021) examine the impact of financial constraints on ICT adoption among small-scale agribusiness enterprises in Somalia. Their research reveals that limited access to credit and the high cost of ICT infrastructure significantly deter these enterprises from embracing technological innovations. The study finds that despite recognizing the potential benefits of ICT, such as improved productivity and access to markets, many businesses are unable to implement these tools due to prohibitive costs. This underscores the broader issue of financial exclusion and its direct implications for digital inclusion in developing economies.

Alnajjar et al. (2025) further expand on this narrative through a case study exploring AI readiness among healthcare SMEs in Finland. The study identifies financial constraints as a principal impediment to the adoption of artificial intelligence technologies. Unlike larger organizations with diverse funding streams, SMEs in the healthcare sector often struggle to allocate funds for advanced technological investments. Alnajjar and colleagues argue that without targeted financial support or public-private partnerships, many healthcare providers will remain technologically underdeveloped, thereby limiting the sector's overall efficiency and innovation capacity.

Chowdhury (2024) provides a broader contextual analysis of digital transformation challenges in organizations, citing financial limitations as a central issue. The article notes that many organizations, particularly in the public sector and non-profits, operate under strict budget

constraints that leave little room for technology investments. Moreover, limited financial resources not only affect the procurement of digital tools but also hinder the hiring of skilled personnel and the implementation of continuous professional training—key components of a successful digital transformation strategy.

In today's digital era, the shift from traditional government operations to e-government platforms has redefined public administration. Recognizing the transformative power of information and communication technology (ICT), governments worldwide are increasingly leveraging digital tools to boost transparency, improve efficiency, and make services more accessible to all citizens. Yet again, in some part of the world, the landscape of e-government adoption has been slow. Even as e-government promises myriad benefits, its embrace by the citizenry remains anxious, people are skeptic about it with apprehensions, particularly concerning the sanctity of their private information. This concern resonates in the developing world (Carlo et al., 2012).

E-government implementation faces numerous challenges that can obstruct its progress. The complexity of e-government initiative introduces a broad range of obstacles to the effective implementation. This is attributable to number of factors: political, administrative, infrastructural, demographical, and socioeconomic that play a critical role in either supporting on hindering e-government efforts. Samsor (2020) views cybersecurity threats and moderate resistance to change in operation as a significant drawback to the broader acceptance of e-government. In addition, not all citizens are having access to smartphones, computer or internet connection in some part of the country especially, the rural areas. Khan et al. (2021) opines that internet service quality, especially in terms of ease of navigation, time response, and information accuracy as significant determinant.

Another group of literature view significant correlation between e-government adoption and people confidence towards e-government platforms and their intention in using these services.

Trust in e-government evaluates how much confidence users have in the security, credibility of information. As opined by Qishun (2023) that trust is fundamental in digital platforms especially when sensitive information is involved. For this reason, a higher level of trust is typically associated with greater likelihood of service adoption. In the same way, according to Monohran (2020) societal perspective about technology and cultural attitudes towards governance have a great influence on how citizens perceive and engage with e-governance. Similarly, Sabani (2020) stressed that socio-cultural and societal influence that mold user perception, subsequently, affecting behavior. While perceived security holds direct in many situations, its influence indirectly shapes additional perception related to factors. Quality of information and the system indirectly modulate the value perception users attribute to e-government services, influencing their decisions.

Against the back drop of the above, it is clear that ICT plays a vital role in fostering transparency. Hood (2006) defines transparency as the right and ability of citizens to access information about government. The idea of transparency has gained considerable momentum with the emergence of computing and Information and Communication Technology (ICT) that facilitated the application of ICT to government function and procedure with the purpose of increasing efficiency, transparency and citizen participation.

Transparency emerged as a key international issue following World War II, gaining importance during post-war negotiations. However, it took many nations a significant amount of time to adopt transparent practices. By the mid-1980s, only 11 countries had enacted freedom of information laws. By the end of 2004, this number had increased to 59 nations (Braman, 2006). Nowadays, transparency and right to access government information are now globally recognized as fundamental to democratic participation. They are vital for fostering trust in government, preventing corruption, supporting informed decision making, ensuring the

accuracy of government data, and providing essential information to the public, business and journalist among others (Quinn 2003).

ICTs offer countries a new approach to creating transparency and promoting anti-corruption. Many nations with transparency laws have directly tied the implementation of these laws to the implementation of ICT-based initiatives, often through e-government. According to Sabharwal (2009) ICTs can reduce corruption by promoting good governance, strengthening reform-oriented initiatives, reducing potential for corrupt behaviors, enhancing relationships between government employees and citizens, allowing for citizen tracking of activities, and by monitoring and controlling behaviors of government employees. ICTs in general show promise as an effective means of reducing corruption, but social attitudes can decrease the effectiveness of ICTs as an anti-corruption tool Shim & Eom, (2009) argue that ICTs hold a great deal of potential for – and are already demonstrating benefits in – anti-corruption, particularly by enhancing the effectiveness of internal and managerial control over corrupt behaviors and by promoting government accountability and transparency.

2.6: Challenges to the Adoption of ICT Government and Budget Process

Resistance to technological change is a well-established barrier that significantly hinders the successful implementation of new technologies within organizations. This resistance commonly arises from a combination of psychological and organizational factors, including fear of the unknown, potential job displacement, and skepticism regarding the benefits of technological innovations. As shown in Table 4.8, a notable proportion of respondents identified resistance to change as a key obstacle in the adoption of technology within the appropriation process.

The advantage of governing through digital technologies are widely recognized. However, there is increasing recognition of the risks of digital technologies that requires similar acknowledgment. While digital tools can revolutionize governance and service delivery by

enhancing efficiency, inclusion, and accountability, they are not inherently neutral. As opined by Wescott (2001) ICT-enabled initiatives as transparency and anti-corruption tools do not guarantee widespread success in all nations that implement them, however. New ICTs have not always led to breakthroughs in transparency or anti-corruption. ICTs historically have sometimes been successful in identifying and removing corruption, but they have also created new means and opportunities for corrupt behaviors. New ICTs can even reduce competition in corrupt behaviors, privileging government officials who know how to operate the ICT. Oftentimes, the same ICT can produce widely divergent results in different nations and cultures. Specifically in terms of e-government, a strong social determinant of the success of e-government projects is the acceptance of the initiative by government officials (Heeks 1998).

Brougham and Haar (2020) conducted a multi-country study examining the impact of technological disruption on job insecurity and turnover intentions. Their findings indicate that employees' awareness of technological advancements significantly influences their perceptions of job security, leading to increased turnover intentions. This study underscores the psychological impact of technological change on employees and highlights the need for organizations to address these concerns proactively.

McClure (2018) explored the phenomenon of technophobia and its association with fears of unemployment and financial insecurity. Utilizing data from the Chapman Survey of American Fears, McClure found that individuals with higher levels of technophobia were more likely to experience anxiety-related mental health issues and fear job loss due to automation. This research emphasizes the psychological barriers to technology adoption and the importance of addressing technophobia in the workforce.

Nugawela and Sedera (2022) conducted a systematic literature review on status quo bias (SQB) in information systems (IS) adoption and continuance intentions. Their study highlights how

SQB influences users' decisions to resist new IS implementations, preferring to maintain existing systems. The authors propose a framework to understand the psychological factors promoting SQB and suggest strategies to mitigate its effects, such as enhancing user involvement and providing adequate training.

Black and Trippi (1990) investigated employee attitudes toward new technology in a unionized manufacturing plant. Their study revealed that resistance to technology adoption was prevalent among both managerial and non-managerial employees, particularly when transitions were not carefully planned, training was insufficient, and organizational procedures were not modified to accommodate the change. This research highlights the critical role of organizational support in facilitating successful technology adoption.

Fischer et al. (2022) examined the impact of employee involvement in decision-making processes on resistance to technological change. Their findings suggest that when employees are included in the planning and implementation phases, resistance to change significantly decreases. The study emphasizes the importance of participatory approaches in managing technological transitions within organizations.

Birkel et al. (2019) focused on the role of perceived value in technology adoption. They found that employees' skepticism about the benefits of new technologies contributes to resistance. The study emphasizes the need for clear communication regarding the value and purpose of technological innovations to foster positive attitudes and facilitate adoption.

Cybersecurity concerns have increasingly been recognized as a significant barrier to the adoption of digital technologies across various sectors. The studies by Phaphoom et al. (2017) and Waliullah et al. (2025) offer compelling insights into how security-related apprehensions influence organizational decisions regarding technological innovations.

