

ORGANISATIONAL STRUCTURE AND ADMINISTRATIVE EFFICIENCY OF GOVERNMENT AGENCIES IN NIGERIA: Implications for Sustainable Development

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Abstract

Government Agencies around the world are being challenged to provide services that are efficient, transparent, accountable and citizen centric especially on developing economies where institutional capacity limitations prevail. This study explores the relationship between organizational structure, administrative performance and sustainability development outcomes, considering digital governance as a moderator. Based on Weberian Bureaucracy, Contingency Theory, Agency Theory, Institutional Theory and New Public Management, organisational structure is conceptualised as Centralisation; Formalisation; Specialisation and Hierarchical Complexity. Data were collected from senior staff from ministries, departments and agencies of government in Nigeria and analysed using Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM). Findings suggest that organization structure is a statistically significant predictor of administrative effectiveness which then has a strong impact on sustainable development results. Administrative efficiency partially mediates the structural design performance relation, and digital governance enhances the positive relationship between structural design and performance. Differences between ministries and autonomous agencies are shown by multigroup analysis, indicating that institutional heterogeneity is apparent. The positive effect of digital transformation on organisational effectiveness and institutional capacity building in resource-rich developing context has been shown by the results. By weaving together, the literature on organisational theory and digital governance, the study contributes insights into how ICT-enabled reform can promote Sustainable Development Goal 16 for effective institutions.

Keywords: *Organisational Structure; Administrative Efficiency; Public Sector Reform; Sustainable Development; Governance; Nigeria; SDG 16*

1. Introduction

Efficient public administration is widely recognized as an essential foundation for sustainable development in modern states. They are the nerves of governance, the institutional machinery through which governments convert their policy desires into actual output such as infrastructure provision, social services delivery, economic and social activities regulation, responsible management of public resources and rule of law enforcement. So public institutions serve as more than just administrative bodies; they are the engines of social progress, stability and collective well-being. The way government agencies perform these

key functions namely their efficiency, integrity and responsiveness largely define the nature of governance that citizens experience and influence wider outcomes such as economic performance, social inclusion or cohesion and public trust (World Bank 2022; Pollitt & Bouckaert 2017; UNDP 2021).

In an age of rapid urbanisation, technological disruption, fiscal malaise and rising citizen demand, the need for administrative efficiency has never been greater. Strong institutions are it in making development strategies take shape as concrete improvements in living standards, reductions in poverty, and social welfare so that inclusive and sustainable growth can materialize. In contrast, weak administrative systems characterized by bureaucratic laggardness, fragmented mandates, weak accountability structures, and limited institutional responsiveness typically lead to policy failure, inefficient resource allocation and declining public trust even in the presence of relatively high levels of public spending (Hope 2013; Pollitt & Bouckaert 2017). These challenges are particularly pronounced in many developing and emerging economies where constraints on institutional capacity still hinder effective policy implementation. Thus, reforming and strengthening public administration is not just a managerial reform agenda but also a strategic developmental necessity, as the capability of the state inevitably dictates whether policy intentions are actually translated into tangible, inclusive and sustainable societal advancement.

Nigeria exemplifies the resource curse paradox, which is resource abundance coexisting with governance deficiency. As the largest African economy and one of the world's leading oil producers, the country has significant fiscal capacity; yet development results are mixed among regions and sectors. Public institutions often face difficulties, such as duplication of roles, politicalized leadership, poor coordination and weak monitoring system that collectively undermine the effectiveness of service delivery (Okeke & Eme, 2020; Eze et al., 2022). Subnational units with substantial resource endowments, such as oil-producing states, also demonstrate that financial inflows are not sufficient for development but that it is the quality of institutions and organisational capacity that matter (World Bank 2022).

Organisational structure constitutes a critical determinant of administrative performance because it defines authority distribution, reporting relationships, communication flows, and coordination mechanisms within institutions (Hall, 1977; Jones, 2013). Classical bureaucratic theory emphasizes hierarchy, formal rules and merit-based hiring as the bases for efficiency and predictability (Weber, 1947). Nonetheless, recent work has offered a critique of overly centralised and rigid form of bureaucracy that can result in slow decisional processes, vulnerability to adaptability in complex forms of governance and resistance to change (Du Gay, 2020; Donaldson, 2001). This is why reform paradigms such as new public management advocate on decentralization, performance measurement and managerial flexibility when seeking to make the public sector more efficient (Hood 1991).

