



INVESTIGATING THE NEXUS BETWEEN PUBLIC DEBT MANAGEMENT AND INCLUSIVE GROWTH IN NIGERIA: AN ARDL ANALYSIS

By

Philip Japheth Pawa

Plateau State University, Boko (M.Sc Student in Economics)

E-mail: pawajapheth@gmail.com

And

Panshak Yohanna

Department of Economics, Faculty of Social Sciences

Plateau State University, Boko

E-mail: panshakyohana@plasu.edu.ng

ABSTRACT

The rapid increase in Nigeria's public debt has generated growing concerns regarding its implications for inclusive growth and human capital development. Although public borrowing is intended to finance infrastructure healthcare and other development priorities, rising debt-servicing obligations have increasingly constrained fiscal space, limiting government investment in critical social sectors. This study examines the impact of public debt management on inclusive growth and human capital development in Nigeria using annual time-series data covering the period 1980–2024. Inclusive growth is proxied by the Human Development Index (HDI), while the public debt-to-GDP ratio, total public debt and domestic debt servicing as the explanatory variables. Data were obtained from the Central Bank of Nigeria (CBN), Debt Management Office (DMO), World Development Indicators (WDI), and the United Nations Development Programme (UNDP). The study employs the Autoregressive Distributed Lag (ARDL) modelling technique to estimate the short-run and long-run relationships among the variables. The findings reveal the existence of a stable long-run relationship between public debt management and inclusive growth. Specifically, a sustainable public debt-to-GDP ratio exerts positive and statistically significant effects on human capital development, whereas excessive public debt negatively influences it. Furthermore, domestic debt servicing constrains fiscal resources in the short run but contributes to long-run fiscal sustainability when supported by prudent debt management practices. The study concludes that the developmental impact of public borrowing depends more on the quality of debt management and the productive utilization of borrowed resources than on the volume of debt accumulated. It therefore recommends strengthening debt sustainability frameworks, improving fiscal transparency and accountability, and ensuring that borrowed funds are channeled toward productive sectors capable of fostering inclusive growth and sustainable human capital development in Nigeria.

Keywords: Public Debt Management; Inclusive Growth; Human Development Index (HDI); Human Capital Development; ARDL; Nigeria.

JEL Classification: H63, O15, O47, C22



1.0 INTRODUCTION

The relationship between public debt management and inclusive growth has become a major concern for developing economies, particularly in resource-dependent countries such as Nigeria. Public debt, when effectively managed, serves as a vital instrument for financing development, stabilizing macroeconomic conditions, and promoting equitable growth. However, when poorly managed, it can generate fiscal instability, constrain development outcomes, and worsen inequality. Nigeria's fiscal structure, which is heavily dependent on oil revenues, exposes the economy to external shocks and revenue volatility. As a result, borrowing has become a recurring strategy for financing budget deficits, leading to a persistent rise in public debt and increasing concerns about fiscal sustainability (Debt Management Office, 2024; World Bank, 2023).

Globally, public debt plays a central role in enabling governments to fund infrastructure, absorb economic shocks, and sustain investment in key sectors. In developing economies, borrowing occurs through both external and domestic sources. External debt is often obtained from multilateral and bilateral institutions, sometimes on concessional terms, but it exposes the economy to exchange rate risks. Domestic debt, on the other hand, is raised through financial instruments such as treasury bills and government bonds, which can strengthen domestic financial markets but may crowd out private investment. Consequently, effective debt management requires a strategic balance between minimizing borrowing costs and managing associated risks such as refinancing pressures, currency volatility, and interest rate fluctuations (Ajayi & Oke, 2012).

In recent years, the concept of debt management has evolved beyond mere borrowing to include debt servicing, restructuring, and portfolio optimization aligned with national development objectives. Strong institutional frameworks are essential in ensuring that public debt remains sustainable and contributes positively to economic growth. In Nigeria, the establishment of the Debt Management Office (DMO) and the implementation of Medium-Term Debt Management Strategies (MTDS) represent key efforts to strengthen fiscal discipline and promote prudent borrowing. These frameworks aim to maintain an optimal debt structure while ensuring that borrowed funds are channeled toward productive investments (DMO, 2022; World Bank).

Notwithstanding these efforts, Nigeria continues to face significant challenges in translating public debt into inclusive growth outcomes. Weak institutional coordination, policy inconsistencies, and deviations from fiscal guidelines have limited the effectiveness of debt management practices. A considerable portion of borrowed funds has been allocated to recurrent expenditures rather than capital investments in infrastructure and human development. This misallocation undermines the potential growth-enhancing impact of debt and raises concerns about long-term sustainability. Furthermore, inefficiencies in project execution, including delays and cost overruns, reduce the overall effectiveness of debt-financed initiatives (Debt Management Office [DMO], 2022; World Bank, 2023).

This study addresses these gaps by providing an empirical assessment of the relationship between public debt management and inclusive growth in Nigeria using annual time-series data covering the period 1980–2024. Specifically, the study employs the ARDL modelling framework to estimate both the short-run and long-run effects of public debt-to-GDP ratio, total public debt,



and domestic debt servicing on inclusive growth. The ARDL approach is particularly appropriate because it accommodates variables integrated of different orders, $I(0)$ and $I(1)$, while simultaneously estimating both long-run equilibrium relationships and short-run adjustment dynamics.

The study contributes to the existing literature in several important ways. First, it extends previous studies by adopting the Human Development Index as a multidimensional measure of inclusive growth rather than relying solely on GDP-based indicators. Second, it jointly examines the effects of public debt accumulation and debt servicing, thereby providing a more comprehensive assessment of public debt management. Third, by employing recent data spanning 1980–2024, the study provides updated empirical evidence reflecting Nigeria's current debt profile and evolving fiscal realities. Finally, the findings are expected to provide useful policy insights for improving debt sustainability, strengthening fiscal governance, and ensuring that public borrowing contributes more effectively to inclusive growth.

The remainder of the paper is organized as follows. Section 2 reviews the relevant theoretical and empirical literature and identifies the research gap. Section 3 presents the methodology, including the model specification, data sources, and estimation techniques. Section 4 discusses the empirical findings, while Section 5 concludes the study and offers policy recommendations.

2.0 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The International Monetary Fund (IMF, 2014) defines public debt as the total outstanding financial liabilities of the government, arising from borrowing to finance budget deficits and other fiscal needs. In this sense, it is the process by which governments acquire, manage, service, and restructure debt in a manner that minimizes borrowing costs while maintaining prudent levels of financial risk and ensuring fiscal sustainability. Effective debt management requires appropriate debt composition, efficient utilization of borrowed funds, transparency, and sound institutional arrangements that promote macroeconomic stability and long-term development (IMF, 2023; World Bank, 2024). The World Bank (2020) describes it as the gross debt owed by the public sector, including both domestic and external obligations, which must be serviced through future revenues. Nigeria's Debt Management Office (DMO, 2024) further specifies public debt as the sum of federal and state government debt, encompassing obligations to both internal and external creditors. Scholars such as Ajayi and Oke (2012) emphasize that public debt represents a key fiscal instrument that, if prudently managed, can stimulate growth, but if mismanaged, may constrain economic performance.

Inclusive growth as defined by World Bank (2009) refers to economic growth that is sustained over time and broad-based across sectors, creating equal opportunities for all segments of society. The Organisation for Economic Co-operation and Development (OECD, 2018) frames it as growth that is both socially inclusive and environmentally sustainable, ensuring equitable distribution of the benefits of increased prosperity. Inclusive growth has evolved beyond the traditional notion of economic expansion to emphasize broad-based participation in economic activities and equitable distribution of development outcomes. Rather than focusing exclusively on increases in Gross Domestic Product (GDP), inclusive growth seeks to improve employment opportunities, reduce poverty and inequality, and enhance access to education, healthcare, and other social services (OECD, 2023; World Bank, 2024). In the Nigerian context, inclusive



growth implies poverty reduction, enhanced human capital, and reduced income inequality, enabling greater participation of all citizens in economic life (UNDP, 2023).

