**GOVERNMENT ACCOUNTING PRACTICES AND SUSTAINABLE DEVELOPMENT GOALS (SDGs): EVIDENCE IN NIGERIA**

**Abstract**

Globally, government accounting offers essential tools for tracking financial resources, transparency, and ensuring accountability, all of which are critical to the success of the SDGs. The study investigated the impact of government accounting practices on sustainable development goals. The study utilized the ex post facto study design. The study spanned the period between 2013-2023 based on government agencies by nature and level of SDG objectives that influenced infrastructure, health, and education through a Stratified Sampling Technique, the study also used Random Sampling Technique. The study utilized secondary data. Data were source from the World Development Group. Data collected were analyzed using Simple Switching Regression (BFGS / Marquardt steps). Findings revealed that budget compliance has a significant influence on sustainable development goals in Nigeria; while expenditure efficiency has a significant impact on sustainable development goals in Nigeria. The study found that budgetary compliance constrains flexibility factor affecting the achievement of sustainable development goals in Nigeria; while expenditure efficiency results in the minimization of government spending and increases sustainable development goals. The study recommended that policymakers should try examining budgetary compliance frameworks to allow for maximum compliance; also, government efforts should be put towards enhancing mechanisms for expenditure efficiency that allow the effective spending of public funds for higher yield.

**Keywords**: Government accounting, budget compliance, expenditure efficiency, and human development index

* 1. **INTRODUCTION**
  2. **Background to the Study**

Sustainable Development Goals (SDGs) are an international call to action to eliminate all the problems in the world by 2030 with interconnected goals that deal with various issues like poverty eradication, quality education, gender equality, clean water and sanitation, affordable and clean energy, economic growth, and climate action (Purba, 2025; Nwoke, 2025). While there are global efforts toward realizing these objectives, implementation is uneven with most countries crippled by poor governance, wars, climate change, institutional weakness, and financial shortages in tapping the full potential of the SDGs (Babatunde, 2022). Nigeria, with the biggest economy and population of all African nations, raises a set of concerns in realizing the SDGs. Different issues like poverty, poor health, poor education systems, corruption, and environmental degradation impact country development (Akinyele et al., 2025). By utilizing effective financial management systems to track money used on SDG-based programs, impose compliance with budgets, and remove corruption and wastage, government accounting supports the effective implementation of SDGs (Grossi & Vakulenko, 2025; Wang et al., 2025). Effective government accounting systems, Ogunjobi et al. (2024) argue, facilitate openness, accountability, and financial reporting all essential to tracking development and guaranteeing effective and efficient use of funds. Nigeria's government accounting systems have been adapted to improve public financial management.

Though these reforms are sure to increase financial transparency and accountability, hence easing successful SDG-program implementation; implementation of the Integrated Financial Management Information System (IFMIS) and the Treasury Single Account (TSA) helps to improve tracking and public finance management (Ali-Momoh et al., 2025; Amos & Jibir, 2024). Budgetary compliance is the degree of government expenditure in line with the approved budget. Budget compliance is important for the SDGs, especially initiatives that are geared towards their achievement because it will guarantee that funds are utilized for what they are intended (Nwoke, 2025; Purba, 2025). The efficiency of expenditure, on the other hand, is a measure of the quality and effectiveness of government expenditure in terms of meeting the desired impact, for example, the facilitation of SDGs and government expenditure that was not only aligned to the SDGs but also incurred to make maximum impact (Ogunjobi et al., 2024; Okwuosa et al., 2024).

**1.2 Statement of Problems**

One of the key challenges facing most countries, especially developing countries, is the lack of proper financial management systems and institutions, transparency, and accountability mechanisms to ensure that funds are allocated effectively and used optimally in a bid to execute the SDGs. In Nigeria, respect for the budget has always been a problem, where budget padding, delayed approvals, and improper use of funds that led to inefficiencies and poor progress in SDG projects have been the order of the day (Mobosi & Okonta, 2024). Despite measures by the Nigerian government towards addressing such issues via policy and interventions like the Economic Recovery and Growth Plan (ERGP) and Vision 20:2020, despite such efforts, there are still issues, such as weak internal controls, absence of good budgetary systems, and even more, the demand for improved monitoring systems Nigeria lags on some of the SDG indicators, especially in health, education, and poverty reduction. Thus, Nigeria's chances of meeting the SDGs in 2030 are questionable, and seriousness in addressing these systemic issues guaranteeing compliance with budgetary allocation and expenditure efficiency that is consistent with SDGs is thus unavoidable if the objectives of the SDGs are to be realized.

