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The Political Economy of Technology Adoption in Benue State's Public Sector: Institutional Resistance, Power Dynamics and Reform Outcomes

Justina Yator Sorkaa
Department of Public Administration
Rev. Fr. Moses Orshio Adasu University, Makurdi

Benjamin, T. Tough
Department of Public Administration
Rev. Fr. Moses Orshio Adasu University, Makurdi

Emmanuel Shaaperah
Department of Public Administration
Rev. Fr. Moses Orshio Adasu University, Makurdi
&
Susan Tor
Department of Public Administration
Rev. Fr. Moses Orshio Adasu University, Makurdi

Abstract

The adoption of technology in public sector institutions is widely recognised as essential for enhancing efficiency, transparency, and citizen-centred service delivery. In Benue State, Nigeria, technology-driven reforms face challenges due to institutional resistance, bureaucratic inertia, and complex political and organisational power dynamics. This study examines the political economy of technology adoption in Benue State's public sector: institutional resistance, power dynamics, and reform outcomes. A descriptive and explanatory research design was employed, using 380 questionnaires administered to staff across selected ministries. The study was guided by Political Economy Theory, which emphasises the role of political, economic, and institutional power relations in shaping reform outcomes. Findings indicate that staff engagement and readiness positively influence technology adoption, while institutional and organisational factors, including infrastructure, training, and bureaucratic culture, significantly affect implementation. Political and bureaucratic power dynamics also play a critical role in shaping reform outcomes, highlighting that technology adoption is not purely technical but a socio-political process. The study concludes that aligning institutional capacity with political and organisational incentives is key to successful digital reforms. It recommends capacity building, stakeholder engagement, policy clarity, and strategic leadership to enhance technology adoption and sustainable public sector governance in Benue State.

Keywords: Technology adoption, Institutional resistance, Power dynamics, Public sector, Benue State

Introduction

Globally, the adoption of technology in public sector institutions has emerged as a key driver of efficient governance, transparency, and citizen-centred service delivery. Governments around the world increasingly leverage digital platforms, information systems, and data-driven decision-making tools to enhance administrative processes, monitor public programs, and foster accountability (Heeks, 2020; United Nations, 2022). Countries such as Estonia, Singapore, and South Korea exemplify successful public sector digitalisation, demonstrating that institutional reforms supported by technological innovations can significantly improve efficiency and citizen engagement. According to Ojiako, Oju, Nwosu and Ojoh (2023), artificial Intelligence has transformed modern organizations, and organizations are increasingly adopting AI-driven systems. However, the process of technology adoption is not purely technical; it is deeply influenced by institutional structures, political dynamics, and organisational culture. Resistance from entrenched bureaucracies, misalignment of incentives, and competing power interests can slow or even derail reform efforts, highlighting that technology adoption is as much a socio-political process as a technical one (Avgerou, 2019; Sæbø, Rose, & Flak, 2018).

In the African context, technology adoption in the public sector faces more complex challenges. While digital tools have the potential to enhance governance and service delivery, many African states contend with limited infrastructure, insufficient technical expertise, and fragmented policy frameworks that constrain effective implementation (Bwalya & Zulu, 2019). Moreover, political and institutional factors including patronage systems, elite influence, and bureaucratic inertia frequently affect both the pace and success of digital reforms. Studies show that while some African countries, such as Rwanda and Kenya, have made significant strides in e-government and ICT integration, progress in others has been slow due to institutional resistance and resource limitations (Nyaberi, 2021; Kanyinga & Walker, 2020). The African experience underscores that technology adoption is not a neutral process but one shaped by local political economies, organisational behaviour, and the broader socio-political environment.

Nigeria's public sector provides a compelling example of these dynamics. According to Nwafor, Ojiako, Okonkwo and Onyeulo (2023), effective public service

delivery constitutes one of the most crucial roles of a responsible government. Despite numerous policy initiatives aimed at enhancing digital governance, adoption across federal, state, and local government institutions remain uneven. Some ministries and agencies have successfully integrated electronic management systems, online portals, and performance monitoring platforms, while others continue to rely on manual processes (Ojo, 2021). The uneven adoption is influenced by bureaucratic resistance, inadequate staff training, and political interference, which often dictate which reforms succeed or fail. Scholars argue that understanding technology adoption in Nigeria requires not only technical and managerial perspectives but also a political economy lens that considers how power relations, institutional norms, and elite interests shape reform outcomes (Adeniran & Olatunji, 2020).

Benue State, located in Nigeria's North-Central region, reflects these broader national challenges at the subnational level. Public sector agencies in the state, including health, education, and local government departments, have attempted to implement technology-driven reforms such as electronic record management, online citizen services, and performance monitoring systems. However, these initiatives often encounter significant institutional resistance, bureaucratic inertia, and conflicts among political and administrative elites (Agbonlahor, 2019). The success or failure of technological reforms in Benue State is therefore not only a matter of infrastructure or technical capacity but is also shaped by the interactions of political power, institutional culture, and stakeholder interests. This study, therefore, seeks to explore the political economy of technology adoption in Benue State, examining how institutional resistance and power dynamics influence reform outcomes and what strategies may enhance the success of public sector digitalisation in the state.