According to the IMF and World Bank (2023), debt management policy refers to the strategies and institutional arrangements designed to ensure that a government's financing needs and payment obligations are met at the lowest possible cost over the medium to long term, consistent with a prudent degree of risk. The DMO (2024) defines it as a coordinated set of measures aimed at managing the structure, maturity, and composition of public debt to ensure sustainability, maintain creditworthiness, and support macroeconomic stability. Scholars such as Ajakaiye and Ncube (2010) stress that effective debt management policies must incorporate transparency, accountability, and alignment with development objectives.

The relationship between public debt management and inclusive growth operates through several transmission mechanisms. Efficient debt management increases fiscal capacity for financing infrastructure, healthcare, and social protection programmes, thereby promoting improvements in productivity and human welfare. However, rising debt servicing obligations reduce fiscal space available for developmental expenditure, limiting investments in human capital and weakening inclusive growth outcomes (Amu et al., 2025; Mustapha, 2026)

2.1 **The Conceptual Nexus: Public Debt Management and Inclusive Growth**

The relationship among public debt management and inclusive growth, is multidimensional and mutually reinforcing. Public debt represents an important fiscal instrument through which governments mobilize financial resources to address infrastructure deficits, improve public service delivery, and stimulate economic development. However, the developmental outcomes associated with public borrowing depend fundamentally on the quality of debt management institutions, fiscal governance, and the productive utilization of borrowed resources (International Monetary Fund [IMF], 2023; World Bank, 2024).

Effective public debt management strengthens inclusive growth by financing investments that expand productive capacity, create employment opportunities, improve educational attainment, and enhance healthcare delivery. Such investments improve labour productivity, raise household incomes, reduce poverty, and promote equitable access to economic opportunities, thereby fostering sustainable and inclusive development (Organisation for Economic Co-operation and Development [OECD], 2023; Nwokoye et al., 2024). Furthermore, investment in education and health strengthens human capital formation, which, according to endogenous growth theory, serves as a critical driver of long-run economic growth and international competitiveness (Amu et al., 2025).

Conversely, weak debt management characterized by excessive borrowing, inefficient debt utilization, poor fiscal discipline, and rising debt servicing obligations reduces the fiscal space available for developmental expenditure. As debt servicing consumes an increasing proportion of government revenue, governments face growing constraints in financing education, healthcare, research, and social protection programmes. This weakens human capital accumulation, limits productivity growth, and undermines inclusive growth outcomes (International Monetary Fund, 2023; Nwokoye et al., 2024; Mustapha, 2025). Consequently, excessive debt accumulation may create a vicious cycle in which increasing indebtedness reduces fiscal sustainability while simultaneously constraining improvements in human development indicators.



By employing the Human Development Index (HDI) as a proxy for inclusive growth and examining the roles of total public debt, and debt servicing, the study provides a comprehensive framework for evaluating the developmental effectiveness of Nigeria's public debt management strategy. This conceptual framework forms the basis for the theoretical and empirical analyses presented in this study and contributes to the growing literature on debt sustainability and inclusive development in developing economies (Amu et al., 2025; World Bank, 2024).

2.2 **Theoretical Framework**

While there are several theories such as the Keynesian Theory of Public Debt; Modern Monetary, that can explain that underpins the current research, this study is principally anchored on the Debt Overhang Theory developed by Krugman (1988) and Sachs (1989). The theory provides the most suitable theoretical foundation for examining how public debt management influences inclusive growth and human capital development in Nigeria.

The Debt Overhang Theory suggests that when a country accumulates excessive debt beyond its repayment capacity, the anticipation of future taxation discourages investment and reduces economic growth (Krugman, 1988). High debt levels create uncertainty for investors, limit capital inflows, and constrain both public and private sector productivity. In developing economies such as Nigeria, persistent debt accumulation can crowd out private investment and weaken the impact of public expenditure, thereby undermining inclusive growth.

The theory argues that both domestic and foreign investors may anticipate that a substantial share of future economic gains will be used to service existing debt rather than finance productive activities. As a result, investment incentives decline, economic growth slows, and public resources available for development become increasingly limited (Krugman, 1988; Sachs, 1989).

In the context of Nigeria's public debt management, the theory suggests that rising debt accumulation and growing debt servicing obligations can reduce the government's fiscal space, thereby limiting expenditure on education, healthcare, infrastructure, and other sectors critical for human capital development and inclusive growth. When debt servicing consumes a large proportion of government revenue, fewer resources remain available for investments that improve the Human Development Index (HDI), reduce poverty, create employment opportunities, and enhance social welfare. Consequently, excessive debt may weaken the government's capacity to promote broad-based and sustainable development.

The theory further emphasizes that the impact of public debt depends on the productive utilization of borrowed funds. If debt is used to finance investments that raise productivity, expand infrastructure, improve education, and strengthen healthcare systems, the economy may generate sufficient returns to service the debt and improve living standards. However, when borrowed resources are directed toward recurrent expenditure, inefficient projects, or unproductive activities, debt accumulation can become a burden that undermines economic performance and human development outcomes (World Bank, 2024).



The relevance of the Debt Overhang Theory to this study is evident in Nigeria's recent fiscal experience. Notwithstanding substantial increases in public debt and the implementation of debt management reforms through the Debt Management Office (DMO) and Medium-Term Debt Management Strategies (MTDS), improvements in human development indicators have remained relatively modest. Rising debt servicing obligations have increasingly constrained government spending on education, healthcare, and social infrastructure, raising concerns about whether public borrowing is effectively contributing to inclusive growth and human capital development (Nwokoye et al., 2024; Amu et al., 2025).

2.3 **Empirical Literature**

Empirical evidence on the relationship between public debt and economic growth has produced mixed and inconclusive results across countries and regions, reflecting differences in economic structures, debt composition, institutional quality, estimation techniques, and periods of analysis. While some studies argue that public debt stimulates economic growth by financing productive investments, others contend that excessive debt accumulation and rising debt servicing obligations constrain economic performance and undermine development outcomes. More recently, scholars have shifted attention from the impact of public debt on aggregate economic growth to its implications for inclusive growth, fiscal sustainability, and human capital development.

At the global level, Carmen Reinhart and Kenneth Rogoff (2010) examined the relationship between public debt and economic growth using panel data covering 44 advanced and emerging economies over approximately two centuries. Employing panel data analysis and threshold estimation techniques, the authors found that countries with public debt exceeding approximately 90 percent of Gross Domestic Product (GDP) generally experienced significantly lower economic growth. Their findings support the Debt Overhang Theory by suggesting that excessive public debt discourages investment and reduces long-run economic performance. However, the study concentrated primarily on aggregate GDP growth and did not examine whether debt contributes to improvements in inclusive growth or human capital development.

Similarly, Catherine Pattillo, Hélène Poirson, and Luca Ricci (2002) investigated the nonlinear effects of external debt on economic growth in 93 developing countries using panel regression techniques. Their findings revealed that moderate levels of public debt can stimulate economic growth by providing additional resources for investment, whereas excessive debt generates diminishing returns and eventually exerts a negative effect on growth. The study concluded that the developmental impact of debt depends largely on its sustainability and productive utilization. Nevertheless, the analysis focused mainly on economic growth and external debt, paying limited attention to debt management practices and broader welfare outcomes and inclusive growth.

Within the African context, Iyoha (2000) examined the impact of external debt on economic growth in Sub-Saharan African countries using simultaneous equation estimation techniques. The study found that external debt significantly reduced economic growth through its adverse effects on investment and macroeconomic stability. The author concluded that excessive debt servicing obligations crowd out productive investment and reduce governments' ability to finance development programmes. Likewise, the African Development Bank (2019), through a cross-country assessment of African economies, reported that weak institutional quality, poor



fiscal governance, and ineffective debt management practices amplify the adverse effects of rising public debt. The report emphasized that public borrowing contributes positively to development only when supported by sound institutions and efficient project implementation.