**1.3 Research Questions**

1. What is theeffect of budget compliance on sustainable development goals in Nigeria?
2. How does expenditure efficiency affect sustainable development goals in Nigeria?

**1.4 Objective of the Study**

The broad objective of this study was to investigate the impact of government accounting practices on sustainable development goals. The study specifically;

1. examines the effect of budget compliance on sustainable development goals in Nigeria;
2. ascertain the influence of expenditure efficiency on sustainable development goals in Nigeria.
   1. **Hypotheses Statement**

**H01:** there is no significant relationship between budget compliance and sustainable development goals in Nigeria;

**H02:** expenditure efficiency does not have a significant relationship with sustainable development goals in Nigeria.

* 1. **Significance of the Study**

The study is necessary since it seeks to address the most basic question on how government accounting processes, budget compliance, and expenditure effectiveness contribute towards the achievement of SDGs in Nigeria by analyzing these significant factors, the study strives to provide insight into how financial management practices improved and ensure that resources are mobilized and expended in the most effective way to achieve the SDGs. The findings of the study would provide policy recommendations that guide public financial management system reform in Nigeria for improved implementation of SDG initiatives. For the government, the study findings will shed light on Nigeria's harmonization challenges and opportunities for aligning its financial management processes with SDG goals and how such challenges can be managed to prevent future issues.

**2.0 LITERATURE REVIEW**

**2.1 Conceptual Review**

**2.1.1 Sustainable Development Goals (SDGs)**

Sustainable Development Goals (SDGs), as Grossi and Vakulenko (2025) define, are a universal goal adopted by the United Nations to solve some of the relevant environmental, political, and economic issues by the year 2030. Inter alia, Nwankwo, (2025) defines sustainable development goals as eradication of poverty, improvement of health and education, gender equality, and reducing climate change. The SDGs promote a unified vision of sustainable development, thereby guaranteeing human flourishing and human well-being while safeguarding the world (Ogunjobi et al., 2024). Good government accounting promotes transparency, accountability, and good governance qualities that define SDG since strong financial reporting prevents corruption, enhances governance, and maximizes the use of resources in public services (Mobosi & Okonta, 2024). Through a concentration on an equilibrium-driven approach and on incorporating human well-being, economic development, and environmental integrity as for each goal clear targets and indicators are defined, thus establishing measurable ground for actualization. SDGs represent a development of the world viewed in its entirety.

**2.1.2 Government Accounting Practices**

Government accounting is the process of recording, classifying, summarizing, and reporting transactions in connection with government bodies and is guided by established principles, frameworks, and legislation towards transparency, accountability, and effective utilization of public resources (Zai et al., 2025). Transparent government accounting promotes good institutions and fair resource allocation, a prerequisite to achieving peace, justice, and robust institutions. Wang et al. (2025) speculate that government accounting is employed to report public-sector financial activities to provide information that guides decision-making, policy formulation, and public oversight. One of the fundamental principles in government accounting is fund accounting which is a fundamental system, that classifies resources into various categories (funds) based on their purpose of use, this is an important method since it allows governments to track and manage public funds for specific purposes, e.g., education, health, and infrastructure (Purba, 2025; Babatunde, 2022). Government accounting has two most important key factors that are treated as the expenditure efficiency and the budgetary compliance. However, the use of the method of accounting makes a difference to the financial statement because cash and accrual accounting provide a truer reflection of the government's financial condition.

**2.1.2.1 Budgetary Compliance**

Stephenson (2025), believed that budgeting constitutes the foundation of government accounting procedures as it is reliant on the control of budget to guarantee that government spending is carried out consistent with the law and within fiscal powers vested in the legislature. Mobosi and Okonta (2024) held that fiscal compliance in reconciling real expenditures to approved budgets and tracking variances to prevent crossing approved ceilings and guarantees that funds of the government are allocated where they are needed most, such as infrastructure, healthcare, and education (Babatunde, 2022). Budget compliance is a vital government accounting and fiscal administration term that refers to adherence to the budget passed at the implementation of government financial activities such that the funds allocated are utilized rightly within the agreed limits, and according to law and policy needs (Akinyele et al., 2025; Okwuosa et al., 2024). Eneje et al. (2024) opined that compliance with the budget ensures that public money is spent effectively, efficiently, and transparently, with minimal wastage and abuse, and maximum desired outcomes of public expenditure. Fadel et al. (2024) show that compliance in budget, in government accounting, is a measure of the extent to which the expenditures accord with the previously approved budget mechanism, and it includes expenditure restrictions, revenue targets, and laws of financial handling that specify the way public monies are distributed and spent. A sound government accounting system that is effective, transparent, and accountable not only enhances fiscal discipline but also leads to confidence-building, promotes long-term development, and gives the public sector a more robust basis on which it can meet the world's largest challenges (Haileselassie et al., 2024; Dewi et al., 2024).