Another group of studies view cyber risk as a barrier to the adoption of technology. Phaphoom et al. (2017) conducted a comprehensive survey-based study to identify key technical barriers to cloud service adoption. Their findings reveal that among various factors—such as cost, complexity, and reliability—security concerns stand out as a dominant deterrent. The study quantifies the impact of these concerns, noting that organizations are up to 26 times more likely to avoid cloud adoption due to perceived security risks. This includes fears of data breaches, unauthorized access, and the loss of control over information stored on third-party servers. The authors argue that these concerns are not unfounded, especially given the increasing frequency and sophistication of cyberattacks targeting cloud infrastructure. They advocate for greater transparency from cloud providers, improved regulatory compliance, and stronger encryption protocols to bolster organizational trust and facilitate wider adoption.

In a similar vein, Waliullah et al. (2025) explore the impact of cybersecurity threats on the adoption and growth of digital banking through a systematic literature review. Their analysis synthesizes findings from a wide array of empirical studies and reveals that threats such as phishing, malware, and ransomware attacks have a detrimental effect on both consumer confidence and institutional willingness to adopt digital banking technologies. The authors emphasize that without a reliable cybersecurity framework, banks risk losing customer trust—an essential element for digital transformation in the financial sector. They further highlight the need for integrated risk management strategies, continuous staff training, and customer awareness campaigns to counteract these challenges.

Taken together, these studies underscore the critical role of cybersecurity in shaping the trajectory of technology adoption. While both studies address different sectors—cloud computing in general IT infrastructure and digital banking specifically—they converge on the conclusion that robust cybersecurity measures are a prerequisite for successful and sustainable technology implementation. Without these safeguards, organizations may delay or altogether

abandon plans to embrace new digital tools, thereby missing out on the efficiency and innovation such technologies promise.

2.7: Theoretical Framework

2.7.1: E-government Theory

E-government, or electronic government refers to the use of information and communication technology (ICT) to deliver public services, improve administrative efficiency, and promote transparency and citizen engagement. The theoretical foundation of E-Government is inherently multi-disciplinary, drawing from public administration, information systems, and political science. One of the central theories underpinning E-Government is Technology Acceptance Model (TAM), which posits that perceived usefulness and ease of use significantly influence the acceptance of technology (Davis, 1989). This model has been widely adapted to explain how both public servants and citizens adopt E-Government platforms.

Another key theoretical perspective is the Diffusion of Innovations Theory by Rogers (2003), which explains how new technologies and ideas spread within societies. This theory is relevant in understanding the adoption of E-Government initiatives across different levels of government and among various stakeholders. It helps to identify the characteristics of adopters and the social systems that facilitate or hinder the implementation of E-Government projects. This diffusion is often influenced by institutional readiness, infrastructure, political will, and the digital literacy of the population.

Moreover, E-Government theory encompasses the concept of citizen-centric governance, where the focus shifts from merely automating internal government processes to engaging citizens in the policy-making and service delivery process. This approach aligns with democratic theories that emphasize participation, accountability, and responsiveness. According to Fountain (2001), the “technology enactment framework” illustrates how

institutional structures and technological capabilities interact to shape the outcomes of E-Government initiatives.

In conclusion, E-Government theory provides a robust analytical lens for understanding the digital transformation of governance. By integrating perspectives from information systems, public administration, and political science, it helps scholars and practitioners evaluate the design, implementation, and impact of digital governance. As digital governance continues to evolve, a nuanced understanding of these theoretical underpinnings will be critical for effective policy development and implementation.

2.7.2: E-democracy Theory

E-democracy refers to the use of digital technologies to enhance democratic processes, including political participation, deliberation, transparency, and accountability. The theoretical foundation of e-democracy draws from classical democratic theories, particularly deliberative democracy, participatory democracy, and representative democracy, but adapts these principles to the digital age. At its core, e-democracy theory explores how information and communication technologies (ICTs) can support or transform the traditional mechanisms of democratic governance (Clift, 2003).

One of the most influential theoretical frameworks in e-democracy is deliberative democracy, which emphasizes informed and reasoned discussion among citizens as a vital component of legitimate decision-making. The internet provides platforms such as forums, online consultations, and social media where citizens can engage in policy deliberation and dialogue with their representatives. According to Coleman and Blumler (2009), digital deliberation offers the potential to deepen democratic legitimacy by allowing a broader segment of the population to participate in political discourse, thus addressing the limitations of physical assemblies or town hall meetings.

However, e-democracy theory also acknowledges challenges such as the **digital divide**, misinformation, and unequal access to online platforms, which can reproduce or even exacerbate existing social and political inequalities. Scholars such as Norris (2001) have warned that while ICTs can increase access to information and participation opportunities, they may primarily benefit already politically engaged and technologically literate citizens. Therefore, e-democracy must be implemented with equity in mind, ensuring inclusivity across socioeconomic, geographic, and generational divides.

In conclusion, e-democracy theory provides a framework for understanding how digital technologies can enrich democratic life by enabling broader, faster, and more interactive participation. While the promise of e-democracy is significant, realizing its potential requires careful attention to digital inclusion, civic education, and the integrity of digital platforms. As governments and societies increasingly embrace digital tools, e-democracy theory remains essential for guiding policies that seek to enhance democratic values in the digital era.

2.7.3: Network Society Theory:

Network Society Theory, primarily developed by sociologist Manuel Castells, refers to a new social structure that emerges from the widespread use of digital information and communication technologies (ICTs). In a network society, social, economic, and political relationships are increasingly organized around digital networks, rather than traditional hierarchies or institutions (Castells, 1996). The theory highlights how the advent of the internet and related technologies has transformed how people interact, work, communicate, and exercise power. Central to this theory is the idea that networks, enabled by digital infrastructure, have become the dominant form of organization in society.

At the core of Castells' argument is the notion that the global economy and culture have shifted from an industrial society—based on mass production and centralized control—to a network society, characterized by decentralized, flexible, and adaptive structures. In this new paradigm,

information becomes a critical resource, and those who control or access networks are empowered. According to Castells (2000), the network society is marked by the "space of flows"—a concept describing how information, capital, and power now move through interconnected global networks, often in real-time, transcending geographical boundaries.

Network Society Theory also explores the implications of this transformation on power and governance. Traditional institutions, such as governments and bureaucracies, often struggle to adapt to the speed and flexibility of networked communication. This has led to the emergence of new forms of political and social activism, such as digital movements, online petitions, and decentralized advocacy campaigns. As Bennett and Segerberg (2012) note in their work on connective action, digital media enables individuals to participate in collective action without relying on formal organizations, reshaping the nature of civic engagement.

However, while the network society promotes increased connectivity and participation, it also raises concerns about inequality and exclusion. Access to and control of networks is not evenly distributed, leading to a digital divide between those with technological access and those without. Moreover, surveillance, data privacy issues, and algorithmic control within networks can undermine democratic values and personal freedoms (Van Dijk, 2006). These concerns underscore the importance of critical policy interventions to ensure that networked technologies serve the public good.

In conclusion, Network Society Theory offers a powerful lens through which to understand contemporary social change driven by digital technologies. It emphasizes the transformative power of ICTs in reshaping communication, power relations, and societal organization. As the world becomes increasingly digital, the theory remains relevant for scholars, policymakers, and technologists seeking to navigate and shape the future of society in the information age.

2.7.4: Theoretical Application to the Study

Commonly, it is important for any study to have a theory that can guide its investigation in drawing a right conclusion. This study is not exceptional in this aspect and the theory found suitable for the study is the E-government and E-democracy Theory. By using the e-government and e-democracy framework, this study can systematically explore how technology adoption affects transparency in the appropriation process, ultimately providing an evidence-based analysis of the impact of technology adoption and transparency in the appropriation process during the Senate. In other words, the theoretical framework will guide the study in investigating the nature of the relationship between technological adoption and transparency in the appropriation process in the Senate. This will help to contextualize the findings of the study within broader discussion on governance, appropriation, technology and public accountability.

