



**Indirect Taxation and Income Inequality in Nigeria Does Government Recurrent
Expenditure Really Matter?**

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Abstract

The primary objective of this study was to examine the effect of specific indirect tax instruments on income inequality in Nigeria, and by extension investigate the moderating role of government recurrent expenditure in shaping its re-distributive effectiveness. Anchored on Musgrave's Theory of Public Expenditure, this study disaggregates indirect taxation into three proxies to include Stamp Duty, Value Added tax, and Excise Duty, thus providing a granular analysis of fiscal equity within the Nigerian context. Using Auto-Regressive Distributed Lag (ARDL) model on annual data from 2000 to 2024, the study captures both short- and long-run effects of taxation on income inequality measured by Gini coefficient. Findings reveal that value added tax exert statistically significant inequality-worsening effects, while other tax variables show insignificant direct and interaction effects. Recurrent expenditure significantly moderates the short-run relationship between value added tax and inequality, intensifying re-distributive effects but weakening the effect under the long run period. Given the weak re-distributive capacity of most indirect taxes and the mixed effects of value added tax, this study recommends that fiscal authorities such as the Federal Inland Revenue Service and the Federal Ministry of Finance adopt a coordinated fiscal approach that moves away from relying on indirect taxes as primary redistribution tools. Instead, emphasis should be placed on restructuring value added tax to enhance equity, while redirecting recurrent expenditure toward inclusive sectors such as education, healthcare, and social protection. This study contributes to extant related literature by empirically incorporating recurrent expenditure as a moderator in Nigeria's tax–inequality model and accentuates the importance of coordinated, tax-type-sensitive fiscal reforms for equitable development in Nigeria.

**Keywords: Indirect Taxation, Income Inequality, Government Recurrent
Expenditure, Gini Coefficient, ARDL Model**



1.0 Introduction

Growing global apprehension regarding heightened income inequality has reawakened both academic inquiry and policy discourse on the redistributive capacity of taxation systems, especially within developing economies. Across both developed and emerging contexts, governments have pursued fiscal reforms aimed at balancing revenue generation with social equity goals. However, inequality indicators continue to remain elevated. In Nigeria, taxation serves as a fundamental tool of fiscal policy, extending beyond revenue mobilization to encompass macroeconomic stabilization and income redistribution. Despite a series of reforms, ranging from the introduction of Value Added Tax in the 1990s to more recent digitization efforts designed to enhance compliance and transparency, income inequality persists at high levels, as evidenced by the sustained increases of the Gini coefficient (Tamunotonye, 2025). Rivera-Williams (2025) notes that structural poverty alongside uneven income distribution continues to define Nigeria's socio-economic structure, thereby heightening expectations on the tax system to perform redistributive functions. In this regard, Herbert *et al.* (2018) argues further that Nigeria's tax system, which integrates both direct and indirect taxes, operates within a resource-dependent fiscal structure characterized by weak enforcement mechanisms and misaligned expenditure priorities.

A large body of fiscal literature demonstrates that the impact of taxation on income inequality is not homogeneous; instead, its redistributive effectiveness is contingent on tax composition, structural configuration, and implementation dynamics (Biswas, Chakraborty & Hai, 2017; Jones, 2016; Duncan & Sabirianova Peter, 2016). Indirect taxes, including value added tax, customs duties, and excise taxes, are embedded within consumption patterns and tend to disproportionately affect lower-income groups, thereby exhibiting regressive tendencies in practice (Kiara & Nekesa, 2023). Consequently, the distributional implications of taxation must be assessed within a wider institutional and macro-fiscal context. Contemporary fiscal theory increasingly recognizes that taxation should not be analyzed in isolation from public expenditure, particularly recurrent government spending, which reinforces the argument by Bird and Zolt (2005) that taxation and public expenditure operate as interdependent elements within a cohesive redistributive framework.

In Nigeria, recurrent expenditure, comprising wages, pensions, administrative overheads, and debt servicing, constitutes a dominant share of annual budgets, frequently surpassing capital allocations. Bhandari (2024) posits that while recurrent spending sustains governmental operations, its distributive impact depends fundamentally on allocation



efficiency and targeting precision. When recurrent funds are absorbed by inflated bureaucratic structures or misappropriated through administrative inefficiencies, they risk reinforcing structural inequalities. In contrast, Andrews *et al.* (2012) argue that recurrent expenditure directed toward social protection, healthcare, education, and rural infrastructure can significantly enhance the redistributive effects of progressive taxation. Similarly, Malla and Pathranarakul (2022) maintain that well-structured public spending can offset the regressive tendencies of consumption-based taxes, thereby fostering a more balanced income distribution. Within this integrative perspective, fiscal equity emerges not solely from revenue generation but from the synergistic alignment between tax instruments and expenditure priorities.

Cross-national empirical experiences reinforce the importance of harmonizing tax structures with expenditure policies to address inequality. Evidence from the West African Economic and Monetary Union (WAEMU) indicates that countries maintaining higher proportions of direct taxation alongside sustained investments in social services achieved relatively more equitable growth trajectories than those dependent on indirect taxation regimes (Mourfou & Ouedraogo, 2021). Conversely, Moździerz (2015) demonstrates that European economies transitioning from progressive tax systems to flat-rate or consumption-heavy frameworks experienced notable increases in income dispersion. In Sri Lanka, Thilanka and Ranjith (2021) report that the dominance of indirect taxation combined with limited welfare investment exacerbated income gaps. This insight affirms that fiscal redistribution is contingent upon structural interaction between tax composition and expenditure deployment. For Nigeria, characterized by oil revenue dependency, fluctuating fiscal buffers, and uneven administrative capacity, the implications are particularly salient suggesting that redistributive potential of taxation must be contextualized within the broader expenditure architecture that shapes the ultimate incidence of fiscal policy. Notwithstanding the theoretical clarity surrounding fiscal complementarity, empirical findings within the Nigeria context remain fragmented and inconclusive. While certain studies identify progressive taxes as instruments of inequality reduction, others reveal inconsistent or weak effects (Dianov *et al.*, 2022; Golosov *et al.*, 2014). Khattak *et al.* (2022), Ekici (2022), and Fernandes *et al.* (2023) demonstrate that the distributive impact of taxation varies significantly according to structural composition and targeting efficiency. Accordingly, Jolaiya (2024) reports that stamp duties exhibit inequality-reducing tendencies. Moreover, Amachree (2025) finds that recurrent government expenditure has historically shown statistically insignificant effects on inequality, thereby raising questions about expenditure quality and fiscal targeting. Noteworthy in the context of this study is that existing scholarly works,



including those of Urama *et al.* (2017) and Nnamaka and Nwanyanwu (2022), omit expenditure-side variables from tax-inequality models, resulting in partial analytical frameworks that overlook fiscal inter-dependencies.