**2.1.2.2 Expenditure Efficiency**

Expenditure efficiency is the ability of an organization, such as a government, to achieve the desired results with the least amount of resources spent with the aim of maximizing the utility derived from every unit of money spent so that public funds are utilized effectively (Akujor & Ihendinihu, 2024). Expenditure efficiency is essential in government accounting such that public resources are harnessed and spent as necessary to attain policy goals, especially the pursuit of sustainable development (Amos & Jibir, 2024). Okoroigwe (2024) is of the view that expenditure efficiency is not really an issue of financial management; it is so much more about attaining policy goals generally, especially the SDGs. Effective spending demands a strategic method of resource utilization and guarantees that money is spent on the most important and effective programs while reducing wastage and duplications. Elaigwu and Khikando (2024) speculate that effective spending is strongly associated with accountability in government fiscal management since open reporting and auditing procedures enable public scrutiny and guarantee that money is being spent as it should (Osmond & Okechukwu, 2024). Efficiency in expenditure is most important in government accounting because governments handle enormous amounts of taxpayers' funds, and their financial decisions impact the lives of citizens maintaining fiscal responsibility with responsible spending patterns that are less likely to experience long-term debt crises or fiscal imbalances (Kenechukwu et al., 2024).

**2.2 Theoretical Review**

Institutional Theory and Human Needs Theory were the two theories under analysis. Nevertheless, the research benefits from the Institutional Theory as a result of its capacity to explain how government institutions are influenced by external norms, standards, and expectations in society.

**2.2.1** **Institutional theory**

Meyer and Brian Rowan first formulated institutional theory in the early 1970s; other researchers have since built on it. The theory explains how organisations are influenced by outside social, cultural, and institutional pressures because organisations do not always operate on efficiency or market rationality but on rules, norms, and environmental cultural expectations, Wirba (2023) and Hassan et al. (2024) theorized. Companies that seek legitimacy and societal acceptance tend to adopt styles and practices conforming to institutionalized norms although these may be ineffectual and this causes isomorphism whereby companies within a given industry become similar (Enechi & Pattberg, 2025; Meyer & Rowan, 1977). Emphasizing extraneous pressure from society and extraneous expectations in organisational behaviour, the institutional theory also takes for granted the practices and norms becoming so internalised that they institutionalise as the right things to do even when they are of low functional value. According to institutional theory, organizational practice is a result of societal expectation, regulatory expectation, and cultural pressure and not just within the firm or exclusively on economic grounds (Nwoke, 2025).

In an institution anchored in institutionalized norms and practice, conformity and legitimacy shape organizational behavior since they seek legitimacy, even possibly not maximum performance or efficiency (Sadiq et al., 2022). Institutional theory, Hassan et al. (2020) suggests, ignores how competition and innovation could be causing variation in practice and is too strongly focused on organisational similarity. Institutional theory is also blamed for minimising the roles of individual agencies, decision-makers, and entrepreneurs in firms that may operate beyond institutional boundaries (Adeosun & Shittu, 2022). Because it explains how external standards, norms, and societal expectations influence government organisations, the institutional theory is very applicable to government accounting and the attainment of sustainable development goals. Institutionalised practices like accrual accounting and transparency can at times be attributed to institutional drivers like global accounting standards, legislations, and society's expectations of governance and accountability in government accounting.

