



PUBLIC FINANCIAL MANAGEMENT AND SERVICE DELIVERY QUALITY OF PUBLIC HEALTH INSTITUTIONS IN NIGERIA'S NORTH-EASTERN REGION: THE MODERATING EFFECT OF PUBLIC ACCOUNTABILITY

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ABSTRACT

This study investigated the impact of Public Financial Management (PFM) practices on the quality-of-service delivery in public health institutions across Nigeria's North-East geopolitical zone, with a particular focus on the moderating role of public accountability. Anchored in stewardship theory, systems theory, and New Public Management theory, the study employed structural equation modelling to test the relationships among revenue mobilization, budget practices, auditing, regulatory frameworks, and financial reporting, alongside their interactions with public accountability. The findings revealed a significant positive relationship between revenue mobilization and service delivery quality, indicating that effective revenue collection mechanisms enhance institutional capacity. In contrast, budget practices showed no significant effect, highlighting implementation gaps and bureaucratic inefficiencies. Surprisingly, auditing exhibited a significant negative effect, suggesting that overly punitive audit systems may hinder service innovation. Regulatory frameworks also showed a negative and insignificant relationship with service delivery, underscoring the ineffectiveness of outdated or weakly enforced regulations. Conversely, financial reporting demonstrated a strong positive effect on service delivery quality, emphasizing the value of transparency in planning and resource mobilization. The moderating effects of public accountability were mixed. It positively enhanced the relationship between revenue mobilization and service delivery, but had a negative and insignificant moderation on budget practices. Accountability marginally improved the impact of auditing, while its moderation on regulatory frameworks was insignificant and negative. Notably, public accountability significantly and negatively moderated financial reporting, suggesting that increased scrutiny can reveal inefficiencies, initially dampening service performance. The study concluded that there is a complex interplay between financial governance mechanisms and accountability in shaping service delivery outcomes. Therefore, the study recommended that public health institutions should adopt digital revenue collection systems and improve transparency to ensure funds are efficiently used for service enhancement.

Keywords: Public Financial Management (PFM), Quality-of-service delivery, public health institutions



Introduction

Nigeria's return to democracy in 1999 was accompanied by numerous challenges, including an increase in external debt, pervasive corruption, insufficient transparency and accountability, and a critical deficit in infrastructure investment (Banko & Onyekachi, 2020). Thus, the efficient management of public funds became essential for the public sector to deliver its services.

The impression of service delivery came from the realization that people relying on government services should be treated in the same way that customers are treated by businesses. According to Majekodunmi (2015), service delivery is all about meeting the requirements and expectations of the people when it comes to receiving services. In Nigeria, the term "service delivery" describes how the state tries to fulfil its residents' hopes and dreams. The standard of publicly provided services including healthcare, roads, schools, and farms is one indicator of the quality of public service delivery (Benson, 2021). Accountability, cost-effectiveness, value for money, resource efficiency, and better communication and decision-making are the pinnacle of service delivery. Producing or providing goods and services to the community is what service delivery is all about. Allocate sufficient cash for this purpose and carry out the plans (Maina, 2016).

In the context of the public sector, public financial management (PFM) pertains to how governments administer their resources. Consequently, PFM serves as a crucial mechanism for governments to achieve their social, economic, and health policy objectives. Olivier (2016) views public financial resource management as the oversight of an organization's outputs and expenditures by its objectives, aimed at enhancing efficiency and effectiveness in service delivery (Motsitsi & Hendriks 2023). Thus far, the associations between revenue mobilization, budget practices, auditing practices, regulatory framework and health service delivery was examined. The implication of public accountability in the relationship between PFM and service delivery was studied.

Public revenue mobilization denotes the method by which nations generate and allocate financial resources for public services (George, 2016). Mobilization of revenue mostly spans from tax mobilization which is a mechanism established for the identification, assessment, and collection of local taxes from residents (Yasin 2018). Revenue mobilization constitutes a summation of all income categories accrued from various sources, including market dues, fines, penalties, and parking fees accessible to the government (Torome, 2013). Revenue mobilization encompasses the planning and administration of the government's income and receipts obtained from many sources, together referred to as public income or public revenue (Dalton, 2016). Revenue planning involves identifying revenue sources, documenting these sources, estimating anticipated revenue, establishing collection objectives and targets, and formulating work plans and budgets (Samuel, 2022).



Budgeting plays a crucial role in planning and control. The plan identifies objectives and the actions needed to achieve them. Budgetary is a method for translating the goals and strategies of an organization into open rational terms. Budgeting which is one of the key components of public financial management has been termed as the genesis of functional public administration (Scott & Enu-Kwesi 2018). Budget practices are deployed by all types of entities to support managerial functions. Budget provides a direction to effectively plan and control government finances (Penyak (2018).