More critically, there exists a conspicuous absence of empirical inquiry examining the moderating role of recurrent government expenditure within the taxation–inequality nexus in Nigeria. While global scholarship increasingly adopts multidimensional fiscal models integrating both revenue and expenditure components (Malla & Pathranarakul, 2022; Martinez-Vazquez *et al.*, 2012), scholarly contributions from the Nigerian space often analyze tax instruments in isolation. Even where expenditure is considered, emphasis is often placed on capital spending rather than recurrent allocations, as seen in Omesi and Appah (2021), thereby opening up conceptual and methodological gap. Further, much of the domestic literature aggregates tax revenues into broad categories, obscuring the distinct re-distributive properties value added tax, stamp duties, and customs duties. As Alassani *et al.* (2022) and Mourfou and Ouedraogo (2021) affirm, tax instruments are not homogeneous in their distributive consequences, instead, in an economy characterized by widespread informality and uneven enforcement capacity, the actual incidence of taxation may diverge substantially from statutory design. Accordingly, a disaggregated and interaction-based analysis becomes imperative to unravel the complex dynamics between specific tax proxies and income inequality, conditioned upon recurrent government expenditure. This integrated approach advances beyond linear fiscal assessments by conceptualizing redistribution as the product of coordinated revenue and spending structures within Nigeria’s evolving economic landscape. This paper is structured into five sections. Section 1 presents the introduction. Section 2 review relevant literature. Section 3 addresses the methodological procedures and the measurement of the study variables. Results and discussion of results are presented in Section 4. Finally, Section 5 concludes the study and offers suggestions for future research.

2.0 Conceptual and Theoretical Review

Taxation

Taxation is both a fiscal and socio-political construct, anchored in the sovereign authority of the state to impose compulsory levies on individuals, businesses, and other entities for the purpose of financing public goods and services (Oyedokun *et al.*, 2021), while its legal essence lies in enforceability under statutory frameworks (Ibe, 2019). In the views of Lanem *et al.*, (2020), taxation extends beyond revenue generation to a structured system defining the relationship between the state and the governed, with tax revenue representing the measurable fiscal inflow generated from the system. The distinction between taxation and tax revenue remains subtle but essential, as taxation embodies policy formulation, legal enforcement, and compliance administration, whereas tax



revenue reflects the outcome of the process. The literature classifies taxation into direct and indirect forms: direct taxes, such as personal income tax, corporate income tax, and petroleum profit tax, are imposed on income or profits and align liability with ability to pay though administratively demanding (Abata *et al.*, 2023; Omodero, 2019); indirect taxes, including VAT, customs duties, and excise, are embedded in prices, broader in coverage, and more stable despite potential regressivity (Egbuhuzor & Tomquin, 2021; Oseni, 2017; Omodero, 2020). In Nigeria, the evolution of taxation is shaped by regulatory institutions such as the Federal Inland Revenue Service (FIRS) and State Boards of Internal Revenue (SBIRs), professional bodies like the Chartered Institute of Taxation of Nigeria (CITN), legislative instruments including Finance Acts, and judicial interpretations, all of which continuously redefine the scope, administration, and revenue-generating capacity of the taxation system.

Recurrent Government Expenditure

Recurrent government expenditure is the category of public spending devoted to operational costs of government, excluding investments in capital assets or infrastructure (Olapade & Afolabi, 2021), encompassing salaries and wages of public servants, pensions, interest payments on public debt, subsidies, and the routine maintenance of government facilities (Akanbi & Olayemi, 2019), and distinguished from capital expenditure by its consumption-oriented nature focused on maintaining the daily functions of the state rather than expanding productive capacity (Hood, Husband & Yu, 2002; IMF, 2019). As emphasized in the study of Akpan & Enya, (2020), government recurrent expenditure serves both a fiscal necessity for continuity of government services and a macroeconomic variable with implications for budgetary sustainability and intergenerational equity, with its definitional scope guided by frameworks such as the IMF's Government Finance Statistics Manual (GFSM) and Nigeria's constitutional and Appropriation Act provisions (IMF, 2019). Operationalization in literature typically measures it as a proportion of total government expenditure or as absolute recurrent allocations, using functional and economic classifications covering defense, administration, wages, goods and services, interest, subsidies, grants, and social benefits (Olapade & Afolabi, 2021; Akanbi & Olayemi, 2019; IMF, 2019). In Nigeria, its development and management are shaped by institutions such as the FIRS, professional bodies including CITN and ICAN, international partners like the IMF and World Bank, and legislative oversight by the National Assembly, collectively ensuring alignment between revenue mobilization, fiscal discipline, and the sustainable funding of government's routine obligations.



Income Inequality

Income inequality, in its expanded conceptualization, is framed globally as the disparity in income distribution across a population, with definitions and analytical emphases varying across institutional and regional contexts. The Organization for Economic Co-operation and Development (OECD, 2019) defines income inequality as the extent to which income is distributed unevenly among individuals or households within a given economy, focusing on comparative measurement across countries using standardized metrics such as the Gini coefficient and income share ratios. The African Union Commission (2015), within Agenda 2063, adopts a multidimensional understanding, defining income inequality within broader social justice concerns shaped by structural inequities driven by historical, political, and resource-allocation imbalances. The World Bank (2020) conceptualizes inequality as both a distributional outcome and a developmental barrier linked to poverty, human capital deficits, and inclusive growth (Piketty, 2020). Literature demonstrates that income inequality is captured through a suite of quantitative measures including the Gini index, income quintile shares, and Palma ratios derived from standardized surveys and national accounts (OECD, 2019; World Bank, 2020). In Nigeria, the National Bureau of Statistics (NBS, 2020) integrates global standards with local socio-economic indicators aligned with the Sustainable Development Goals (SDGs), while decomposition analyses distinguish within-group and between-group inequalities for policy targeting (Atkinson, 2015; Cowell, 2016). Policy responses reflect OECD principles of progressive taxation and targeted spending, African Union (AU)-driven regional equity strategies, and World Bank-supported social protection programs, with institutions such as FIRS and CITN advancing fiscal frameworks aimed at mitigating inequality within national and global governance paradigms.