**2.2.2 The Human Needs Theory**

Renowned psychologist Abraham Maslow first formulated the thesis in his 1954 book "Motivation and Personality." According to the Human Needs Theory, human beings from five basic categories: physiological needs, safety needs, social needs, esteem needs, and self-actualization needs; are driven by a hierarchy of needs (Gould et al., 2023). This assumption mandates that basic-level needs be satisfied before more advanced ones. The most fundamental are physiological needs (shelter, water, and food); self-actualization that is, actualizing one's potential follows first (Martela, 2024). From mere survival to loftier aspirations like personal development and service to humankind, the premise is that people are driven by the necessity of fulfilling unsatisfied wants (Grossi & Vakulenko, 2025). Having been very influential in social sciences, education, and psychology, the human needs theory is symbolized as a pyramid with self-actualization at the top and physiological needs at the base (Ihensekien & Joel, 2023).

While very popular, Maslow's hierarchy has also been faulted for being too rigid and lacking factual evidence. Starting from basic needs and moving up towards higher-order wants, the theory embraces that people move linearly through the needs stages (Rojas et al., 2023). According to the thesis, all people have the same kinds of needs and that these ones tend to apply in most civilisations and societies (Martela, 2024). Apart from this, human behavior is further stated to be more complex and diverse than stipulated in the theory with the pursuit of needs happening sometimes in concert, as opposed to being a linear succession, thus no tangible empirical proof is there that can support hierarchical stiffness (Mobosi & Okonta (2024; Moore et al. (2024; Babatunde 2022). Particularly when governments are concerned with ensuring that resources are distributed in a way that caters to the basic needs of their people, the Human Needs Theory is highly applicable to government accounting and the SDGs.

**2.3 Empirical Review**

From a multi-actor's viewpoint, Grossi and Vakulenko (2025) investigated how accounting helps in ensuring social and financial sustainability during crisis periods. They investigated how financial sustainability develops alongside social sustainability in critical situations through accounting mechanisms for addressing and coping with the different implications of crises. The result of their research reveals that accounting instruments can be used to rank the most important social impact areas education, healthcare, and social protection. Spending in these areas improves social sustainability and enhances public institutions' resilience. Zai, et al. (2025) explored the application of the government accounting system within the Gunungsitoli Utara District Office. The financial report of the Gunungsitoli Utara District Office for the year 2023 forms the study population. The 2023 financial report of Gunungsitoli Utara District Office is the basis for their analysis. Their data analysis methodology employs a qualitative descriptive approach. The Gunungsitoli Utara District Office has compiled its annual financial report according to Government Regulation Number 71 of 2010 on Government Accounting Standards and Regulation of the Minister of Home Affairs Number 13 of 2006 on Guidelines for Regional Financial Management based on the research findings on the compilation of annual financial reports.

Wang et al. (2025) investigated whether random checks of the quality of accounting information triggered by the Ministry of Finance and state accounting supervision have an impact on upstream and downstream enterprises' green investment of midstream companies' supply chains. Mechanism analysis shows that by improving supply chain information disclosure quality and consequently easing finance constraints, government accounting supervision increases environmental investment undertaken by enterprises. Their findings revealed that government accounting supervision significantly enhances the environmental investment of upstream and downstream supply chains. Informed by documented sources of information, Titus et al. (2025) widely explored the determinants of the high cost of governance and their effects on socioeconomic development in Nigeria. The principal forces driving the high government expenditure in Nigeria are corruption, mismanagement of resources, and unduly complex bureaucracy, according to their research. Further, the study also indicated that wasteful government spending has caused a staggering budget deficit and an astronomical debt load to the nation; these also play a contributing factor in the spending of the government but equally, impair the efficiency in utilizing the resources.

Purba (2025) analyzed how human resource capability and public openness can lead to coherence in local government financial procedures. Emphasizing openness as a means to strengthen responsibility, the study uses institutional and agency theories to illustrate how human resource capability can help implement strategic goals. His research showed clear major problems like symbolic uniformity, fragmented planning, and political interference. John and Luma (2025) assessed research on the impact of corruption on the Nigerian public financial management system. Applied lessons learned from government reports and current research to examine the impact of corruption on Nigeria's PFM system. Their study is grounded on the institutional theory based predominantly on round 1 and 2 iterations of the mapping and scoping anti-corruption and governance interventions in PFM research in Nigeria reports. Their results show that corruption has a significant and broad impact on the PFM system in Nigeria. In 2025 Akinyele et al. discussed the nexus between African human development and the efficiency of government expenditure. Their approach uses second-generation estimating methods and is based on Keynesianism assumptions. More efficient government expenditure, according to their results, promotes human development. Furthermore, the separation of the sample into resource-poor and resource-endowed African nations displays how poorly the natural resource endowment has been handled to stimulate African human development. The resource curse hypothesis might be characterized as the explanation of endowed resources in Africa, which impacts human development. Rationing government resources without compromising the quality of spending is an even better facilitator of human development in Africa.