Auditing is the independent examination of an expression of opinion on the financial statement of an enterprise by an appointed auditor in pursuance of that appointment and compliance with any relevant statutory obligation (Kpurugbara, 2016). The auditing practice is an important activity in any government, which is designed to ensure the veracity of financial reports and the need to provide a service in a controlled and supported environment (Thottol et al., 2022).

The regulatory frameworks of public sector accounting are established at various intervals, with some undergoing periodic reviews. Similar to the Constitution of the Federal Republic of Nigeria (1999), the Finance (Control and Management) Act of 1958, and the International Public Sector Accounting Standards (IPSAS). The regulatory framework comprises elements such as legal regimes, regulations, judicial rulings, and administrative practices that shape public financial management methods and influence the provision of public services. Similarly indicates that the regulatory framework encompasses the laws and regulations delineating the legal requirements to be fulfilled (Scott, 2017).

The term accountability fundamentally denotes being responsible for one's conduct. Public accountability signifies the unequivocal acknowledgement and acceptance that all public authorities get their positions from the trust of the populace. Accountability is inherent in responsibility; anyone who bears responsibility is consequently accountable. Public accountability mandates that individuals in positions of public trust must justify their utilization of that trust to citizens or their representatives (Ejere, 2012).

PFM, or the processes through which public funds are managed, plays an important role in service delivery because it sets the framework for how public funds are used to finance the provision of health care. As such, PFM influences how service delivery contributes to health system objectives of efficiency, equity, quality, and accountability and ultimately to better health status and financial protection (Piatti-Fünfkirchen & Schneider 2018). This study is driven by the urgent necessity to improve public service delivery in Nigeria via efficient public financial management (PFM). Notwithstanding governmental initiatives, the quality and accessibility of vital services, including healthcare, education, and infrastructure, continue to be inconsistent, frequently impeded by ineffective resource distribution, insufficient accountability, and inadequate regulatory adherence. Considering Nigeria's socio-economic objectives and the significance of public financial management in attaining sustainable development goals, it is imperative to analyze the functions



of revenue mobilization, budgeting procedures, audits, and regulatory frameworks. This study elucidated the connections between PFM components and service delivery outcomes, to uncover actionable insights to enhance the efficiency, transparency, and accountability of public sector resource management in Nigeria, thereby advancing the nation's overarching development goals.

One of the challenges of government and course the legitimate expectation of the citizens of a developing country such as Nigeria is the ability of the public service to direct its proper aspirations towards improving the general welfare of the citizens. This is because the primary responsibility of the government is to deliver services through its public service effectively and promptly to citizens at affordable prices, particularly now that the country is under civil rule following the wind of democracy which has blown over world countries. However, the ability of the Nigerian public service to effectively and efficiently manage public affairs and ensure prompt and quality service delivery has always been called into questioning over the years. Public service delivery in Nigeria has been described as poor, inefficient and ineffective, inconsistent with citizen preference (Ewuim et al., 2016). These problems are mostly due to a lack of accountability, transparency, high cost of administration, wastage and lack of commitment in making service work for the citizenry (World Bank, 2012).

Previous studies (Orie, 2023; Afrifas, et al. 2023; Dandibi, et al. 2023; Gbegi, et al. 2023; Rafindadi & Ogidan 2023; Kanu, 2021) in Nigeria have extensively examined the concept of financial management in the public sector and how it affects several economic factors. In the context of how recent financial reforms influence the quality of services delivered in Nigeria, a critical literature gap exists. Okee and Nakimbugwe (2024) who assessed public financial practices at the division and their implications on access to essential social amenities for residents delved much into public financial management and service delivery, the study overlooked the inclusion of moderating effects of public accountability, this situation creates gaps that need to be bridged. Similarly, Abiodun and Christopher (2024) who aimed to conduct an encompassing examination into the interplay between financial management practices and service delivery performance within Kisoro Local Government between 2015 to 2020 skipping moderating effects of public accountability, established a gap that deserves to be filled.

Retrospectively, the literature consulted above did not explicitly capture the influence of public accountability on the relationship between public financial management and service delivery quality in Nigeria. This signifies that there is a gap created in literature which if not properly addressed, the debacle in society will continue to remain unabated and this will pose a great threat to the public sector of the economy. It is glaring that corruption as a menace has done great damage to Nigeria and is becoming part of the system of administration in the public sector. Based on the above backdrop, this study intends to examine the relationship between public financial management and the quality-of-service delivery in Northeast Nigeria with particular reference to the health sector; furthermore, public accountability will moderate the linear relationship between public financial management and service delivery.



The aim of this study is to address the moderating role of public accountability on the effect of public financial management on service delivery in North-east, Nigeria.

- i. examine the effect of public financial management (revenue mobilization practices, budget practices, auditing practices, regulatory framework and financial report on service delivery quality in North-East Nigeria.
- ii. determine the moderating effect of public accountability on the relationship between public financial management and service delivery quality in North-East Nigeria.

