EFFECTS OF BUDGET PREPARATION AND PROCESS ON ACCOUNTABILITY: EVIDENCE FROM SELECTED PUBLIC SECTOR ENTITIES IN NIGERIA

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Abstract
This study investigates the effect of budget preparation and processes on the accountability of public sector entities in Nigeria, with specific attention to federal ministries, departments, and agencies (MDAs). The study adopted a cross-sectional survey design targeting senior officials directly involved in budget processes across 29 federal ministries and 159 agencies. Using stratified random sampling, a total of 311 valid responses were obtained. The data was analyzed using Ordered Logistic Regression and Ordinary Least Squares (OLS) to assess the influence of budget preparation components on various dimensions of accountability in the MDAs. The findings indicate that Budget Preparation and Review ($\beta = 0.228$, $t = 2.09$, $p = 0.037$) and Budget Hearings and Defenses ($\beta = 0.236$, $t = 2.32$, $p = 0.021$) positively and significantly enhance accountability, whereas Budget Policy Formulation and Call Circulars ($\beta = 0.008$, $t = 0.09$, $p = 0.931$) and Budget Approval and Adoption ($\beta = 0.006$, $t = 0.06$, $p = 0.951$) have no significant effect. The study concludes that effective budget preparation, review, and defense significantly enhance accountability in Nigerian public sector entities, whereas policy formulation and formal approval have minimal impact.The study recommends that the Budget Office of the Federation and State Ministries of Budget and Planning, should promote early-stage budget planning through realistic revenue projections and clear policy guidelines, while also fostering stakeholder inclusiveness during policy formulation to enhance transparency and ownership.

Keywords: Accountability, budget preparation, budget process, Nigeria, public sector, principal-agent theory

1.0 Introduction

Public sector accountability remains a cornerstone of effective governance and a prerequisite for sustainable development. It ensures that government institutions act transparently, efficiently, and responsibly in managing public resources and delivering services to citizens. Among the various mechanisms that promote accountability, the budget process stands out as a critical instrument for planning, resource allocation, expenditure control, and performance evaluation (Andrews, Cangiano, & Cole, 2021). In well-functioning democracies, robust budgeting systems not only enhance fiscal discipline and service delivery but also strengthen citizens' trust in public institutions (Andrews et al., 2021). Reform paradigms such as New Public Management (NPM) and more recent frameworks like Digital Era Governance (DEG) have emphasized

performance orientation, digital integration, and transparency in public financial management (Mergel, 2022; World Bank, 2023).

In developing economies, particularly across Africa, initiatives such as Integrated Financial Management Information Systems (IFMIS) have shown promise in enhancing budget transparency and control. However, outcomes vary widely depending on institutional enforcement, bureaucratic integrity, and political will (Mensah & Aboagye, 2021; Ndung'u, 2022). Nigeria's experience reflects these regional patterns. Despite implementing public financial management reforms such as the Medium-Term Expenditure Framework (MTEF), Zero-Based Budgeting (ZBB), and the Fiscal Responsibility Act (FRA), the translation of reform intentions into tangible accountability outcomes has remained weak (Okon & Yusuf, 2023; Adebayo et al., 2024; Nwosu, Adekunle, & Eze, 2022). Persistent issues such as political interference, weak institutional capacity, and limited compliance continue to undermine budget credibility (Okafor & Adebiyi, 2023; Transparency International Nigeria, 2024).

Despite the presence of formal fiscal frameworks, Nigeria performs poorly in global accountability and governance indicators. The 2023 Corruption Perceptions Index scored Nigeria 24/100, highlighting persistent weaknesses in public sector transparency and fiscal oversight (Transparency International, 2023). Audit reports from the Office of the Auditor General of Nigeria (2023) continue to expose budget padding, unapproved expenditures, and financial irregularities that erode fiscal control. These deficiencies not only distort resource allocation and weaken service delivery but also diminish citizens' trust in government institutions (Okafor et al., 2021).

A fundamental problem is that accountability failures often originate at the budget preparation stage, where unrealistic revenue projections, weak linkages between policy priorities and resource allocation, and delays in approval processes undermine fiscal discipline (Eze et al., 2022). The World Bank (2021) notes that Nigeria's federal budget approval process frequently experiences three- to six-month delays, disrupting capital project execution and fiscal predictability, while the IMF (2022) reports average revenue shortfalls of about 30% (2015–2021) and budget implementation rates below 60% between 2016 and 2020, reflecting systemic inefficiencies (CBN, 2021).

Although reform tools such as the MTEF were designed to enhance budget credibility, compliance remains suboptimal. The Fiscal Responsibility Commission (2022) found that only 45% of MDAs complied with MTEF guidelines in the 2021 budget cycle, underscoring persistent institutional gaps. Thus, despite a series of fiscal reforms, the link between budget preparation processes and accountability outcomes remains poorly understood and empirically underexplored.

This study addresses that gap by empirically examining how various stages of the budget preparation process influence public sector accountability in Nigeria. Prior studies (Akinyemi et al., 2021; Adeniyi & Okonkwo, 2022; Ugwoke & Nweke, 2023) have focused broadly on financial mismanagement, expenditure control, and corruption, but few have integrated these perspectives into a unified analytical model that directly connects the budget preparation process to accountability outcomes.

The purpose of this study is to investigate the effect of budget preparation and process on the accountability of public sector entities in Nigeria, focusing on federal ministries, departments, and agencies (MDAs). Specifically, the study seeks to determine how the key stages of budget preparation; policy formulation and call circulars, preparation and

review, hearings and defenses, and approval and adoption affect financial, social, and administrative accountability. Which components of the budget process most significantly influence accountability outcomes? By addressing this questionq, the study aims to advance understanding of how budgeting practices shape governance quality and accountability in developing country contexts.

This research contributes to both theory and practice. Theoretically, it enriches the discourse on public financial management by clarifying how budgetary processes translate into accountability outcomes within a developing economy. Practically, it offers evidence-based insights for policymakers, administrators, and development partners seeking to strengthen fiscal discipline, improve transparency, and enhance governance effectiveness. The findings are expected to inform reforms that promote efficient resource allocation, public trust, and progress toward Sustainable Development Goal (SDG) 16, which emphasizes building strong institutions and accountable governance.

2.0 Literature Review

The conceptual review in this study is the review of the study variables, categorizing, describing the concepts and outline the presumed relationships between them, including relevant theories and supporting empirical research.