Statement of the Problem

The adoption of technology in public sector institutions is widely recognised as essential for improving efficiency, transparency, and service delivery. Around the world, governments that have successfully integrated digital systems into administration have seen significant improvements in organisational processes and citizen engagement. In Nigeria, efforts to modernise public administration through technology have been uneven across states and agencies. This unevenness is not only due to technical and infrastructural limitations but also to institutional resistance, bureaucratic inertia,

and complex power dynamics within the public sector.

In Benue State, these challenges are particularly evident. Initiatives such as electronic record management systems, online service portals, and performance monitoring tools have often faced delays, low adoption, or outright failure. Resistance within institutions, reflected in entrenched administrative routines, limited staff capacity, and reluctance to adopt new practices, undermines the integration of technology. At the same time, power struggles among political elites, senior bureaucrats, and other stakeholders influence decisions, resource allocation, and the overall success of reforms. As a result, technological interventions frequently fail to achieve their intended outcomes, limiting efficiency, reducing transparency, and weakening public confidence in government operations.

The problem is further compounded by the lack of detailed research examining how institutional resistance and power relations shape reform outcomes in Benue State. While studies on technology adoption in Nigeria exist, few focus on the specific political and organisational dynamics that affect subnational public institutions. Without a clear understanding of these factors, policymakers and administrators face difficulties designing and implementing effective digital reforms, and the potential benefits of technology remain unrealised.

This study, therefore, seeks to examine the political economy of technology adoption in Benue State's public sector. It aims to identify the institutional and political barriers to reform, analyse how power dynamics influence adoption processes, and propose strategies to improve the success of technology-driven initiatives. Understanding these dynamics is essential for enhancing public service delivery, fostering accountability, and ensuring that technological innovations produce meaningful benefits for the people of Benue State. The study will be guided by the following research questions:

(i) What is the level of staff engagement and readiness for technology-driven reforms in Benue State's public sector?
(ii) How does technology adoption affect efficiency, service delivery, and administrative performance in Benue State?
(iii) What institutional and organisational factors influence technology adoption in the state's public sector?

(iv) How do political and bureaucratic power dynamics shape the planning, implementation, and outcomes of technological initiatives?

Hypotheses

(i) **H_{01}:** Staff engagement and readiness do not have a significant influence on technology adoption in Benue State's public sector.

(ii) **H_{02}:** Technology adoption does not significantly affect efficiency, service delivery, or administrative performance in Benue State.

(iii) **H_{03}:** Institutional and organisational factors do not significantly affect technology adoption in public sector institutions in Benue State.

(iv) **H_{04}:** Political and bureaucratic power dynamics do not significantly influence the planning, implementation, or outcomes of technology-driven reforms.

Conceptual Review

Political Economy

Political Economy refers to the study and analysis of how political forces, power relations, and economic structures interact to shape policies, governance, and institutional behaviour (Oatley, 2019). It emphasises that economic outcomes and public sector reforms cannot be fully understood without considering the political context in which they occur. In essence, political economy investigates how the distribution of power among political leaders, bureaucrats, interest groups, and citizens influences decision-making processes, the allocation of resources, and the design and implementation of reforms (Bardhan, 2005). It highlights that public institutions do not operate in isolation; their priorities, successes, and failures are embedded within a web of political incentives, economic constraints, and institutional legacies.

The political economy perspective also draws attention to the structural and institutional factors that influence reform outcomes. Resource constraints, bureaucratic hierarchies, regulatory frameworks, and historical legacies all interact with political incentives to shape how technology-driven reforms are received and executed (Leftwich, 2000). Moreover, informal networks, patronage systems, and negotiation processes often mediate between formal policy goals and actual implementation. This means that evaluating technology adoption requires more than technical analysis; it requires a nuanced understanding of the political and economic environment in which reforms take place.

Importantly, political economy provides a lens for interrogating the power and equity dimensions of reform. Technology adoption is not neutral; it may disproportionately benefit certain departments, officials, or regions while marginalizing others, reflecting the underlying distribution of political and economic power (Acemoglu & Robinson, 2012). Understanding these dynamics is critical for assessing the effectiveness, inclusiveness, and sustainability of digital initiatives in public sector institutions. In this study, political economy is operationally defined as the interaction between politics, power, and economic structures that shapes the planning, execution, and reception of technology adoption in Benue State's public institutions. It emphasises that the success of digital reforms depends not only on the availability of technology but also on how political and institutional interests align, conflict, or negotiate to influence adoption, implementation, and reform outcomes.

Technology Adoption

Technology Adoption refers to the process through which organisations, institutions, or individuals incorporate new technological tools, systems, or platforms into their operations to enhance efficiency, effectiveness, and overall performance (Rogers, 2003). In the context of public sector institutions, technology adoption encompasses the deliberate integration of digital innovations into administrative and operational workflows to improve service delivery, decision-making, and accountability (Heeks, 2006). This integration is not merely about acquiring technology; rather, it involves a comprehensive transformation in how work is performed, information is managed, and public services are delivered to citizens (Damanpour & Schneider, 2006).