Taxation and Income Inequality

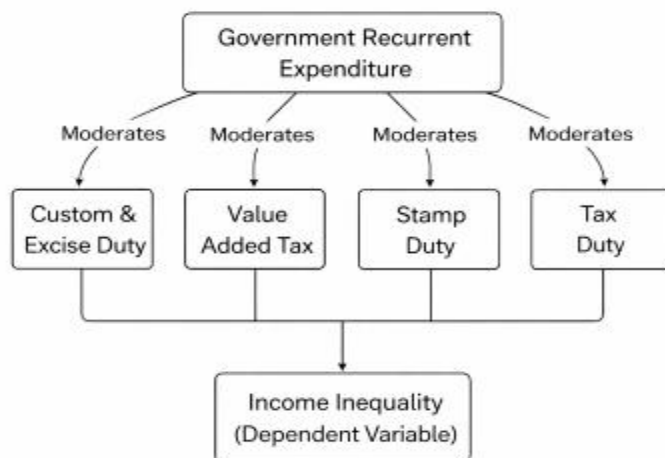
In fiscal theory and empirical literature, the link between taxation and income inequality is fundamentally shaped by the structural composition of tax systems, particularly the balance between direct and indirect tax instruments. Rooted in Musgrave's (1959) distributive function of public finance, indirect taxes, including value added tax, stamp duty, customs and excise are typically consumption-based and tend to exert regressive effects because lower-income households allocate a larger proportion of their earnings to taxable goods and services (Bird & Zolt, 2005; Keen, 2013). Bastagli, Coady and Gupta, (2015); Lustig, (2018) viewed that while indirect taxation may enhance revenue stability and administrative efficiency, its distributive consequences often offset gains achieved through progressive direct taxation unless accompanied by compensatory transfers or exemptions. A critical synthesis suggests that the taxation–inequality nexus is neither linear nor uniform; rather, its equity implications depend on the relative dominance, design features, and enforcement effectiveness of indirect tax components within a country's broader fiscal architecture.



Moderating Effect of Recurrent Government Expenditure on the Nexus between Taxation and Income Inequality

In theoretical discourse, the moderating role of recurrent government expenditure in the taxation–income inequality equation has been interpreted in contrasting ways. Drawing on Musgrave’s (1959) distribution function of public finance, proponents argue that taxation alone cannot achieve equity unless complemented by well-targeted recurrent spending on wages, pensions, health, education, and social safety nets, thereby enhancing the redistributive capacity of tax revenues (Oates, 2005; OECD, 2019). Conversely, grounded in public choice theory and the Leviathan model, critics such as Brennan & Buchanan, (1980); Tanzi & Schuknecht, (2000) contend that poorly structured or politically motivated recurrent expenditure, such as excessive administrative costs and non-targeted subsidies, can absorb progressive tax revenues without reducing inequality, potentially worsening income disparities. A critical synthesis suggests that the moderating effect of recurrent government expenditure is contingent upon its composition, institutional quality, and fiscal discipline, as fiscal equity depends not only on revenue mobilization but also on transparent and efficiency-driven expenditure allocation (Atkinson, 2015; Peacock & Wiseman, 1961; Oates, 1988).

Fig 1 Conceptual Framework



Source: Authors’ (2026)

Theoretical Framework

Musgrave’s Theory of Public Expenditure

Musgrave’s Theory of Public Expenditure, developed by Richard A. Musgrave in *The Theory of Public Finance* (1959), provides a comprehensive framework for



understanding the functional roles of government spending in a modern economy. The theory identifies three core functions of public finance: allocation (efficient provision of public goods and correction of market failures), distribution (reduction of income and wealth disparities), and stabilization (maintenance of macroeconomic stability through fiscal policy). It assumes that markets alone cannot achieve socially optimal outcomes and that government intervention is necessary to address inefficiencies and inequities (Oates, 2005). According to Tanzi & Schuknecht, (2000) the central proposition is that public expenditure, particularly recurrent spending on wages, social services, and welfare programs, plays a critical role in promoting equity and supporting vulnerable groups. The theory is both normative and prescriptive, offering a structured rationale for public resource allocation. It further links taxation to expenditure, emphasizing that the redistributive impact of taxation depends on how revenues are utilized. The distribution function justifies the moderating role of recurrent expenditure in enhancing equity outcomes (OECD, 2019). When directed toward education, healthcare, and public services, recurrent expenditure strengthens the progressive effects of taxation. Conversely, poorly targeted spending weakens redistribution. This framework is particularly relevant in developing economies where fiscal policy effectiveness depends on the interaction between taxation and expenditure (World Bank, 2020).

Empirical Review

Beljić and Glavaški (2025) investigated how heterogeneous tax structures shape income inequality by empirically examining the short- and long-run relationships between direct and indirect tax revenues and the Gini coefficient across 22 European OECD economies over the period 2003–2020. The study is based on 14 developed and 8 emerging countries, covering 17 years of observations, while adopting a quantitative longitudinal research design. Methodologically, the study employs heterogeneous non-stationary panel econometric techniques, specifically the Mean Group (MG) and Pooled Mean Group (PMG) estimators within a panel error-correction framework, supported by robustness checks using Panel-Corrected Standard Errors (PCSE) and preliminary diagnostics such as cross-sectional dependence, unit root, and cointegration tests. The findings reveal that value added tax (VAT) revenue shows no significant long-run effect but exhibits country-specific short-run negative impacts, suggesting that its redistributive role depends on how effectively revenues are utilized.