Scholars have highlighted the significance of e-governance especially the developing countries. Gianluca (2007) observes that e-governance can drive transformation public administration and governance through three major dimensions: economic, social, and governance dimensions. The economic dimension focuses on reducing operational cost to enhance service delivery efficiency, expand coverage and service quality, improve response to social challenges, and increase revenue-generating capacity. The social dimension includes job creation, advancement in education and health, and enhance safety and security for citizens among others. In the same vein, Bertot (2012) argues that ICT provides a cost-effective means for fostering e-transparency and combating corruption, though their effectiveness depends on widespread acceptance among citizens. Grönlund (2010) outlines ICT-based strategies in combating various means of corruption. These strategies include: (1) automation, which remove human intermediaries and reduce opportunities for corrupt practices; (2) transparency, which limits discretionary power; (3) detection, which monitors operation to identify

anomalies; (4) preventive detection, which anticipates potential corrupt practice; (5) awareness-raising, which educate the public about government rules and procedures to enhance their ability to resist arbitrary treatment; (6) reporting, which facilitates the reporting of incidents to enable corrective actions and system improvement; (7) deterrence, to discourage government personnel from engaging in corrupt practice; and (8) promoting ethical attitudes, which involves engaging the public through online discussions to reinforce ethical standers. Achieving these e-transparency goals may involve various ICT tools, including websites, social media platforms, online newspaper, mobile phones and SMS input.

Given the transformative abilities that e-government holds, it has become an imperative mode of governance across the globe. It is advancing rapidly to an extent that it creates an impression that certain technologies particularly artificial intelligence, may soon drive revolutionary changes for which individuals, institutions and societies are not yet fully prepared. The Council of Europe has initiated a reflection on these issues to assist its member states in identifying the challenges of digital transformation and better equipping them to harness its opportunities. For example, the Council has addressed topics such as e-democracy, e-governance, internet governance, the application of artificial intelligence in criminal law, preventing discrimination from biased algorithms, and the manipulative use of social media in electoral campaigns (Mergel, 2012).

2.8: Empirical Literature Review on ICT Adoption in Government and legislature

The adoption of Information and Communication Technology (ICT) in government and legislative institutions has been a subject of growing empirical inquiry. These studies reveal critical insights into the drivers, challenges, and impact of ICT integration across different governance levels. Some empirical studies have shown that several factor influence ICT adoption in government institutions. These include organizational readiness, leadership commitment, staff ICT literacy and infrastructural capacity. Dwivedi, et al. (2012) conducted

a comprehensive review of ICT adoption literature in public administration. The study identified critical factors like leadership support, infrastructure, and legal environment. Karim, & Oyedemi, (2018) investigated ICT use in the legislative processes in Bangladesh and South Africa. The findings from the study reveals that ICT tools enhanced public engagement and legislative transparency but faced institutional resistance. Rahman, (2007) explored the adoption of ICT in parliaments of developing countries. He observed that parliamentary websites improved access to bills and debates, though digital divides limited effectiveness. Mutula and Mostert (2010) in their study on Botswana and South Africa, found that organizational culture and the lack of ICT skills among public servant were significant barriers to adoption. They employed surveys and interview with government employees to reach this conclusion. Gil-Garcia and Pardo (2005) explored technological and organizational factor using data from U.S. state government. Their findings indicate that the level of top management support and finding strongly predict successful ICT implementation. Yildiz (2007) used case studies from OECD countries to analyze e-government implementation and found that organizational readiness, leadership, and public sector reform agendas are central to successful ICT adoption. Ndou (2004) examined ICT adoption in developing countries and highlighted infrastructural and human capital limitations as primary barriers.

Another group of literature have linked ICT adoption with improved legislative performance and service delivery. Leston-Bandeira (2012) conducted a case study of the UK Parliament and found that online platforms improved citizen engagement and parliamentary communication. Obi and Iwasaki (2010) examined legislative e-participation tools in Nigeria and found that ICT tools such as websites and SMS platforms helped increase legislative openness but faced sustainability issues. Mwagiru and Gitau (2018) studied ICT adoption in the Kenyan Parliament and concluded that automation of legislative processes improved bill tracking and document management but was constrained by training and system integration challenges.

Nkwe (2012) in case study of Botswana's e-government initiative, used questionnaires to assess public servant and citizens' views. Based on the findings, the study suggest that e-government systems enhanced transparency, though usage was limited by poor internet penetration and resistance to change. Heeks (2006) analyzed over 40 e-government projects worldwide and found that while ICT had potential to enhance efficiency and accountability, nearly 35% of the projects were total failures due to mismatch between design and local realities. Carter & Bélanger, (2005) examined citizens' adoption of e-government using the Technology Acceptance Model (TAM). The finding shows that trust perceived usefulness were critical adoption factors. Similarly, Misuraca, & Viscusi, G. (2014) reviewed e-participation tools in parliament across Africa and Europe. He observes that ICT initiative improved accountability, but effectiveness varied with political will. In the same way, Bwalya, & Mutula, (2014) assessed ICT implementation in the Zambian Parliament. The study suggest that ICT helps legislators engage constituent but was constrained by digital literacy and resource gaps. Ifinedo (2011) uses the Technology Acceptance Model (TAM) to study African countries. Based on the findings from the study, it is observers that organizational support, ICT infrastructure, and cultural factors impact adoption. Bwalya et al. (2014) conducted a study in Zambia on ICT use in public service delivery and found that while policy frameworks exist, implementation is often limited by lack of funding and technical expertise. Norris (2001) did broad analysis of legislative technology adoption globally. He argues that technology amplifies existing practices; it does not democratize on its own.

Based on the above empirical review, the reviewed literatures confirm that while ICT adoption in governance and legislative bodies holds immense potential for improving service delivery and democratic engagement, success largely depends on contextual factors such as political commitment, infrastructure, and institutional capacity. Further research is needed on long-term impacts and post-implementation assessment.

CHAPTER THREE

METHODOLOGY

3.1 Research Design

This study adopts quantitative research methods. Quantitative research design is a systematic approach to obtaining numerical data to quantify the phenomenon being studied and explore relationships between variables of interest. It relies on numerical data and statistical analysis to test hypothesis and draw conclusions. As Creswell (2009) asserts, the research design is a robust framework that enables data to be quantified to explore relationships among variables. combines these two paradigms within a single study.

Specifically, descriptive quantitative research design is used for this study as the quantified data are analysed using descriptive statistical methods.

In this study, the quantitative phase began with a survey that provided a broad overview of participants' perceptions on the use of technology in the appropriation process.

3.2 Population of the Study

The population refers to the aggregate of individuals, events, or governmental units that are the focus of exploration or study, as described by Krysik and Finn (2007). Given that this study is focused on the Senate, the population of the study comprises of Senators, Staff of the Senate's Appropriation Committee, Civil Society Organizations (CSOs), Policy Experts and Information and Communication Technology (ICT) Experts. Ascertaining the population of the relevant respondents groups is based on the available data and personal experience of the stakeholders that works with the Senate in the appropriation process. An overview of the population of the study is presented in Table 3.1 below.

Table 3.1 Proportionate Population of the study

S/N	Categories	Population
1.	Senate	109
2.	Legislative Staff (Data & Technical Section)	10
3.	Civil Society Organizations (CSOs)	5
4.	Policy/ Budget Experts	5
5.	Information and Communication Technology (ICT) Expert	2
Total		133

Source: Field Survey, 2025

3.3 Sampling Technique

The study adopts a purposive sampling technique. This sampling technique is employed to ensure that respondents are those with the requisite knowledge of the subject matter of the research. The adoption of this technique is justified that not all members of the public or staff of the National Assembly are conversant with the appropriation process and/or technology adoption. So, emphasis is placed on those with good knowledge of the subject matter of the study. Therefore, the goal is credibility not representativeness (Ronah, 2015).

Specifically, for the study, data for quantitative is collected from legislators (in the Senate), legislative staff in the appropriation committee (Data Technical Section), Civil Society Organization (CSOs), Policy/Budget Expert, Information and Communication Expert.

3.4: Sample Size

Unlike the random sampling method, purposive sampling does not require a specific sample size. Rather, the sample is selected and optimised after reaching data saturation. The sample size can vary from study to study. For this study, we aimed to reach the entire population of

interest. However, after few months of data collection, 66 respondents out of the possible 133 respondents were reached and form the sample size of this study.

3.5 Sources and Instrument of Data Collection

The data for this study is sourced from the administration of structured questionnaire to 98 respondents. These respondents consisted of legislators, parliamentary staff, legislative aides, budget and economic experts, ICT experts.

The questionnaire is a structured questionnaire and contains closed-ended questions. The first section of the questionnaire addresses the socio demographic characteristics of the respondents. The following section of the questionnaire contains questions on perception about technology adoption in the appropriation process. In each section, the respondent will be given clear instructions on how to complete the questionnaire.

The questionnaire was sorted, and a unique identification number was given to each questionnaire before data entry. The unique identification number is used to check for any inconsistencies in the data generated.