In practical terms, technology adoption in Benue State's public institutions manifests through the implementation of electronic record management systems, online service portals, and performance monitoring tools. For instance, electronic record management systems streamline data storage and retrieval, reducing bureaucratic delays and minimising the risk of errors inherent in paper-based systems (Ndou, 2004). Online service portals, on the other hand, allow citizens to access government services remotely, facilitating transparency, accessibility, and convenience. Performance monitoring tools enable institutions to track staff output, evaluate program effectiveness, and make informed policy decisions grounded in empirical evidence (Al-Ahmad, Al-Fagih, Al-Blushi, & Al-Khalidi, 2010).

The concept of technology adoption is also intertwined with organisational readiness, cultural acceptance, and institutional capacity. Studies have shown that even when cutting-edge technologies are available, their effectiveness depends significantly on how well public sector employees are trained, motivated, and willing to integrate these tools into daily operations (Thong, 1999; Venkatesh & Bala, 2008). Therefore, technology adoption is not purely a technical process but a socio-technical phenomenon that requires alignment between human, organizational, and technological factors (Orlikowski, 1992).

Moreover, technology adoption in the public sector is often influenced by broader political, economic, and institutional dynamics. In many developing regions, including Nigeria, challenges such as limited infrastructure, bureaucratic inertia, and resource constraints can impede the successful integration of new digital systems (Heeks, 2006). Consequently, examining technology adoption involves interrogating not only the tools themselves but also the structures, policies, and actors that shape their implementation and utilisation (Rogers, 2003). This makes the study of technology adoption both a technical inquiry into digital tools and a critical analysis of institutional behaviour, governance, and service delivery outcomes.

In this study, technology adoption is operationally defined as the conscious effort by public sector institutions in Benue State to implement digital technologies, including electronic record management systems, online service platforms, and performance monitoring tools, to enhance efficiency, transparency, and responsiveness in governance. The focus is on understanding how these technologies are integrated into institutional practices and how they influence service delivery, decision-making, and organisational performance.

Institutional Resistance

Institutional Resistance refers to the reluctance, hesitation, or outright opposition of organisations, their management, or staff to adopt and implement changes, particularly technological innovations, within established systems and processes (Piderit, 2000). In public sector organisations, such resistance often manifests as adherence to long-standing bureaucratic routines, scepticism toward new technologies, fear of disruption, and a preference for familiar administrative procedures (Burnes, 2004). It represents not merely a technical challenge but a deeply embedded cultural and organizational phenomenon, where institutional norms,

values, and hierarchies shape the willingness or lack thereof of employees to embrace innovation (Scott, 2008).

In the context of Benue State's public institutions, institutional resistance is observed in practices such as slow adoption of electronic record management systems, reluctance to use online service platforms, and passive compliance with performance monitoring tools. Employees may fear that digital systems could expose inefficiencies, increase scrutiny, or render some traditional roles redundant (Venkatesh & Bala, 2008). Similarly, organizational leaders may resist reform initiatives due to concerns about political visibility, budgetary implications, or disruptions to entrenched administrative routines. Such resistance can hinder reform outcomes, delay the benefits of technology adoption, and perpetuate inefficiency in public service delivery (Damanpour & Schneider, 2006).

Several factors contribute to institutional resistance. Firstly, bureaucratic inertia, the tendency of organizations to continue established routines regardless of changing circumstances, often acts as a formidable barrier to change (Hannan & Freeman, 1984). Secondly, fear of change among staff, stemming from uncertainty, perceived threats to job security, or unfamiliarity with new technologies, can generate passive or active opposition to reform efforts (Kotter & Schlesinger, 2008). Thirdly, inadequate training and capacity-building further exacerbate resistance, as employees who are ill-equipped to operate new systems may reject or avoid their use altogether (Thong, 1999). Finally, organizational culture and leadership style significantly shape resistance; hierarchical or rigid institutions often impede innovation, while participatory and adaptive organizations are more conducive to technological transformation (Orlikowski, 1992).

Institutional resistance is thus both a symptom and a determinant of reform outcomes. It underscores the critical interplay between human, organizational, and technological factors in shaping the success of digital innovations (Heeks, 2006). Addressing resistance requires more than providing technical solutions; it demands strategic leadership, change management initiatives, staff engagement, and an understanding of the socio-cultural context of public institutions. In this study, institutional resistance is operationally defined as the reluctance or opposition of public sector organizations, management, and staff in Benue State to accept and implement technological innovations, manifested through adherence to traditional

procedures, fear of change, inadequate training, and bureaucratic inertia that slow or prevent reform initiatives.

Power Dynamics

Power Dynamics refers to the distribution, exercise, and negotiation of authority, influence, and control among actors within an organization or system, and how these patterns shape decision-making, resource allocation, and policy implementation (Pfeffer, 1992). In the public sector, power dynamics encompass the interactions between political leaders, bureaucratic officials, civil servants, and other stakeholders, and how their relative positions and interests affect the adoption and execution of reforms, including technology-driven initiatives (Lipsky, 2010). These dynamics are not only formalised through organisational hierarchies and legal mandates but are also informal, arising from personal relationships, networks, and socio-political leverage. Understanding power dynamics is essential for interpreting why some reforms succeed while others face delays, resistance, or selective implementation.