Evidence from West Africa presents similar but more nuanced findings. According to the International Monetary Fund (2022), Ghana's rapidly increasing public debt resulted in severe fiscal stress, culminating in domestic debt restructuring measures aimed at restoring debt sustainability. Using debt sustainability analysis, the report concluded that excessive borrowing without corresponding improvements in revenue generation significantly undermined fiscal stability. In contrast, studies conducted in Kenya indicate that linking government borrowing to clearly defined performance benchmarks and rigorous project monitoring enhances accountability, improves resource allocation, and strengthens development outcomes. These findings suggest that institutional quality and effective debt management play a more important role than the volume of borrowing in determining development outcomes.

In Nigeria, empirical evidence generally indicates that although public borrowing has increased substantially over the past two decades, its contribution to sustainable and inclusive development remains limited. Samuel Ajayi and Michael Oke (2012) examined the relationship between external debt and economic growth in Nigeria using the Ordinary Least Squares (OLS) estimation technique. The study found that while external borrowing provides much-needed financial resources for development, it simultaneously exposes the economy to exchange rate volatility and increasing debt servicing obligations. The authors concluded that prudent debt management is essential if borrowing is to contribute meaningfully to economic development.

Similarly, Onyekwena and Ekeruche (2020) assessed Nigeria's public debt management from an institutional perspective using policy analysis. Their findings revealed that corruption, weak governance structures, poor project implementation, and inadequate monitoring significantly reduce the effectiveness of debt-financed investments. The study argued that institutional weaknesses rather than debt accumulation itself explain the limited developmental impact of public borrowing in Nigeria. In the same vein, Ajakaiye and Neube (2010), using institutional and policy analysis, concluded that weak coordination among fiscal institutions and inconsistent macroeconomic policies undermine the benefits associated with public borrowing.

More recently, Kanwanye et al. (2025) employed advanced econometric techniques, specifically the Autoregressive Distributed Lag (ARDL) model method to investigate the direct impact of public debt on human capital development in Nigeria from 1996 to 2023. The study found that both public debt and debt servicing have significant negative effects on human capital indicators. These adverse impacts are particularly noticeable in the education and health sectors. Similarly, it was that governance quality, measured by institutional effectiveness, control of corruption, and regulatory quality, plays a crucial role in mitigating the adverse impacts of public debt on human capital development.

Strong Governance Enhances Debt Utilization: The study confirms that robust governance frameworks enhance the productive use of public debt, ensuring that borrowed resources contribute positively to human capital development



Weak Governance Exacerbates Crowding-Out Effects: Conversely, weak governance exacerbates the crowding-out effects of debt servicing, particularly on critical social investments. The World Bank (2023) studied Nigeria's fiscal performance and debt sustainability using macroeconomic assessment techniques. The report showed that the country's rapidly increasing debt-service-to-revenue ratio has significantly reduced fiscal space, limiting government expenditure on critical sectors such as education, healthcare, and infrastructure. Despite sustained increases in public borrowing, improvements in human development indicators have remained relatively modest. This suggests that the challenge confronting Nigeria is not merely the size of public debt but the effectiveness of its management and the productive utilization of borrowed resources.

Recent empirical studies have begun to incorporate welfare-oriented indicators into debt analysis. Nwokoye et al. (2024) investigated the relationship between public debt and human capital development in Nigeria using the Autoregressive Distributed Lag (ARDL) estimation technique. Their findings indicate that the effect of public debt on human capital development depends largely on fiscal efficiency and the productive allocation of borrowed resources. Specifically, investments directed toward education and healthcare were found to improve human development outcomes, whereas excessive debt servicing reduced government expenditure on social sectors.

Similarly, Amu et al. (2025) scrutinized the relationship between public debt and economic development in Nigeria using cointegration and ARDL estimation techniques. The study found that productive utilization of borrowed funds promotes long-run economic development, whereas poor debt management and inefficient resource allocation constrain sustainable growth. Their findings reinforce the argument that the quality of debt management, rather than the quantity of borrowing alone, determines whether public debt contributes positively to development outcomes.

In conclusion, the empirical literature demonstrates that the impact of public debt on economic performance depends largely on debt sustainability, institutional quality, governance, and the productive utilization of borrowed funds. While global and African studies generally support the Debt Overhang Theory by showing that excessive debt undermines economic growth, Nigerian studies further reveal that weak governance, poor project implementation, and rising debt servicing obligations have constrained the developmental benefits of public borrowing. Nevertheless, important gaps remain in the literature. Most previous studies have focused on conventional macroeconomic indicators such as GDP growth, investment, inflation, and fiscal deficits while paying limited attention to inclusive growth and human capital development. Methodologically, although OLS, VECM, and FMOLS have been widely applied, relatively few studies have employed the ARDL framework to estimate both the short-run and long-run effects of public debt management on inclusive growth. This study addresses these gaps by employing the Human Development Index (HDI) as a proxy for inclusive growth and applying the ARDL approach to examine how public debt management influences inclusive growth in Nigeria over the period 1980-2024.



3.0 RESEARCH METHODOLOGY

3.1 Data and Sources

This study adopts a quantitative research design to examine the impact of public debt on inclusive growth in Nigeria using annual time-series data spanning the period 1980–2024. The study is based on the positivist research paradigm, which emphasizes objective measurement and empirical testing of economic relationships through statistical techniques. Secondary data were obtained from the Central Bank of Nigeria (CBN), Debt Management Office (DMO), National Bureau of Statistics (NBS), United Nations Development Programme (UNDP), and the World Bank World Development Indicators (WDI). The dependent variable is Inclusive Growth, proxied by the Human Development Index (HDI), while the explanatory variables include the Public Debt-to-GDP Ratio (PDEBT-GDP), Debt Service Payments (DDS), and Total Public Debt (PDEBT). Descriptive statistics and correlation analysis are employed to examine the characteristics and relationships among the variables, while the Augmented Dickey-Fuller (ADF) unit root test is used to determine their stationarity properties. Thereafter, the ARDL approach and Bounds Cointegration Test are utilized to investigate both the short-run and long-run effects of public debt and debt management indicators on inclusive growth in Nigeria.

3.3 Model Specification

The economic model is of the form:

$$HDI_t = f(PDEBT - GDP_t, DDS_t, PDEBT_t) \quad 1$$

Where:

HDI = Inclusive Growth (proxied by Human Development Index, HDI)

$PDEBT - GDP_t$ = Debt-to-GDP ratio

DDS_t = Domestic debt service

$P - DEBT_t$ = Per capita public debt

3.4 Econometric Form of the Model

$$HDI_t = \beta_0 + \beta_1 (PDEBT - GDP)_t + \beta_2 DDS_t + \beta_3 PDEBT_t + \epsilon_t \quad 2$$

Where:

HDI_t = Human Development Index at time t

$(PDEBT - GDP)_t$ = Public debt-to-GDP ratio at time t

DDS_t = Debt service payments at time t

$PDEBT_t$ = Total public debt at time t

β_0 = Intercept (constant term)

$\beta_1, \beta_2, \beta_3$ = Parameters to be estimated

ϵ_t = Stochastic error term



The Unrestricted Error Correction Model (UECM) representation is given as:

$$\Delta HDI_t = \alpha_0 + \sum_{i=1}^{p-1} \alpha_{1i} \Delta HDI_{t-i} + \sum_{i=0}^{q-1} \alpha_{2i} \Delta \ln PDEBT - GDP_{t-i} + \sum_{i=0}^{q-2} \alpha_{3i} \Delta \ln PDEBT_{t-i} + \sum_{i=0}^{q-3} \alpha_{4i} \Delta \ln DDS_{t-i} + \alpha_5 BREAK_{1990} + \gamma_1 HDI_{t-1} + \gamma_2 \ln PDEBT - GDP_{t-1} + \gamma_3 \ln PDEBT_{t-1} + \gamma_4 \ln DDS_{t-1} + \varepsilon_t \dots \dots \dots (1)$$

Where:

$\alpha_{1i} - \alpha_{4i}$ = The model short-run coefficients.

$\gamma_1 - \gamma_4$ = the model Long-run coefficients.

$\ln = \log$

HDI : Human Development Index, a composite indicator of health, education, and living standards. (*Dependent variable*)

$\ln PDEBT - GDP$: PDebt-GDP ratio, a proxy for economic growth and income level.