More recent innovations in governance research also support the notion of change induced by digital technology. Digital governance initiatives such as e-governments platforms, integrated information systems and data-driven decision support tools have the potential to simplify administrative procedures, increase transparency and involve citizens in public programs. But all these actions are only effective if the organisation is ready for them and they align with company structure. Technology can magnify institutional capabilities,

however which also can replicate inefficiencies if organisational arrangements have remained rigid or fragmented.

The consequences of administrative inefficiency are not limited to organisational effectiveness but extend up to the level of development goals. Strong institutions are fundamental to oversee public resources, implement policies and ensure social harmony; in contrast, weak administrative systems could increase the inequity gap and can erode trust of the people at large on state (UNDP, 2021). Acknowledging this link between institutions and development, 'effective, accountable and inclusive institutions' are listed as a key target under Goal 16 of the United Nations' (UN) 2030 Agenda for Sustainable Development with an explicit goal to 'build responsive, inclusive, participatory and representative decision-making at all levels' in this roadmap for achieving sustainable development over the next 15 years (United Nations, 2015).

While the literature on public sector reform is vast, relatively little has been learned and documented about how organizational structure intersects with administrative efficiency and digital governance to affect development results in practice especially in resource-rich developing countries. By so doing, this study seeks to fill this gap by examining the impact of organisational structure on administrative efficiency in Nigerian government agencies and its implications for sustainable development. Combining insights from organisational theory and governance and development literatures, the paper aims to show that institutional design is not a managerial issue alone, but also a strategic driver of state capacity and long-term development.

2. Conceptual Framework

This study conceptualises the relationship between organisational structure and sustainable development as a moderated mediation framework, in which organisational structure influences sustainable development indirectly through administrative efficiency, while digital governance conditions the strength of this relationship.

At its core, the model posits a sequential causal pathway:

Organisational Structure → Administrative Efficiency → Sustainable Development

Administrative efficiency functions as the principal transmission mechanism through which structural characteristics translate into broader developmental outcomes. Two operational dimensions service quality and cost effectiveness serve as mediating variables that capture how institutional arrangements shape performance in practical terms. Service quality reflects the responsiveness, reliability, and accessibility of public services, whereas cost effectiveness captures the ability to deliver outputs using minimal resources without compromising standards. Together, these factors represent key indicators of operational competence in public administration.

Conceptual Framework

This study conceptualises the relationship between organisational structure and sustainable development as a moderated mediation model; i.e., that organisational structure indirectly impacts sustainable development via administrative efficiency, which is conditioned by digital governance.

Organisational Structure Variables

[Centralisation | Formalisation | Specialisation | Digital Governance]



Administrative Efficiency

[Service Quality | Cost Effectiveness]



Sustainable Development Outcomes

[Strong Institutions | Growth | Welfare]

The model makes its basic sequential causal pathway simple:

Organisational Structure → Administrative Efficiency → Sustainable Development

Administrative efficiency function as the primary transmission mechanism through which institutional traits are channelled into wider developmental results. Two operational dimensions, service quality and cost effectiveness, serve as mediating variables that explain the mechanisms through which institutional set-ups determine efficiency in a pragmatic sense. Quality is defined as a measure of the responsiveness, reliability and access of public services, while efficiency pertains to the ability to produce outputs with minimum resources and under acceptable standards. After all, both elements also are important indicators of administrative operation competences.

Digital governance, as e-government systems, information systems and data-driven administrative tools is conceptualized to be a moderator. By harnessing digital technologies, the efficiency of governance can be improved through process automation, lessening bureaucratic bottlenecks and frustrations, improving transparency and fewer opportunities for rent-seeking behaviour (OECD, 2019; Tan, 2020). In this guise, digital governance does not so much increase performance via a direct route but rather increases the efficiency of existing organizational arrangements.

Enhanced administrative efficiency leads to sustainable development benefits, in terms of improved institutions enshrined under Sustainable Development Goal 16 (United Nations, 2015). Strong institutions can help oversee public resources, execute policies and keep society from imploding into chaos for long enough to foster development.

Hypotheses Development

Drawing on theoretical foundations and empirical literature, the following hypotheses are proposed:

H1: Organisational structure has a statistically significant effect on administrative efficiency.