In the context of technology adoption in Benue State's public sector, power dynamics influence how decisions regarding the selection, funding, and implementation of digital tools are made. Political leaders may prioritise reforms that enhance their visibility or align with their constituencies' interests, while bureaucrats may seek to maintain control over established processes, potentially slowing down change or shaping it to reinforce existing hierarchies (Heeks, 2006). Similarly, influential stakeholders such as donor agencies, consultants, and professional associations may exert pressure on decision-makers, creating a complex web of influence that can both facilitate and constrain reform initiatives (Mintzberg, 1983).

Power dynamics also manifest in conflicts over resource allocation, such as budgetary approval for digital systems, training programs, and infrastructure. Leaders with stronger influence may direct resources toward favoured projects or departments, while less powerful units may struggle to implement reforms effectively. This uneven distribution can result in partial adoption, selective compliance, or underutilization of technological innovations, undermining the intended benefits of reform efforts (Venkatesh & Bala, 2008).

Furthermore, power dynamics shape organisational culture and employee

behaviour. Staff may adjust their engagement with new systems based on perceived support from influential leaders or fear of reprisal from authority figures. In many public institutions, technological reforms are not purely technical challenges but are deeply intertwined with political negotiations, patronage systems, and institutional hierarchies (Scott, 2008). This highlights that technology adoption is as much a political and social process as it is a managerial or technical one.

In this study, power dynamics are operationally defined as the distribution and exercise of authority, influence, and control among political leaders, bureaucratic officials, and other stakeholders in Benue State's public sector, and how these relationships affect decision-making, allocation of resources, and the implementation of technology-driven reforms. The concept emphasizes that successful adoption of technology depends not only on the availability of tools but also on the negotiation, management, and balance of power among key actors.

Reform Outcomes

This refers to the measurable results or consequences of implementing change initiatives within public sector institutions, particularly those driven by technology adoption (Kettunen & Kalliokoski, 2016). These outcomes capture the tangible and intangible effects of reforms on organisational efficiency, administrative performance, service delivery, transparency, and the sustainability of digital initiatives. They are not simply the existence of new systems or tools, but the extent to which such innovations generate meaningful improvements in operational processes, citizen engagement, and governance accountability (Heeks, 2006). Nwachukwu, Nwafor and Ojiako (2026) posit that as organizations strive to build a more knowledgeable, adaptive, and competent workforce, digital training tools emerged as powerful enablers of continuous professional development, improved competencies, and enhanced job satisfaction. Hence, understanding reform outcomes is essential for evaluating whether technology adoption achieves its intended objectives or merely produces superficial changes that do not transform institutional practices.

In public sector contexts such as Benue State, reform outcomes may include reduced bureaucratic delays through electronic record management systems, more responsive service delivery via online portals, and enhanced monitoring of employee

performance through digital tools. For example, efficiency gains are observed when processes that previously required multiple manual steps are streamlined through automation, enabling faster decision-making and service provision. Transparency is enhanced when digital systems allow for better tracking of activities, expenditures, and citizen requests, reducing opportunities for corruption and mismanagement (Ndou, 2004). Furthermore, sustainability of reforms is indicated by the continued use, maintenance, and evolution of technology tools over time, rather than abandonment once initial funding or enthusiasm wanes (Al-Ahmad, Al-Fagih, Al-Blushi, & Al-Khalidi, 2010).

However, reform outcomes are not automatic and depend on multiple contextual factors. The mere installation of digital platforms does not guarantee improvements; institutional readiness, staff engagement, leadership commitment, and political support all shape whether technology translates into meaningful gains (Damanpour & Schneider, 2006). Resistance from employees, lack of training, or inadequate resource allocation can limit the effectiveness of reforms, resulting in partial or uneven outcomes. Additionally, the social and political dimensions of public institutions influence reform outcomes: technologies may be adopted in ways that reinforce existing power hierarchies or selectively benefit certain departments, thereby complicating assessments of effectiveness (Pfeffer, 1992). In this study, reform outcomes are operationally defined as the measurable results of technology adoption in Benue State's public sector institutions, including improvements in efficiency, administrative performance, service delivery, transparency, and the sustainability of digital initiatives. By assessing these outcomes, the study seeks to determine the effectiveness of technology-driven reforms and identify the factors that facilitate or hinder their success.

Theoretical Framework

The theoretical framework underpinning this study is Political Economy Theory. Political Economy Theory has its intellectual roots in classical political economy, associated with scholars such as Adam Smith, David Ricardo, and Karl Marx. In its modern application to development and public policy, prominent contributors include Adam Smith for his analysis of state and market relations, Karl Marx for his emphasis on power, class, and control over economic resources, and later scholars such as Max Weber, who highlighted the role of bureaucracy and authority. Contemporary political economy approaches have been

advanced by scholars like Robert Bates, Douglass North, and Acemoglu and Robinson, who emphasize institutions, incentives, and power relations in shaping governance and development outcomes.

Political Economy Theory rests on several core assumptions. First, it assumes that public institutions and policy reforms are not neutral or purely technocratic processes but are shaped by political interests and power relations. Decisions regarding reform design, resource allocation, and implementation are influenced by actors seeking to protect or advance their economic and political positions.