Literature Review

Public Financial Management

Comprehensive public financial management is a catalyst for sustainable developmental processes, which is critical to achieving aggregate control of public funds, prioritisation of objectives, accountability and transparency in the management of the funds and delivery of social services. Public financial management is concerned with the planning, organizing, procurement and utilization of government financial resources as well as the formulation of appropriate policies to achieve the aspirations of members of that society (Onuorah & Appah 2012). Public financial management is an important means of economic growth and development of every sovereign nation.

Lawson (2016) defined public financial management (PFM) as the set of laws, rules, systems and processes used by sovereign nations (and sub-national governments), to mobilize revenue, allocate public funds, undertake public spending, account for funds and audit results. In this view, Public financial management (PFM) is a system comprising many processes, that involve several government institutions, under the auspices of laws and rules that define functions and responsibilities and guide the relationships between or among the various parts of the system. The overall objective of Public financial management (PFM) deduced from this view is to collect revenue for the government and allocate the revenue in form of expenditure for the economic benefits of all through a demonstrated transparent and accountable manner. Osisoma (2018) posits that financial management is the business function that deals with investing the available financial resources in a way that the greater business success and return-on-investment is achieved. Financial management professionals plan, organize and control transactions in a business. In the public-sector, Osisoma further pointed out that financial management refers to the collection, management and expenditure of public finances throughout an economy.

Revenue Mobilization

Revenue mobilization is classified as one of the sub-systems of public funds management, and which has a link to service delivery in decentralized government units (Maina, 2016). Akpa (2008) observed that revenue is a veritable instrument for the effective functioning of any government apparatus and no government agency can survive without adequate revenue. Revenue for



government is collected through taxation and other fees. Thies (2010) and Salami (2011) posit that taxation is the primary mechanism of revenue mobilization for government. According to Bird (2010), sound revenue mobilization practices for government units are an essential pre-condition for the success of public service delivery. This is because, apart from raising revenues, local revenue mobilization has the potential to foster political and administrative accountability by empowering communities (Oates, 2011).

Sylvester and Ade (2018) affirmed that revenue allocation is hinged on the policy of the Federal Government of Nigeria. Nigeria has had about nine revenue allocation formulas from the Philipson Commission in 1946 to the National Revenue Mobilization Allocation and Fiscal Commission headed by Lt. Gen. T. Y. Danjuma (Rtd.) in 1989. The highlights of this formulation were derivation which principle asserts that the state from which the bulk of revenue is obtained should receive an extra share above what other states receive and even development which principle requires that growth development be spread so that serious inequalities or imbalances are reduced in the federation (Adams & Lukpata, 2013). Public Revenue matters are enshrined in Section 162 of the 1999 Constitution of the Federal Republic of Nigeria as amended. While Sec. 162 (1) and (2) explains how the funds accruing to the "Federation Account" are distributed to the various states of the Federation. Section 162(2) second paragraph stated that the principle of derivation shall be constantly reflected in any approved formula as being thirteen percent (13%) of the revenue accruing to the federation account directly from any natural resources (Green & Onouha 2021).

Budgeting Practices

Budgets are vital in management control processes and are generally considered formal, structural controlling mechanisms enlisted to support the controlling use. Thus, the budget is primarily considered as a coercive tool to assist management to coerce employees' compliance and effort (Aleksandrov et al., 2018; Horngren et al., 2014; Lambovska et al., 2019; Sponem & Lambert, 2016).

The budget is the quantitative expression of the proposed plan of action by what is to be done to implement that plan. A budget can cover both financial and non-financial aspects of the plan. Budget proactive (budget preparation and allocation) helps management to achieve its financial objectives by establishing measurable goals for each organization's segments this mechanism conveys to the segment managers the standard that senior managers will use for assessing their performance (Reddy, et al., 2019).

Auditing Practices

According to Cyasi (2001), auditing is the independent examination and investigation of the evidence from which a financial statement has been prepared with a view of enabling the independent examiner to report on whether his own opinion according to the information and



explanation obtained by him, the statement is properly drawn up and give a true and fair view of that which is supposed to show and if not to report in what respect he is not satisfied.

The auditing standard (2004), defined auditing as the independent examination of an expression of opinion on the financial statement of an enterprise by an appointed auditor in pursuance of that appointment and compliance with any relevant statutory obligation. Therefore, an auditor in an ordinary sense is any person who is in charge with the responsibility of examining the books of accounts of an organization in such a detailed form as well as enabling him form an independent opinion as to the truth and fairness of the financial statement (Okolo, 2007). From this definition it can be deduced that auditing is the process of accessing the financial statement of an organization to which the person undertaking the task is not a member with the aim of ensuring that this financial statement was truly prepared from actual records of financial transaction.