$\ln PDEBT$: Log of public debt, measuring government indebtedness and fiscal constraints.

$\ln DDS$: Log of debt service payments, representing the cost of debt management and burden of repayment on development resources.

$BREAK_{1990}$: Dummy variable for structural break in 1990 accounting for significant reforms or global shocks.

Δ = Difference operator

ε_t = stochastic term

After cointegration has been confirmed, the standard ARDL bounds-testing specification is given Equation 1 becomes,

$$\Delta HDI_t = \alpha_0 + \sum_{i=1}^{p-1} \alpha_{1i} \Delta HDI_{t-i} + \sum_{i=0}^{q-1} \alpha_{2i} \Delta \ln PDEBT - GDP_{t-i} + \sum_{i=0}^{q-2} \alpha_{3i} \Delta \ln PDEBT_{t-i} + \sum_{i=0}^{q-3} \alpha_{4i} \Delta \ln DDS_{t-i} + \alpha_5 BREAK_{1990} + \delta ECT_{t-1} + \varepsilon_{t-1} - (2)$$

Where;

ECT_{t-i} = Error correction term

δ = Speed of adjustment coefficient, expected to be negative and significant.

4.0 EMPIRICAL RESULTS AND DISCUSSIONS OF FINDINGS

This section presents the data employed for the empirical analysis of the relationship between public debt and inclusive growth in Nigeria. The study utilizes annual time-series data spanning the period 1980–2024, providing 45 observations for analysis. As earlier noted, the Human Development Index (HDI) serves as the dependent variable and is used as a proxy for inclusive growth, while the explanatory variables include the Public Debt-to-GDP Ratio ($\ln PDEBT - GDP$), Debt Service Payments (DDS) and Total Public Debt (PDEBT).

$\ln PDEBT - GDP_t$ = Public debt-to-GDP ratio at time t

$\ln PDEBT_t$ = Total public debt at time t

$\ln DDS_t$ = Debt service payments at time t

Table 4.1: Descriptive Statistics

Statistic	$\ln PDEBT - GDP$	$\ln PDEBT$	$\ln DDS$	HDI	Residual
Mean	2.867	3.254	10.418	30.789	-1.9808
Median	3.153	3.235	6.329	35.800	2.258552
Maximum	4.317	4.500	28.217	51.900	1.240735
Minimum	-0.654	1.985	3.140	0.379	3.126954
Std. Dev.	1.137	0.609	9.136	17.077	1.240735

Source: Researcher's computation using Stata 2015

Table 4.1 presents the descriptive statistics of the study variables over the period 1980–2024. The $\ln PDEBT - GDP$ ratio recorded a mean value of 2.867 with a standard deviation of 1.137, ranging from –0.654 to 4.317, indicating moderate fluctuations in debt levels relative to GDP. Total Public Debt ($\ln PDEBT$) averaged 3.254 with a standard deviation of 0.609, varying from 1.985 to 4.500, reflecting a relatively stable but rising debt profile. Domestic Debt Service ($\ln DDS$) exhibited the highest variability, with a mean of 10.418, a standard deviation of 9.136, and values ranging from 3.140 to 28.217. The Human Development Index (HDI), the dependent variable, recorded a mean of 30.789 and a standard deviation of 17.077, with a minimum of 0.379 and a maximum of 51.900, indicating significant changes in human development outcomes during the study period. Overall, the results suggest that debt-related variables and human development experienced substantial fluctuations, reflecting the effects of fiscal policies, debt management practices, and economic reforms in Nigeria.

4.1 **Multicollinearity: Variance Inflation Factor (VIF) Test**

Prior to estimating the ARDL model, the Variance Inflation Factor (VIF) test was conducted to examine the presence of multicollinearity among the explanatory variables. Multicollinearity arises when two or more independent variables are highly correlated, making it difficult to isolate the individual effect of each variable on the dependent variable. Severe multicollinearity inflates the standard errors of the estimated coefficients, resulting in unstable parameter estimates and unreliable statistical inference.

The results presented in **Table 4.2** indicate that the VIF values for all explanatory variables are below the commonly accepted threshold of **10.0** recommended by Gujarati and Porter (2009), and are also below the more conservative threshold of **5.0** suggested by Hair et al. (2019), with the exception of **LPDEBTGDP**, whose VIF of **5.32** is only marginally above the conservative benchmark but remains well below the critical threshold of 10.

The **mean VIF 6of 4.03** also supports the conclusion that the explanatory variables do not exhibit harmful linear dependence. Since the average VIF is well below the conventional threshold of 10 and close to the more conservative benchmark of 5, the model is considered free from multicollinearity problems. This suggests that each explanatory variable contributes distinct information to the model, allowing their individual effects on human development to be estimated with reasonable precision.

Economically, the relatively moderate correlation observed among the debt-related variables is expected because indicators such as the public debt-to-GDP ratio, total public debt, and domestic debt servicing are conceptually related measures of a country's debt profile. However, the VIF results demonstrate that the degree of association among these variables is insufficient to compromise the stability of the regression estimates. Therefore, all selected explanatory variables can be retained in the estimated model without violating the assumptions of classical regression analysis.

Table 4.2: Variance Inflation Factor (VIF) Test for Multicollinearity

Variable	VIF	Tolerance (1/VIF)	Decision
LPDEBTGDP	5.32	0.188	No serious multicollinearity
LDDS	4.64	0.215	No serious multicollinearity
LPUBDEBT	2.13	0.469	No serious multicollinearity
Mean VIF	4.03	—	Model free from harmful multicollinearity

Source: Researcher's Computation using Stata 15.

The Augmented Dickey–Fuller (ADF) unit root test results indicate that HDI, logged public debt (*lnPDEBT*) and logged debt servicing (LDDS). In contrast, the logged Public Debt-to-GDP Ratio (*lnPDEBT – GDP*) is stationary at level, indicating integration of order zero, $I(0)$. The results from Table 4.3 therefore reveal a mixture of $I(0)$ and $I(1)$ variables, with no variable integrated of order two, $I(2)$, thereby satisfying the requirements for the application of the ARDL bounds testing approach. Furthermore, considering the possibility of structural changes arising from major economic reforms, policy shifts, and external shocks during the study period, the Zivot–Andrews unit root test was conducted to account for potential structural breaks. This test provides more robust evidence on the true order of integration by allowing for a single endogenous structural break before proceeding to the cointegration analysis.

**Table 4.3:** Augmented Dickey-Fuller Unit Root Test

Variable	ADF (Level)	p-value (Level)	ADF (1st Diff)	p-value (1st Diff)	Order of Integration
HDI	-17.437	1990	-5.08	Stationary	I(0)
$\ln PDEBT - GDP$	-2.064	0.2591	-4.571	0.0001	I(1)
$\Delta \ln PDEBT$	-2.978	0.0370			I(0)
$\Delta \ln DDS$	-2.490	0.1180	-3.697	0.0042	I(1)

Source: Researcher's computation using Stata 2025

Table 4.4 presents the results of the Zivot-Andrews unit root test, which accounts for structural breaks in the series. The findings show that *HDI* and Domestic Debt Service (*lnDDS*) are stationary at levels, indicating that they are integrated of order zero, *I*(0), while the Public Debt-to-GDP Ratio (*lnPDEBT - GDP*), and Public Debt (*lnPDEBT*) are non-stationary at levels but become stationary after first differencing, implying integration of order one, *I*(1). The test also identifies important structural break year, 1990 corresponding to major economic reforms. Overall, the presence of a mixture of *I*(0) and *I*(1) variables, with no evidence of *I*(2) processes, confirms the suitability of the ARDL approach for the study and highlights the importance of accounting for structural changes in the empirical analysis.