Sun and Nishigaki (2025) investigated the effects of comprehensive income and consumption taxes on human capital formation, economic growth, and income distribution by combining an endogenous growth model with empirical evidence drawn



from panel data covering OECD and developing countries over the period 1972–2020. The study adopts a quantitative research design integrating theoretical modeling with empirical panel analysis, comprising 27 OECD countries and 16 developing countries. For hypothesis testing, the study employed panel regression techniques, specifically fixed-effects and random-effects models determined through F-tests and Hausman tests. The findings indicate that consumption tax does not directly hinder economic growth but promotes physical capital accumulation while reducing human capital formation. In contrast, comprehensive income tax suppresses economic growth by reducing physical capital accumulation and increasing labor supply, yet simultaneously promotes human capital accumulation. Further, empirical results reveal that consumption tax positively affects economic growth in developing countries but is insignificant in OECD and global samples, whereas income tax consistently exhibits a negative effect on economic growth in both OECD and developing countries.

Fernandes *et al.* (2025) examined the relationship between tax structures and income inequality using panel data from 52 OECD and non-OECD countries over the period 2000–2012, focusing on how the composition of tax revenues influences income distribution. The study utilizes a country-year panel dataset comprising 609 observations across diverse economic systems covering multiple sectors at the macroeconomic level. Adopting a quantitative research design with a comparative cross-country panel approach, the analysis employs dynamic panel System Generalized Method of Moments (System GMM) estimator to address endogeneity, incorporating lagged dependent variables and internal instruments. The findings reveal that indirect taxes have a positive significant effect, exacerbating inequality across the full sample. Disaggregated results show that indirect taxes consistently increase inequality in both OECD and non-OECD groups. Robustness checks using alternative measures and specifications confirm that the positive impact of indirect taxes on inequality remain consistent, reinforcing the central conclusion that tax structure plays a critical role in shaping income distribution outcomes.

Ouedraogo *et al.* (2022) investigated the effect of taxation on income inequality using an unbalanced panel dataset covering 45 sub-Saharan African countries over the period 1980–2018, aiming to determine how different tax structures influence income distribution across countries. The study adopts a quantitative, panel research design with a census-based sampling approach, yielding a sample of 45 countries within the region. To test the hypotheses, the authors employ Ordinary Least Squares (OLS), Instrumental Variable Two-Stage Least Squares (IV-2SLS), and Instrumental Variable Quantile Regression (IVQR) techniques to address endogeneity and capture distributional



heterogeneity. The findings reveal that direct tax is positive and significant on income inequality across most quantiles, contradicting theoretical expectations of progressivity, whereas indirect taxes increase inequality in lower quantiles but exhibit no significant effect in highly unequal countries. Additionally, the study uncovers an inverted U-shaped relationship between indirect taxes and inequality, indicating that beyond a certain threshold, higher indirect taxes contribute to reducing inequality.

Ekici (2022) documented a result which was obtained from investigating the effect of tax composition on income inequality with a central aim of determining how varying levels of reliance on income taxes versus consumption taxes influence disparities in income distribution across nations. The study employs data from 189 countries, drawing tax data specifically from their national stock exchange, spanning the years 2006 to 2012. The research adopts a quantitative design using secondary macroeconomic data, applying k-means clustering for grouping countries, and utilizing ordinary least squares, generalized method of moments, and instrumental variable regression for hypothesis testing. With a sample size of 316 observations covering up to 64 countries in a given year, the findings reveal that countries relying more on income tax relative to consumption tax experience significantly lower levels of income inequality, while higher dependence on consumption taxes corresponds with increased inequality. Expenditures on health, education, agriculture, and public services also contribute to lowering inequality, while household consumption expenditure is positively associated with it.

Idowu and Obaretin (2022) in their conceptual study examined the effects of indirect taxes on income inequality, specifically within the context of Nigeria. The data timeframe analyzed or referenced revolved around government tax amendments occurring in 2019 and 2020. Methodologically, the study adopted an exploratory research design. The findings indicated that both value-added tax and customs and excise duties contribute to worsening income inequality, primarily because such indirect taxes are regressive and increase consumer prices uniformly, affecting low-income earners more adversely.

Martorano (2022) explored how reforms in personal income taxation influence income inequality, with the objective of assessing whether changes in tax structures can mitigate income disparities across African countries. The analysis covers a period from 1990 to 2018. The research employed a quantitative panel data design, using a sample of 50 African countries and covering 29 years, resulting in 1,450 country-year observations. A fixed effects regression model was employed as the primary data analysis technique, supported by robustness checks using alternative econometric specifications. The



findings indicate that reforms that enhance the progressivity of personal income taxes are significantly associated with reductions in income inequality, suggesting that well-structured tax reforms can serve as effective tools for promoting equity in developing economies.

Alassani, et al., (2022) analyzed the extent to which different tax instruments influence income inequality, with a specific focus on thirty Sub-Saharan African countries. The central objective of the study is to assess how tax structure shapes income redistribution across the region. Data were collected exclusively from Sub-Saharan African stock exchanges, covering a time span from the year 2000 to 2017. Employing a panel data approach, the study utilizes fixed-effects least square dummy variable (LSDV) regression and two-stage least square (2SLS) with instrumental variables for addressing endogeneity concerns. The sample consists of 30 countries. Findings show that personal income tax significantly reduces income inequality, while corporate income tax and value added tax have no significant effect. Trade taxes and indirect taxes increase inequality, and the effect of personal income tax is weakened in the presence of military regimes or ethnic tensions. Further, the mitigating influence of personal income tax on inequality is strengthened by high institutional quality and strong property rights enforcement.

Khan and Padda (2021) identified how various fiscal policy instruments affect income inequality, with specific focus on Pakistan's fiscal regime. The study uses annual data collected exclusively from the Pakistan Stock Exchange, covering a forty-year time frame from 1980 to 2019. Employing a time-series research design, the authors test the hypotheses, using Auto Regressive Distributed Lag (ARDL) technique, capturing both short-run and long-run dynamics. The study finds that direct taxes and development expenditures reduce income inequality, whereas indirect taxes, non-tax revenues, and fiscal deficits exacerbate income inequality emphasizing the redistributive potential of progressive taxation and investment-oriented public spending in the context of Pakistani an economy.