McKenna (2011) posits that auditing could be defined as a systematic and independent examination of data, statements, records, operations and performances, financial or otherwise of an enterprise for a stated purpose. Auditing has the role to ensure that public funds are not subject to fraud, waste and abuse or subject to error in reporting. To ensure that processes are operating within established parameters and achieving established objectives, a process audit is employed (Drucker, 2017).

Financial Reports

Financial reporting is the preparation of published report for users of financial statements. Erasmus (2016) defined financial records as the process of creating, managing, and retaining thorough, accurate, and reliable documentation of business operations or transactions. Financial Records should be preserved in files or folders for office management, according to Aberi & Jagongo (2018).

Financial reporting is a communication of financial statements and its related information from a venture to its stakeholders. The primary goal of financial reporting is to deliver high-quality information on reporting entities, to promote informed economic decisions making. Financial reporting in the public sector is important to help achieve political and economic stability by ensuring government revenue is not wasted, and is managed and spent efficiently, effectively and transparently; and most importantly that it is appropriately spent on health care, education, transport and infrastructure. Compliance to meaningful accounting principles enhances fiscal discipline, unite system efficiencies, reduce the likelihood that scare resources are dissipated because of poor controls and provides more relevant information for better informed decision making. The purpose of Public Sector Accounting and Financial Reporting is to provide useful financial information to the users of the information. Information must have certain characteristics in order for it to be useful for decision making such as relevance, reliability, comparability and understandability. Financial reporting might be internal: presented to management for specific purposes, or external: presented to stakeholders for general purposes (Wisdom et al., 2017).



Public Accountability

Accountability is all about being answerable to those who have invested their trust, faith, and resources in you. Adegite (2010) defined accountability as the obligation to demonstrate that work has been conducted by agreed rules and standards and the officer reports fairly and accurately on performance results vis-à-vis mandated roles and or/plans. It means doing things transparently in line with due process and the provision of feedback. Cheruiyot et al. (2017) define accountability as the duty to provide on account (by no means necessarily financial) or reckoning those actions for which one is held responsible. According to Makina and Mago (2015), it is the obligation to render an account for a responsibility conferred. It presumes the existence of at least two parties: one who allocates responsibilities and one who accepts the obligation to demonstrate that work has been conducted by agreed rules and standards with the officer reporting fairly and accurately on performance results vis-à-vis mandated roles and or/plans (Odunayo, 2014).

Financial accountability is “defined as an embodiment of the obligation to account for the success or failure of the organization's mission in achieving the objectives and objectives that have been determined through a media accountability carried out periodically” (Muttaqin & Mulyasari, 2018). It is also defined as “the recording, disseminating, summarizing, assessing, and interpreting financial accounts in aggregate and detail” (Ogiriki & Buseri, 2022).

System Theory

System theory was propounded by David Easton in 1965. He posits that system theory emphasizes a set of model inter-relationships which involves mutual interactions, and a high degree of connections among the members of a system. The theory is hinged on the notion that elements within a group are inter-related to each other and likewise interact with one another based on specific known processes. The theory establishes mutual relationships between the elements in a system, therefore, “a holistic, organized unit of interdependent, transacting and mutually influencing parts (individuals or collectives and their sub-units) within an identifiable (socio-ecological) environment (Siporin, 1975). System theory is an interdisciplinary theory which encompasses every system in nature, in scientific domain and in society and also a framework used to investigate phenomena as a whole (Capra, 1997). Some researchers recognized system theory that organizations are made up of complex social systems and an attempt to separate the parts from the whole lead to reduction in the overall effectiveness of the organization (Schein, 1980).

The theory is used in this research work to show how the public financial management practices of budgeting, accounting and reporting system, internal control system, public procurement laws and external audit and oversight work as a system to make sure that public funds are utilized efficiently and effectively to provide services to the populace in a country. Public financial management system comprises of major sub-components referred to as planning and budgeting, collection of revenue, accounting, auditing, and governance (Broback&Sjolander, 2002). The sub-components are viewed as a system of connected elements that development of one sub-component



relies and conditioned on the other components state if the objectives of development are to be met by the government (Andersen & Isaksen, 2013). The PFM sub-components (budgeting, accounting and reporting system, internal control system, public procurement laws and external audit and oversight) are very important and needs to be enhanced in achieving development objectives. Thus, the sub-components in this study were used to examine how PFMS can influence one another and also influence infrastructural development in Nigeria. The theory revealed the interactions and the relationships which exist between the government officials that manage public funds in order to understand government organization, functioning and outcomes.