Table 4.4: Zivot-Andrews Unit Root Test Results (for Structural breaks)

Variable	Minimum t-statistic	Break Year	Critical Value (5 percent)	Decision	Order of Integration
HDI	-17.437	1990	-5.08	Stationary	I(0)
$\ln PDEBT - GDP$	-4.265	1991	-5.08	Non-stationary	—
$\Delta \ln PDEBT$	-3.115	1990	-5.08	Non-stationary	—
$\Delta \ln DDS$	-11.019	1990	-5.08	Stationary	I(0)

Source: Researcher's computation using Stata 2015

Table 4.5 presents the VAR lag order selection results, showing that the VAR(2) model is the optimal specification for the study. The Akaike Information Criterion (AIC) and Hannan–Quinn Criterion (HQ) attain their minimum values at lag 2, while the Schwarz Bayesian Information Criterion (BIC) favors lag 1; however, AIC and HQ are generally preferred for capturing persistent dynamic relationships in relatively small samples. Furthermore, the log-likelihood improves substantially up to the second lag before exhibiting diminishing returns, confirming VAR(2) as the most appropriate lag length for subsequent ARDL analysis.

**Table 4.5:** Lag Order Selection Criteria

MODEL	LOGL	AIC*	BIC	HQ	DECISION
VAR(0)	-473.248	23.3292	23.5381	23.4053	Not selected
VAR(1)	-340.347	18.0657	19.3195*	18.5223	Not selected
VAR(2)	-303.773	17.5011*	19.7998	18.3382*	Selected
VAR(3)	-285.213	17.8153	21.1588	19.0328	Not selected
VAR(4)	-264.361	18.0176	22.4060	19.6156	Not selected

Source: Researcher's computation using Stata 2015

4.2 **Cointegration Test: Pesaran, Shin, and Smith (2001) ARDL Bounds Test Results**

Table 4.6 presents the results of the Pesaran, Shin, and Smith (2001) ARDL Bounds Test for cointegration. The computed F-statistic of 10.840 exceeds the upper bound critical values (I(1)) at the 10%, 5%, and 1% significance levels. Accordingly, the null hypothesis of no long-run relationship is rejected, confirming the existence of a stable long-run cointegrating relationship among the Human Development Index (HDI), public debt-to-GDP ratio (PDEBT-GDP), total public debt (LPDEBT), and domestic debt servicing (LDDS). This finding indicates that the variables move together over time and maintain a long-run equilibrium relationship despite short-run fluctuations. Consequently, the ARDL approach is appropriate for estimating both the long-run coefficients and the associated error correction model (ECM).

Table 4.6: Cointegration: F-Statistic

Significance	Upper Bound I(1)	F-statistic	Decision
10%	3.793	10.840	Reject H ₀
5%	4.493	10.840	Reject H ₀
1%	6.165	10.840	Reject H ₀

Source: Researcher's computation using Stata 2015

4.3 **ARDL Long-Run Results**

Table 4.7 presents the estimated long-run coefficients from the ARDL model, with the Human Development Index (HDI) serving as the dependent variable. The results indicate that the public debt-to-GDP ratio (lnPDEBT-GDP) has a positive and statistically significant effect on HDI in the long run ($\beta = 0.3623$, $p = 0.05$). This suggests that maintaining a sustainable debt-to-GDP ratio enhances human development in Nigeria. Specifically, because the explanatory variable is expressed in logarithms while HDI is measured in levels, a 1% increase in the public debt-to-GDP ratio is associated with an increase of approximately 0.0036 units in the HDI, holding other factors constant. This finding implies that public borrowing can improve inclusive growth when borrowed resources are efficiently utilized for productive investments in sectors such as education, healthcare, and infrastructure.

**Table 4.7:** ARDL Long-Run Results**Dependent Variable: HDI**

Variable	Coefficient	Std. Error	t-Stat	Prob.
$\ln PDEBT - GDP$	0.3623*	0.1841	1.97	0.05
$\ln PDEBT$	-8.1138*	3.9933	-2.03	0.05
$\ln DDS$	2.8431	1.5904	0.53	0.25
BREAK1990	52.5007	29.4500	1.78	0.08

Note: *, ** and *** denote significance at 10 percent, 5 percent and 1 percent levels, respectively

Source: Authors' Computation, using Stata 15.

Conversely, total public debt ($\ln PDEBT$) exerts a negative and statistically significant effect on HDI ($\beta = -8.1138$, $p = 0.05$). The result indicates that excessive debt accumulation undermines human development by increasing fiscal pressures and reducing the resources available for essential social and developmental expenditures. The finding is consistent with the Debt Overhang Theory, which argues that excessive indebtedness discourages investment and constrains long-run economic performance.

The coefficient of domestic debt servicing ($\ln DDS$) is positive ($\beta = 2.8431$) but statistically insignificant ($p = 0.25$). This indicates that, although debt servicing is positively associated with human development in the estimated model, there is insufficient statistical evidence to conclude that domestic debt servicing has a meaningful long-run effect on HDI during the study period. Consequently, changes in domestic debt servicing cannot be regarded as a significant determinant of human development in the long-run.

Furthermore, the structural break dummy (BREAK90) is positive and significant ($\beta = 52.5007$, $p = 0.086$), indicating an improvement in human development outcomes following the economic reforms introduced after 1990. Although the Structural Adjustment Programme (SAP) was introduced in 1986, its major macroeconomic and fiscal effects became more pronounced by 1990. Between 1986 and 1989, Nigeria experienced a transition period characterized by gradual implementation of exchange rate liberalization, fiscal reforms, trade liberalization, financial sector deregulation, and public sector restructuring. By 1990, these reforms had become firmly embedded in the economy, significantly altering government borrowing patterns, fiscal management, and debt accumulation. Consequently, the year 1990 represents a more appropriate structural break because it captures the period when the long-term effects of SAP began to influence public debt management and economic development.

4.4 **ARDL-ECM Short-Run Results**

Table 4.8 presents the short-run dynamics of the ARDL Error Correction Model (ECM), with the Human Development Index (HDI) as the dependent variable. The results indicate that the public debt-to-GDP ratio exerts a negative and statistically significant effect on human development in the short run. Specifically, the contemporaneous coefficient of $\Delta \ln PDEBT$ -GDP is negative and significant ($\beta = -0.0797$, $p = 0.026$), while its one-period lag also remains negative and significant ($\beta = -0.1239$, $p = 0.002$). These findings suggest that increases in the public debt-to-

GDP ratio immediately reduce human development, reflecting the short-run fiscal burden associated with rising debt obligations.

Table 4.8: Summary of ARDL-ECM Short-Run Results

Variable	Coefficient	Std. Error	t-Stat	Prob.
C	-2.3615	11.956	-0.20	0.845
$\Delta \ln PDEBT - GDP$	-0.0797**	0.0338	-2.36	0.026
$\Delta \ln PDEBT - GDP (-1)$	-0.1239**	0.0358	-3.46	0.002
$\Delta \ln PDEBT$	3.4524**	1.4004	2.47	0.020
$\Delta \ln PDEBT (-1)$	1.2135	0.9652	1.26	0.219
$\Delta \ln DDS$	-1.4509***	0.2776	-5.23	0.000
$\Delta \ln DDS (-1)$	-0.5904**	0.2050	-2.88	0.008
ECM (-1)	-0.3777**	0.1349	-2.80	0.009
R ² =	0.9535			
Adjusted R ² =	0.9701			

Note: *, ** and *** denote significance at 10 percent, 5 percent and 1 percent levels, respectively

Source: Authors' Computation, using Stata 15.

The coefficient of $\Delta \ln PDEBT$ is positive and statistically significant ($\beta = 3.4524$, $p = 0.020$), indicating that increases in total public debt are associated with improvements in HDI in the short run. This suggests that when borrowed funds are promptly channelled into productive sectors such as education, healthcare, and infrastructure, they can generate immediate welfare gains. However, the lagged change in public debt is positive but statistically insignificant ($\beta = 1.2135$, $p = 0.219$), implying that the short-run impact of additional borrowing does not persist beyond the initial period.

Domestic debt servicing ($\Delta \ln DDS$) has a negative and highly significant contemporaneous effect on HDI ($\beta = -1.4509$, $p < 0.01$). Its lagged effect also remains negative and statistically significant ($\beta = -0.5904$, $p = 0.008$). These results indicate that rising domestic debt servicing obligations reduce human development in the short run by diverting government resources away from priority social expenditures toward debt repayment, thereby constraining investments in education, health, and other welfare-enhancing sectors.