Budget Preparation and Process (BPP)

Budget Preparation and Process (BPP) refers to the structured steps through which a government formulates, reviews, and finalizes its financial plans before implementation. It is a fundamental aspect of public financial management, ensuring that available resources are allocated efficiently to meet economic and developmental objectives. Scholars have defined this concept in various ways, often emphasizing its role in setting fiscal priorities, ensuring expenditure control, and enhancing transparency in public governance (Omolehinwa & Naiyeju, 2012). According to Allen and Tommasi (2001), BPP encompasses all activities involved in the formulation and approval of a budget, including revenue estimation, expenditure planning, and legislative authorization. Similarly, Schiavo-Campo and Tommasi (1999) describe BPP as the policy-driven process through which governments translate their economic goals into financial commitments for a given fiscal period.

The concept has been referred to by different names in financial management literature. It is commonly known as budget formulation, budget development, or budget drafting, depending on the country or institutional framework. The World Bank (2018) describes it as “budget planning and approval,” emphasizing its procedural and legal dimensions. In Nigeria, it is officially recognized as “Budget Preparation and Approval,” as outlined in the annual fiscal policy guidelines issued by the Budget Office of the Federation. Regardless of the terminology, the core objective remains the same: to establish a comprehensive financial plan that guides government operations and public service delivery.

Historically, budget preparation and process have evolved alongside modern governance structures. The earliest recorded budgeting practices date back to ancient Mesopotamian and Egyptian civilizations, where rulers allocated resources for infrastructure and military activities. However, the contemporary approach to budget preparation originated in 19th-century Britain, where the government introduced structured fiscal planning under the Exchequer and Audit Departments Act of 1866 (Wildavsky & Caiden, 2004). Over time, budgeting processes became more

sophisticated, integrating principles of performance-based budgeting, zero-based budgeting, and participatory budgeting to enhance accountability and efficiency (Schick, 1998). In Nigeria, formal budget preparation gained prominence during the colonial era, with structured financial planning introduced through the Finance (Control and Management) Act of 1958, which laid the foundation for the country's public financial management system. Despite numerous reforms, the Nigerian budgetary process continues to face challenges such as late budget approvals, unrealistic revenue projections, and political interference (Iyoha & Oyerinde, 2010).

The Budget Preparation and Process consists of several key activities that ensure a transparent and efficient allocation of financial resources. The first stage, Budget Policy Formulation and Budget Call Circular, involves defining national priorities and issuing directives to guide budget drafting. Governments at all levels outline macroeconomic assumptions, revenue forecasts, and spending limits based on economic conditions and policy objectives (World Bank, 2018). The Budget Call Circular, a formal document issued to all government ministries, departments, and agencies (MDAs), provides detailed instructions on expenditure ceilings and submission deadlines. This ensures that budget proposals align with overarching economic and social development strategies (Adeyemi et al., 2012).

Following this, Budget Preparation and Reviews take place, during which MDAs develop expenditure plans based on sectoral needs and policy priorities. These budget estimates undergo Budget Hearings and Defenses, where agency heads justify their financial requests before legislative committees and financial oversight bodies (Okpala, 2012). The final stage, Budget Approval and Adoption, involves legislative scrutiny and passage of the budget into law. In Nigeria, this process is often characterized by delays, revisions, and executive-legislative negotiations, which can impact the timely implementation of public programs (Ibietan, 2013). Ensuring that each of these steps is executed efficiently is crucial for achieving a budget that is both realistic and responsive to the nation's economic and developmental goals.

Budget Policy Formulation and Budget Call Circular

Budget policy formulation sets the macro-fiscal strategy, priorities, and multi-year ceilings that guide annual budgets, while the budget call circular (BCC) operationalizes these choices by instructing MDAs on ceilings, templates, timelines, and evidentiary requirements for submissions (OECD Journal on Budgeting, 2024). Credible formulation hinges on a medium-term framework that links macro assumptions to sector limits and performance targets, improving allocative discipline and transparency (Public Budgeting & Finance, 2021). In practice, BCCs specify submission deadlines, costings, and performance indicators, and increasingly integrate cross-cutting directives (e.g., gender/equity guidance), anchoring consistency across government (Budget Office of the Federation, 2021; OECD Journal on Budgeting, 2024). Clear policy-to-circular linkages are vital because weak guidance and fragmented timelines translate into execution bottlenecks and accountability gaps (Global Health: Science and Practice, 2024). Thus, the core components (macro-fiscal parameters, sector ceilings, standardized forms, performance evidence, and compliance checks) make the BCC a pivotal instrument that converts policy intent into budget submissions and, ultimately, measurable results (PB&F, 2021; OECD, 2024).

Budget Preparation and Review

Budget preparation and review refer to the structured processes through which public sector entities translate macro-fiscal policies into detailed, actionable sectoral allocations while ensuring alignment with national policy priorities (IMF, 2022). Conceptually, budget preparation involves setting realistic revenue projections, defining expenditure ceilings, and designing program-based allocations that reflect both strategic objectives and resource constraints. The review phase ensures that proposed budgets are critically examined, validated, and adjusted to enhance fiscal discipline, transparency, and accountability (IMF, 2022).

In the Nigerian context, effective budget preparation and review are crucial for operationalizing the annual budget in federal ministries, departments, and agencies (MDAs). A robust preparation framework ensures that macroeconomic forecasts are realistically linked to expenditure plans, reducing the gap between projected and actual spending (Okoye & Onah, 2021). Participatory approaches, such as stakeholder consultations and input from civil society, enhance budget realism and ownership (Haileselassie et al., 2024), while legislative oversight by bodies like the National Assembly strengthens the review process and enforces accountability (Molepo & Jahed, 2023).

Budget Hearing Defences

Budget hearing defences are structured forums in which public officials present, justify, and defend proposed budgets before legislative committees. Conceptually, these hearings are critical mechanisms for reinforcing transparency, reducing information asymmetry between policymakers and legislators, and enhancing accountability in public financial management (Csehi & Schulz, 2022). Through rigorous examination of budget proposals, audit reports, and departmental activities, legislative committees can question officials, request clarifications, and recommend corrective measures, thereby strengthening governance integrity (Ayepare & Orueze, 2015; Kemp et al., 2023).

In the Nigerian context, budget hearing defences are integral to the budget cycle within federal ministries, departments, and agencies (MDAs). Parliamentary committees, including the Appropriations and Finance Committees of the National Assembly, function as “engine rooms” of fiscal oversight, ensuring that public funds are allocated and spent in line with approved plans (Janse van Rensburg, 2023; Csehi & Schulz, 2022). The effectiveness of these hearings in Nigeria depends on factors such as the technical capacity of committee members, adherence to timely legislative schedules, and follow-through on recommendations. Empirical evidence indicates that when hearings are conducted regularly, transparently, and with clear mandates, they can curb fiscal waste, improve compliance, and promote responsible financial management (Kemp et al., 2023). Conversely, delayed, perfunctory, or poorly enforced hearings weaken their accountability function.