The data collection for this study is carried out within the premises of the National Assembly.

3.6. Method of Data Presentation and Analysis

The data obtained through the questionnaire is then coded and used for analysis. The method of analysis is frequency and percentages. The data is presented in tables and graphs to enable rapid understanding of the information being presented.

Microsoft Excel is used to enter, process and analyze data, generating the tables and graphs. Descriptive statistics such as frequencies and percentages are used to elicit key inferences from the data.

CHAPTER FOUR

RESULTS ANALYSIS AND DISCUSSION

4.1: Introduction

This chapter presents the analysis and interpretation of the data and information collected during the study. The primary aim is to evaluate the responses obtained through the survey instruments and relate them to the research objectives and questions. The findings are discussed in the context of existing literature to provide insight into the adoption of technology in the appropriation process and its implications for transparency, efficiency, and accountability. Descriptive statistics are presented in tabular form, accompanied by narrative explanations that highlight significant trends and patterns. Relevant studies and empirical comparisons are drawn from both primary data and prior scholarly works to support or contrast the findings. By integrating quantitative results with qualitative interpretation, this chapter seeks to provide a comprehensive understanding of the dynamics surrounding technology adoption in public financial management, particularly within the context of the appropriation process. The discussion aims to not only interpret the results but also to explore their practical implications for policy, institutional reform, and future research.

4.2: Demographic Characteristics of the Respondents

This section presents the socio-economic and demographic information of the respondents. The information is presented in Table 4.1. Generally, it presents the age, gender, educational qualification, experience and profile of the respondents. In terms of age, 7 respondents (10.6%) were between the ages of 18 and 30, followed by 17 respondents (25.8%) aged between 30 and 40, 19 respondents (28.8%) aged 40–50, and 22 respondents (33.3%) aged 50 and above. One respondent (1.5%) did not respond. This shows that most of the respondents are well aged, with over 80% over 30 years of age.

For the gender distribution, 45 respondents (68.2%) were male, while 21 (33.0%) were female. The low representation of female among the respondents highlights the limited participation of women in the budget and appropriation process. Fewer women with experience on the appropriation process means fewer women that would be able to contribute their knowledge and experience to the study. Overall, it reflects a notable gender disparity and the underrepresentation of women in Nigeria's fiscal and public financial management governance.

In terms of educational qualification, none of the respondents had primary education or less, 3.0% had secondary education, 45.4% had tertiary education, and 46.9% had postgraduate education. This suggests that majority of the respondents are well-educated and have the requisite educational background to participate in the study.

Regarding their roles, the respondents were categorized as follows: legislators (Senators) made up 33.3% of the respondents, staff of the Appropriation Committee constituted 21.2%, representatives from Civil Society Organizations (CSOs) accounted for 9.1%, budget and economic experts were 12.1%, and ICT experts comprised 12.1%.

The table also outlines the respondents' years of work experience. Specifically, 10 respondents (15.1%) had 0–5 years of experience, 21 respondents (31.8%) had 5–10 years, and 7 respondents (10.6%) had 11–15 years of experience, 19 respondents (28.7%) had 16–20 years' work experience, and 9 respondents (13.6%) had over 20 years' experience. Further examining their work experience in the NASS or with the NASS or in responsibilities and task related to budget and appropriation process, 10 respondents (15.1%) reported having 0–5 years of experience, 21 respondents (31.8%) had 5–10 years, and 7 (10.6%) had 11–15 years. 26 respondents (39.3%) have over 15 years' experience in this area. 2 respondents (3.0%) had no

experience working in NASS, with NASS or on the budget and appropriation process. This provides additional insight into the experience levels of participants involved in the study.

Table 4.1: Biodata and profile of respondents

Variable	Frequency	Percentage
<u>Age</u>		
18-30	7	10.6
30-40	17	25.8
40-50	19	28.8
50-Above	22	33.3
Blank	01	1.5
<u>Gender</u>		
Male	45	68.2
Female	21	31.8
<u>Marital Status</u>		
Divorced	05	7.5
Married	47	71.2
Single	12	18.0
Blank	02	3.0
<u>Educational Level</u>		
Primary	00	00
Secondary School	02	3.0
Tertiary Education	30	45.4
Postgraduate	31	46.9
Blank	03	4.5
<u>Position</u>		
Lawmaker	22	33.3
Staff of the Appropriation	14	21.2
CSO	06	9.1
Budget Expert	08	12.1
ICT Expert	08	12.1
Others	08	12.1
<u>Years of Experience</u>		
0-5Years	10	15.1
5-10years	21	31.8
11-15years	07	10.6
16-20 years	19	28.7
Over 20 years	09	13.6
<u>Years of Working Experience in NASS</u>		
0-5Years	10	15.1
5-10years	21	31.8
11-15years	07	10.6
16-20 years	19	28.7
Over 20 years	07	10.6
Not Applicable	02	3.0
<u>Years of Experience in Appropriation.</u>		

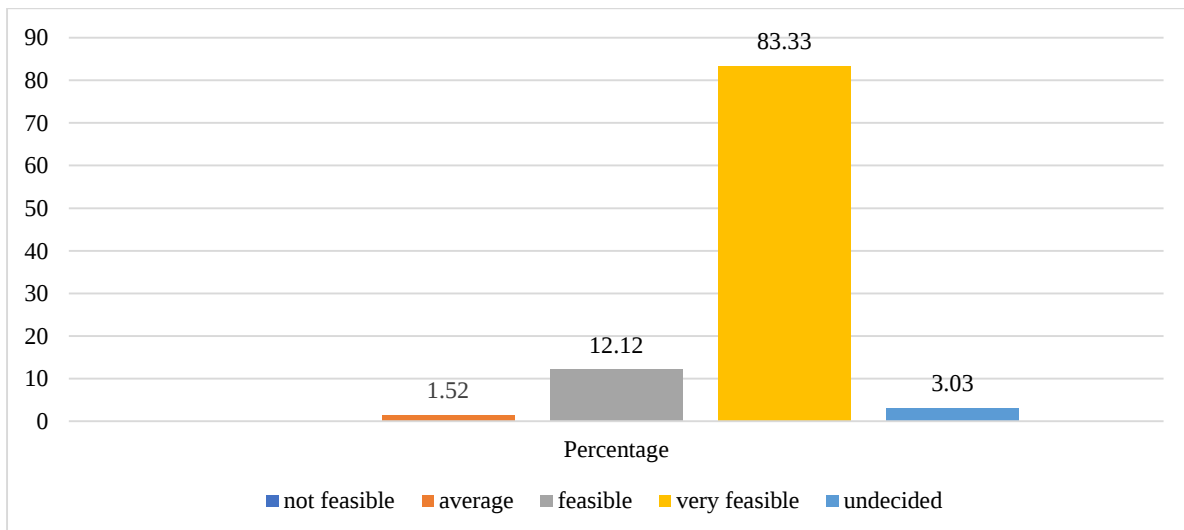
0-5years	13	19.6
5-10years	19	28.7
11-15years	05	7.6
16-20years	13	19.6
Over 20 years	04	6.0
Not Applicable	08	12.1
Blank	04	6.1

Source: Filed Survey: 2025

4.3: Prospects of Technology Adoption in the Appropriation Process

The prospects and feasibility of technology adoption in the appropriation process are examined in this study. 83% of the respondents note that adopting technology in the appropriation process is very feasible, 12.12% agree that it is feasible, 1.52% note it is averagely feasible (Figure 4.1). None of the respondents state that it is not feasible. This suggests that technology adoption in the appropriation process is believed to be at least feasible or very feasible.

Figure 4.1: Feasibility of adopting technology in the appropriation process



Source: Field Survey, 2025

Meanwhile, 88% of the respondents are aware of recent technology adoption in the adoption process in Nigeria (Figure 4.2). In terms of the nature of the technology adopted, 39 of the respondents (59%) noted that they are aware of the adoption of Microsoft Excel software in the appropriation process while 19 respondents (28.8%) are aware of the adoption of GIFMIS.