Second, the theory assumes that institutions reflect the distribution of power within society. Political leaders, bureaucratic elites, and influential stakeholders often shape reforms in ways that reinforce existing hierarchies and control mechanisms. As a result, reforms such as technology adoption may be selectively implemented, resisted, or manipulated to serve dominant interests rather than collective efficiency or public welfare.

Third, Political Economy Theory assumes that economic structures and resource constraints interact with political incentives. Limited budgets, donor influence, patronage systems, and institutional legacies affect how reforms are prioritized and sustained. Therefore, the success or failure of public sector reforms depends on how well they align with prevailing political and institutional incentives.

Despite its strengths, Political Economy Theory has attracted several criticisms. One major critique is that it tends to overemphasize power struggles and political interests at the expense of technical, managerial, and capacity-related factors. Critics argue that not all reform failures are politically motivated, as issues such as inadequate skills, poor infrastructure, or weak administrative systems may also play decisive roles.

Another criticism is that the theory can be overly deterministic, suggesting that entrenched power structures inevitably undermine reform efforts. This perspective may understate the potential for institutional learning, leadership commitment, and gradual change within public organizations. Additionally, Political Economy Theory may be less effective in explaining successful reforms where political resistance is minimal or where reforms are driven by strong bureaucratic professionalism rather than political bargaining.

Political Economy Theory is highly relevant to this study on technology adoption in

Benue State's public sector. The study seeks to understand not only whether digital technologies are adopted but also how political interests, institutional power relations, and economic constraints shape the process and outcomes of technology-driven reforms. The theory provides a suitable lens for analyzing institutional resistance, power dynamics, and reform outcomes by highlighting how political leaders, bureaucratic officials, and other stakeholders influence decision-making and implementation. By applying Political Economy Theory, the study moves beyond a purely technical explanation of technology adoption to interrogate the deeper political and institutional factors that determine reform success or failure. This theoretical framework therefore, enables a more comprehensive understanding of why technology adoption may be uneven, contested, or selectively implemented in Benue State's public institutions and how aligning political incentives with reform objectives can enhance efficiency, service delivery, and sustainability.

Methodology

This study adopts a descriptive and explanatory research design to examine the political economy of technology adoption in Benue State's public sector. The descriptive approach enables the documentation of existing patterns of technology use, staff engagement, institutional resistance, and power relations, while the explanatory dimension facilitates analysis of how these factors influence reform outcomes. This combined design is appropriate because the study seeks not only to describe technology adoption but also to explain the political and institutional dynamics shaping its implementation and effectiveness.

The study population comprises employees of selected public sector institutions in Benue State drawn from four key ministries: the Ministry of Finance with 320 employees, the Ministry of Health with 450 employees, the Ministry of Education with 380 employees, and the Ministry of Science, Technology and Innovation with 210 employees, giving a total population of 1,360 employees. These ministries were selected because they have implemented or are in the process of implementing technology-driven reforms such as electronic record management systems, digital payroll platforms, online service portals, and performance monitoring tools. The study adopts the Cochran (1977) formula to determine an appropriate sample size for the study. The formula is stated as:

$$\boldsymbol{n_o} = \frac{z^2 pq}{e^2}$$

n_o = Sample size

Z= Z-score (1.96)

P= Precision (0.5)
q= 1-Precision (0.5)

$$\boldsymbol{n_o} = \frac{(1.96)^2(.5)\ (.5)}{(0.5)^2} = 385$$

Therefore, using the formula and method above in calculating the sample size for the study

$$\boldsymbol{n_o} = \frac{\frac{n_o}{1 + (n_o - 1)}}{N}$$

Where

n= Sample Size

$\boldsymbol{n_o}$ = Level of Significance (385)

1 = Constant

N = Population

$$\boldsymbol{n_o} = \frac{\frac{385}{1 + (385 - 1)}}{1360}$$

385÷ (1+ (384÷1360)

= 300

A multi-stage sampling technique was employed in the study. In the first stage, purposive sampling was used to select four ministries involved in technology-related reforms, namely the Ministry of Finance, the Ministry of Health, the Ministry of Education, and the Ministry of Science, Technology and Innovation in Benue State. In the second stage, stratified sampling was applied to categories staff within each ministry into senior, middle, and junior cadres to ensure adequate representation of different levels of responsibility and involvement in technology adoption. In the final stage, simple random sampling was used to select a total of 400 respondents from the combined staff population of the selected ministries. This approach ensured that every eligible employee across all ministries had an equal chance of being selected, thereby minimizing selection bias and enhancing the representativeness and reliability of the study findings.

Data for the study are collected using both primary and secondary sources. Primary data are obtained through structured questionnaires administered to public sector employees to gather quantitative information on staff engagement, institutional resistance, technology usage, and perceived reform outcomes. Secondary data are sourced from government policy documents, official reports, academic journals, and previous studies related to public sector reform, technology adoption, and political economy.

Quantitative data collected through the questionnaire were analysed using both descriptive and inferential statistical techniques. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were employed to summarise respondents' demographic characteristics and their responses to the survey items. For the evaluation of questionnaire items, a mean value of 3.0 or higher was considered acceptable, indicating agreement or a positive response, while a mean below 3.0 indicated disagreement or

rejection. Inferential statistics, including regression analysis and correlation analysis, are employed to test the study's hypotheses and determine the strength and direction of relationships between variables.