Martinez-Vazquez, Moreno-Dodson, and Vulovic (2012) investigated the role of taxation and public expenditure policies in shaping income distribution by employing a large panel dataset of approximately 150 developed, developing, and transition countries over the period 1970–2006. In the study, quantitative longitudinal research design using an unbalanced panel was employed. The study employs dynamic panel data estimation using the Generalized Method of Moments (Arellano–Bond GMM estimator), alongside multivariate regression frameworks to address endogeneity, autocorrelation, and



unobserved heterogeneity. The findings reveal that progressive personal income tax significantly reduces income inequality, with stronger effects at higher levels of tax progressivity and revenue share, while corporate income tax also improves income distribution but its effect diminishes in more globalized economies due to tax incidence shifting. In contrast, general consumption taxes (VAT) significantly exacerbate inequality, whereas excise taxes and customs duties show weak but generally positive associations with inequality.

3.0 Methodology

This study was empirically examined using annual macroeconomic time-series data. In this study, the population comprises all available annual observations of disaggregated taxation variables (Customs and Excise Duties, Stamp Duties, and Value Added Tax), government recurrent expenditure, and income inequality indicators (Gini coefficient) within the Nigerian macroeconomic framework. From the population, a purposive census-based time-series sampling approach was adopted, restricting the sample to 35 annual observations covering 1990–2024 based on data completeness, consistency, and continuity. The sample span is considered adequate for time-series econometric estimation, offering sufficient degree of freedom to capture both short-run dynamics and long-run equilibrium relationships. All data were collated from authoritative sources, including the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), Federal Inland Revenue Service (FIRS), the World Bank data base, and subsequently compiled and analyzed using Stata version 17 econometric software.

In this study, a moderated Autoregressive Distributed Lag (ARDL) model is employed to estimate both short-run and long-run relationships of taxation, government recurrent expenditure, and income inequality. The ARDL framework, developed by Pesaran and Pesaran (1997) and extended through the bounds testing approach (Pesaran *et al.*, 2001), is particularly appropriate where variables are integrated of mixed orders $I(0)$ and $I(1)$, and where potential endogeneity among regressors may exist. Unlike traditional cointegration techniques that require uniform integration order (Nkoro & Uko, 2016), the ARDL approach accommodates different integration levels and performs efficiently in small sample contexts (Pesaran, Shin, & Smith, 2001; Wolde-Rufael, 2010). The model incorporates interaction terms between disaggregated taxation variables and recurrent government expenditure to capture interaction effects, thereby allowing for a deeper examination of how public spending conditions the taxation–inequality relationship.



3.1 Pre-Estimation Diagnostics

Pre-estimation diagnostic tests, including the Phillips–Perron (PP) and KPSS unit root tests, were conducted to ascertain stationary properties, followed by the ARDL bounds test to determine the existence of long-run co-integration using the F-statistic decision criteria. Upon confirmation of co-integration, long-run coefficients and associated error correction mechanisms were estimated simultaneously. Post-estimation diagnostics, including the Ramsey RESET test for specification error, Autoregressive Conditional Heteroscedasticity (ARCH) test for heteroskedasticity, Lagrange Multiplier (LM) test for serial correlation, and CUSUM/CUSUMSQ tests for parameter stability, were performed to ensure robustness, structural consistency, and econometric reliability. Therefore, the moderated ARDL framework thus provides efficient, consistent, and policy-relevant estimates that robustly capture the dynamic and conditional effects of fiscal policy instruments on income inequality within the Nigerian macroeconomic landscape.

Table: 3.2 Measurements of the Variables

Variable Name	Measurement	Source
Income Inequality	$G = \frac{2 \sum_{i=1}^n i y_i}{n \sum_{i=1}^n y_i} - \frac{n+1}{n}$ Where; G = Gini coefficient, n = number of individuals (or households) y_i = income of individual i (sorted from smallest to largest) & i = rank of income	Biswas, Chakraborty and Hai, (2017).
Custom & Excise Duty	Absolute values as reported in CBN Statistical Bulletin	Nnamaka, (2022)
Stamp Duty	Absolute values as reported in NBS bulletin	Aniefor, (2022).
Value Added Tax	Absolute values as reported in NBS bulletin	Appah and Omes, (2021).
Government Recurrent Expenditure	Absolute values as reported in CBN Statistical Bulletin	Nwachukwu (2025).

Source: Authors' Compilation (2026)

3.3 Model Specification

The model for this study is anchored on the objective that government recurrent expenditure has a statistically significant moderating effect on the relationship between tax revenue and income inequality presented in its functional form as:



Model 1

$$\text{INCINQ} = F(\text{CEDTAX}, \text{SDTAX}, \text{VATAX}, \text{CEDTAX} * \text{GREXP}, \text{SDTAX} * \text{GREXP}, \text{VATAX} * \text{GREXP}) \dots (1)$$

However, the econometric structure of this study is presented as;

Model 2

$$\text{INCINQ} = \delta_0 + \delta_1 \text{CEDTAX} + \delta_2 \text{SDTAX} + \delta_3 \text{VATAX} + \delta_4 \text{GREXP} + \delta_5 \text{CEDTAX} * \text{GREXP} + \delta_6 \text{SDTAX} * \text{GREXP} + \delta_7 \text{VATAX} * \text{GREXP} + \mu \dots (2)$$

4.0 Results

4.1 Descriptive Statistics

The descriptive statistics provide insightful revelations into the trends and dispersion of variables relevant to the Nigerian fiscal structure and income inequality over the period 2000–2024. With respect to Income Inequality (INCINQ), measured by the Gini coefficient, a mean value of 35.44% with a standard deviation value of 2.92% and values ranging from 27.8% to 41.3%, were recorded, indicating moderate but persistent inequality consistent with World Bank reports and findings of Jolaiya (2024) and Alassani *et al.* (2022).

Table: 4.1.2 **Descriptive Statistics Result**

Variable	Obs	Mean	Std. Dev.	Min	Max
INCINQ	25	.354	.029	.278	.413
CEDTAX	25	1.023	.743	.117	2.567
SDTAX	19	1.361	.692	.736	2.446
VATAX	25	2.673	.566	.812	3.272
REXP	25	2.972	.346	2.379	3.599

Source: Authors' Computation (2026)

As indicated in **table 4.1.2**, Custom and Excise Duties (CEDTAX) exhibit high volatility value of (0.74), consistent with the findings of Ekici (2022), while Stamp Duty (SDTAX), shows high variability value of (0.69), supporting the position of Omesi and Appah (2021), and Value Added Tax (VATAX) maintains moderate dispersion value of (0.57), which align with earlier outcome of Mourfou and Ouedraogo (2021). In this study, Government Recurrent Expenditure (REXP) records a high mean value of (2.97) with low standard deviation (0.35), reinforcing Amachree's (2025) assertion of Nigeria's rigid and recurrent-heavy fiscal structure. Importantly, the statistics validate existing empirical



claims that indirect taxes display volatility, and recurrent expenditure remains persistently high.