Organisation arrangements that are decentralised, adequately formalised and clearly specify functions should in theory improve efficiency by enabling timely decision-making and coordination. On the other hand, strict hierarchies and over-centralisation may hinder

performance due to establishing bureaucratic narrowing of communication (Donaldson, 2001; Jones, 2013).

H2: Government efficiency has a positive influence on development sustainable outcome.

Effective public institutions are more likely to execute development programmes, manage resources prudently and deliver services that foster economic and social well-being (WorldBank, 2022).

H3: Organizational structure is related to sustainable development through administrative efficiency.

Developmental benefits cannot be expected to flow from structural reforms on their own right; the effect relies mainly on advances in administrative performance (Pollitt & Bouckaert, 2017).

H4: The relationship between organisational structure and administrative efficiency is moderated by digital governance.

Digital technology helps with capacity by simplifying process, improving delivery and even encourage transparency so the positive impact of well-designed organisation structure is mediated in a more efficient manner (OECD, 2019; Tan, 2020).

2.2 Organisational Structure

Organisational structure signifies the formal arrangements of jobs, authority relationships, lines of communication and channels for coordination in an organization (Hall, 1977). How it is being organized and how tasks are distributed, decisions made and organizational members interrelate with each other to accomplish goals". In public sector bodies, organisational structure matters a great deal since it affects the operations that take place within administrative systems and the efficiency with which policy can be implemented (Jones, 2013).

Scholars commonly conceptualise organisational structure along several key dimensions: centralisation, formalisation, specialisation, and hierarchical layering (Pugh et al., 1969; Jones, 2013). These structural features influence both operational efficiency and organisational adaptability.

Centralised decision-making refers to the accumulation of decision making authority at higher levels of an organization. Very centralized systems bring evenness and control but can hinder response to local requirements and emergent points (Donaldson, 2001). Decentralised systems devolve power into the organisation and away from the command level, it has companies to make faster decisions and promotes creativity and customer service. In public administration, decentralisation is often linked with improved accountability and citizen involvement (Hood, 1991).

Formalisation is the extent to which rules, procedures and communications are written down. Formalisation improves predictability and fairness by decreasing the level of discretion in administrative decisions (Weber, 1947). Yet an over-formalisation can lead to procedural ossification and condition inhibitions of powers...those encouraged not to think

for themselves (or worse still, about their work) are all too easily hypnotised into doing as the rules demand (Du Gay, 2020).

Specialisation involves putting work to different expertise or at least different function. This improves technical competence and efficiency; however, it can lead to institutional silos that prevent departments from coordinating. Too much specialisation can then be seen to hinder adaptability, particularly when it comes to tasks that have multidisciplinary requirements.

Hierarchical layering is indicative of the number of management levels in an institution. Tall organizations have many layers of approval, which can slow the transfer of information and decision-making. Shallower structures aid in more rapid information flow and provide greater empowerment to employees but may pose challenges for control and supervision (Hall, 1977).

Within government agencies, the design of such structural elements can help promote or inhibit an agency's ability to streamline activity across its surface and make resources and capabilities available to citizens. Institutions' failures result in duplicating functions, non-clarity of responsibility and bottlenecks and these can effectively derail institution's performance (Kuye, 2004). As a result, organisational structure is perceived to be an important factor influencing the efficiency of administration in the public sector.

2.3 Administrative Efficiency

Administrative efficiency is the ability of an organization to accomplish its purpose with a minimum use of resources while maintaining high standards of service delivery (McWatters et al., 2001). In public administration, efficiency encompasses not only cost reduction but also effectiveness in meeting citizens' needs.

Efficient administration is characterized by timeliness, simplification of policies and procedures, transparent decision-making processes and accountability; it responds to demand for services (Sinambela, 2006) These qualities add to trust and legitimacy in society, which are necessary for successful governance. On the other hand, inefficiency leads to backlogs, wasteful of resources, harassment and inconsistent service delivery which in turn undermines confidence in government.

Administrative inefficiency in developing countries is usually a result of systemic constraints, lack of human capacity, political interference and poor monitoring mechanism (Okeke & Eme, 2020). Project approval requirement could be too complicated and agencies' duties overlapping could postpone project construction and add to the costs of administration. Also, poor institutions may discourage investment due to regulatory uncertainty and transaction costs.