Using a two-step Generalised Methods of Moment (GMM) estimate method, Mobosi and Okonta (2024) investigated the impact of revenue structure and budget choice on the fiscal sustainability index of Nigeria's 36 state governments between 2012 and 2020. Lagos and Rivers States were the most financially sustainable of the 36 states in Nigeria over the sample period in their preliminary findings. Third, fourth, fifth, and sixth most fiscally prudent states are Edo, Kano, Delta, and Ogun; the worst is Osun, placed at position 36 in Nigeria. In their paper, they also demonstrated that the fiscal viability index has a positive spillover from the past to the current period, implying that states with consistent fiscal policy are likely to continue with fiscal policy structure. Equally, the budgetary decision variable has a positive but statistically non-significant effect on the fiscal sustainability index. Ojukwu et al. (2024) looked into how expenditures by state governments can revive Nigeria's economy. The research design used in the study was experimental and ex-post facto. Systematic and convenient sampling procedures facilitated the study covering the 1983-2023 period. Their research employed a second-hand source of data time series data the CBN Statistics Bulletin 1983-2023. The Regular Least Square. Developing the regression model to investigate dependency and independent variable relationships. Their result using the Ordinary Least Square Model indicated that State government capital expenditure has a negative but not significant impact on the real gross domestic product (RGDP) of (P<.5) while State government recurrent expenditure has a significant and positive impact on the real gross domestic product (RGDP). The impact of Sustainable Development Goal (SDG) 6 and its targets acknowledges the importance of having clean, accessible, and affordable water for everyone and hence advocating for the attainment of water security to provide access to water and sanitation for all.

Okwuosa et al. (2024) discussed reviewing the probable roles of the accounting profession in improving water governance and accountability for the attainment of SDG6 in both countries, their paper describes the practices of water governance and responsibility in Nigeria and Ghana. While the shortages in water service delivery are precipitated by weak governance, supply-side and top-down strategies, inadequate stakeholder engagement, poor funding for investment in water infrastructure, and inefficiency in the management of available water systems, their report showed that population growth was driving the rising demand for water in Nigeria. Ogunjobi et al. (2024) analyze throughout the years 1981-2019 the effect of public educational investment on resource efficiency utilized in the Nigerian manufacturing sector. Estimated efficiency scores for the years in question using envelopment data analysis. Except for the year 2019, their research showed that estimation of efficiency, public educational capital spending does not result in the effective use of resources in most of the years covered; only 16 years of public educational recurrence spending showed constant returns; no years showed decreasing return to scale, contrary to the year 1982.

Moore et al. (2024) analyzed Nigeria's public sector performance and budget implementation. An ex-post facto research design was utilized in the research. In compliance with reasonable and systematic sampling strategies, the study spans 1981-2023. Common Least Squared was utilized. Specification of the regression model to examine the relationship between dependent and independent variables. It was run on EVIEWS 10. Based on their results, government capital spending was at best having a very minor negative impact on the real gross domestic product (RGDP) of (P>.5) and a very significant positive impact on government recurrent expenditure. With the application of ratio and statistical analysis, Babatunde (2022) investigated the interrelation between public debt management, youth unemployment, corruption, and poverty eradication. The analysis relied on secondary data from the Nigerian annual budget for 2018-2022. Used r, linear regression, descriptive, Pearson correlation. His findings showed there was no meaningful positive correlation between public debt management, youth unemployment, and poverty alleviation. Poverty eradication and corruption are negatively correlated. His conclusion reveals a significant, though non-significant effect of youth unemployment on corruption control and poverty reduction.

**2.4 Gap in the Literature**

Literature is thin on the overall assessment of the application of international public sector accounting standards (IPSAS) to Nigeria's public financial management framework and their contribution to SDGs attainment. Literature on the government accounting contribution to SDG attainment of rich and poor countries is minimal (Ogunjobi et al., 2024; Babatunde, 2022). Though effectiveness in spending is a universal subject of debate, specific researches that tie it to SDG target attainment in the case of Nigeria have not been carried out. For financially under-developed countries like Nigeria, scant studies on government accounting and its nexus to SDG attainment dominate. Literature exploring the direct connection between government fiscal compliance and SDG achievement is rare, particularly among developing countries that are known to have major governance challenges. This paper thus explored the influence of sustainable development goals (SDGs) and government accounting principles: aligning financial reporting to global goals.