The error correction term, ECM (-1), has the expected negative and statistically significant coefficient ($\beta = -0.3777$, $p = 0.009$), confirming the existence of a stable long-run equilibrium relationship among the variables. The coefficient implies that approximately 37.8% of any short-run disequilibrium in HDI is corrected each year, indicating a moderate speed of adjustment toward the long-run equilibrium following temporary shocks. The significance of the error correction term further validates the appropriateness of the ARDL-ECM specification.

The model also exhibits a high explanatory power, with an R² of 0.9701 and an adjusted R² of 0.9535, indicating that approximately 97.0% and 95.4% of the variation in HDI is explained by the included explanatory variables, respectively. While these statistics suggest an excellent model fit, they should be interpreted alongside the diagnostic and stability tests rather than as the sole indicators of model adequacy.

4.5 **Diagnostics Test**

Table 4.9 shows that the ARDL-ECM model satisfies the major diagnostic tests and is statistically reliable. The Breusch-Godfrey LM test indicates the absence of serial correlation ($\chi^2 = 1.039$, $p = 0.3080$), while the Breusch-Pagan/Cook-Weisberg test confirms homoskedasticity of the residuals ($\chi^2 = 0.310$, $p = 0.5797$), suggesting stable error variance and efficient coefficient estimates.

Table 4.9: Summary of Diagnostic Tests

Diagnostic Test	Statistic	Value	Prob	Null Hypothesis
Breusch-Godfrey LM Test	Chi ²	1.039	0.3080	No serial correlation
Breusch-Pagan / Cook-Weisberg Test	Chi ² (1)	0.310	0.5797	Constant variance
Ramsey RESET Test	F-statistic	0.770	0.5174	Model is correctly specified

Source: Authors' Computation, using Stata 15

Furthermore, the Ramsey RESET test reveals that the model is correctly specified ($F = 0.770$, $p = 0.5174$), indicating no evidence of omitted variable bias or functional form misspecification.

Figure 4.1: Normality Test: Jarque-Bera T

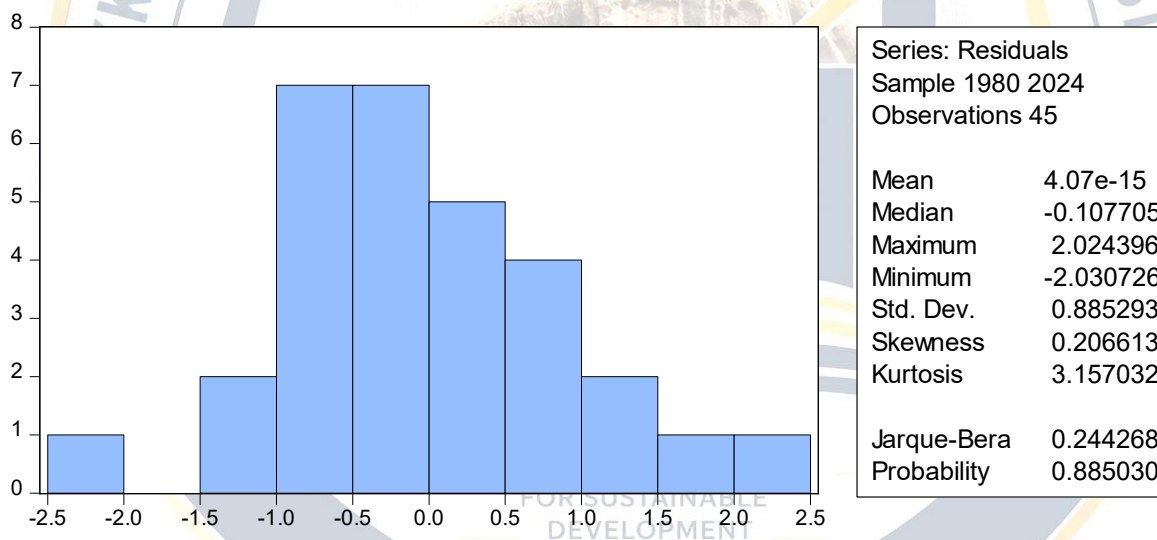


Figure 4.1 indicates that the residuals of the ARDL-ECM model are normally distributed. This is because the Jarque-Bera statistic of 0.2443 with a probability value of 0.8850 (> 0.05); indicating that the null hypothesis of normality cannot be rejected.

5.0 **DISCUSSION OF FINDINGS**

The long-run ARDL estimates reveal that public debt management exerts significant and heterogeneous effects on human development in Nigeria. The results suggest that while sustainable debt financing can promote inclusive growth, excessive debt accumulation undermines long-term welfare. This finding highlights the importance of distinguishing between



the sustainability of public debt and the absolute size of public debt in assessing its developmental implications.

The public debt-to-GDP ratio exhibits a positive and statistically significant long-run effect on the Human Development Index (HDI) ($\beta = 0.3623$, $p = 0.05$). This result suggests that a sustainable level of public borrowing relative to the size of the economy contributes positively to human development over time. A manageable debt-to-GDP ratio enhances the government's ability to finance long-term investments in education, healthcare, infrastructure, and other productive sectors that improve living standards and expand human capabilities. The finding supports the Keynesian perspective that public borrowing can stimulate economic development when debt remains within sustainable limits and is efficiently allocated to productive investments. It also aligns with the endogenous growth theory, which emphasizes that public investment in human and physical capital raises productivity and improves long-run economic performance. Empirically, the result is not only consistent with the findings of Nwokoye et al. (2024), who reported that well-managed public borrowing contributes positively to human capital development and long-term economic welfare but also align with Ajayi and Oke (2012), Iyoha (1999), and Adesola (2009), who had earlier argued that excessive debt burdens can hinder welfare improvements. In conclusion, the results indicate that the developmental impact of public debt depends largely on prudent debt management, fiscal discipline, and the productive utilization of borrowed funds.

Conversely, total public debt (lnPDEBT) has a negative and statistically significant effect on HDI ($\beta = -8.1138$, $p = 0.05$), indicating that excessive debt accumulation adversely affects human development in the long run. This result implies that beyond sustainable borrowing thresholds, rising public debt imposes fiscal constraints that limit government expenditure on essential social services. As debt obligations increase, a larger proportion of public revenue is devoted to servicing existing debt, leaving fewer resources available for investments in education, healthcare, poverty reduction, and infrastructure. Consequently, excessive debt accumulation weakens the government's capacity to improve human welfare and inclusive growth. This finding lends strong support to the Debt Overhang Theory advanced by Paul Krugman (1988) and Jeffrey D. Sachs (1989), which argues that excessive indebtedness discourages investment, reduces economic efficiency, and constrains long-run development.