Thus, administrative efficiency is a norm as well as an indicator of governance. Organizations that function in an effective manner are more likely to be able to put the appropriate development policies into place, to use public resources responsibly and control social stability (World Bank, 2022). Enhancing administrative efficiency is one of the main goals of public sector reforms in the world.

2.4 Theoretical Framework

The link between organisational structure and administrative efficiency in public bureaucracies remains best explained from a multi-theoretical perspective as no single pure framework is able to fully explain the complexity of organizations working in an ever-changing socio-political context. This paper therefore cross-fertilises in the behaviour of public bureaucracies by bringing together complementary theories from organisational sociology, public administration and governance studies to explain how structural features influence administrative performance and development outcomes. These two points of view together should shed some light on form and activity in the creation of institutions.

Weberian Bureaucracy

Max Weber's bureaucracy theory, made more than 100 years ago, continues to be a core element of the study of public administration and organizations. Weber (1947) defined bureaucracy as a rational and legality-oriented organisational form with hierarchical authority structure, rules and regulations, formalism, impartiality in decision making process, promotion of employees based on merit. The idea was that such characteristics will promote predictability, uniformity and justice in administrative decision-making by reducing arbitrariness and individual subjectivity.

In reality, bureaucratic structures add layer upon layer of stability and accountability in the guise of regularized processes and roles. Even today, many public authorities look very much like the ones of Weber's time also in developing countries. However, critics also argue that too much formalisation and such rules-based structuring may be the source of what is known as "red tape," which serves to slow decision-making and innovation resistance in those organisational environments which need to remain flexible and adaptable (Du Gay, 2020). Thereby, although control and reliability are strengthened by bureaucracy, adaptability and organisational learning may be hindered in inherently complex governance conditions.

Contingency Theory

The heuristic of contingency theory opposes the existence of one best organizational structure, it is argued that effectiveness depends on how well an organization's structure fits its external environment (Donaldson, 2001) From this point of view, organisational design should be contingent on the levels of technological complexity, size, task uncertainty and environmental constraints.

Public institutions often operate in volatile environments characterised by political change, economic instability, and diverse stakeholder demands. In such contexts, highly centralised and rigid hierarchical systems may struggle to respond effectively, whereas decentralised and flexible arrangements can enhance responsiveness, innovation, and problem-solving capacity. Contingency theory thus underscores the importance of adaptive structures that balance stability with flexibility to maintain performance under changing conditions.

Agency Theory

Agency theory is concerned with principals' citizens or political leaders and agents public officials entrusted to carry out the programs. Theories argue that agents may strive to maximise their own and/or their organisations' interests at the expense of principals, especially in cases where there is information asymmetries and monitoring arrangements

are constrained (Jensen & Meckling, 1976). In the public sector, they may appear as corruption, inefficiency, rent-seeking or neglect of public welfare.

Weak accountability structure of developing countries such as Nigeria, patronage systems and low level of transparency exacerbate principal agent problems, resulting in poor administrative performance (Okeke & Eme 2020). Risks are likely to be reduced if there are effective checks and balances in organisational structures together with regular monitoring of performance and transparency, to ensure that agents have their incentives more consistent with the public interest. Agency theory thus underscores the importance of institutional design in reducing opportunism and enhancing efficiency.

Institutional Theory

Institutional theory stresses the role of social norms, legitimacy pressures and historical trajectories on organisational structures and practices (DiMaggio & Powell, 1983). Institutions are also typically inertia-ridden, and organisations organisational structures may be more a reflection of institutional accretion than the most efficient form. This phenomenon, commonly referred to as institutional isomorphism, results in the spread of homogenized organisational forms across sectors and areas.

A number of public institutions replicate administrative framework which were inherited from colonial rule or the central government. Although such models may bring legitimacy, they are not always consistent with local socio-economic texture and thus can be inefficient; coordination failures and low responsiveness to citizens demand remain. Such latent structures, whose suboptimality is recognized very widely, are thus explained in institutional terms by the persistence of inefficient arrangements.

New Public Management (NPM)

New Public Management (NPM) has become a dominant reform paradigm due to the alleged inefficacy of traditional bureaucratic structures. It seeks decentralization, the measurement of performance, managerial autonomy, competition and a customer-oriented public service (Hood, 1991). NPM aims to improve the effectiveness, transparency and accountability in public institutions by borrowing management practices from the private sector.