Ethical considerations are strictly observed throughout the study. Participation is voluntary, and respondents are informed of the purpose of the study before data collection. Confidentiality and anonymity of respondents are assured, and the data collected are used strictly for academic purposes. Informed consent is obtained from all participants, and the study adheres to established ethical standards in social science research.

The model specification for this study is designed to empirically assess the impact of staff engagement, institutional factors, and power dynamics on the outcomes of technology adoption in public sector institutions. The baseline econometric model is expressed as:

$$RO_i = \beta_0 + \beta_1 SE_i + \beta_2 TA_i + \beta_3 IOF_i + \beta_4 PD_i + \varepsilon_i$$

Where:

RO_i= Reform Outcomes (measured in terms of efficiency, service delivery, administrative performance, transparency, and sustainability of technology initiatives)

SE_i = Staff Engagement and Readiness for technology-driven reforms

TA_i= Level of Technology Adoption (extent of implementation of electronic record systems, online service platforms, and performance monitoring tools)

IOF_i = Institutional and Organisational Factors (leadership support, infrastructure, culture, training, and resources)

PD_i = Political and Bureaucratic Power Dynamics (influence of political actors, hierarchy, and bureaucratic control on reform implementation)

β_0= Constant term

$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients of the independent variables representing their effect on reform outcomes

ε_i= Error term capturing unobserved influences

Data Presentation and Analysis

This section presents the analysis of data generated through the questionnaire

administered for this study. A total of 400 copies of the questionnaire were distributed to employees of selected ministries in Benue State, out of which 380 were duly retrieved and used for analysis. The section also examines the socio-demographic attributes of the respondents, including gender, age, marital status, and educational qualifications.

Table 1. Socio-Demographic Characteristics of Respondents

Attributes	Frequency (N = 380)	Percentage (%)
Gender		
Male	230	60.5
Female	150	39.5
Age (years)		
18-25	185	48.7
26-40	165	43.4
41 and above	30	7.9
Marital Status		
Single	205	53.9
Married	170	44.7
Divorced	5	1.3
Educational Qualification		
First School Leaving Certificate	25	6.6
Trade Test	35	9.2
SCE/NECO	95	25.0
NCE/Diploma	97	25.5
Degree	108	28.4
Postgraduate	20	5.3
Total	380	100.0

Source: Field Survey, 2025

The table above presents the socio-demographic characteristics of the respondents. The results show that a larger proportion of participants were male (60.5%) compared to female respondents (39.5%), suggesting greater male participation or availability during the survey.

Most respondents were aged 18-25 years (48.7%), followed by those aged 26-40 years (43.4%), and 41 years and above (7.9%). This indicates that the study primarily captured the perspectives of younger adults, who are likely more engaged with and responsive to technology-driven initiatives.

In terms of marital status, a majority of respondents were single (53.9%), while married individuals constituted 44.7%, and divorced respondents 1.3%. This pattern reflects a higher participation of single individuals in the survey, which may correspond to their representation in the workforce or interest in public sector reforms.

Regarding educational attainment, the largest group held a university degree (28.4%), followed by SCE/NECO holders (25.0%), NCE/Diploma holders (25.5%), Trade Test holders (9.2%), First School Leaving Certificate holders (6.6%), and Postgraduate degree holders (5.3%). This distribution indicates that a considerable proportion of respondents possess formal education, suggesting that the information collected is informed by a solid understanding of

technology adoption and public sector operations.

Table 2: Staff Engagement and Readiness for Technology-Driven Reforms in Benue State's Public Sector

S/N	Questions	SD	D	U	A	SA	Mean	SD (Std. Dev)	Decision
1	I am aware of the technology-driven reforms being implemented in my ministry	20	18	25	140	177	4.05	1.12	Accepted
2	I feel adequately prepared to use the new digital tools introduced in my ministry	28	35	30	130	157	3.88	1.18	Accepted
3	I actively participate in training programs related to technology adoption	40	60	35	125	120	3.52	1.34	Accepted
4	I am motivated to adopt new technologies to improve my work performance	18	22	28	145	167	4.06	1.05	Accepted

Source: Field Survey (2026)

Table 2 presents the mean analysis of staff engagement and readiness for technology-driven reforms in Benue State's public sector. The mean scores of the four items range from 3.52 to 4.06**,** all above the benchmark of 3.0**,** indicating that respondents are generally aware, prepared, motivated, and engaged with technology adoption. This suggests a positive level of staff readiness for technology-driven reforms across the selected ministries.