Budget Approval and Adoption

Budget approval and adoption refer to the legislative phase in which an executive-prepared budget is formally examined, amended where necessary, and enacted into law, thereby acquiring the legal authority for public sector spending (Public Budgeting Systems, 2025). Conceptually, this stage is essential for ensuring that fiscal allocations align with policy objectives while reflecting representative oversight, accountability, and transparency (Molepo & Jahed, 2023). Through structured approval mechanisms, legislative bodies scrutinize program priorities, assess the validity of fiscal assumptions, and verify performance data before granting formal adoption, holding the executive accountable in the process (Molepo & Jahed, 2023).

In the Nigerian context, the constitutional responsibility for budget approval rests with the National Assembly, specifically the Senate and House of Representatives through their Appropriations Committees (Senate Committee on Appropriation, 2025). These committees review and amend budget proposals, conduct hearings, and authorize allocations prior to the commencement of the fiscal year. When executed effectively, the approval and adoption process enhances the legitimacy of budgetary allocations, strengthens public trust, and ensures that resources are aligned with national development priorities. Conversely, delays, inadequate scrutiny, or political interference during this stage can compromise budget credibility, undermine accountability, and negatively affect subsequent implementation (Molepo & Jahed, 2023).

Accountability in Public Sector

Accountability in the public sector refers to the obligation of government officials and public institutions to explain, justify, and take responsibility for their decisions, actions, and use of public resources before citizens, oversight authorities, and other stakeholders. It serves as a key pillar of good governance, promoting transparency, compliance with legal and ethical standards, and improved service delivery (Onuorah & Appah, 2012). Scholars conceptualize accountability both as a duty to answer for conduct (Akinwunmi & Akinola, 2019) and as a power relationship in which officeholders must justify policy choices and face sanctions when performance fails to meet expected standards (Kankpang & Nkiri, 2019).

In Nigeria, the institutional framework for accountability is supported by regulatory instruments such as the Fiscal Responsibility Act (2007), the Public Procurement Act (2007), and the Financial Regulations (2009). However, the effective realization of accountability continues to be challenged by systemic corruption, political interference, weak oversight capacity, and bureaucratic inefficiencies (Aigbe & Omamor, 2023).

Crucially, accountability in the Nigerian public sector is multidimensional, consisting of financial, administrative, and social accountability (Akhidime, 2012; Uche et al., 2020). Financial accountability focuses on ensuring that public funds are managed according to approved budgets and audit procedures. Administrative accountability involves adherence to institutional rules, internal controls, and performance standards within ministries, departments, and agencies. Social accountability emphasizes the role of citizens, civil society, and media in demanding openness and responsiveness from public officeholders. Strengthening these three dimensions together is essential for reducing corruption, enhancing institutional performance, and restoring public trust in government systems (Agbatogun, 2019).

Theoretical Underpinning

The Principal-Agent Theory is a central framework in economics, political science, and public administration that explains how one party (the principal) entrusts authority to another (the agent) to act on its behalf. Originally articulated by Stephen Ross (1973) and later developed by Jensen and Meckling (1976) in their landmark work Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure, the theory emphasizes the challenges that emerge when agents' interests diverge from those of principals. These misalignments, often reinforced by information asymmetry, create agency problems such as moral hazard and adverse selection.

Since its development, the scope of the theory has expanded far beyond corporate governance into areas such as public sector management and policymaking. Arrow (1991) highlighted issues of risk-sharing within principal-agent dynamics, while Moe (1984) demonstrated how agency problems produce bureaucratic inefficiencies in government. Later works by Lane (2005) and Besley & Ghatak (2003) examined the influence of political institutions and regulatory frameworks on agency relationships, especially in public financial management. These contributions illustrate the versatility of the theory in explaining accountability and governance challenges across diverse institutional contexts.

In Nigeria, the Principal-Agent framework offers a powerful lens for analyzing public sector accountability and budgetary practices. Citizen's act as principals, while elected officials and civil servants function as agents charged with managing public resources. However, weak monitoring, poor transparency, and entrenched corruption enable agents to advance personal or political interests instead of the public good (Sorunke & Adekanmi, 2016). Problems such as budget padding, diversion of funds, and ineffective implementation reflect misaligned incentives between leaders, bureaucrats, and the electorate (Okwoli & Ogbu, 2023). Oversight bodies such as the legislature and anti-corruption agencies attempt to curb these agency costs, though their effectiveness is often undermined (Agu et al., 2024). Empirical studies support these insights: Agu et al. (2024) show how political interference undermines budget discipline, Azinogo & Erasmus (2025) emphasize the Auditor-General's limited enforcement capacity, and Ebimobowei et al. (2020) highlight the role of information asymmetry in perpetuating inefficiencies. Together, these findings underscore the importance of aligning incentives and strengthening oversight to enhance accountability.

Despite its usefulness, the theory is not without criticism. Some scholars argue that it reduces human behavior to narrow self-interest, neglecting factors such as trust, culture, and informal networks that often influence decision-making (Perrow, 1986; Donaldson & Davis, 1991). Others, like Gibbons (1998), contend that it struggles to explain complex, long-term relationships where multiple principals and agents interact simultaneously. These critiques have prompted refinements, incorporating behavioral and institutional perspectives to make the theory more adaptable to real-world governance issues.

Empirical Review

Empirical evidence across countries consistently demonstrates that effective budget preparation enhances accountability, though the degree of success varies depending on institutional context, governance quality, and stakeholder engagement.

In developed economies, studies converge on the view that structured budgeting systems strengthen fiscal discipline and transparency. Shawe (2023) underscores that effective budgeting promotes planning, control, and accountability but also criticizes traditional budgeting for rigidity and limited adaptability to changing fiscal realities. Similarly, Dakhil (2023) finds that adopting international accounting standards in Russia enhances transparency and accountability, although implementation challenges persist. In South Africa, Molepo and Jahed (2023) reveal that active parliamentary participation in budget oversight promotes fiscal accountability, aligning with findings from Ukraine, where Hryhoriv et al. (2024) report that integrating digital technologies into budget processes improves reporting accuracy and institutional transparency. Collectively, studies from developed contexts emphasize that technological innovation and legislative oversight are key drivers of accountability.