In context, while NPM has achieved significant improvements in many developed countries, its application of developing nations is mixed. For example, institutional capacity, political resistance, infrastructure deficiencies and socio-economic inhibitors have often facilitated the failure to implement performance-based management systems (Pollitt & Bouckaert, 2017). However, central tenets of NPM efficiency, transparency and responsiveness still inform present-day public-sector reform across the globe.

3. Methodology

3.1 Research Design

In this study, a cross-sectional survey was used to explore the relationship between organisational structure, administrative efficiency, digital governance and sustainable development performance of government agencies in Nigeria. Cross-sectional designs are commonly used in organizational and public administration research as they serve the

purpose of allowing for data collection from a population at one particular time, which permit examination of associations among variables without being burdened by the organizational requirements associated with longitudinal studies (Bryman, 2016; Creswell, 2014). The method is especially apt for the exploration of organizational characteristics and performance perceptions in intricate institutional settings.

With the explanatory nature of the study, this design allowed for hypotheses derived from theory to be tested by empirical findings on the ways in which structural attributes influence administrative efficiency and development outcomes. Advanced multivariate methods such as Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were included to investigate measurement validity and the structural relationships between latent constructs.

3.2 Population of the Study

The respondents were senior administrators within selected MDAs. The officials hold many key positions in areas such as policy implementation, finance supervision, purchasing, planning and organizational co-operation which means that they have a full knowledge of institutional structures and bureaucratic operations (Kuye 2004). Among the positions represented were Directors: Administration, Finance and Accounts, Procurement, Planning and Projects etc. The use of high-level administrators increases the validity and relevance of responses, since they are directly responsible for decision making and oversight roles.

3.3 Sampling Procedure

A purposive sampling technique was employed to ensure that respondents possessed the specialised knowledge required to provide informed assessments of organisational dynamics. Purposive sampling is appropriate where the research objective necessitates insights from participants with specific expertise or experience (Etikan et al., 2016). Where feasible, a census approach was applied within selected agencies to capture perspectives across major functional units, thereby improving representativeness and external validity within the public sector context.

3.4 Instrumentation

Data were collected using a structured questionnaire developed specifically for the study. The instrument comprised three sections:

1. Demographic Characteristics: Gender, educational attainment, years of service, and organisational position.
2. Organisational Structure: Items measuring centralisation, formalisation, specialisation, hierarchical complexity, and coordination mechanisms.
3. Administrative Efficiency and Development Outcomes: Items assessing service quality, cost effectiveness, transparency, responsiveness, and perceived contribution to sustainable development.

Participants used a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) for their responses. Scales of the Likert-type format are commonly accepted method in organizational research as these scales allow quantification of subjective perceptions with

statistically robust applications (Likert, 1932). The Items were modified from the content of equipment constructed with existing instruments, validated in public administration and further adapted for conceptual relevance as well as to facilitate comparison (Sinambela, 2006; OECD, 2019).

3.5 Measurement of Variables

Organisational Structure. Operationalised as a latent construct measured through indicators reflecting centralisation of authority, formalisation of procedures, task specialisation, hierarchical complexity, and coordination mechanisms, consistent with classical organisational theory (Pugh et al., 1969; Jones, 2013).

Administrative Efficiency. Measured using indicators relating to timeliness of decision-making, service quality, transparency, resource utilisation, and responsiveness to citizens (McWatters et al., 2001; Sinambela, 2006).

Digital Governance. Treated as a moderating variable capturing the extent of ICT adoption, including electronic document management, online service platforms, digital procurement systems, integrated payroll systems, and decision-support tools (OECD, 2019; Tan, 2020).

Sustainable Development Outcomes. Assessed in terms of institutional effectiveness, public trust, and perceived contributions to long-term socio-economic development, consistent with Sustainable Development Goal 16 on strong institutions (United Nations, 2015).

3.6 Reliability and Validity

Internal consistency reliability was assessed using Cronbach's alpha, with values above 0.70 considered acceptable (Cronbach, 1951; Nunnally & Bernstein, 1994). Content validity was established through expert review of the measurement items to ensure adequacy of coverage of the constructs. Construct validity was evaluated using Confirmatory Factor Analysis (CFA).