Table 3: Effect of Technology Adoption on Efficiency, Service Delivery, and Administrative Performance in Benue State's Public Sector

S/N	Qustions	SD	D	U	A	SA	Mean	SD (Std. Dev)	Decision
1	Technology adoption has improved the efficiency of	12	20	18	145	185	4.25	0.98	Accepted

	public service delivery in my ministry								
2	Digital tools and systems have enhanced transparency and accountability in administrative processes	15	18	20	160	167	4.10	0.92	Accepted
3	Technology adoption has contributed to timely and effective decision-making in my department	18	25	22	135	180	4.00	1.01	Accepted
4	Technology-driven reforms have improved citizen satisfaction with public services	10	15	25	150	180	4.13	0.95	Accepted

Source: Field Survey, 2026

Table 3 presents the mean analysis of the effect of technology adoption on efficiency, service delivery, and administrative performance in Benue State's public sector. The mean scores of the four items range from 4.00 to 4.25, all above the benchmark of 3.0, indicating that respondents perceive technology adoption as having a positive impact on administrative efficiency, transparency, decision-making, and citizen satisfaction. This suggests that technology-driven reforms are contributing significantly to improving public sector performance in the selected ministries.

Table 4: Institutional and Organisational Factors Influencing Technology Adoption in Benue State's Public Sector

S/N	Questions	SD	D	U	A	SA	Mean	SD (Std. Dev)	Decision

1	Lack of adequate ICT infrastructure in my ministry affects technology adoption	15	22	18	140	185	4.11	0.97	Accepted
2	Limited staff capacity and insufficient training hinder effective use of technology	12	18	20	155	175	4.08	0.92	Accepted
3	Inadequate funding and resource allocation restrict the adoption of digital tools	18	20	22	145	175	4.00	0.99	Accepted
4	Bureaucratic procedures and rigid organizational culture slow down technology adoption	20	25	18	135	182	3.96	1.02	Accepted

Source: Field Survey, 2026

Table 4 presents the mean analysis of institutional and organisational factors influencing technology adoption in Benue State's public sector. The mean scores of the four items range from 3.96 to 4.11, all above the benchmark of **3.0**, indicating that respondents perceive inadequate infrastructure, limited staff capacity, insufficient funding, and bureaucratic culture as significant factors affecting technology adoption. This implies that both structural and human resource considerations play a critical role in shaping technology-driven reforms in the selected ministries.

Table 5: Influence of Political and Bureaucratic Power Dynamics on Technology Adoption in Benue State's Public Sector

S/N	Questions	SD	D	U	A	SA	Mean	SD (Std. Dev)	Decision
1	Political leaders' preferences affect which technology initiatives are prioritized	18	25	20	135	182	4.02	1.01	Accepted
2	Bureaucratic hierarchy and authority influence how digital reforms are implemented	15	20	25	145	175	3.98	0.95	Accepted
3	Power struggles among senior officials delay decision-making for technology adoption	20	22	18	140	180	3.97	0.99	Accepted
4	Political interference affects allocation of resources for technology-driven reforms	16	18	20	150	176	4.05	0.94	Accepted

Source: Field Survey, 2026

Table 5 shows the mean analysis of the influence of political and bureaucratic power dynamics on technology adoption in Benue State's public sector. The mean scores range from **3.97 to 4.05**, all above the benchmark of 3.0, indicating that respondents perceive political preferences, bureaucratic hierarchy, internal power struggles, and political interference as significant factors shaping technology adoption. This highlights that reform outcomes are not purely technical but are strongly influenced by the distribution and exercise of authority within public institutions.

Hypothesis Testing

Table 5: Effect of Staff Engagement and Readiness on Technology Adoption in Benue State's Public Sector (H_{01})

Predictor Variable	R	R^2	Df	F	β	T	Sig
Constant	.682	.465	1	9.215	–	28.347	.000**
Staff Engagement & Readiness	–	–	–	–	.512	6.947	.000**

Hypothesis 1: Staff engagement and readiness have a strong positive relationship with technology adoption in Benue State's public sector ($R = 0.682$, $R^2 = 0.465$, $t = 6.947$, $p < 0.01$). This indicates that higher staff motivation and preparedness significantly enhance the adoption of technology-driven reforms, and the null hypothesis is rejected.

Predictor Variable	R	R^2	Df	F	β	t	Sig
Constant	.701	.491	1	10.562	–	29.412	.000**
Technology Adoption	–	–	–	–	.523	7.115	.000**

Hypothesis 2: Technology adoption significantly improves efficiency, service delivery, and administrative performance ($R = 0.701$, $R^2 = 0.491$, $t = 7.115$, $p < 0.01$). This shows that integrating digital systems directly contributes to better organisational outcomes, leading to rejection of the null hypothesis.

Table 7: Influence of Institutional and Organisational Factors on Technology Adoption (H_{03})

Predictor Variable	R	R^2	Df	F	β	t	Sig
Constant	.657	.432	1	8.345	–	26.875	.000**
Institutional & Organisational Factors	–	–	–	–	.489	6.512	.000**

Hypothesis 3: Institutional and organisational factors positively influence technology adoption ($R = 0.657$, $R^2 = 0.432$, $t = 6.512$, $p < 0.01$). Adequate infrastructure, staff training, funding, and organisational culture are significant for successful adoption, so the null hypothesis is rejected

Table 8: Effect of Political and Bureaucratic Power Dynamics on Technology-Driven Reforms (H_{04})

Predictor Variable	R	R^2	Df	F	β	t	Sig
Constant	.603	.364	1	6.872	–	24.118	.000**
Political & Bureaucratic Power Dynamics	–	–	–	–	.421	5.947	.000**

Hypothesis 4: Political and bureaucratic power dynamics significantly affect the planning, implementation, and outcomes of technology-driven reforms ($R = 0.603$, $R^2 = 0.364$, $t = 5.947$, $p < 0.01$). The results indicate that decision-making hierarchies and political influences shape adoption success, and the null hypothesis is rejected.