In developing countries, the findings are more mixed. Donius (2023) observes that participatory and structured budgeting in Uganda and Rwanda improves accountability and performance outcomes, though resource constraints and partial stakeholder inclusion undermine sustainability. Similarly, Saffina (2020) and Handayani et al. (2022) find that budgeting practices enhance efficiency and resource use in nonprofit and educational sectors, but institutional weaknesses often hinder results. Nguyen (2023) highlights that stakeholder engagement is essential to accountability in Vietnamese enterprises, while Sorsa (2022) identifies adherence to budgetary guidelines and participatory processes as critical for accountability in Ethiopian finance offices. Overall, studies from developing contexts suggest a positive but fragile link between budgeting and accountability; strengthened by participation yet constrained by weak capacity and political influence.

In Nigeria, empirical findings echo these mixed trends but point to deeper systemic challenges. Adekunle et al. (2021) show that fiscal discipline is eroded by incremental budgeting and political interference. In contrast, Igbokwe-Ibeto (2021) demonstrates that well-implemented budgeting practices can enhance governance and service delivery, though corruption and weak institutional enforcement persist. Onireti (2022) and Ngara and Dasat (2020) highlight the legislature's potential to foster accountability through budget scrutiny, but their findings also reveal that political interference and limited technical capacity diminish its effectiveness. Similarly, Olasehinde (2020) links transparent and participatory budgeting to improved resource allocation and economic growth, yet notes that persistent malpractices such as budget padding and unrealistic projections, continue to undermine credibility.

Across contexts, a clear pattern emerges: where budget processes are transparent, participatory, and institutionally supported, accountability outcomes improve. However, contradictions arise in the extent to which reforms translate into practice. Developed countries tend to succeed due to stronger enforcement and technological integration, while developing countries including Nigeria, struggle with political interference, weak capacity, and limited citizen engagement. Thus, the literature collectively underscores that budget preparation enhances accountability only when supported by transparency, participation, and strong institutional oversight.

Gaps Identified In Literature

Despite extensive evidence on the relationship between budgeting and accountability, important gaps remain in the literature on Nigeria's public sector. First, much of the existing research emphasizes the role of legislative oversight and fiscal discipline (Onireti, 2022; Ngara & Dasat, 2020) but pays limited attention to how the processes

of budget preparation such as formulation guidelines, call circulars, and inter-agency coordination directly influence accountability outcomes of public sector entities in Nigeria.

3.0 Methodology

This study adopted a cross-sectional descriptive survey design to empirically examine the effect of budget preparation and process on the accountability of public sector entities in Nigeria. The design is quantitative in nature and suitable for obtaining standardized responses from a large sample within a defined time frame (Yin, 2003). It allows systematic analysis of relationships among budgetary practices, institutional quality, and accountability outcomes in federal ministries, departments, and agencies (MDAs). The target population comprised 1,880 senior officials directly involved in budget preparation, review, and monitoring across 29 Federal Ministries and 159 Agencies. These officials include Directors, Deputy Directors, Chief Accountants, and Heads of Procurement, Audit, and Planning, Monitoring, and Evaluation Departments. A stratified random sampling technique was employed to ensure proportional representation across MDAs and sectors. The Krejcie and Morgan (1970) formula for determining sample size was applied as follows:

$$S = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$$

Where X^2= 3.841, N = 1880, P = 0.50,d = 0.05. This yielded a minimum sample size of 306 respondents. To enhance robustness and account for possible non-responses, 319 questionnaires were distributed proportionately across the strata. This approach improved representativeness and generalizability of findings (Zhao et al., 2023).

Model Specification

The objective of this study is to evaluate the effects of Budget preparation and process on accountability of public sector entities in Nigeria. The study adapted and modified a model specified by Alade *et al*. (2020) that established a relationship between budget preparation and process on financial accountability in Ondo State, Nigeria as specified below:

$Li = \alpha_0 + \alpha_1 BP + \mu i$……...3.1

Where:

Li= Logit (dependent variable) = financial accountability

BP = Budget Preparation

μi= Error term

α_1 = Parameters to be estimated

The framework proposed by Alade *et al*. (2020) has been specifically adapted and customized to align with the unique context and objectives of our current research. In this adaptation, we made modifications to the original model. Firstly, the study adopted financial accountability from the original dependent variable and included administrative accountability, social accountability and the overall accountability in the new model. The study further excluded budget planning from the model and included Budget Preparation and Process. The fundamental objective of this modified framework is to examine the effect of Budget Preparation and Process (Budget Policy Formulation and Budget Call Circular, Budget Preparation and Review, Budget Hearing Defences, and Budget Approval and Adoption) on accountability (financial

accountability, administrative accountability, and social accountability) of Nigeria MDAs.

The model will be adapted based on its interpretative similarity tendency to the current study as presented in the equation, representing the algebraic expression of the model below in equation 3.2, 3.3, 3.4 and 3.5. Thus, the model will be expressed as follows:

$FACC = \beta_0 + \beta_1 BPF + \beta_2 BPR + \beta_3 BHD + \beta_4 BAA + \varepsilon$ 3.2

$AACC = \beta_0 + \beta_1 BPF + \beta_2 BPR + \beta_3 BHD + \beta_4 BAA + \varepsilon$ 3.3

$SACC = \beta_0 + \beta_1 BPF + \beta_2 BPR + \beta_3 BHD + \beta_4 BAA + \varepsilon$ 3.4

$ACC = \beta_0 + \beta_1 BPF + \beta_2 BPR + \beta_3 BHD + \beta_4 BAA + \varepsilon$ 3.5

Where:

FACC = Financial Accountability of Government MDAs
AACC = Administrative Accountability of Government MDAs
SACC = Social Accountability of Government MDAs
ACC = Accountability of Government MDAs
BPF = Budget Policy Formulation and Budget Call Circular
BPR = Budget Preparation and Reviews
BHD = Budget Hearing and Defences
BAA = Budget Approval and Adoption
β_0 = constant intercept
$\beta_1 - \beta_4$ = coefficient
ε = Error Term

Research Instrument and Data Collection

Primary data were collected using a structured, close-ended questionnaire, designed in two sections. Section A captured respondents' demographic and professional information. Section B measured key variables: Budget Preparation and Process, Budget Control Mechanisms, Stakeholders' Involvement, Budget Implementation, Budget Flexibility, Accuracy of Estimates, and Accountability. Responses were recorded using a five-point Likert scale. Data collection was carried out through self-administered questionnaires and targeted interviews with key budget officers to ensure completeness and accuracy. The instrument was pretested to refine clarity and structure before full deployment.