4.1.3 Normality of Data Analysis

The Shapiro–Wilk normality results reported in **table 4.1.3** indicate a mixed distributional pattern across the variables. First, it can be seen that Income inequality ($Z = 1.564$; $p = 0.05891$) does not significantly deviate from normality hence can be treated as approximately normal, consistent with prior inequality literature of (Hatem, Zeidan, Goossens, & Moreira, 2022).

Table 4.1.3 Data Normality Analysis Result

Variable	Obs	W	V	z	Prob>z
INCINQ	25	0.923	2.149	1.564	0.059
CEDTAX	25	0.846	4.274	2.969	0.001
SDTAX	19	0.761	4.850	3.136	0.001
VATAX	25	0.847	4.261	2.963	0.002
REXP	25	0.970	0.836	-0.365	0.643

Source: Authors' Computation (2026)

Customs and Excise Duty ($Z = 2.969$; $p = 0.00149$), Stamp Duty ($Z = 3.136$; $p = 0.00086$), and Value Added Tax ($Z = 2.963$; $p = 0.00152$), all significantly deviate from normality, reflecting cyclical fluctuations, policy shifts, compliance variations, and oil market volatility. In contrast, Government Recurrent Expenditure ($Z = -0.365$; $p = 0.64254$) satisfy the normality assumption, suggesting stable trends over the study period. Despite these deviations, the application of parametric regression remains justified under the Central Limit Theorem, which ensures that the sampling distribution of estimators approximates normality. Also, this study maintains the position of Stock & Watson, (2015) who posit that normality of data is not a strict requirement for unbiased least squares estimation but primarily affects efficiency and hypothesis testing.



4.1.4 Test for Variable Stationarity

Dickey-Fuller unit root test presented in **table 4.1.4**, was employed to assess the stationarity of the variables at level and first differences and to determine their order of integration for a reliable time series properties modeling. At levels, custom and excise duty ($p = 0.9835$), stamp duty ($p = 0.9659$), value added tax ($p = 0.5774$), and government recurrent expenditure ($p = 0.7986$) are non-stationary, as their Z-statistics are less negative than the critical values and p-values exceeded 0.05, consistent with Nkoro & Uko (2016) on fiscal data behavior in developing economies.

Table 4:2 Stationarity Test Result

S/N	Variable	Ord. of Integration	MacKinnon App. P-value	Decision Taken	Ord. of Integration	MacKinnon App. P-value	Decision Taken
1	CEDTA X	1(0)	0.9835	Reject	I (1)	0.0000	Accept
2	SDTAX	1(0)	0.9659	Reject	I (1)	0.0392	Accept
3	VATA X	1(0)	0.5774	Reject	I (1)	0.0000	Accept
4	INCIN Q	1(0)	0.0001	Accept	I (1)	0.0000	Accept
5	REXP	1(0)	0.7986	Reject	I (1)	0.0000	Accept

Source: Authors' Computation (2026)

In contrast, income inequality ($p = 0.0001$) is stationary at levels, indicating I (0) properties. At first difference, all previously non-stationary variables became stationary, with differenced stamp duties ($p = 0.0029$) and other tax and expenditure variables showing p-values below 0.05, confirming I (1) integration and aligning with similar outcome of Okonkwo and Chukwu (2022). The mixture of I (0) and I (1) variables justifies the application of ARDL as proposed by Pesaran *et al.* (2001), which accommodates mixed integration orders while preserving long-run relationships. The ARDL diagnostics reveal strong explanatory power with R-squared value of 0.7417 and adjusted R-squared value of 0.7214, while the negative and significant error correction term (-0.8145) confirms approximately 81% annual adjustment toward long-run equilibrium, consistent with co-integration theory (Pesaran, Shin & Smith, 2001). Although the Breusch–Godfrey LM test ($p = 0.0001$) indicates the presence of serial



correlation, heteroskedasticity is not evident based on the outcomes from Breusch–Pagan ($p = 0.3256$) and White's test ($p = 0.5447$), and residuals satisfy normality assumptions under the Shapiro–Wilk ($p = 0.1745$) and sktest ($p = 0.1023$). The Durbin–Watson statistic of 2.93 suggests no serious positive autocorrelation concern Overall, despite mild serial correlation, the model satisfies key diagnostic conditions, supporting cautious but credible interpretation of both short-run dynamics and long-run equilibrium relationships.

Table 4.3 Regression Analysis Result for Income Inequality

LONG-RUN MAIN EFFECT		LONG-RUN M_EFFECT		SHORT-RUN MAIN EFFECT		SHORT-RUN M- EFFECT	
CED TAX	0.347 (0.339)	CED TAX	-0.241 (0.701)	CED TAX	-0.065 (0.123)	CEDTA XM	- 0.447 (0.064)
VATA XM	2.874 *** (0.000)	VA TAX M	1.125 (0.075)	VA TAX	- 2.987 ** (0.001)	VATA XM	- 1.097 ** (0.012)
SD TAXM	6.952 (0.551)	SD TAX M	-11.949 (0.081)	SA TAX M	-9.336 (0.091)	SDTAX M	0.451 (0.521)
ROOT MS	0.0169						
AJ R- SQUAR ED	0.7214						
		MEAN VIF= ≤ 2.74					
WHERE; M_EFFECT REPRESENTS MODERATING EFFECT		Breusch–Godfrey LM test for autocorrelation $\chi^2 = 5.527$ Prob > $\chi^2 = 0.0001^{**}$ Skewness and kurtosis tests for normality Prob = 0.1023 Shapiro–Wilk W Test for Normal Data				Breusch–Pagan heteroskedasticity $\chi^2 = 1.83$ Prob > $\chi^2 = 0.3256$ White's Test Prob = 0.5447 Cameron & Trivedi's decomposition of IM-test Total Probability = 0.5116 ECM = -0.8145	