Convergent validity was examined through standardized factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE), while discriminant validity was assessed using the Fornell Larcker criterion (Fornell & Larcker, 1981; Hair et al., 2019).

Reliability analysis indicated strong internal consistency across all constructs, with Cronbach's alpha values exceeding 0.80 (Table 1). CFA results demonstrated robust measurement validity, with factor loadings above recommended thresholds and satisfactory CR and AVE values (Tables 2 and 3).

3.7 Data Analysis

Both descriptive and inferential statistical techniques were employed. Descriptive statistics were used to summarise respondents' characteristics. CFA was conducted to validate the measurement model, followed by Structural Equation Modelling (SEM) to test hypothesised relationships among constructs, given its suitability for analysing complex models involving multiple latent variables (Kline, 2016).

Model fit was evaluated using widely accepted indices, including the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardised Root Mean Square Residual (SRMR), following recommended thresholds (Hu & Bentler, 1999).

3.8 Mediation and Moderation Analysis

The mediation analysis was based on whether administrative efficiency mediated the relationship between organisational structure and sustainable development outcomes, bootstrapping (Preacher & Hayes, 2008) was employed to ensure robustness of the inferences. Moderation analysis assessed whether digital governance influenced the strength of the structural efficiency relationship through interaction terms.

3.9 Ethical Considerations

Ethical standards for social science research were strictly observed. Participation was voluntary, informed consent was obtained, and confidentiality was assured. No identifying information was collected, ensuring anonymity and compliance with research ethics guidelines (Bryman, 2016).

4. Results

4.1 Reliability Analysis

Table 1. Reliability Statistics (Cronbach’s Alpha)

Construct	Items	Cronbach’s Alpha
Organisational Structure	12	0.91
Administrative Efficiency	10	0.88
Sustainable Development	8	0.86

All constructs demonstrated high internal consistency, exceeding the recommended threshold of 0.70.

4.2 Confirmatory Factor Analysis

Table 2. CFA Loadings

Indicator	Standardised Loading	p-value
Centralisation	0.82	<0.001
Formalisation	0.79	<0.001
Specialisation	0.76	<0.001

Indicator	Standardised Loading	p-value
Digital Governance	0.84	<0.001

All factor loadings were statistically significant and above recommended cut-off levels, confirming convergent validity.

4.3 Measurement Model Validity

Table 3. Measurement Model Validity

Construct	CR	AVE	Validity
Organisational Structure	0.92	0.67	Valid
Administrative Efficiency	0.90	0.64	Valid
Sustainable Development	0.88	0.61	Valid

Construct	CR	AVE	Validity
Organisational Structure	0.92	0.67	Valid
Administrative Efficiency	0.90	0.64	Valid
Sustainable Development	0.88	0.61	Valid

CR values exceeded 0.70 and AVE values surpassed 0.50, supporting convergent validity. Discriminant validity was confirmed using the Fornell–Larcker criterion.

4.4 Structural Model Fit

Table 4. SEM Model Fit Indices

Fit Index	Value	Acceptable Threshold
CFI	0.95	> 0.90
TLI	0.94	> 0.90
RMSEA	0.05	< 0.08
SRMR	0.04	< 0.08

The structural model demonstrated good fit to the data.

4.5 Structural Relationships

SEM analysis revealed that organisational structure exerted a strong positive effect on administrative efficiency ($\beta = 0.62, p < 0.001$), while administrative efficiency significantly influenced sustainable development outcomes ($\beta = 0.55, p < 0.001$). These findings indicate that administrative efficiency plays a central role in translating structural arrangements into developmental outcomes.

Figure 2. SEM Path Model

(SEM path diagram showing standardized coefficients between constructs)

4.6 Mediation Analysis

Table 5. Mediation Analysis

Path	Indirect Effect	Bootstrapped CI	Result
Structure → Efficiency → Development	0.31	[0.18, 0.46]	Significant

Mediation analysis confirmed that administrative efficiency serves as a key transmission mechanism linking organisational structure to sustainable development.

4.7 Moderation Analysis

Table 6. Moderation Analysis (Digital Governance)

Interaction Term	B	SE	p
Structure × Digital Governance	0.27	0.08	0.002

Digital governance significantly strengthened the relationship between organisational structure and administrative efficiency, indicating that ICT adoption enhances the effectiveness of structural arrangements.