Figure 4.2: Awareness or knowledge of any adopted recent technology adoption in the Appropriation Process (%)

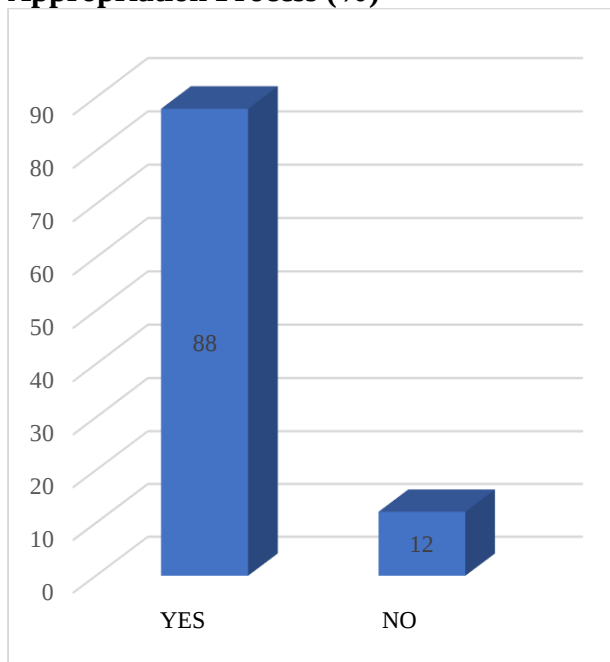
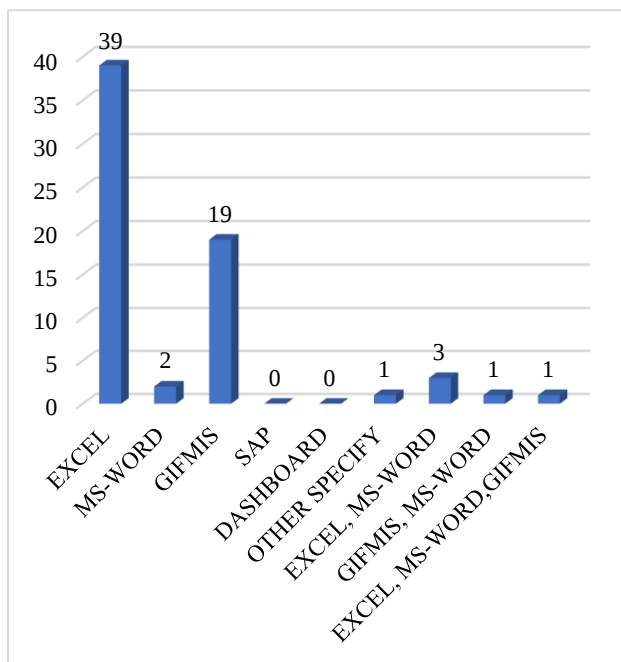


Figure 4.3: Nature of technology in the Appropriation Process (%)

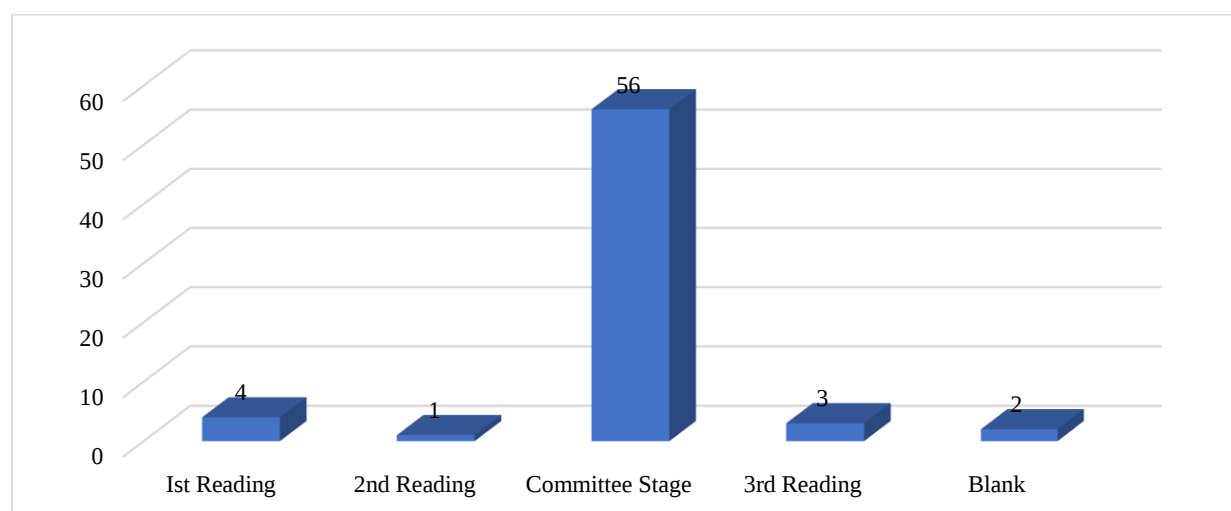


Source: Field Survey, 2025

In terms of the stages of the appropriation process that technology is to be adopted, 56 of the respondents (84.8%) note that technology should be adopted in the committee stage. This is

followed by 4 respondents (6.1%), which note that technology should be adopted in the first reading. 3 respondents (4.5%) note that it should be adopted in the third reading (Figure 4.4).

Figure 4.4: Stages of the Appropriation Process for technology adoption (frequency)



Source: Field Survey, 2025

Table 4.2 notes to what extent the respondents believe that technology adoption could improve the appropriation process. It reveals that 34 respondents (51.5%) strongly agree, and 31 respondents (46.9%) agree that technology can enhance the appropriation process. This suggests unanimity in the belief in the application of technology for enhancing transparency in the appropriation process.

Table 4.2: Technology and improvement in the appropriation process

Response	Frequency	Percentage
Strongly Agree	34	51.5
Agree	31	46.9
Neither Agree nor disagree	0	0
Disagree	0	0
Strongly Disagree	0	0

No response	1	1.5
TOTAL	66	100

Source: Field Survey, 2025

Further probing how technology adoption can enhance the appropriation process in Nigeria, all respondents strongly agree or agree that it can enhance accessibility to legislative documents and budget data (Table 4.3). This aligns with the general understanding of e-governance in its ability to ensure members of the public have access to relevant government documents and information.

Table 4.3: Technology and accessibility of legislative documents and data

Response	Frequency	Percentage
Strongly Agree	32	48.5
Agree	34	51.5
Neither Agree nor Disagree	0	0
Disagree	0	0
Strongly Disagree	0	0
TOTAL	66	100

Source: Field Survey, 2025

All respondents also confirm that technology adoption in the appropriation process can reduce inefficiencies in legislative operations and the appropriation process (Table 4.4). While 46.9% of respondents strongly agree with this, 53.0% agree that technology adoption can reduce inefficiencies in the appropriation process.

Table 4.4: Technology adoption and inefficiency reduction in the appropriation process.

Response	Frequency	Percentage
Strongly Agree	31	46.9
Agree	35	53.0
Neither Agree nor Disagree	0	0
Disagree	0	0
Strongly Disagree	0	0
TOTAL	66	100

Source: Field Survey, 2025

Furthermore, 48.5% of respondents strongly agree that technology adoption can help to track changes in the budget documents and figures while 51.5% agree that adoption of technology can provide greater clarity in tracking changes to legislative texts and budgets (Figure 4.5).

Table 4.5: Technology adoption and tracking of changes in the budget

Response	Frequency	Percentage
Strongly Agree	32	48.5
Agree	34	51.5
Neither Agree nor Disagree	0	0
Disagree	0	0
Strongly Disagree	0	0
TOTAL	66	100

Source: Field Survey, 2025

Table 4.6 indicates that 34 respondents (51.5%) strongly agree that technology adoption in the appropriation process can solve the problem of delays in budget cycle while 31 respondents (46.9%) agree. 1.5% of the respondents neither agree nor disagree that technology adoption can solve the problem of delays in the appropriation process.

Table 4.6: Technology adoption and delays in the appropriation process

Response	Frequency	Percentage
Strongly Agree	34	51.5
Agree	31	47.0
Neither Agree nor Disagree	0	1.5
Disagree	1	0
Strongly Disagree	0	0
TOTAL	66	100

Source: Field Survey, 2025

Similarly, Table 4.7 shows that 30 respondents (45.5%) strongly agree and 34 respondents (51.5%) agree that technology adoption can help to solve the problem of corruption and lack of transparency in the appropriation process. 1 respondent (1.5%) neither agree nor disagree to this assertion and 1 respondent (1.5%) strongly disagree.

Table 4.7: Technology adoption and reduction of corruption in the appropriation process.