**3.0 METHODOLOGY**

The study utilized the ex post facto research design. The study spanned the period between 2013 and 2023 based on government agencies by their nature and level of SDG goals that influenced infrastructure, health, and education by a Stratified Sampling Technique, the study also used Random Sampling Technique. A random sample from a stratum was randomly selected. The study utilized secondary data usage. Data was collected from the World Development Group as at February (2025). The national, state, and local population consisted of 722 government organizations and agencies. Government accounting as an independent variable was measured by budgetary compliance and spending efficiency. The Sustainable Development Goals (SDGs) measured by the Human Development Index (HDI) is the dependent variable.

**Table 1. Summary of Measurement of Variables**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Variable Types** | **Descriptions** | **Measurement** | **Sources** |
| Sustainable Development Goals | Dependent | A global call to action to address pressing global challenges by 2030 | Human Development Index | Purba (2025); Nwankwo (2025). |
| Human Development Index | Independent | A composite indicator developed by the United Nations Development Programme (UNDP) to measure and compare the extent of human development across nations. | (Health Index multiplied by Education Index multiplied by Income Index)1/3 | Dewi et al. (2024) |
| Government Accounting | Independent | Government accounting promotes good institutions and fair resource allocation, a prerequisite to achieving peace, justice, and robust institutions. | Budgetary Compliance and Expenditure Efficiency | Zai et al. (2025). |
| Budgetary Compliance | Independent | How well an entity adheres to its planned budget by comparing the actual expenditures and revenues against the approved budget. | Budgeted Expenditure Divided by Actual Expenditure​ | Fadel et al. (2024); Haileselassie et al. (2024). |
| Expenditure Efficiency | Independent | How effectively and efficiently government spending achieves the intended outcomes such as the advancement of SDGs. | The ratio of Actual expenditure to planned budgeted expenditure | Amos & Jibir (2024) |

**Authors Computation (2025)**

**Model Specification**

The study modified a model in the study of

*SDGs* = *f(HDI, BCOMP, EXEFF) ………………………………………………………i*

FinSt = *f( β0 + β1HDIit +β2BCOMPit + β3EXEFFit +µit ………………..…………..(ii)*

*Where:*

*SDGs = Sustainable Development Goals*

*BCOMP = Budgetary Compliance*

*EXEFF = Expenditure Efficiency*

*µit = Error Term*

*β0 - β3 = Co-efficient of Variables*

The openness, 𝛽0 is the constant 𝛽1, 𝛽2, 𝛽3 is the value of coefficient variables, *µit* the value of the error term. The Apriori expectation is that government accounting has a positive and significant effect on Sustainable Development Goals in Nigeria. Mathematically stated thus: 𝛽1 > 0, 𝛽2 > 0, and 𝛽3 > 0. Data collected were analyzed using E-view version 9

**4.0 RESULT AND DISCUSSION**

**4.1 Descriptive Statistics**

Descriptive statistics for each of the three variables Human Development Index (HDI), Budgetary Compliance (BGT\_COMP), and Expenditure Efficiency (EX\_EFF) are shown in the table. The mean for HDI, at -2.1617, is strongly negative and indicates that the distribution is highly asymmetrical and therefore mostly below the median of -2.55. With the median of BGT\_COMP just above its mean and the median of EX\_EFF significantly below its mean, both BGT\_COMP and EX\_EFF possess positive means (69.99 and 56.42, respectively). Exhibiting skewness in both instances, both have positive means. Extreme negative skewness (-3.2362) from HDI indicates a left tail of the distribution. With negative skewness (-0.4929) BGT\_COMP and positive skewness (1.0991) EX\_EFF has a right-tailed and more spread higher value. With very high kurtosis (37.1257), HDI has an abnormally peaked distribution and extreme values outliers. With moderate kurtosis levels (3.1690 and 3.2184), BGT\_COMP and EX\_EFF show a more normal, but somewhat peaked, distribution. Since the p-value is 0.000, all three variables HDI, BGT\_COMP, and EX\_EFF have relatively high Jarque-Bera statistics, thus rejecting the null hypothesis that the data follow a normal distribution.