4.8 Multi-Group Analysis

Table 7. Multi-Group SEM Analysis (Ministries vs Agencies)

Group	Path Coefficient	Significance
Ministries	0.62	<0.001
Agencies	0.55	<0.001

Multi-group analysis revealed stronger structural effects in ministries than in autonomous agencies, highlighting institutional heterogeneity across public organisations.

4.9 Robustness Checks

Robustness tests using alternative model specifications and sub-samples confirmed the stability and reliability of the findings.

5. Discussion

The study explored the impact of organisational structure on sustainable development outcomes through administrative efficiency, with digital governance as a moderator in public sector institutions. The results offer compelling empirical evidence in favour of an institutional perspective to development, emphasising that governance results are contingent not only on the availability of resources or policy intent; but rather on how capable public organisations are at delivering policies.

5.1 Organisational Structure, Administrative Efficiency, and Development

The findings show that organisational structure has a significant positive relationship with effective administration, further emphasising the importance of formal institutional architecture in modern public service. Clear authority structures, codified processes and functional specialisation help improve coordination, mitigate role ambiguity, and strengthen accountability mechanisms. These findings fit within Weberian bureaucratic theory, which illustrates the hierarchical organisation and rule-based governance as devices to enable predictability and administrative control of complex organisations.

But the evidence does not support a binary preference for either centralisation or decentralisation. Instead, effectiveness depends on structural coherence and alignment with organisational tasks based in contingency theory. Unnecessarily rigid hierarchies can stymie responsiveness and slow down decision-making, whereas decentralised arrangements (when proportionate) can improve adaptability without threatening accountability. It is less the structural form itself that determines institutional performance than the degree to which organisational arrangements facilitate coordinated action.

We found that administrative efficiency is the primary mechanism through which organisational structure impacts sustainable development outcomes. Structural reforms yield societal benefits only to the extent that they lead to better operational performance. Institutional design matters because the way public organisations are designed ultimately affects their ability to convert policy, resources and mandates into actual outputs — for example delivering infrastructure, enforcing regulation and providing public services.

This finding strongly resonates with the New Public Management (NPM) perspectives which principally place emphasis on performance orientation, managerial competence and results-based governance. This also strengthens a wider governance scholarship suggesting how development objectives depend more on institutional quality than financial resources. A dominant theme now reflects the recognition that in many developing contexts, large public investments typically generate less than one would expect resulting from poor

administrative capacity and overall efficiency being a key mechanism through which institutional arrangements translate into benefit to society.

5.2 Digital Governance as an Institutional Amplifier

The study further demonstrates that digital governance also significantly enhances the relationship between organisational structure and administrative efficiency. INFORMATION AND COMMUNICATION TECHNOLOGIES: Demonstrating their potentials and use for improving institutional functions through better information flow, administrative processes speed-up, and real-time data monitoring. Digital systems lower transaction costs, reduce discretionary delays and enhance transparency.

Crucially, digital technologies do not replace formal administrative structures rather, they supplement and digitise such structures. This aligns with governance perspectives for the digital age whereby ICT is seen as an institutional facilitator. Technological reforms are often best implemented when developed within robust organisational structures, suggesting that the mere fact of digital transformation cannot offset poor institutional design.

Hence, digital governance serves as an institutional amplifier that amplifies the existing structures and processes. When applying with efficient administrative systems, digital tool can greatly enhance service delivery, accountability and responsiveness.

5.3 Institutional Heterogeneity and Contextual Governance

The analysis for the multiple groups confirmed important differences between ministries and autonomous agencies, showing evidence of institutional heterogeneity in public sector. Being incorporated into the core machinery of government means ministries are able to leverage structured coordination mechanisms, and policy alignment. Autonomous agencies typically have more operational independence but are commonly less integrated into central governance frameworks and accountability systems.

These differences point to the need for context-specific reform strategies. What works best in one organisational form may not work best in another. By contrast, governance reforms need to be sensitive to institutional mandates, autonomy levels and operational environments of organisations on the continuum between 'state' and 'non-state', acknowledging the diversity of structures in which the state broker operates.

5.4 Implications for Sustainable Development Governance

The findings have significant implications for sustainable development governance. They demonstrate that development outcomes are fundamentally institutional: organisational arrangements influence progress primarily through their impact on administrative efficiency, while digital governance enhances this relationship by strengthening operational performance.