Empirical Review

Fadison et al. (2024) examine the effect of financial accountability on service delivery. Data from 86 respondents was collected and analyzed quantitatively, complemented with qualitative analysis. Since descriptive analysis entailed description of a single variable and its attributes, frequency tables were used to present the data. At the bivariate level, a Pearson correlation matrix was conducted to ascertain the relationships between the predictor variables and the dependent variable. A linear regression model was used to fit the data. The main conclusion drawn from the research is that funds disbursement, auditing process and record keeping systems have a significant effect on service delivery.

Orie (2023) appraised the effectiveness and efficiency of financial management process in the Nigerian public sector which, borders on the Anambra State Local Government system experience. The methodology for the search is a survey design. The data were generated from both primary and secondary sources and analyzed using percentage and descriptive statistics. Three metropolitan towns of Awka, Nnewi and Onitsha were selected from the three, senatorial districts (Anambra South, Central, and North) for the questionnaire distribution. The researcher adopts the theoretical foundation of financial accountability, management transparency and accountability. Three hypotheses were formulated and tested with the use of chi-square method of analysis. The results revealed that inadequate accounting records and books exist, outdated financial management policy framework, and ineffective management techniques pervade the system, absence of due process and good governance principles leading to corrupt practices abound.

Otieno (2022) assessed the financial management from the perspective of skills & capacity utilization, records keeping, budgeting and adoption of regulations by County governments in Kenya for purposes of enhancing service delivery to the public. A descriptive survey of 20 counties drawn across the former eight provincial /regional administrative units were conducted between 2018 and 2019. The findings indicate that most counties (Local Governments) were constraint with skills and capacity across various sections including budgeting, records management and regulation. It was noted that counties (Local Governments) generated various types of records including policy related records, financial records and auditing records whose management was curtailed by inadequately trained staff, lack of records disposal and retention schedules, inadequate



equipment and space, moderate policies and standards notwithstanding. While positive strides had been made in the most counties' budgeting process especially towards 2019 /2020, there was need to enhance coordination between national and county departments, political independence, stakeholder involvement, funding process and spending against limited revenue to best meet the needs of the public.

Kapur and Shukla (2021) investigate whether the current public financial management system in India allows for capturing required nutrition data. It does this by mapping the availability and comparability of data for a set of key nutrition- specific interventions through the budget cycle: from budget formulation, to execution, and finally, evaluation. The study finds significant gaps in data availability including absence of financial data by level of governance, geography and intervention components. These challenges relate to gaps in PFM design in India from weak planning processes, line- item budgeting, unavailability of time costs, inefficient fund release processes, difficulties in estimating target populations and the lack of output costing.

Goryakin et al. (2020) examined the existing academic literature, both theoretical and empirical, on the contributions of public financial management (PFM) systems and reforms to improve the effectiveness of health service delivery. The study considers both population health indicators as well as more proximate process indicators related to health system performance. The existing literature is limited and only 53 articles are reviewed, divided across three subthemes: first, "system quality" studies, on the impact of PFM quality and good governance generally; second, "health system strengthening" studies, including articles on medium-term expenditure frameworks (MTEFs), reforms related to budget transparency and participatory budgeting and decentralization; third, studies on the impact of donor-related reforms such as the introduction of sector-wide approaches (SWAs). The theoretical literature predicts that high-quality PFM systems will have a positive impact on various dimensions of performance; whereas evidence from empirical studies is more limited, though generally positive. Overall, evidence shows good governance has an important role in health service delivery. Increased public funding of health programmes is likely to be more effective in countries with better governance, but what this means in practice is highly context-specific.

Methodology

The research design used for this study was the cross-sectional survey research design. This was because it allowed the views of the respondents to be collected from a sample of a large population.

The population of the study include the six (6) states in the northeast (Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe). The study was focus on health institutions in the northeast. Public health centres in the six states used for the study. The population of the study is three hundred and twenty-seven (327) consisting of health practitioners at public health centres and the Department of Public Health in the Ministry of Health staff. They are included because they are implementers of public health services at the state level. The sample size was determined using the Krejcie and



Morgan (1973) sample table. Based on the population stated above. For the population size of 327 and a margin of error of 5% (0.05), the sample size is 191. The model for the study is:

$$SDQ = \beta_0 + \beta_1 RM + \beta_2 BP + \beta_3 AP + \beta_4 RF + \beta_5 FR + \beta_5 (RM * AC) + \beta_6 (BP * AC) + \beta_7 (AP * AC) + \beta_8 (RF * AC) + \beta_9 (FR * AC) + \mu$$

Where:

SDQ = Service Delivery Quality

RM = Revenue Mobilization

BP = Budgeting Practices

AP = Auditing Practices

RF = Regulatory Framework

AC = Public Accountability

Result and Discussion

Multicollinearity

Multicollinearity is the existence of inter-correlation among two or more explanatory variables which can affect the outcome of predicting capabilities of the explanatory variables of a regression model (Gujarati, 2004). It is seen as a predicament that occurs when the explanatory variables are highly interrelated above 0.8 (Gujarati, 2004; Verbeek, 2004). As soon as two or more elements of a constructs in the first order or second order model are excessively interrelated, they include redundant information that can affect the results, hence, only those that cannot affect analysis or those variables that cannot increase the size of error terms can be included for analysis. If such problems are observed, they can be resolved by removing the wrong variable. To check for multicollinearity, Variance Inflation Factor (VIF) and tolerance level were analysed. The general rule of thumb is that the VIF should not exceed 10 and for the tolerance values to be far from 0 or not less than 0.10 (Gujarati, 2004; Verbeek, 2004). From Table 1, it is clearly that VIF values ranges from a minimum of 1.020 to a maximum of 1.107. Hence, the values are significantly less than 10, and this indicated absence of multicollinearity problem among the exogenous variables.



Table 1 below presents variance inflation factor (VIF) values and tolerance of the present study.

Table 1: Tolerance and VIF

Independent Variables	Collinearity Statistics	
	Tolerance	VIF
Revenue Mobilization Practices	0.980	1.020
Budget Practices	0.903	1.107
Auditing Practices	0.960	1.041
Regulatory Framework	0.930	1.076
Financial Report	0.908	1.102

Field Survey, 2025

Descriptive Analysis of Constructs

The variables of the study were described using the descriptive statistics. Statistical values of mean, standard deviation, minimum and maximum were considered for the independent variables (revenue mobilization practices, budget practices, auditing practices, regulatory framework and financial report), moderator variable (public accountability) and the dependent variable (service delivery quality). Table 2 below presents the results of these statistical values. All the variables were calculated on a five-point scale.

Table 2: Descriptive Statistics of Construct

Construct	N	Mean	Std. Dev	Min	Max
Service Delivery Quality (SDQ)	179	3.611	0.601	1.00	5.00
Revenue Mobilization Practices (RM)	179	3.677	0.579	1.00	5.00
Budget Practices (BP)	179	3.818	0.529	1.00	5.00
Auditing Practices (AP)	179	3.656	0.562	1.00	5.00
Regulatory Framework (RF)	179	3.703	0.535	1.00	5.00
Financial Report (FR)	179	3.766	0.583	1.00	5.00
Public Accountability (AC)	179	3.585	0.557	1.00	5.00

Source: Field Survey, 2025

The result of the descriptive statistics shows that the mean value for the dependent variable (Service Delivery Quality) is 3.6 which is little higher than the middle response of 3 (not sure). This is an indication that, responses toward the highest response of 5 (strongly agree) are higher. The mean score for the independent variables ranges from 3.6 to 3.8 which is indicating a normal distribution of the data set of the variables with lowest mean being auditing practice and the highest being the budget practice with 3.818 and 3.656 respectively. Similarly, no serious deviation is observed from the mean with a standard deviation of 0.529 to 0.529 for auditing practice and budget practice respectively. The minimum and maximum values are 1 and 5 respectively, indicating that for all the variables, responses were recorded in all the range.



Table 3: Discriminant Validity: Fornell-Larker (1981) Criterion

	AC	AP	BP	FR	QSD	RF	RM
Public Accountability	0.976						
Auditing Practice	-0.515	0.811					
Budgeting Practice	0.611	-0.276	0.896				
Financial Report	0.953	-0.512	0.589	0.979			
Service Delivery Quality	0.923	-0.626	0.655	0.933	0.943		
Regulatory Framework	-0.531	0.653	-0.548	-0.584	-0.681	0.925	
Revenue Mobilisation	0.882	-0.637	0.652	0.884	0.979	-0.682	0.926

Source: Field Survey, 2025

Therefore, Table 3 shows that the square root of AVE of each latent construct is greater than the correlation among the latent constructs signifying that discriminant validity has been achieved (Fornell & Larker, 1981). Beside as explain earlier, cross loading and indicator can be used to assess discriminant validity. Consequently, all indicators loading were compared with cross loading as suggested by Chin (1999). Table 4 presents all the indicators as well as cross loadings of the constructs.