Instrument validity was assessed through convergent and discriminant validity tests using Average Variance Extracted (AVE) and Fornell–Larcker criteria (Fornell & Larcker, 1981). Convergent validity was confirmed where AVE ≥ 0.50, while discriminant validity was ensured where the square root of AVE exceeded inter-construct correlations. Reliability was evaluated using Cronbach's Alpha and Composite Reliability coefficients. A Cronbach's Alpha value ≥ 0.70 indicated acceptable internal consistency (George & Mallery, 2003). Items with low loadings (<0.70) were revised or removed after pilot testing. Factor analysis complemented reliability checks by confirming the coherence of latent constructs.

Method of Data Analysis

The data analysis employed a combination of descriptive and inferential statistical techniques to examine the relationship between budget implementation and accountability in Nigeria's public sector. Descriptive statistics were first applied to summarize demographic and organizational characteristics, providing an overview of respondent distribution across key budgetary and accountability variables (Hair et al., 2021). To validate the suitability of the data for parametric analysis, normality tests

using skewness and kurtosis were conducted, while multicollinearity diagnostics through pairwise correlation analysis ensured that inter-variable correlations did not bias regression estimates (Kock & Lynn, 2012). Factor analysis was then utilized to uncover latent constructs underlying the accountability framework, thereby reducing dimensionality and enhancing model robustness (Williams, Onsman, & Brown, 2010). For inferential testing, Ordered Logistic Regression was applied to capture the ordinal nature of accountability outcomes, which reflect varying levels of performance across public sector entities (Long & Freese, 2014). In addition, Ordinary Least Squares (OLS) regression was employed for the overall accountability model to estimate linear relationships between core dimensions of budget implementation; Budget Release and Allocation, Budget Reporting and Accounting, Stakeholder Engagement and Communication, Cash Planning and Management, and Procurement Planning and Management, and the dependent variable of accountability (Wooldridge, 2020).

4.0 Data Analysis and Presentation of Results

This section outlines the statistical procedures and findings on the influence of budget preparation and process on accountability in Nigeria's public sector. Descriptive statistics summarize respondent characteristics, while diagnostic tests ensure data suitability. Factor analysis validates constructs, and regression techniques (Ordered Logistic and OLS) are applied to examine the relationships between budget preparation and process and accountability across federal ministries, departments, and agencies (MDAs).

Descriptive Statistics

Consistent with Cooper and Schindler's (2008) emphasis on examining research tools for reliability, this study carefully validated its questionnaire, yielding 311 usable responses and only 8 invalid ones, resulting in a strong 97.5% response rate. The demographic data show a male-dominated sample (70.1%) reflective of Nigeria's senior public service, with respondent's largely well-educated 59.2% holding first degrees and 40.8% postgraduate qualifications ensuring intellectual capacity for informed feedback. Professional expertise was equally strong, with 41.2% certified by ICAN and 37.9% by ANAN, reinforcing the technical quality of their inputs on budgetary and accountability issues.

The sample included key officers directly engaged in financial administration, notably Heads of Finance and Accounts or Division Heads (28.9% and 25.1% respectively), alongside senior officials such as Assistant Chief Officers (24.1%) and Deputy Directors (20.9%), ensuring responses came from those with both operational and strategic authority. With 37.6% of participants having 5–10 years of service experience, the data also reflect seasoned perspectives on Nigeria's public financial management system. The subsequent descriptive analysis explores accountability along financial, social, and administrative dimensions, using statistical measures such as mean, standard deviation, residual variance, interclass correlation, and Cronbach's Alpha to assess the reliability of the findings.

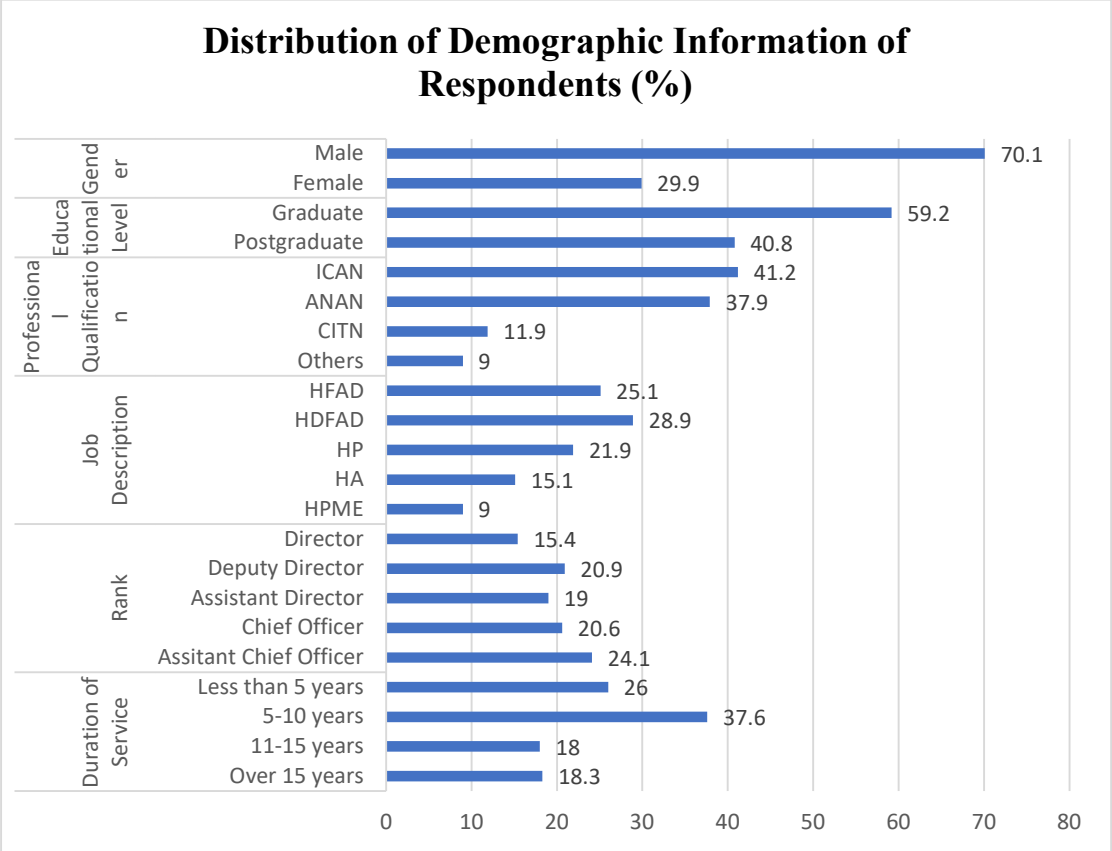


Figure 4.1 Distribution of Respondents in Percentages

Source: Authors' computation, (2025).