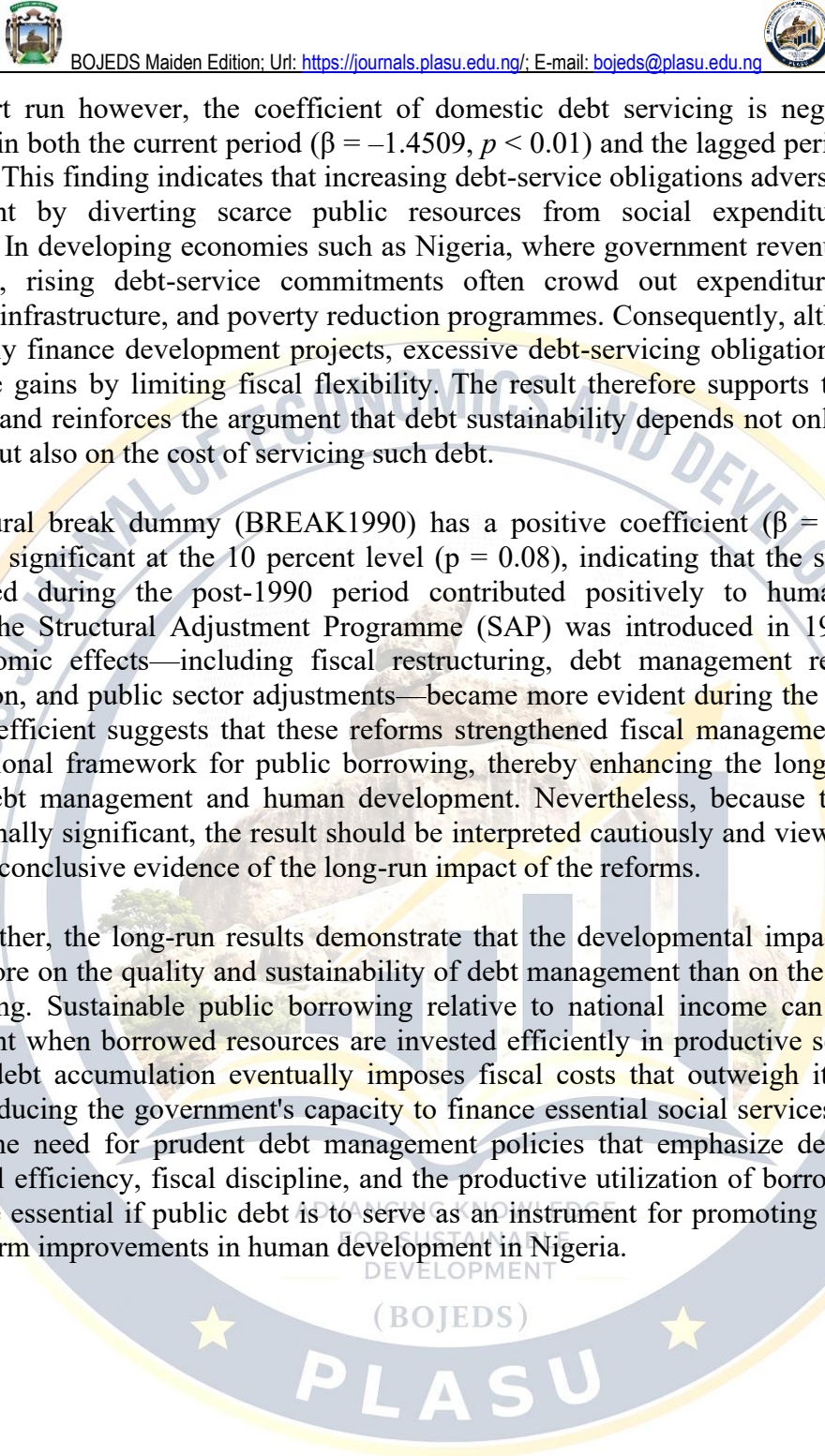
The coefficient of domestic debt servicing (lnDDS) is positive ($\beta = 2.8431$) but statistically insignificant ($p = 0.25$). This finding suggests that although domestic debt servicing is positively associated with human development, the evidence is insufficient to conclude that it exerts a significant long-run influence on HDI in Nigeria. One possible explanation is that regular debt servicing enhances investor confidence, strengthens fiscal credibility, and improves the government's access to domestic financial markets, thereby supporting macroeconomic stability. However, these potential benefits appear too weak or inconsistent to generate a statistically significant long-run improvement in human development. The insignificant result may also reflect fluctuations in fiscal policy, changing debt management strategies, or inefficiencies in the utilization of borrowed resources during the study period. Consequently, domestic debt servicing alone cannot be regarded as a reliable driver of long-run improvements in human welfare.



In the short run however, the coefficient of domestic debt servicing is negative and highly significant in both the current period ($\beta = -1.4509$, $p < 0.01$) and the lagged period ($\beta = -0.5904$, $p = 0.008$). This finding indicates that increasing debt-service obligations adversely affect human development by diverting scarce public resources from social expenditure toward debt repayment. In developing economies such as Nigeria, where government revenues are relatively constrained, rising debt-service commitments often crowd out expenditure on education, healthcare, infrastructure, and poverty reduction programmes. Consequently, although borrowing may initially finance development projects, excessive debt-servicing obligations can eventually offset these gains by limiting fiscal flexibility. The result therefore supports the crowding-out hypothesis and reinforces the argument that debt sustainability depends not only on the amount borrowed but also on the cost of servicing such debt.

The structural break dummy (BREAK1990) has a positive coefficient ($\beta = 52.5007$) and is statistically significant at the 10 percent level ($p = 0.08$), indicating that the structural reforms implemented during the post-1990 period contributed positively to human development. Although the Structural Adjustment Programme (SAP) was introduced in 1986, many of its macroeconomic effects—including fiscal restructuring, debt management reforms, financial liberalization, and public sector adjustments—became more evident during the early 1990s. The positive coefficient suggests that these reforms strengthened fiscal management and improved the institutional framework for public borrowing, thereby enhancing the long-run relationship between debt management and human development. Nevertheless, because the coefficient is only marginally significant, the result should be interpreted cautiously and viewed as suggestive rather than conclusive evidence of the long-run impact of the reforms.

Taken together, the long-run results demonstrate that the developmental impact of public debt depends more on the quality and sustainability of debt management than on the absolute volume of borrowing. Sustainable public borrowing relative to national income can enhance human development when borrowed resources are invested efficiently in productive sectors. However, excessive debt accumulation eventually imposes fiscal costs that outweigh its developmental benefits, reducing the government's capacity to finance essential social services. These findings reinforce the need for prudent debt management policies that emphasize debt sustainability, institutional efficiency, fiscal discipline, and the productive utilization of borrowed funds. Such policies are essential if public debt is to serve as an instrument for promoting inclusive growth and long-term improvements in human development in Nigeria.





The estimated error correction coefficient, ECM (-1), is negative ($\beta = -0.3777$) and statistically significant ($p = 0.009$), confirming the existence of a stable long-run equilibrium relationship among human development, public debt indicators, and debt servicing. The coefficient indicates that approximately 37.8% of any short-run disequilibrium is corrected each year, implying a moderate speed of adjustment toward long-run equilibrium following temporary shocks. The negative and significant error correction term validates the earlier ARDL bounds test results and demonstrates that deviations from equilibrium are gradually eliminated over time. Such a speed of adjustment suggests that while shocks to public debt management affect human development in the short run, the economy possesses a self-correcting mechanism that restores equilibrium within a reasonable period. The model also demonstrates substantial explanatory power, with an R^2 indicating that the included explanatory variables account for approximately 97% of the variation in HDI during the study period.





6.0 CONCLUSIONS AND RECOMMENDATIONS

This study investigated the effect of public debt management on inclusive growth in Nigeria over the period 1980–2024 using the Autoregressive Distributed Lag (ARDL) modelling approach. By employing the Human Development Index (HDI) as a multidimensional proxy for inclusive growth, the study extends the existing literature beyond the conventional focus on aggregate economic growth to examine the welfare implications of public debt management. The empirical findings indicate the existence of a stable long-run relationship between public debt management and inclusive growth. Specifically, the results suggest that maintaining a sustainable public debt-to-GDP ratio, ensuring efficient debt servicing and increasing productive public expenditure—particularly on education—can enhance human capital development and improve welfare outcomes. Conversely, excessive debt accumulation and rising debt-servicing obligations constrain fiscal space, reduce investment in critical social sectors and weaken inclusive growth.

The study further demonstrates that the developmental impact of public borrowing depends less on the volume of debt than on the effectiveness of debt management, institutional quality, fiscal discipline, and the productive utilization of borrowed resources. While public debt remains an indispensable instrument for financing development in a resource-constrained economy such as Nigeria, its sustainability and developmental benefits require sound macroeconomic management, transparent governance, and strategic allocation of borrowed funds to sectors capable of generating long-term economic and social returns. The evidence also accentuates the importance of the structural reforms initiated under the 1990 Structural Adjustment Programme in shaping Nigeria's debt management trajectory and highlights the continuing need for reforms that strengthen fiscal resilience.