Efficient public institutions are indispensable for managing resources, implementing policies, and delivering services that improve citizens' welfare. Administrative efficiency enables governments to convert financial allocations into infrastructure, social services,

environmental protection, and economic opportunities. Without such capacity, even well-designed policies and substantial investments may yield limited benefits.

The results therefore reinforce the centrality of institutional quality to achieving Sustainable Development Goal 16 on effective, accountable, and inclusive institutions, while also supporting progress across other development goals. In resource-dependent contexts, the findings provide insight into the “resource curse” paradox: abundant revenues do not automatically translate into development without effective governance systems for allocation, implementation, and oversight.

5.5 Policy Implications for Public Sector Reform

The empirical evidence points to the need for comprehensive institutional reforms that integrate structural alignment, administrative capacity, technological capability, and accountability mechanisms.

First, governments should strengthen organisational coherence by rationalising overlapping mandates and improving coordination across ministries, departments, and agencies. Clear lines of authority and responsibility are essential for effective policy implementation.

Second, enhancing administrative efficiency should be a central reform priority. Streamlined procedures, performance-based management systems, and investment in human capital—including merit-based recruitment and continuous professional development—can substantially improve institutional competence.

Third, sustained digital transformation is necessary to modernise public administration. Integrated e-government systems for budgeting, procurement, financial management, and service delivery can reduce corruption opportunities, improve transparency, and accelerate decision-making. However, technological initiatives must be embedded within broader institutional reforms to be effective.

Fourth, decentralisation strategies should balance responsiveness with accountability. Delegation of authority must be accompanied by robust monitoring and coordination mechanisms to prevent fragmentation and policy inconsistency.

Finally, context-sensitive reforms are essential. Differences between ministries and agencies indicate that governance strategies should be tailored to organisational characteristics rather than applied uniformly across the public sector.

Taken together, these measures form a mutually reinforcing framework for strengthening institutional resilience and enhancing the capacity of governments to deliver inclusive and sustainable development outcomes.

5.6 Theoretical Contributions

This study advances public administration and governance theory by integrating organisational design, managerial performance, and digital transformation within a unified explanatory framework.

First, it reframes the structure–performance relationship by demonstrating that organisational structure influences development indirectly through administrative efficiency rather than directly. This shifts theoretical emphasis from structural form to structural functionality.

Second, the findings reconcile Weberian bureaucracy and New Public Management by showing that formal structures provide coordination and accountability, while efficiency-oriented processes determine whether these structures generate tangible results. Effective governance therefore reflects a hybrid model combining structural discipline with managerial effectiveness.

Third, the significant moderating effect of digital governance extends digital-era governance theory by demonstrating that ICT enhances the effectiveness of organisational structures rather than replacing them. Technology functions as an institutional amplifier that strengthens coordination, transparency, and responsiveness.

Fourth, the study highlights institutional heterogeneity within the public sector, suggesting that governance theories must account for variations across organisational types rather than treating public institutions as homogeneous entities.

Finally, the research contributes to development theory by demonstrating that institutional capacity specifically administrative efficiency is a critical conduit through which governance structures influence sustainable development. Development is thus fundamentally an institutional process rather than solely an economic one.

5.7 Conclusion

This study demonstrates that sustainable development outcomes in the public sector are fundamentally driven by the interaction of organisational structure, administrative efficiency, and digital governance capacity. Structural arrangements influence development primarily through their impact on operational performance, while digital transformation enhances this relationship by modernising administrative processes and improving transparency.

The findings challenge the assumption that financial resources alone can drive development. Effective institutions capable of translating policies into tangible results are essential. Structural rigidity, fragmented mandates, weak accountability mechanisms, and inadequate administrative capacity undermine governance performance, whereas coherent institutional design supported by digital innovation significantly improves effectiveness.

Ultimately, sustainable development depends on the capacity of public organisations to coordinate actions, utilise resources efficiently, and respond to societal needs in a timely and accountable manner. Comprehensive reforms integrating institutional design, managerial competence, and technological capability are therefore critical for building resilient, responsive, and development-oriented governance systems.

In sum, the study reinforces the view that development is not merely an economic phenomenon but an institutional one. Strengthening governance capacity offers one of the

most powerful pathways for achieving inclusive and sustainable progress in the twenty-first century.

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