This implies that the data may contain outliers or non-standard shapes since they are not normally distributed. HDI standard deviation (2.9538) is considerably less than the large variation in EX\_EFF (22.1541) and BGT\_COMP (13.8899) and therefore indicates greater homogeneity among HDI values than for the other two variables. The range of -33.7400 to 16.0000 of extreme HDI values indicates an extreme range and outliers for this variable. Conversely, both BGT\_COMP and EX\_EFF have less extreme ranges; the range of BGT\_COMP is 16.6700 to 100.0000, and the range of EX\_EFF from 16.6700 to 125.0000. As HDI has a much skewed, leptokurtic distribution and BGT\_COMP and EX\_EFF have more normal but still skewed patterns, the three variables each have important differences in their pattern of distribution.

**Table 2: Descriptive Statistics**

|  |  |  |  |
| --- | --- | --- | --- |
| Items | HDI | BGT\_COMP | EX\_EFF |
| Mean | -2.161731 | 69.98785 | 56.41510 |
| Median | -2.055000 | 71.43000 | 50.00000 |
| Maximum | 16.00000 | 100.0000 | 125.0000 |
| Minimum | -33.74000 | 16.67000 | 16.67000 |
| Std. Dev. | 2.953796 | 13.88987 | 22.15407 |
| Skewness | -3.236212 | -0.492919 | 1.099064 |
| Kurtosis | 37.12569 | 3.168988 | 3.218446 |
| Jarque-Bera | 36294.19 | 30.09634 | 146.7913 |
| Probability | 0.000000 | 0.000000 | 0.000000 |
| Sum | -1560.770 | 50531.23 | 40731.70 |
| Sum Sq. Dev. | 6290.661 | 139101.3 | 353868.7 |

**Source: Authors’ Computation (2025)**

**4.2 Simple Switching Regression (BFGS / Marquardt steps) Method**

Table 3, is the output of a multi-regime statistical model, such as Regime 1, Regime 2, and a common list of variables impacting the dependent variable. Let us break down the findings and identify the most crucial variables and insights: For Regime 1, the coefficient of LOG(SIGMA) is very positive and significant (p-value = 0.0000), implying there is a strong positive correlation between LOG(SIGMA) and the dependent variable. A one unit increase in LOG(SIGMA) is associated with a rise in the dependent variable of 2.415 units, which is substantial. Its high z-statistic of 17.738 also attests to this. In Regime 2, the coefficient is smaller (0.446) but still has a very significant p-value of 0.0000. This means that the variable LOG(SIGMA) also plays a role in the explanation of the dependent variable under this regime, though the size of the effect is less than in Regime 1. The z-statistic of 13.828 also points towards the statistical significance. The negative and statistically significant coefficient (-0.01987) of the variable budgetary compliance (BGT\_COMP) means that the dependent variable decreases as budgetary compliance (BGT\_COMP) increases. With a z-statistic of -7.852 and a p-value of 0.0000, the variable is a significant predictor in the model. The coefficient for expenditure efficiency (EX\_EFF) is also negative (-0.009644) and significant (p-value = 0.0011), indicating that a rise in expenditure efficiency (EX\_EFF) is associated with a fall in the dependent variable.

The effect size is smaller than budgetary compliance (BGT\_COMP), but it is statistically significant. The P1-C parameter is significant with a highly negative coefficient of -2.918 and reflects that it is a significant variable in explaining the probability of the event of interest. The z-statistic of -12.470 also indicates its significance and a p-value of 0.0000 reflecting strong evidence against the null hypothesis. The value of the Durbin-Watson statistic of 1.512909 suggests there may be some autocorrelation among the residuals since values close to 2 would suggest no autocorrelation. This value means the autocorrelation is at an intermediate level and may be researched further or can be included in the model. The AIC, BIC, and Hannan-Quinn criterion values are compared for models. The smaller the values of these measures, the greater the goodness of fit for the model. The values can be compared to any other feasible model to ensure model selection. These findings show that LOG(SIGMA), budget compliance (BGT\_COMP), and expenditure efficiency (EX\_EFF) are all predictors of the dependent variable under both regimes. The coefficient magnitudes of LOG(SIGMA) are of reasonable size under both regimes but have a greater impact under Regime 1. In addition, the fact that the coefficients of budget compliance (BGT\_COMP) and expenditure efficiency (EX\_EFF) are negative indicates that an increase in these variables would be accompanied by a decrease in the dependent variable. The statistical significance of all coefficients, evident by their low p-values, reiterates the consistency of these observations. The Durbin-Watson statistic indicates there might be autocorrelation, and that would mean that possibly there is a need for additional calibration of the model.