Table 4: Cross Loading

	AC	AP	BP	FR	QSD	RF	RM
AC2	0.971	-0.500	0.615	0.982	0.944	-0.574	0.900
AC4	0.964	-0.508	0.574	0.864	0.850	-0.466	0.817
AC5	0.993	-0.498	0.598	0.940	0.903	-0.509	0.861
AP1	-0.420	0.833	-0.112	-0.447	-0.532	0.547	-0.540
AP4	-0.401	0.773	-0.349	-0.382	-0.499	0.513	-0.515
AP5	-0.375	0.836	-0.272	-0.374	-0.441	0.596	-0.440
AP6	-0.461	0.801	-0.180	-0.446	-0.545	0.472	-0.554
BP5	0.652	-0.350	0.972	0.617	0.704	-0.566	0.702
BP6	0.241	0.120	0.755	0.179	0.220	-0.189	0.228
BP7	0.590	-0.285	0.946	0.601	0.641	-0.558	0.632
FR1	0.900	-0.452	0.552	0.977	0.887	-0.545	0.832
FR3	0.971	-0.500	0.615	0.982	0.944	-0.574	0.900
FR5	0.904	-0.522	0.536	0.974	0.889	-0.575	0.839
FR6	0.956	-0.527	0.601	0.981	0.932	-0.591	0.887
QSD1	0.934	-0.523	0.588	0.969	0.937	-0.587	0.881
QSD2	0.785	-0.660	0.636	0.782	0.945	-0.702	0.952
QSD6	0.971	-0.500	0.615	0.982	0.944	-0.574	0.900
QSD7	0.789	-0.682	0.635	0.786	0.948	-0.708	0.960
RF1	-0.535	0.574	-0.563	-0.595	-0.662	0.907	-0.655
RF2	-0.486	0.605	-0.512	-0.496	-0.619	0.921	-0.633
RF4	-0.447	0.633	-0.438	-0.522	-0.603	0.947	-0.601
RM1	0.676	-0.584	0.553	0.674	0.819	-0.610	0.914
RM4	0.785	-0.683	0.636	0.782	0.944	-0.709	0.962
RM6	0.971	-0.500	0.615	0.982	0.944	-0.574	0.900

Source: Field Survey, 2025

Table above shows that all the indicator loadings are greater than the cross loading, suggesting discriminant validity was achieved (Chin, 1999).

Assessment of Significant of Structural Model

In previous section, the measurement model has been discussed, therefore this section evaluates the structural model of the study. The main assessing criteria for structural model are R-square measure and the level of significance of the path coefficient (Hair et al., 2011). Therefore, this study employed a “standard bootstrapping process whereby creating huge sample (i.e. 5000) (Hair et al., 2011; Hair et al., 2014) and 179 cases to evaluate significance of the path coefficients. Accordingly, figure below presents the estimates for the study’s structural model which comprise a moderator variable (public accountability).