Multivariate Regression Analysis Result

The ARDL regression result presented in **table4.3** reveal that only Value Added Tax (VATAX) exerts a statistically significant influence on income inequality in Nigeria across both the main and moderated specifications, in the short and long run. In the long run, the positive significant coefficient of VATAX confirms its regressive incidence, reinforcing the proposition of Musgrave's theory of public expenditure that indirect taxes disproportionately burden lower-income households when re-distributive mechanisms are weak. This finding is consistent with Michael Keen (2008) and Richard Bird and Eric Zolt (2014), who argue that consumption-based taxation tends to widen inequality in developing economies with limited social protection systems. In the Nigerian context, where VAT applies uniformly to consumption amid high poverty levels and weak targeted transfers, this outcome reflects a practical reality. The Nigerian tax system extracts proportionally more from low-income earners (International Centre for Tax and Development (ICTD, 2021) without adequate compensation through welfare or capital investment. Conversely, the negative significant short-run effect of VATAX suggests a temporary re-distributive benefit, aligning with Wagner's Law, which posits that increased public spending can enhance social welfare. This position is supported by Cnossen (2011), who emphasizes that the equity impact of VAT depends largely on how its revenues are utilized. This result exposes structural weakness as the Nigerian experience. Recurrent government expenditure, which dominates fiscal outlays, is largely consumed by administrative costs, salaries, and overheads rather than productivity-enhancing or pro-poor investments. As a result, while VAT revenue may generate short-term cushioning effects, its re-distributive capacity quickly dissipates, lacking the transformative depth required to sustainably reduce inequality. This explains why the moderating role of recurrent expenditure fails to reverse the long-run inequality effect, highlighting a critical policy gap in Nigeria's fiscal architecture.

5.0 Conclusion and Recommendation

The persistent challenge of income inequality in Nigeria highlights the need to examine the structural dynamics of the fiscal system, particularly the redistribution roles of taxation and government expenditure. Despite successive tax reforms, the income gap remains high, raising concerns about whether the composition and interaction of customs and excise duties, stamp duties, and value added tax are aligned with equitable outcomes. This study empirically analyzes the influence of indirect tax on income inequality while incorporating government recurrent expenditure as a moderating variable, highlighting the complex nexus between tax policy and recurrent spending in shaping re-distributive outcomes, and conclude that the equity impact of fiscal policy in Nigeria is jointly determined by both revenue sources and the structure of public spending. However, given



the generally insignificant re-distributive impact of stamp duty and customs and excise duty, alongside the complex but remarkable effects of value added tax, this study recommends that fiscal authorities such as the Federal Inland Revenue Service (FIRS), the Federal Ministry of Finance, and related stakeholders adopt an integrated fiscal strategy that deemphasizes ineffective tax instruments as standalone tools for income redistribution, instead focus on restructuring indirect taxes (particularly value added tax) for equity, and reorienting recurrent expenditure toward inclusive sectors like education, health, and social protection, all within a framework of improved fiscal transparency and targeted pro-poor budgeting.

Suggestions for Further Studies

Future studies should consider delving deeper into the tax revenue proxies, such as stamp duty and customs and excise duties, that showed statistically insignificant effect on income inequality, to uncover the underlying institutional, structural, or behavioral factors responsible for their limited re-distributive impact. Particularly, further research could explore how tax compliance levels, administrative enforcement gaps, tax expenditure policies, and informal sector dynamics dilute the equity outcomes of tax instruments in Nigeria. Additionally, comparative studies across sub-national entities or within other developing economies with similar fiscal profiles could offer broader insights into contextual dynamics. Employing alternative methodological frameworks such as non-linear models, threshold analysis, or dynamic panel data could also illuminate latent interactions that might be obscured under linear assumptions, thereby enriching the discourse on taxation and equity in low- income economies.

References

- Abata, M. A., Osamor, I. P., & Elluh, C. C. (2023). The effect of direct and indirect taxes on economic growth: Evidence from Nigeria. *EPRA International Journal of Multidisciplinary Research*, 9(7), 45–55.
- Akanbi, A. M., & Olayemi, O. (2019). Government expenditure and fiscal sustainability in Nigeria. *Journal of Economics and Public Finance*, 5(3), 230–247.
- Akpan, U. F., & Enya, V. E. (2020). Government expenditure and revenue generation in Nigeria: Conceptual and theoretical review. *African Journal of Economic Review*, 8(1), 102–118.



- Alassani, A., Laporte, B., & Semedo, G. (2022). How does tax structure affect income inequality? Empirical evidence from Sub-Saharan Africa. *Working Paper*.
- Alassani, A., Laporte, B., & Semedo, G. (2022). How does tax structure affect income inequality? Empirical evidence from Sub-Saharan Africa. *Working Paper*.
- Amachree, J. (2025). Fiscal rigidity and budgetary imbalance in Nigeria: A review of recurrent expenditure trends. *Journal of African Public Finance*, 12(1), 56–71.
- Andrews, C., Das, M., Elder, J., Ovadiya, M., & Zampaglione, G. (2012). *Social protection in low-income countries and fragile situations: Challenges and future directions*. World Bank, Washington, DC.
- Aniefor, S. J. (2022). Stamp duty tax and economic growth: Evidence from Nigerian Economy. *Journal of Global Accounting*, 8(1), 65-73.
- Appah, E., & Omes, I. (2021). Taxes and Income Inequality in Nigeria: Cointegration and error correction mechanisms. Evidence from 1980–2018. *The Journal of Accounting and Management*, 11(2).
- Atkinson, A. B. (2015). *Inequality: What can be done?* Cambridge, MA: Harvard University Press.
- Bastagli, F., Coady, D., & Gupta, S. (2015). Fiscal redistribution in developing countries: Overview of policy issues and options. *Inequality and fiscal policy*, 57-76.
- Bhandari, L. B. (2024). *Impact of government fiscal policy on economic growth and stability* (Doctoral dissertation, Shanker Dev Campus).
- Bird R. M., & Zolt, E., M. (2005). Redistribution via taxation: The limited role of the personal income tax in developing countries. *UCLA Law Review* 52 1627 ^ 1695
- Bird, R. M. (1971). Wagner's "Law" of expanding state activity. *Public Finance*, 26(1), 1–26.
- Bird, R. M., & Zolt, E. M. (2014). Taxation and inequality in the Americas: Changing the fiscal contract? In *Taxation and Development: The Weakest Link?* (pp. 193-237). Edward Elgar Publishing.