**Table 3: Simple Switching Regression (BFGS / Marquardt steps)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | z-Statistic | Prob. |
|  |  |  |  |  |
|  |  |  |  |  |
| Regime 1 | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(SIGMA) | 2.414995 | 0.136143 | 17.73868 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| Regime 2 | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
| LOG(SIGMA) | 0.446023 | 0.032255 | 13.82800 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| Common | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
| BGT\_COMP | -0.019870 | 0.002531 | -7.851992 | 0.0000 |
| EX\_EFF | -0.009644 | 0.002961 | -3.257393 | 0.0011 |
|  |  |  |  |  |
|  |  |  |  |  |
| Probabilities Parameters | | | | |
|  |  |  |  |  |
|  |  |  |  |  |
| P1-C | -2.917913 | 0.233991 | -12.47020 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
| Mean dependent var | -2.161731 | S.D. dependent var | | 2.953796 |
| S.E. of regression | 2.963751 | Sum squared resid | | 6306.784 |
| Durbin-Watson stat | 1.512909 | Log likelihood | | -1507.042 |
| Akaike info criterion | 4.188482 | Schwarz criterion | | 4.220214 |
| Hannan-Quinn criter. | 4.200731 |  |  |  |
|  |  |  |  |  |

**Source: Authors Computation (2025)**

**4.2 Discussion of Findings**

The budgetary compliance variable (BGT\_COMP) takes a negative coefficient value (-0.01987) in Regime 2 with an extremely significant p-value (0.0000), indicating that higher budget compliance decreases the dependent variable. The z-statistic value of -7.852 also confirms this relationship. The previous studies (Akinyele et al., 2025; Zai et al., 2025; Ogunjobi et al., 2024; Babatunde, 2022) all depict a balancing act between financial austerity and budgetary efficiency wherein strict adherence may be an inhibition to flexibility as well as total performance through less adaptability corporate and government budgets. The reverse relationship indicates these findings.

**H01:** **there is no significant relationship between budget compliance and sustainable development goals in Nigeria**

Thus, the hypothesis assertion that there is no statistically significant relationship between budget compliance and sustainable development goals in Nigeria is rejected by this study; hence, the study accepted the alternative hypothesis that there is a statistically significant relationship between budget compliance and sustainable development goals in Nigeria.The study supports the findings in the study by Akinyele et al. (2025) which examined a study of the efficiency of government spending and African human development. Based on their study, more efficient government spending enhances human development and negates the finding in the study by Moore et al. (2024) that examined the effect of budget execution and the performance of the public sector in Nigeria. Their finding suggested that government capital expenditure has a non-significant negative effect on the real gross domestic product.

**H02: Expenditure efficiency does not have a significant relationship with sustainable development goals in Nigeria**

The Expenditure Efficiency (EX\_EFF) variable is statistically significant because (p-value = 0.0011), which suggests that better expenditure efficiency leads to a decrease in the dependent variable. Though its effect is lower than that of BGT\_COMP that remains a significant determinant. The study rejects the null hypothesis that there is no significant relationship between expenditure efficiency and sustainable development goals in Nigeria. An alternative hypotheses hereby accepted that expenditure efficiency has a significant relationship with sustainable development goals in Nigeria. The study concurs with the findings in the study of Moore et al. (2024) their findings showed that the government's current expenditure has a positive and significant effect on the real gross domestic product.

**5.0 Conclusion and Recommendations**

The study concluded that budgetary compliance limits extravagant spending as expenditure efficiency in spending results in a decrease in government spending and increases overall sustainable development goals and government performance. The study recommended that to improve Nigeria's sustainable development goals, budgetary compliance frameworks should be reconsidered and revised to enable full control, and the Nigerian government should enhance expenditure efficiency mechanisms to promote and improve public spending efficiency for better national development for budgeting control.

**5.1 Implication of Findings**

The implications of the findings show that compliance with budgets and efficiency in spending are prime drivers of Nigeria's progress toward sustainable development targets. Therefore, policymakers must prioritize improving these two areas of fiscal management and strict enforcement of budgets as approved, improving public financial management, and optimal maximization of government spending efficiency to have maximum impact on country development.

**Disclaimer (Artificial Intelligence)**

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

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