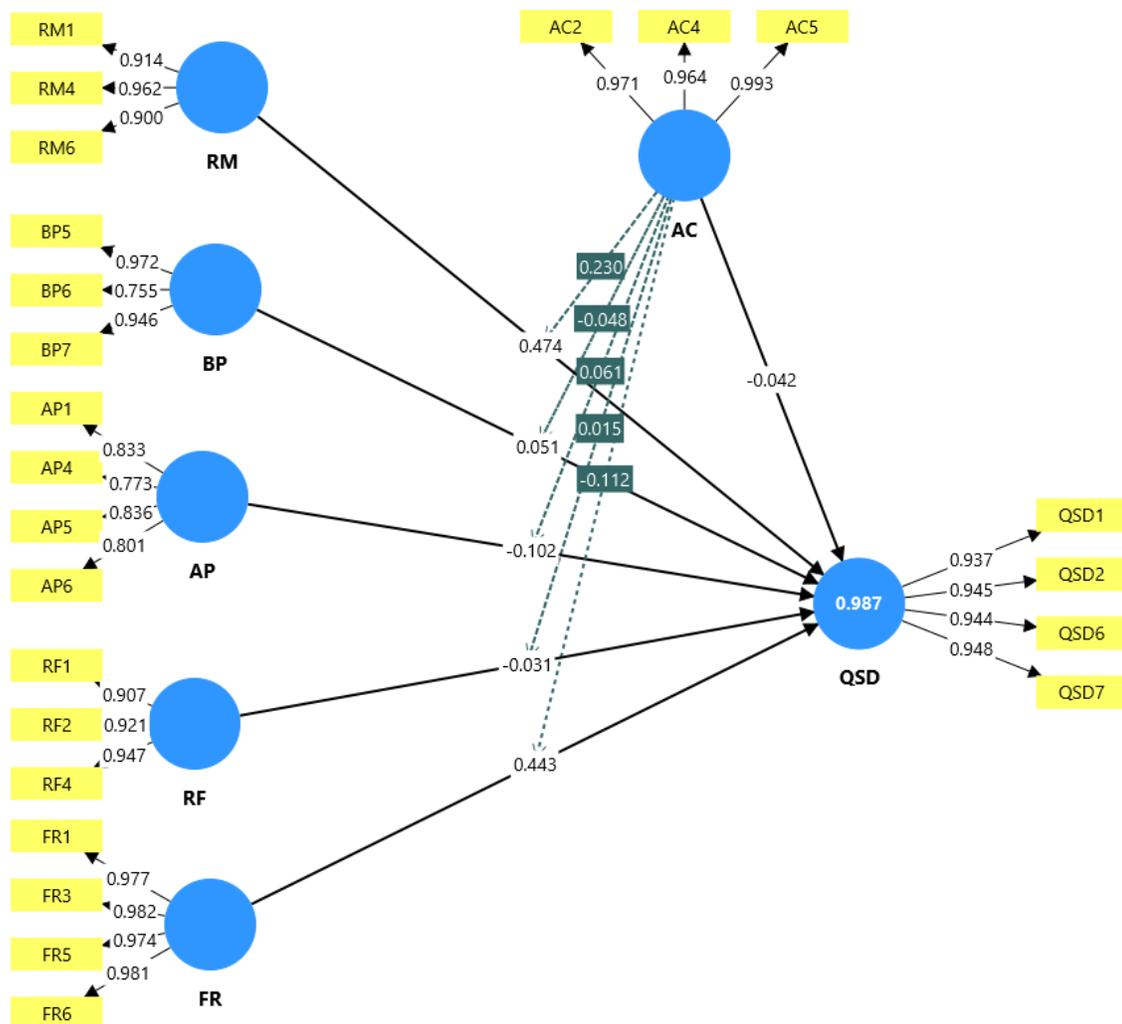


Figure 4. 1: Structural Model

Test of Hypotheses (Main/Direct Effect)



To understand the direct and indirect effect among the variables, structural model analysis (using PLS-SEM) was conducted. The individual contribution of each exogenous variable is represented by the "standardize beta value" within the PLS structural model (Chin, 1998b). The present study is concerned with exploring the moderating effect of public accountability on the relationship between public financial management and service delivery quality of public health institutions in Nigeria's North-Eastern region. The standardize beta values were used to present all the relationships and again the significance level was set at $P < 0.05$ and $P < 0.10$ (Hair et al., 2010).

Hypothesis 1: Propose that there is no significant relationship between revenue mobilization practices and service delivery in Nigeria. Consequently, the findings indicates that revenue mobilization is positive and significantly related to service delivery quality ($\beta = 0.474$ $t = 6.857$ $P = 0.000$). In other words, when a public health institution has a strong revenue mobilization policy such as having an effective revenue collection technique, such public health institutions will have quality in their service delivery. Statistically, if revenue mobilization changes by 1%, service delivery quality will change by 0.474, therefore, hypothesis one is rejected.

Secondly, hypothesis 2 predicted budget practices have no significant effect on service delivery in North-East Nigeria. This result also supported hypothesis 2 ($\beta = 0.051$ $t = 0.940$ $P = 0.347$) indicating an insignificant positive relationship between budget practices and service delivery quality in North-East Nigeria. Likewise hypothesis 3 proposed no significant relationship between auditing practices and service delivery in North-East Nigeria and the result shows a significant negative effect between auditing practice and service delivery quality in Nigeria ($\beta = -0.120$ $t = 2.437$ $P = 0.015$).

More so, hypothesis 4 proposed no significant relationship between regulatory framework and service delivery in North-East Nigeria. Consequently, the result ($\beta = -0.031$ $t = 0.805$ $P = 0.421$) reveals an insignificant negative relationship between regulatory framework and service delivery quality in North-East Nigeria. In addition, hypothesis 5 also predicted no significant relationship between financial report and service delivery quality in North-East, Nigeria. However, the result shows a significant positive relationship between financial report and service delivery quality in Nigeria ($\beta = 0.443$ $t = 6.240$ $P = 0.000$). Finally, hypothesis 6 proposed that public accountability does not have a significantly relationship with service delivery in North-East, Nigeria and the finding also support the hypothesis ($\beta = -0.042$ $t = 0.560$ $P = 0.576$).

Conclusion and Recommendations

This study explored how elements of public financial management including revenue mobilization, budget practices, auditing, regulatory frameworks, and financial reporting affect service delivery quality in public health institutions across North-East Nigeria. It further assessed how public accountability moderates these relationships. The results indicate that revenue mobilization and



financial reporting significantly enhance service delivery, while auditing practices, though essential, can have unintended negative effects if not approached constructively. Public accountability emerged as a critical enabler, strengthening the impact of some practices (e.g., revenue mobilization) while complicating others (e.g., financial reporting).

Based on the findings, the following recommendations are proposed:

- i. Public health institutions should adopt digital revenue collection systems and improve transparency to ensure funds are efficiently used for service enhancement.
- ii. To make budgets effective, community members and civil society should be actively involved in budget preparation, tracking, and execution.
- iii. Shift from punitive to performance-based auditing, incorporating public feedback and ensuring audits lead to actionable improvements rather than stifling operations.
- iv. Update health governance regulations to reflect modern realities and tie them directly to service delivery metrics and accountability mechanisms.
- v. Train finance and audit officers in ethical reporting, data visualization, and stakeholder communication to make financial reporting more meaningful and accessible.



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