Descriptive Analysis of Variables

This section presents a descriptive analysis of respondents' opinion with regards to accountability in the public sectors in Nigeria. The analysis is structured around key thematic dimensions, including financial accountability, social accountability, and administrative accountability. This section focuses on mean, standard deviation, residual variance, interclass correlation, and Cronbach's Alpha.

Table 1:
Perceptions on Accountability in Public Sector Entities

Items	Mean	Standard deviation	Residual variance	Intraclass correlation	Cronbach's alpha
Financial Accountability (FACC)					
FACC1	3.26	1.361	1.851	0.929	0.940
FACC2	3.00	1.321	1.745		
FACC3	3.30	1.217	1.481		
FACC4	3.15	1.198	1.434		
FACC5	3.23	1.220	1.488		
FACC6	3.55	1.043	1.087		
FACC7	3.48	1.089	1.186		
FACC8	3.20	1.163	1.354		
Social Accountability (SACC)					
SACC1	3.14	1.239	1.535	0.962	0.968
SACC2	3.25	1.271	1.614		
SACC3	3.41	1.238	1.533		
SACC4	3.46	1.228	1.507		

SACC5	3.31	1.226	1.503		
SACC6	3.22	1.299	1.688		
SACC7	3.51	1.164	1.354		
SACC8	3.48	1.121	1.257		
Administrative Accountability (AACC)					
AACC1	3.32	1.175	1.381	0.888	0.905
AACC2	3.4	1.192	1.42		
AACC3	3.24	1.233	1.521		
AACC4	3.36	1.29	1.663		
AACC5	2.83	1.267	1.604		
AACC6	3.00	1.194	1.426		
AACC7	3.09	1.211	1.465		
AACC8	2.94	1.182	1.397		

Source: Author's Computation (2025)

Explanatory Notes: *FACC1 to FACC8 are questions on Financial Accountability; SACC1 to SACC8 are questions on Social Accountability; AACC1 to AACC8 are questions on Administrative Accountability*

The descriptive analysis of accountability in Nigeria's public sector, presented in Table 1, assessed financial, social, and administrative accountability using 24 items with strong reliability and validity measures. Results show that across all three dimensions, the mean scores were above the midpoint of 3, indicating general agreement among respondents on the accountability measures. Financial accountability was most strongly reflected in items FACC6 (M = 3.55) and FACC7 (M = 3.48), supported by high reliability (Cronbach's Alpha = 0.940, ICC = 0.929). Social accountability scored highest on SACC7 (M = 3.51) and SACC8 (M = 3.48), also showing excellent reliability (Cronbach's Alpha = 0.968, ICC = 0.962). Administrative accountability was led by AACC2 (M = 3.40) and AACC4 (M = 3.36), with acceptable internal consistency (Cronbach's Alpha = 0.905, ICC = 0.888). Overall, the findings confirm that the measures used effectively captured accountability perceptions, with participants largely affirming positive practices across financial, social, and administrative dimensions in ministries, departments, and agencies.

Preliminary Analyses

This section presents all the pre-estimation required to ensure that the variables included in the model meets the assumption of ordered logistic regression and OLS being the composite model of this study. The pre-tests conducted include normality test and correlation analysis. Furthermore, this section conducted a factor analysis meant for selection of the appropriate proxy among the constructs of the accountability components (financial, social, and administrative). These analytical approaches were carefully executed as preliminary to the core OLS regression analysis.

Descriptive Analysis of Independent Variables

Table 2:

Perceptions on Budget Preparation and Process in Public Sector Entities

Items	Mean	Standard deviation	Residual variance	Intraclass correlation	Cronbach's alpha
Budget Policy Formulation & Call Circular (BPF)					
BPF1	2.7	1.031	1.063	0.828	0.855
BPF2	2.6	0.984	0.969		
BPF3	2.55	0.928	0.862		
BPF4	2.64	1.009	1.017		

BPF5	2.52	1.062	1.128		
Budget Preparation and Reviews (BPR)					
BPR1	2.8	1.089	1.186	0.891	0.909
BPR2	2.74	1.089	1.187		
BPR3	2.81	1.135	1.288		
BPR4	2.86	1.066	1.137		
BPR5	2.67	1.033	1.067		
Budget Hearing and Defenses (BHD)					
BHD1	2.82	1.137	1.292	0.938	0.948
BHD2	2.77	1.048	1.098		
BHD3	2.83	1.018	1.036		
BHD4	2.88	1.086	1.179		
BHD5	2.89	1.095	1.198		
Budget Approval and Adoption (BAA)					
BAA1	2.86	1.123	1.261	0.881	0.900
BAA2	2.94	1.160	1.345		
BAA3	2.58	1.053	1.109		
BAA4	2.55	1.037	1.074		
BAA5	2.59	1.022	1.044		

Source: Author's Computation, 2025.

Explanatory Notes: *BPF1 to BPF5 are questions on Budget Policy Formulation & Call Circular; BPR1 to BPR5 are questions on Budget Preparation and Reviews; BHD1 to BHD5 are questions on Budget Hearing and Defenses; BAA1 to BAA5 are questions on Budget Approval and Adoption*.

Table 2 summarizes the analysis of budget preparation and process across four dimensions; budget policy formulation and call circular (BPF), budget preparation and reviews (BPR), budget hearing and defenses (BHD), and budget approval and adoption (BAA) measured with 20 items in total. The findings show that for all categories, mean scores were below the midpoint of 3, indicating that most respondents disagreed with the assertions relating to budgetary practices in ministries, departments, and agencies in Nigeria. Specifically, the highest-rated items were BPF1 (M = 2.70), BPR4 (M = 2.86), BHD5 (M = 2.89), and BAA2 (M = 2.94), all still reflecting disagreement. Despite this, the reliability and validity results were strong across all dimensions, with Cronbach Alpha values ranging from 0.855 to 0.948 and convergent validity between 0.828 and 0.938, confirming that the measures used were consistent and reliable indicators of budget processes.

Normality Test

The variables included in the normality test have been transformed based on the responses associated with each. Each respondent responses with respect to each construct were summed up and a weighted mean was carried out. From this point, the analysis will be based on calculated variables.

Table 3:
Skewness and Kurtosis Joint Normality Test

Variables	Skewness	Kurtosis
ACCT	-0.094	-1.062
BPF	0.169	-0.447
BPR	0.115	-0.665
BHD	0.223	-0.297
BAA	0.293	-0.750

Source: Author's Computation, 2025.