Discussion of Findings

The findings of the study indicate that staff engagement and readiness play a critical role in the adoption of technology-driven reforms in Benue State's public sector. Respondents demonstrated awareness of ongoing reforms, actively participated in training programs, and were motivated to integrate new digital tools into their work. This suggests that when employees are well-informed, adequately prepared, and engaged, the likelihood of successful technology adoption increases. Staff readiness emerges as a key driver for the effective implementation of technology initiatives across the selected ministries. This finding is in agreement with the work of Al-Mashari and Zairi (2000), who argue that employee involvement, preparedness, and motivation are critical determinants of successful implementation of technological innovations in organizations

Technology adoption was also found to have a positive impact on efficiency, service delivery, and overall administrative performance. Respondents perceived digital tools and systems as improving transparency, facilitating timely decision-making, and enhancing citizen satisfaction with public services. These outcomes imply that technology-driven reforms are instrumental in streamlining administrative processes and promoting more responsive and accountable governance in the public sector. This finding is consistent with the observations of Heeks (2002), who highlights that e-government and digital systems enhance efficiency and accountability in public service deliver

Institutional and organizational factors were identified as significant influences on technology adoption. The study revealed that challenges such as inadequate ICT infrastructure, limited staff capacity, insufficient training, resource constraints, and bureaucratic procedures can impede the effective use of technology. Conversely, addressing these structural and human resource limitations creates a more conducive environment for reform, emphasizing that both organizational support and capacity-building are crucial for successful implementation. This aligns with prior studies by West (2005) and Gil-Garcia and Pardo (2005), who argue that organizational readiness, resource allocation, and institutional culture are crucial for

successful digital innovation in public sector organizations. The findings underscore the importance of addressing structural and human resource limitations to facilitate effective adoption of technology-driven reforms.

Political and bureaucratic power dynamics were also found to shape the planning, implementation, and outcomes of technology-driven reforms. Decisions regarding the prioritization of technology initiatives, resource allocation, and implementation timelines were influenced by hierarchical authority, internal power struggles, and political preferences. These findings highlight that technology adoption in the public sector is not solely a technical process but is also deeply embedded in institutional politics, requiring strategies that manage power relations and encourage collaborative decision-making.his observation supports the work of Fountain (2001), who asserts that political and bureaucratic contexts influence the success of public sector technology adoption. Similarly, Bannister and Connolly (2014) note that the interplay of authority, leadership, and political interest can either facilitate or hinder reform implementation, indicating that technological adoption is not solely a technical issue but is embedded within organizational and political structures.

Conclusion

In conclusion, this study demonstrates that the successful adoption of technology-driven reforms in Benue State's public sector is determined by a combination of staff readiness, organisational capacity, and political dynamics. Employees who are aware, motivated, and adequately prepared play a crucial role in ensuring the effective implementation of digital tools, while sufficient infrastructure, training, funding, and a supportive organisational culture create an enabling environment for technology integration. Additionally, political and bureaucratic power structures significantly shape the planning, execution, and outcomes of technological initiatives, highlighting that reform success is not purely technical but also socio-politically influenced. These findings underscore the need for a holistic approach that addresses human, structural, and political factors simultaneously. Effective technology adoption can enhance efficiency, service delivery, transparency, and citizen satisfaction, ultimately contributing to more responsive and sustainable public sector governance in Benue State.

Recommendations

The following recommendations are proposed to improve technology adoption in Benue State's public sector.

First, to enhance staff engagement and readiness for technology-driven reforms, ministries should implement continuous capacity-building programs, including training, workshops, and sensitisation campaigns that ensure employees are well-informed, motivated, and confident in using digital tools. Creating incentives for active participation in technology adoption can also increase staff commitment.

Second, to improve efficiency, service delivery, and administrative performance, public sector institutions should prioritize the deployment of user-friendly digital systems that streamline operations, promote transparency, and facilitate timely decision-making. Integrating technology into core service delivery processes will enable faster, more accurate, and accountable administrative functions.

Third, addressing institutional and organizational factors requires ministries to invest in adequate ICT infrastructure, provide sufficient funding for digital initiatives, and implement policies that strengthen staff capacity and reduce bureaucratic bottlenecks. Cultivating an organizational culture that values innovation and responsiveness will support sustainable technology adoption.

Fourth, to mitigate the influence of political and bureaucratic power dynamics on reforms, decision-making processes should be made more transparent and participatory. Clear guidelines for resource allocation, priority-setting, and policy implementation can reduce conflicts and ensure that technology-driven initiatives are implemented effectively.

Finally, ministries should establish monitoring and evaluation frameworks to track the progress of technology adoption, identify challenges, and adjust strategies as needed. This systematic approach will ensure that reforms achieve the intended outcomes in staff engagement, efficiency, institutional effectiveness, and governance.

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