Response	Frequency	Percentage
Strongly Agree	30	45.5
Agree	34	51.5
Neither Agree nor Disagree	1	1.5
Disagree	0	0
Strongly Disagree	1	1.5
TOTAL	66	100

Source: Field Survey, 2025

The perception of the extent to which technology can enhance public trust in the appropriation process is presented in Table 4.8. According to the results, 31 respondents (46.9%) strongly agree that the adoption of technology can help enhance public trust in the budget process. 35 respondents, which is equivalent to 53% of the respondents, agree that the adoption of technology can help to enhance public trust in the budget process.

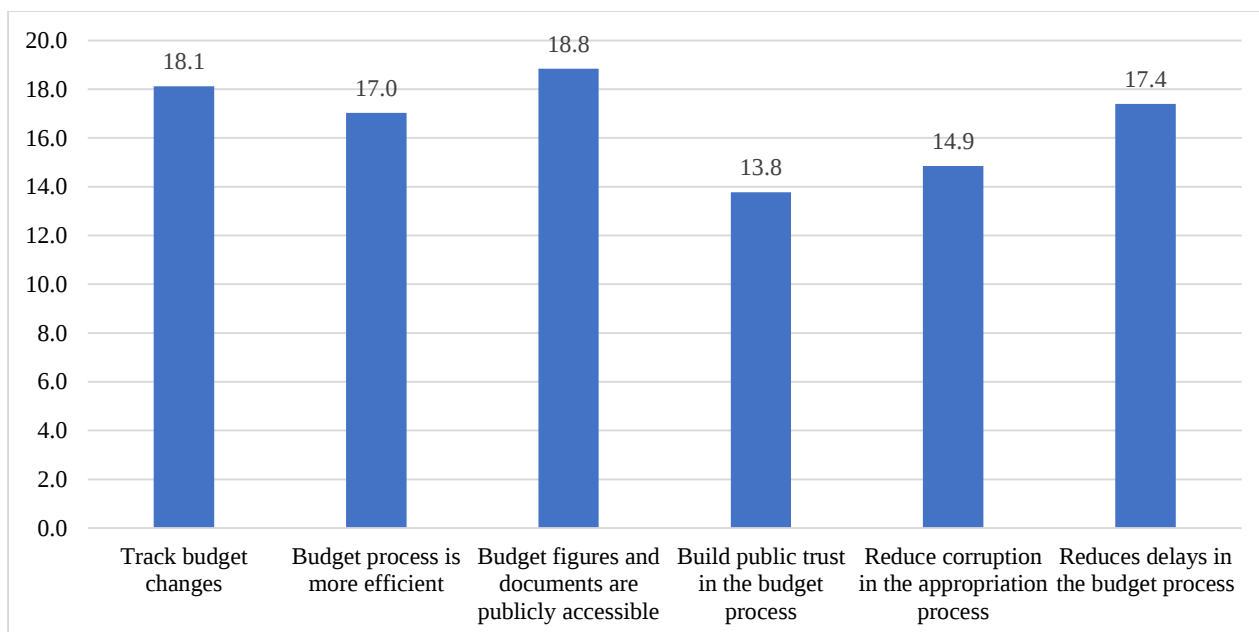
Table 4.8: Technology adoption and public trust in the appropriation

Response	Frequency	Percentage
Strongly Agree	31	46.9
Agree	35	53.0
Neither Agree nor Disagree	0	0
Disagree	0	0
Strongly Disagree	0	0
TOTAL	66	100

Source: Field Survey, 2025

Among the different ways the adoption of technology can improve the appropriation process, 18.8% of the respondents opine that it can make the budget figures and documents more publicly available, 18.1% claim it can help to track changes in the budget, 17.4% note it can reduce delays in the budget process. 17.0% of respondents argue it can make the budget process more efficient. 14.9% and 13.8% claim it can reduce corruption and build public trust in the appropriation process respectively (Figure 4.5).

Figure 4.5: Ways that technology adoption can enhance the appropriation process



Source: Field Survey, 2025

4.4 Challenges and barriers to technology adoption in the appropriation process

This study also examines the barriers and challenges to technology adoption in the appropriation process. According to the results in Table 4.9, 20 respondents (30.3%) strongly agree and 30 respondents (45.5%) agree that the Senate faces significant financial barriers in implementing technological solutions in the appropriation process. 9 respondents (13.6 %) neither agree nor disagree and 7 respondents (10.6 %) disagree that financial barrier is a challenge for adopting technology in the appropriation process.

Table 4.9: Financial barriers in technology adoption in the appropriation process

Response	Frequency	Percentage
Strongly Agree	20	30.3
Agree	30	45.5
Neither Agree nor Disagree	09	13.6
Disagree	07	10.6
Strongly Disagree	0	0
Total	66	100

Source: Field Survey, 2025

Resistance to change is another major challenge for adopting technology in the appropriation. 22 respondents (33.3%) strongly agree to this assertion while 35 respondents (53%) agree

(Table 4.10). 6 respondents (9.0%) neither agree nor disagree that resistance to change is a major barrier to technology adoption. In contrast, 3 respondents (4.5%) disagree with this view.

Table 4.10: Resistance to technology adoption in the appropriation process

Response	Frequency	Percentage
Strongly Agree	22	33.3
Agree	35	53.0
Neither Agree nor Disagree	06	9.0
Disagree	03	4.5
Strongly Disagree	0	0
Total	66	100

Source: Field Survey, 2025

The problem of cyber risks and system failure is also identified as a challenge for technology adoption. As seen in Table 4.11, 22 respondents (33.3%) strongly agree that the risk of cyber threats pose a challenge to technology adoption in the appropriation process. Also, 30 respondents (45.5%) agree that technical challenges, such as system failures or cyber risks, can undermine technology adoption. Meanwhile, 10 respondents (15.4%) disagree with this assertion.

Table 4.11: Technical challenges and technology adoption in the appropriation process

Response	Frequency	Percentage
Strongly Agree	22	33.3
Agree	30	45.5
Neither Agree nor Disagree	03	4.5
Disagree	10	15.2
Strongly Disagree	0	0
Blank	01	1.5
TOTAL	66	100

Source: Field survey, 2025

Manpower constraints, in terms of lack of adequate training for legislators and staff of the appropriation committee, is another key challenge for technology adoption in the appropriation process. Table 4.12 indicates that 34 respondents (51.5%) of the respondents strongly agree, and 28 respondents (42.4%) agree that manpower capacity is a major barrier to effectively

adopting technology in the appropriation process. Meanwhile, 3 respondents (4.5%) neither agree nor disagree with this statement.

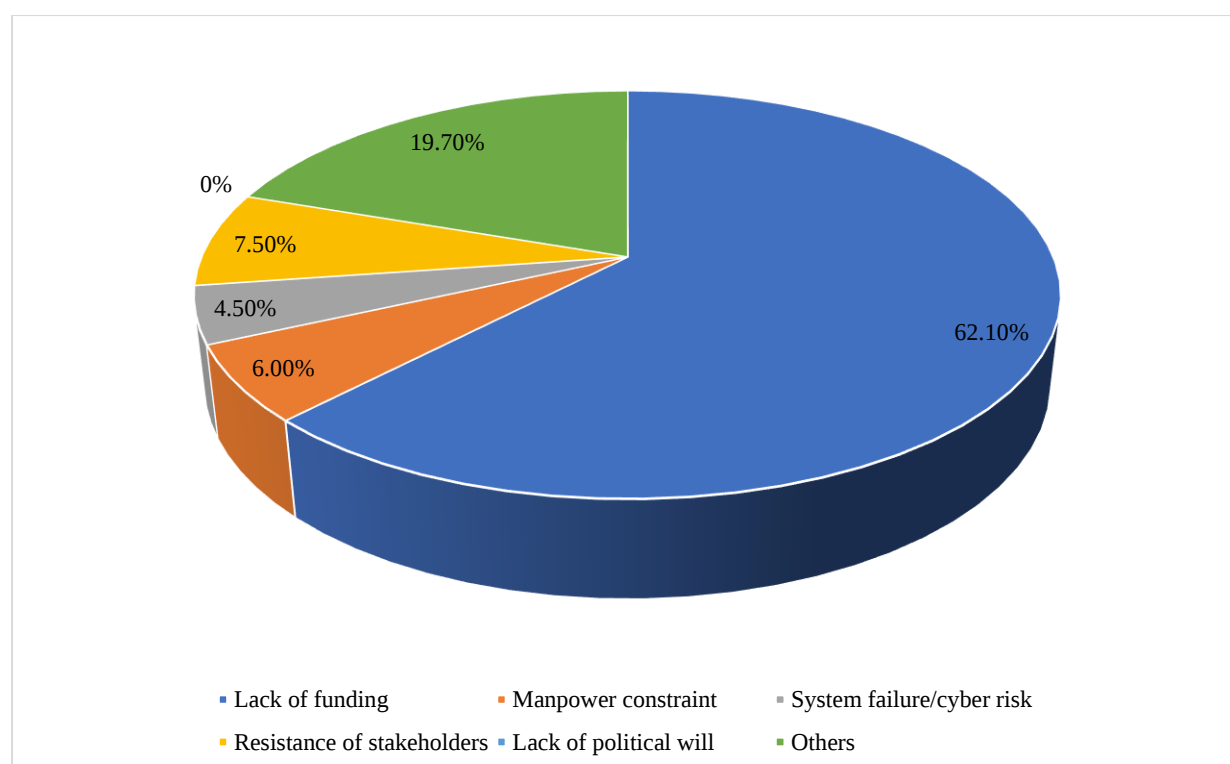
Table 4.12: Manpower constraints and technology adoption in the appropriation process