Table 3 presents the skewness and kurtosis statistics used for the determination of the normality of the data for each of the variables. The decision rule is that each statistic must fall within the range of +3 and -3, which is the range accepted for a variable to be normally distributed (Asika, 1991). The skewness values for all variables range between -0.094 and 0.293, which fall within the acceptable ±1 threshold, indicating that the data for each variable is approximately symmetric and does not exhibit severe skewness. Similarly, kurtosis values range from -1.062 to 0.750, also within the acceptable ±3 range, suggesting that the distributions are generally mesokurtic and do not present extreme peakedness or flatness. Overall, the skewness and kurtosis results confirm that the dataset is approximately normally distributed, making it suitable for further parametric statistical analysis.

Multicollinearity Test

In light of this, the present study conducted a pairwise correlation analysis prior to model estimation. This analysis aimed to explore the bivariate relationships between the variables in the models, as depicted in Table 4.4.

Table 4:
Multicollinearity Test

Variable	ACCT	BPF	BPR	BHD	BAA
ACCT	1				
BPF	0.014	1			
BPR	0.033	0.427	1		
BHD	-0.055	0.651	0.522	1	
BAA	-0.017	0.635	0.441	0.482	1

Source: Author's Computation, 2025.

The correlation results in Table 4 shows the relationship across different pair of the variables included in the study. The coefficients within these tables were found to be less than 0.8. This suggests that multicollinearity is not a concern in this dataset. Thus, the variables appear sufficiently independent to proceed with regression analysis without risk of multicollinearity distorting the results.

Table 5:
Variance Inflator Factor

Variables	N	VIF	Tolerance Value
Budget Preparation and Process Model			
BPF	311	2.22	0.450
BPR	311	3.98	0.251
BHD	311	3.90	0.257
BAA	311	2.87	0.348

Source: Author's Computation, 2025.

The variance inflation factor (VIF) results presented in Table 5 indicate that multicollinearity was not a significant concern across the models. All VIF values ranged between 2.22 and 3.98, which are below the commonly accepted threshold of 10.0 (Hair et al., 2019), suggesting acceptable levels of collinearity. Tolerance values ranged from .251 to .450, all above the critical cut-off of .10, further confirming the absence of problematic multicollinearity. These findings imply that the predictor variables included in the regression models are sufficiently independent, thereby ensuring the reliability and validity of subsequent regression estimates.

Regression Analysis adopting Ordered Logistic Regression and OLS

Table 4.6 presents the ordered logistic regression results assessing the effect of budget preparation and processes on the three accountability components; financial, social and administrative accountability of public sector entities in Nigeria. In addition, the Ordinary Least Squares (OLS) results for the overall accountability index are also reported.

Table 6:
Regression Results for Budget Preparation and Process

Variables	Financial Accountability Model			Social Accountability Model			Administrative Accountability Model			Overall Accountability Model		
	Coeff.	**t**	**p-value**	**Coeff.**	**t**	**p-value**	**Coeff.**	**t**	**p-value**	**Coeff.**	**t**	**p-value**
BPF	-0.156	-0.82	0.410	-0.242	-1.27	0.203	0.505	2.53	0.011	0.008	0.09	0.931
BPR	0.472	2.15	0.031	0.452	2.00	0.046	0.184	0.86	0.391	0.228	2.09	0.037
BHD	0.546	2.56	0.011	0.132	0.65	0.517	0.682	3.21	0.001	0.236	2.32	0.021
BAA	0.307	1.66	0.097	-0.298	-1.58	0.114	0.338	1.78	0.075	0.006	0.06	0.951
Constants	-	-	-	-	-	-	-	-	-	3.257	17.75	0.000
Cut1	2.255	-	-	3.074	-	-	0.703	-	-	-	-	-
Cut2	0.404	-	-	1.419	-	-	0.626	-	-	-	-	-
Cut3	0.283	-	-	0.891	-	-	1.196	-	-	-	-	-
Cut4	2.190	-	-	0.914	-	-	3.570	-	-	-	-	-
LR chi2(5)	8.890	-	0.043	7.25	-	0.049	19.63	-	0.001	-	-	-
Pseudo R2	0.0096	-	-	0.0080	-	-	0.0213	-	-	-	-	-
Log Likelihood	- 457.04	-	-	- 451.68	-	-	- 450.77	-	-	-	-	-
F(4, 306)	-	-	-	-	-	-	-	-		2.75	-	0.028
R-Squared	-	-	-	-	-	-	-	-	-	0.035	-	-

Source: Author's Computation, 2025.

Explanatory Note: *ACCT is Accountability; BPF is Budgetary Policy Formulation & Call Circular; BPR is Budget Preparation and Review; BHD is Budget Hearing and Defenses; BAA is Budget Approval and Adoption;*

The results of the regression in Table 6 analyses highlight the relationship between budget processes and accountability in Nigeria's public sector. The likelihood ratio chi-square tests showed that all three accountability models were statistically significant, with the administrative accountability model demonstrating the strongest fit ($\chi^2 = 19.63$, $p = .001$), while both financial ($\chi^2 = 8.89$, $p = .043$) and social accountability ($\chi^2 = 7.25$, $p = .049$) models were moderately significant. However, the pseudo R^2 values were relatively low across the models, ranging from .0080 to .0213, indicating that while the predictors were significant, they explained only a small proportion of the variance. The log-likelihood values suggest that the administrative and social accountability models fit better than the financial accountability model. At the overall level, the accountability model was significant ($F(4,306) = 2.75$, $p = .028$), with an R^2 of .035, showing that about 3.5% of the variance in accountability was explained by budget processes. The cut points of the ordered models further provided thresholds for interpreting accountability categories across the three models.

In terms of individual predictors, budget policy formulation and call circulars (BPF) had a significant positive effect on administrative accountability ($\beta = 0.505$, $p = .011$) but showed insignificant effects on both financial and social accountability, as well as overall accountability. Budget preparation and reviews (BPR) emerged as a consistent predictor, significantly improving financial accountability ($\beta = 0.472$, $p = .031$), social accountability ($\beta = 0.452$, $p = .046$), and overall accountability ($\beta = 0.228$, $p = .037$). Budget hearing and defenses (BHD) also showed strong effects, significantly enhancing financial accountability ($\beta = 0.546$, $p = .011$), administrative accountability ($\beta = 0.682$, $p = .001$), and overall accountability ($\beta = 0.236$, $p = .021$), though its effect on social accountability was insignificant. Finally, budget approval and adoption (BAA) had weak and mostly insignificant effects, showing only marginal positive influences on financial and administrative accountability, but no impact on social or overall accountability.