The study concludes that prudent public debt management is fundamental to achieving inclusive growth in Nigeria. Consequently, policymakers should prioritize debt sustainability, strengthen domestic revenue mobilization, improve transparency and accountability in debt utilization, and channel borrowed resources toward productive investments. By doing so, Nigeria can maximize the developmental gains from public borrowing while safeguarding long-term fiscal sustainability and improving the welfare of its citizens.

7.0 RECOMMENDATIONS

1) *Align Public Borrowing with Productive Investments and Human Development Goals*

Government should ensure that all borrowed funds are directed toward high-impact sectors such as education, healthcare, infrastructure, and other productive investments that generate measurable socio-economic returns. Borrowing decisions should be guided by human development indicators, including the Human Development Index (HDI), to ensure that debt contributes directly to improvements in welfare and inclusive growth. Robust project appraisal, monitoring, and evaluation frameworks should be strengthened to guarantee efficient utilization of debt-financed resources.

2) *Strengthen Debt Sustainability through Prudent Borrowing and Affordable Financing*

Fiscal authorities should maintain a sustainable debt-to-GDP ratio by adopting prudent borrowing limits consistent with Nigeria's economic capacity and revenue potential. Greater emphasis should be placed on long-term and concessional financing from multilateral institutions, while expensive short-term debt should be restructured or refinanced to reduce



repayment pressures. This approach will lower debt-servicing costs, reduce fiscal vulnerability, and create a stable environment for long-term development.

3) *Enhance Debt Governance, Transparency, and Institutional Effectiveness*

The effectiveness of public debt depends largely on the quality of institutions managing it; therefore, debt management agencies should be strengthened to improve accountability, efficiency, and professionalism. Government should promote transparency through regular public disclosure of debt information, stronger legislative oversight, and adherence to international debt management standards. Improved governance will reduce corruption, prevent resource misallocation, and maximize the developmental benefits of public borrowing.

4) *Integrate Debt Management with a Comprehensive Development and Revenue Strategy*

Debt policy should be closely linked to broader national development objectives and supported by stronger domestic revenue mobilization efforts. Debt sustainability assessments should evaluate both fiscal outcomes and their impact on human development, ensuring that borrowing decisions balance economic growth with social welfare. By combining responsible borrowing, improved revenue generation, and development-focused spending, Nigeria can transform public debt into a sustainable driver of inclusive and equitable growth.

8.0 SUGGESTIONS FOR FURTHER STUDIES

Future research should explore the role of **state-level debt management** in inclusive growth, as sub-national governments account for a growing share of Nigeria's borrowing. Comparative studies with peer African economies such as Ghana, Kenya, and South Africa could also provide richer insights into best practices. Furthermore, following recent empirical studies, this study employs the Human Development Index (HDI) as a proxy for inclusive growth because it captures improvements in health, education, and living standards, which constitute essential dimensions of inclusive development. Nevertheless, HDI does not fully capture all dimensions of inclusive growth, particularly income distribution and employment. Future studies should incorporate inequality indices, poverty headcount ratios, and sector-specific indicators to complement HDI and provide a more comprehensive assessment of inclusive growth.

ADVANCING KNOWLEDGE
FOR SUSTAINABLE
DEVELOPMENT
(BOJEDS)

PLASU



REFERENCES

- Adesola, W. A. (2009). Debt servicing and economic growth in Nigeria: An empirical investigation. *Global Journal of Social Sciences*, 8(2), 1–11.
- African Development Bank. (2019). *African economic outlook 2019*. African Development Bank.
- Ajakaiye, O., & Ncube, M. (2010). *Infrastructure and economic development in Africa*. African Development Bank.
- Ajayi, L. B., & Oke, M. O. (2012). Effect of external debt on economic growth and development of Nigeria. *International Journal of Business and Social Science*, 3(12), 297–304.
- Akintoye, I. R., & Oladeji, T. (2021). Debt governance and fiscal responsibility in Nigeria. *Journal of Development Finance and Policy*, 4(1), 65–81. The paper investigates public debt's impact on economic growth in Nigeria using the ARDL model, finding that while external debt positively influences growth, debt service payments adversely affect it, highlighting the need for productive investment allocation
- Amu, C. U., Kanu, S. I., Akuwudike, H. C., & Okere, K. I. (2025). Exploring the intricate relationship between public debt and economic development in Nigeria. *Future Business Journal*, 11, Article 15. <https://doi.org/10.1186/s43093-025-00435-8>
- Babu, J. O., Kiprop, S., Kalio, A., & Gisore, M. (2015). Effect of domestic debt on economic growth in the East African Community. *American Journal of Research Communication*, 3(9), 73–95.
- Breusch, T. S. (1978). Testing for autocorrelation in dynamic linear models. *Australian Economic Papers*, 17(31), 334–355. <https://doi.org/10.1111/j.1467-8454.1978.tb00635.x>
- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroskedasticity and random coefficient variation. *Econometrica*, 47(5), 1287–1294. <https://doi.org/10.2307/1911963>
- Buiter, W. H. (1985). A guide to public sector debt and deficits. *Economic Policy*, 1(1), 13–79.
- Central Bank of Nigeria. (2024). *Statistical bulletin*. Central Bank of Nigeria.
- Debt Management Office. (2022). *Medium-term debt management strategy (MTDS)*. Debt Management Office.
- Debt Management Office. (2024). *Nigeria public debt statistical report*. Debt Management Office.
- International Monetary Fund. (2022). *Ghana: Request for an arrangement under the extended credit facility*. International Monetary Fund.
- International Monetary Fund. (2023). *Revised guidelines for public debt management*. International Monetary Fund.
- Iyoha, M. A. (2000). *External debt and economic growth in sub-Saharan African countries: An econometric study* (AERC Research Paper No. 90). African Economic Research Consortium.
- Jarque, C. M., & Bera, A. K. (1980). Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Economics Letters*, 6(3), 255–259. [https://doi.org/10.1016/0165-1765\(80\)90024-5](https://doi.org/10.1016/0165-1765(80)90024-5)
- Kanwanye, H. T., Effiong, S. E., & Wara, H. U. (2025). *Does Governance Quality Moderate the Impact of Public Debt on Human Capital Development in Nigeria?* <https://doi.org/10.5281/zenodo.17023457>
- Krugman, P. (1988). Financing versus forgiving a debt overhang. *Journal of Development Economics*, 29(3), 253–268. [https://doi.org/10.1016/0304-3878\(88\)90044-2](https://doi.org/10.1016/0304-3878(88)90044-2)



- National Bureau of Statistics. (2024). *Nigeria socio-economic indicators report*. National Bureau of Statistics.
- Nwokoye, E. S., Dimnwobi, S. K., Onuoha, F. C., & Madichie, C. V. (2024). Does public debt matter for human capital development? Evidence from Nigeria. *Journal of Public Affairs*, 24(2), e2912. <https://doi.org/10.1002/pa.2912>
- Onyekwena, C., & Ekeruche, M. A. (2020). *Understanding the impact of the COVID-19 outbreak on the Nigerian economy*. Brookings Institution.
- Pattillo, C., Poirson, H., & Ricci, L. (2002). *External debt and growth* (IMF Working Paper No. 02/69). International Monetary Fund.
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289–326. <https://doi.org/10.1002/jae.616>
- Reinhart, C. M., & Rogoff, K. S. (2010). Growth in a time of debt. *American Economic Review*, 100(2), 573–578. <https://doi.org/10.1257/aer.100.2.573>
- Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, 98(5, Part 2), S71–S102. <https://doi.org/10.1086/261725>
- Sachs, J. D. (1989). The debt overhang of developing countries. In G. A. Calvo, R. Findlay, P. Kouri, & J. Braga de Macedo (Eds.), *Debt, stabilization and development: Essays in memory of Carlos Díaz-Alejandro* (pp. 80–102). Basil Blackwell.
- United Nations Development Programme. (2024). *Human development report 2024*. United Nations Development Programme.
- World Bank, & International Monetary Fund. (2021). *Debt sustainability framework for low-income countries*. World Bank.
- World Bank. (2023). *Nigeria development update*. World Bank.
- World Bank. (2024a). *World development indicators*. World Bank.
- World Bank. (2024b). *World development report 2024: The middle-income trap*. World Bank.