Response	Frequency	Percentage
Strongly Agree	34	51.5
Agree	28	42.4
Neither Agree nor Disagree	03	4.5
Disagree	0	0
Strongly Disagree	0	0
Blank	01	1.5
TOTAL	66	100

Source: Filed Survey: 2025

Among these factors, lack of funding is the most prominent challenge facing the adoption of technology in the appropriation process (Figure 4.6). 41 respondents (62.1%) note that lack of funding is the most important challenge facing technology adoption in the appropriation process. 4 respondents (6.0%) note that inadequate expertise, 3 respondents (4.5%) opine cyber risk/system failures, 5 respondents (7.5%) claim the biggest challenge is resistance of stakeholders to change. 13 respondents (19.7%) identify “other” challenges.

Table 4.6: Top challenges of technology adoption in the appropriation process



Source: Field Survey, 2025

4.5 Discussion of findings

The results of the study in Section 4.4 are further discussed in this section. It draws primarily on the data analysed in the previous section. During the discussion and analysis, the research questions are revisited considering the study's findings.

4.5.1 Prospects of technology adoption in the appropriation process in Nigeria

The empirical findings of the study highlight the promising prospects of technology adoption in Nigeria's appropriation process. Majority of respondents affirmed that technology can significantly improve the appropriation process. These findings suggest that integrating digital tools into legislative budgeting procedures holds considerable potential for promoting openness, efficiency, and good governance in Nigeria's legislative framework.

The perception of positive correlation between adoption of technology and transparency in the appropriation process can be substantiated by various studies highlighting the role of digital technologies in promoting transparency and accountability. One of the most notable ones is the digitization of budget documents and real-time access to fiscal data through online portals. According to the International Monetary Fund (IMF, 2018), digital platforms enable stakeholders, including legislators, civil society, and the public, to scrutinize allocations and expenditures, thereby reducing the risks of corruption and mismanagement. Technology also facilitates participatory budgeting by enabling broader citizen engagement. E-governance tools, such as mobile applications, interactive websites, and social media platforms, allow citizens to provide input into the budget process, monitor implementation, and report discrepancies. This fosters a culture of accountability where public officials are more likely to adhere to legal and fiscal rules. A study by the World Bank (2020) highlights how digital feedback mechanisms in Kenya's budget process led to improved project implementation and

increased public satisfaction, showcasing the role of ICT in building trust and responsiveness in governance.

Furthermore, digital audit trails and automated reporting systems reduce human discretion in data handling, making the process more objective and less prone to manipulation. Tools like Integrated Financial Management Information Systems (IFMIS) have been successfully implemented in countries such as Ghana, Nigeria, and Rwanda to track appropriation and expenditure in real time. These systems enhance the quality of financial reports, facilitate timely auditing, and strengthen legislative oversight. As noted by Pimenta and Pessoa (2015), IFMIS contributes to better fiscal control and improved transparency by minimizing the opportunity for unauthorized spending and ensuring that all financial activities are traceable. A notable example of this impact can be seen in countries that have implemented Integrated Financial Management Information Systems (IFMIS). These systems are designed to enhance transparency by providing a comprehensive and real-time overview of government financial operations, including budget formulation, appropriation, and expenditure tracking.

The integration of technology also streamlines communication between the executive and legislative arms during budget formulation and approval. Cloud-based platforms and digital dashboards offer legislators easy access to key appropriation data, promoting informed decision-making and reducing delays. This improves not only efficiency but also the integrity of the budgeting process. OECD (2019) reports that digital tools improve legislative scrutiny by allowing parliamentarians to analyze trends, track allocations across sectors, and ensure alignment with policy priorities.

Obidike and Onuora (2025) conducted an empirical investigation into the impact of digital transformation on public sector accountability and transparency in Nigeria. Their study focused on federal government Ministries, Departments, and Agencies (MDAs) in Anambra State, analyzing the effects of adopting systems like the Integrated Personnel and Payroll Information

System (IPPIS) and the Treasury Single Account (TSA). The findings revealed that these digital initiatives significantly enhanced transparency and accountability, reducing financial irregularities in the federal government's payroll system. The study concludes that the adoption of IPPIS and TSA has entrenched transparency in Nigeria's public sector financial records.

Similarly, a study by Celestin (2025) explored the transformative impact of digital transformation and blockchain technology on public sector budgeting. Employing a mixed-method approach, the research analyzed secondary data from government reports, academic literature, and case studies between 2020 and 2024. The findings demonstrated a strong correlation between the adoption of digital tools and improved financial oversight. Specifically, every million-dollar investment in digital transformation was associated with a 0.82-point increase in transparency, while blockchain adoption correlated with a significant reduction in fraud cases. The study underscores the potential of digital technologies in enhancing transparency and reducing corruption in public budgeting.

4.5.2 Key challenges and barriers to the effective adoption of technology in the appropriation process

Based on the findings from the study, several key challenges were identified as barriers to the effective adoption of technology in the appropriation process. These include financial constraints, resistance to change, cyber risks, and inadequate training. A considerable proportion of respondents acknowledged the presence of financial barriers in technology adoption, including even in the private sector. This assertion is supported by several scholarly studies. For instance, Philbin et al. (2022) identify insufficient financial resources as a prominent obstacle to technology adoption, particularly for small and medium-sized enterprises (SMEs), which often struggle with constrained budgets that affect their ability to adopt new tools, maintain existing systems, and offer staff training. Similarly, Abdullahi et al. (2021), in their study on ICT adoption in Somalia, highlight financial constraints, such as the

high cost of technology and limited access to funding, as major barrier to technological advancement. Chowdhury (2024) also reinforces this point in a discussion on digital transformation, noting that budgetary constraints inhibit organizations from investing in new technologies, hiring skilled personnel, and implementing effective training programs, each of which is essential for a successful transition to digital systems. Collectively, these studies underscore the pivotal role that financial resources play in determining an organization's ability to adopt and sustain technological innovations.

A notable proportion of respondents also identify resistance to change as a key obstacle in the adoption of technology within the appropriation process. A primary driver of resistance is the fear of job losses. Employees often perceive technological advancements as a threat to their job security, which can heighten feelings of insecurity and even lead to increased turnover intentions. Brougham and Haar (2020), in a multi-country study, demonstrated that employee awareness of technological disruption significantly affects their perceptions of job insecurity, ultimately influencing their intention to leave their jobs. This underscores the strong psychological impact that technology-related change can have on the workforce.

Skepticism about the value of new technologies further contributes to resistance. When employees lack a clear understanding of the purpose and benefits of a new system, they are less inclined to support its implementation. Birkel et al. (2019) emphasize that unclear value propositions are a major source of resistance, stressing the importance of communicating the benefits of technology to foster positive attitudes and engagement. Psychological barriers such as technophobia and status quo bias also intensify resistance. McClure (2018) highlights that individuals who exhibit technophobia, fear of robots, artificial intelligence, and unfamiliar digital tools, are more prone to anxiety and concerns about job displacement. Similarly, status quo bias, the preference for existing systems over new ones, can deter employees from embracing technological change. Nugawela and Sedera (2022) illustrate how this bias

negatively impacts users' intentions to adopt or continue using new information systems. Organizational shortcomings, including insufficient involvement of employees in decision-making and inadequate training, compound the challenge of resistance. Black and Trippi (1990) found that even managers may resist technology adoption when transitions are poorly planned, training is lacking, or institutional processes are not updated to support the change.