The regression results provide evidence for testing the stated hypotheses on the effects of budget processes on accountability in Nigeria's public sector. For $H_0$1, Budget Policy Formulation and Budget Call Circular (BPF) recorded a very small and statistically insignificant coefficient ($\beta = 0.008$, $t = 0.09$, $p = 0.931$), leading to a failure to reject the null hypothesis; thus, BPF does not significantly influence accountability. For $H_0$2, Budget Preparation and Review (BPR) showed a positive and statistically significant effect ($\beta = 0.228$, $t = 2.09$, $p = 0.037$), prompting the rejection of the null hypothesis and confirming that effective preparation and review processes improve accountability. Similarly, $H_0$3 is rejected since Budget Hearing Defences (BHD) had a positive and significant effect ($\beta = 0.236$, $t = 2.32$, $p = 0.021$), indicating that rigorous defence processes enhance accountability outcomes. Finally, $H_0$4 is not rejected as Budget Approval and Adoption (BAA) yielded an insignificant coefficient ($\beta = 0.006$, $t = 0.06$, $p = 0.951$), showing no meaningful impact on accountability. Overall, the findings highlight that while preparation, review, and hearing stages contribute significantly to accountability, policy formulation and approval stages appear weak in influencing accountability outcomes.

Hypotheses Testing Decisions (OLS – Overall Accountability)

Hypothesis	Statement	Coefficient (β)	p-value	Decision
H01	There is no significant effect of Budget Policy Formulation and Budget Call Circular (BPF) on accountability	0.008	0.931	Not Rejected
H02	There is no significant effect of Budget Preparation and Review (BPR) on accountability	0.228	0.037	Rejected

Hypothesis	Statement	Coefficient (β)	p-value	Decision
H03	There is no significant effect of Budget Hearing Defences (BHD) on accountability	0.236	0.021	Rejected
H04	There is no significant effect of Budget Approval and Adoption (BAA) on accountability	0.006	0.951	Not Rejected

Source: Author's Computation, 2025.

Discussion of Findings

The regression results indicate that not all stages of the budget process equally influence accountability in Nigeria's public sector. Budget Policy Formulation and Call Circulars (BPF) as well as Budget Approval and Adoption (BAA) were found to have no significant impact, suggesting that while these processes set the framework for budgeting, they often remain formalities without translating into stronger accountability outcomes. In contrast, Budget Preparation and Review (BPR) and Budget Hearing Defences (BHD) demonstrated positive and statistically significant effects, highlighting that more interactive and participatory stages of the budget process are the ones that genuinely shape accountability.

These findings resonate with existing empirical studies. For instance, Baptista, Wiagustini, and Soares (2024) in Timor-Leste and Eneje, Ogbu, and Nnam (2024) in Nigeria's health sector found that effective budget preparation and review foster operational efficiency and transparency. Similarly, Molepo and Jahed (2023) in South Africa and Hryhoriv et al. (2024) in Ukraine emphasized the importance of parliamentary scrutiny and technological tools in strengthening accountability during budget defence and review stages. Conversely, evidence from Adekunle et al. (2021) and Onireti (2022) shows that political interference often undermines budget policy formulation and approval stages in Nigeria, consistent with this study's finding of their limited effect. Taken together, these results highlight that accountability gains are most achievable when emphasis is placed on inclusive review and hearing mechanisms, supported by transparency, oversight, and strong institutional enforcement.

The outcomes of this study can be interpreted through the lens of Principal–Agent Theory (PAT), which explains the accountability challenges that arise when public officials (agents) act on behalf of citizens or elected representatives (principals) (Eisenhardt, 1989; Jensen & Meckling, 1976). Principal Agent Theory posits that agents may pursue their own interests rather than those of the principals, particularly when there is information asymmetry and limited monitoring (Jensen & Meckling, 1976). In this context, the significant effects of Budget Preparation and Review (BPR) and Budget Hearing Defences (BHD) suggest that requiring agents to justify their budget proposals and undergo rigorous scrutiny reduces information asymmetry and limits opportunities for opportunistic behaviour, thereby aligning the actions of public officials with the interests of citizens and oversight bodies (Baptista, Wiagustini, & Soares, 2024; Molepo & Jahed, 2023).

Conversely, the non-significance of Budget Policy Formulation and Call Circulars (BPF) and Budget Approval and Adoption (BAA) indicates that these stages are often insufficiently structured to mitigate agency problems. Political elites frequently dominate these processes, resulting in weak oversight, poor enforcement, and minimal improvements in accountability (Adekunle et al., 2021; Onireti, 2022). Thus, emphasizing participatory review mechanisms and rigorous budget defence procedures provides a practical means of addressing principal–agent challenges, reinforcing transparency, and enhancing accountability within Nigeria's public sector.

5.0 Conclusion

This study concludes that budget preparation and processes exert a significant influence on accountability within Nigeria's public sector entities, though the magnitude of this effect varies

across the financial, administrative, and social dimensions of accountability. The analysis revealed that Budget Preparation and Review (BPR) and Budget Hearing and Defences (BHD) had positive and statistically significant effects on overall accountability. These results indicate that rigorous review processes and structured budget hearings substantially enhance financial discipline, administrative responsibility, and institutional transparency.

In contrast, Budget Policy Formulation and Call Circulars (BPF) and Budget Approval and Adoption (BAA) were statistically insignificant, implying that early-stage formulation and approval procedures currently lack the operational depth and transparency needed to drive accountability outcomes. Overall, the findings affirm that participatory and evidence-based budget processes, particularly during review and defence stages, are critical levers for enhancing fiscal responsibility and governance effectiveness in Nigeria's public sector. This study therefore, provides actionable recommendation each for the significant variables from this study:

i. The positive and significant effect of Budget Preparation and Review (BPR) on accountability indicates that the Budget Office of the Federation, State Ministries of Budget and Planning, and individual MDAs should institutionalize and promote early-stage budget planning by adopting realistic revenue projections and clear policy guidelines, while implementing rigorous, evidence-based review mechanisms that link budget estimates to credible forecasts and measurable performance outcomes rather than historical or politically influenced allocations.

ii. The significant positive effect of Budget Hearing and Defences (BHD) highlights the value of transparency and accountability during budget justification processes. Thus, the National Assembly, Budget and Appropriation Committees, and oversight bodies should promote more open and participatory budget defence sessions. Selected civil society organizations, professional bodies, and independent public finance experts should be incorporated into the observation and review process to enhance scrutiny and credibility.

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