The adoption of technology in the public sector, including government institutions and parliaments, has been widely acknowledged as essential for improving service delivery, transparency, and efficiency. However, numerous studies highlight persistent challenges that hinder full implementation. One key challenge is **institutional resistance to change**. According to Heeks (2006), public sector institutions often operate in bureaucratic environments with rigid structures, making them less adaptable to innovation. This inertia is rooted in deeply embedded administrative cultures and risk aversion, which slows the uptake of new technologies.

Another major barrier is the lack of adequate infrastructure and technical capacity. In many developing countries, the foundational infrastructure—such as reliable electricity, internet connectivity, and secure digital platforms—is either insufficient or unevenly distributed (Nkohkwo & Islam, 2013). Even where such infrastructure exists, the absence of skilled personnel to implement and manage digital systems significantly impedes progress. This skills gap is particularly evident in parliaments and government agencies where IT departments are either understaffed or under-resourced.

Technology adoption often requires significant upfront investments in hardware, software, and training. Yet, public budgets are frequently constrained, and technology projects may be deprioritized in favor of more immediate political or socio-economic needs. As Gil-Garcia and Helbig (2006) argue, the financial unpredictability in the public sector makes it difficult to

sustain long-term digital transformation efforts, especially in environments with unstable political leadership or frequent changes in government priorities.

Furthermore, cybersecurity and data privacy concerns present growing challenges. Public sector organizations deal with sensitive information, and any breach can have severe consequences. Many governments are hesitant to adopt cloud-based or third-party solutions due to fears about data sovereignty and the ability to secure citizen data effectively (Weerakkody et al., 2011). These concerns are often compounded by a lack of comprehensive legal and regulatory frameworks to govern digital activities and safeguard against misuse.

In the legislative context, such as in parliaments, limited digital literacy among legislators and outdated legislative procedures pose additional hurdles. Manda and Backhouse (2016) observe that while e-parliament initiatives are expanding globally, many lawmakers are not digitally savvy and prefer traditional methods of documentation and debate. This results in underutilization of available ICT tools designed to support legislative drafting, public participation, and oversight functions.

To address these challenges, organizations must adopt proactive strategies aimed at reducing resistance. Clear communication, inclusive decision-making processes, and robust training programs are essential. Fischer et al. (2022) demonstrate that involving employees in the planning and implementation phases significantly reduces resistance to change. Furthermore, deploying user-friendly systems and providing adequate support and training can lead to higher levels of satisfaction and successful technology adoption.

System failures and cyber risks adversely affect the effective implementation of technology in the appropriation process. This perspective is supported by several empirical studies. For instance, Phaphoom et al. (2017) found that security concerns can increase the likelihood of non-adoption of cloud service by up to 26 times. Organizations are apprehensive that, in the absence of robust cybersecurity infrastructure, adopting cloud technologies could expose them

to significant vulnerabilities, potentially leading to data breaches and operational disruptions. In the financial sector, Waliullah et al. (2025) conducted a systematic literature review which revealed that cybersecurity threats, such as phishing and malware attacks, have a substantial negative impact on the adoption and expansion of digital banking services. The study emphasizes that such threats undermine consumer trust and necessitate stringent security protocols to support safe and widespread technology adoption. Furthermore, a McKinsey report (2024) revealed that 70% of surveyed executives view cyber-security as a strategic risk. Many of these executives acknowledged that security concerns have delayed the adoption of emerging technologies such as cloud computing and mobile platforms by at least one year. This finding underscores how cybersecurity apprehensions can significantly hinder technological progress and innovation within organizations.

In conclusion, the threat of cyberattacks and data breaches plays a pivotal role in shaping organizational decisions related to technology adoption. To address these concerns effectively, it is imperative for organizations to invest in comprehensive cybersecurity frameworks. Such investments are essential to safeguard data integrity and ensure that the deployment of new technologies does not compromise organizational security or public trust

Manpower constraints and inadequate training pose a significant barrier to technology adoption, highlighting how insufficient staff preparation limits the effective use of technological tools. This is supported by empirical evidence. For instance, a study by Liang and Dulebohn (2006) examined the influence of technology training on employees' acceptance and use of new systems. The findings revealed that comprehensive training not only improved employees' technical capabilities but also positively shaped their attitudes toward technology adoption. The study emphasizes that training acts as a critical mediator between the introduction of new technologies and their successful integration into organizational processes.

In summary, the lack of adequate training and technical expertise among staff constitutes a major obstacle to the effective utilization of new technologies. To overcome this challenge, organizations must invest in well-structured training programs that not only build technical competence but also promote positive engagement with technological change. Such strategic investment is essential to ensure that new systems are fully leveraged, thereby enhancing organizational performance and innovation.

Overall, these findings suggest that overcoming financial limitations, fostering stakeholder buy-in, mitigating cyber risks, and investing in capacity building are critical to enhancing the adoption and effective use of technology in the appropriation process.

4.4: Conclusion

This chapter has presented and discussed the key findings of the study in relation to the research questions and objectives. The analysis revealed that while there is growing recognition of the importance of adopting technology in the appropriation process, several challenges hinder its effective implementation. These challenges include limited financial resources, stakeholder resistance, cybersecurity threats, and inadequate training and technical expertise among staff. Each of these factors was critically examined using both quantitative data and supporting literature.

Importantly, the findings also highlight the positive impact of technology on transparency, accountability, and efficiency in the appropriation process. The adoption of digital tools has made it easier to track changes in budget figures, strengthened public trust, and provided mechanisms to deter corrupt practices through improved data integrity and auditability. Overall, the discussion underscores the complex yet essential role of technology in enhancing public financial management. It also points to the need for strategic investments in capacity building, cybersecurity infrastructure, stakeholder engagement, and policy reforms to

overcome existing barriers. These insights provide a strong foundation for the recommendations offered in the next chapter.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1: Summary of Findings

This study set out to examine the adoption of technology in the appropriation process, focusing on its impact on transparency, efficiency, and accountability, as well as the challenges hindering its effective implementation. The analysis was guided by key research questions and was based on empirical data collected from relevant stakeholders.

The findings revealed that:

- Limited financial resources significantly impede the adoption and sustainability of technological solutions. Budget constraints affect the ability of organizations to procure, maintain, and optimize new technologies.
- Stakeholder resistance, including from employees and management, presents another critical barrier. This resistance stems from fear of job displacement, uncertainty, and a lack of understanding of the benefits of technological innovation.
- Cybersecurity concerns were found to be a major deterrent, as the fear of data breaches and system failures discourages many institutions from fully embracing digital platforms.
- Inadequate training and technical expertise among staff members hinder effective utilization of technology, leading to underperformance and underutilization of systems.
- Despite these challenges, a significant proportion of respondents affirmed that technology adoption enhances transparency in the appropriation process. It allows for

easier tracking of budget changes, increases public trust, and plays a role in curbing corruption through real-time monitoring and audit trails.

5.2: Conclusion

In conclusion, this study affirms that while the adoption of technology in the appropriation process offers immense potential for improving transparency, accountability, and efficiency, it is also acknowledged with notable challenges. These challenges include: financial constraints, resistance to change, cybersecurity threats, and inadequate technical capacity—must be systematically addressed for technology to yield its full benefits.

The evidence from both the data analysis and supporting literature strongly suggests that technology, when appropriately deployed and managed, can significantly reform the budgeting and appropriation landscape. It can foster a more open, responsive, and efficient public financial management system.

5.3: Recommendation

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

- **Increased Budgetary Allocation for Technology Investment:** Government institutions should prioritize funding for technology acquisition, infrastructure development, and maintenance to support the appropriation process.
- **Comprehensive Training Programs:** Regular and targeted capacity-building initiatives should be implemented to enhance staff proficiency and reduce resistance to technological change. Training should also aim to improve user confidence and acceptance of new systems.

- **Stakeholder Engagement:** Involve employees, management, and relevant stakeholders in the planning and implementation phases of technological change. Clear communication of benefits and addressing concerns early can mitigate resistance.
- **Strengthening Cybersecurity Measures:** Institutions should adopt robust cybersecurity frameworks to protect sensitive financial data. This includes investing in up-to-date security software, regular audits, and training on cybersecurity best practices.
- **Policy and Legislative Support:** Policymakers should enact supportive legislation that encourages the integration of technology in public financial management, with clear guidelines and accountability structures.
- **Monitoring and Evaluation Systems:** Implementing regular monitoring and evaluation mechanisms will help track the effectiveness of technology use, identify gaps, and provide feedback for continuous improvement.
- By adopting these measures, organizations can create an enabling environment for the successful integration of technology in the appropriation process, ultimately enhancing governance and service delivery.

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