- Biswas, S., Chakraborty, I., & Hai, R. (2017). Income inequality, tax policy, and economic growth. *The Economic Journal*, 127(601), 688-727.
- Brennan, G., & Buchanan, J. M. (1980). The power to tax: Analytical foundations of a fiscal constitution. Cambridge: Cambridge University Press.
- Cnossen, S. (2011). A proposal to improve the VAT treatment of housing in the European Union, *Fiscal Studies* 32(4), 455–481.
- Cowell, F. A. (2016). Measuring inequality (3rd ed.). Oxford: Oxford University Press.
- Dianov, S., Koroleva, L., Pokrovskaya, N., Victorova, N., & Zaytsev, A. (2022). The influence of taxation on income inequality: Analysis of the practice in the EU countries. *Sustainability*, 14(15), 9066.
- Duncan, D., & Sabirianova Peter, K. (2016). Unequal inequalities: Do progressive taxes reduce income inequality? *International Tax and Public Finance*, 23(4), 762-783.
- Edeh, H. (2021). Assessing the equity and redistributive effects of taxation reforms in Nigeria. *Institute of Development Studies Working Paper*.
- Egbuhuzor, C. A., & Tomquin, A. I. (2021). Effect of indirect taxes on economic growth in Nigeria. *Journal of Accounting and Financial Management*, 7(1), 67–80.
- Ekici, O. (2022). The Nexus Between Income Inequality and Tax Composition: A Cross-Country Perspective. *Ege Academic Review*, 22(4), 473–486.
- Fernandes, C. B. S., Vasconcelos, M. R., Cunha, M. S., & Obst, T. (2023). *The impact of direct and indirect taxes on income inequality*.
- Fernandes, C., Vasconcelos, M. R., da Cunha, M. S., & Obst, T. (2025). The relationship between tax structures and income inequality. *Desarrollo y Sociedad*, (100).
- Fernandes, F., Novais, A., & Rocha, P. (2023). Tax structure and income inequality: A cross-country analysis. *International Journal of Economic Policy Studies*, 17(1), 33–52.



- Golosov, M., Tsyvinski, A., & Werquin, N. (2014). *A variational approach to the analysis of tax systems* (No. w20780). National Bureau of Economic Research.
- Hatem, G., Zeidan, J., Goossens, M., & Moreira, C. (2022). Normality testing methods and the importance of skewness and kurtosis in statistical analysis. *BAU Journal-Science and Technology*, 3(2), 7.
- Herbert, W. E., Nwarogu, I. A., & Nwabueze, C. C. (2018). Tax reforms and Nigeria's economic stability. *International Journal of Applied Economics, Finance and Accounting*, 3(2), 74-87.
- Hood, R., Husband, D., & Yu, F. (2002). *Recurrent expenditure requirements of capital projects estimation for budget purposes* (Vol. 2938). World Bank Publications.
- Ibe, I. U. (2019). An appraisal of the legal and administrative framework for taxation in Nigeria. *African Journal of Constitutional and Administrative Law*, 1(1), 94–112.
- Idowu, M. A., & Obaretin, O. (2022). Issue of income inequality in Nigeria: The role of indirect taxes. *African Development Finance Journal*, 2(2), 65-89.
- Jolaiya, O. F. (2024). Impact of financial deepening on domestic investment in Nigeria. *Asian Journal of Economics, Business and Accounting*, 24(1), 128-140.
- Jones, T. C. (2016). Taxation and economic inequality: An Analysis of income taxes and their impact on various levels of income.
- Keen, M. (2013). The anatomy of the VAT. *National Tax Journal*, 66(2), 423–446.
- Khan, S., & Padda, I. U. H. (2021). The impact of fiscal policy on income inequality: A case study of Pakistan. *The Lahore Journal of Economics*, 26(1), 57–84.
- Khattak, S. I., Asim, M., & Rehman, H. U. (2022). Fiscal policy and income inequality: The role of taxes and transfers in Pakistan. *Economies*, 10(115), 1–20. <https://doi.org/10.3390/economies10050115>
- Kiara, F. G., & Nekesa, M. (2023). Impact of indirect tax policy reforms on revenue performance in Kenya. *African Tax and Customs Review*, 7(1), 31-31.



- Lanem, J. M., Jocelyn, U. U., & Yua, H. (2020). Causal relationship between taxation and revenue generation in contemporary Nigeria: 1997–2018. *International Journal of Innovative Finance and Economics Research*, 8(2), 13–25.
- Lustig, N. (2018). Commitment to equity handbook. Estimating the impact of fiscal policy on inequality and poverty. Brookings Institution Press and CEQ Institute, Tulane University.
- Malla, M. H., & Pathranarakul, P. (2022). Fiscal policy and income inequality: The critical role of institutional capacity. *Economies*, 10(115).
- Malla, R., & Pathranarakul, P. (2022). Tax system, government spending and income inequality: Evidence from a developing economy. *Journal of Public Budgeting, Accounting & Financial Management*, 34(4), 519–541.
- Martinez-Vazquez, J., Moreno-Dodson, B., & Vulovic, V. (2012). The impact of tax and expenditure policies on income distribution: Evidence from a large panel of countries. *International Center for Public Policy Working Paper Series*, 12-25, Georgia State University.
- Martorano, B. (2022). Personal income tax reforms and income inequality in African countries. *UNU-WIDER Working Paper 2022/146*.
- Mourfou, A., & Ouedraogo, I. M. (2021). Effect of tax revenue mobilization on income inequalities in West African Economic and Monetary Union countries. *American Journal of Theoretical and Applied Business*, 7(1), 8–15.
- Moździerz, A. (2015). Tax policy and income inequality in the VISEGRAD countries. *Naše Gospodarstvo/Our Economy*, 61(6), 12–18.
- Musgrave, R. A. (1959). The theory of public finance. New York, NY: McGraw-Hill.
- Musgrave, R. A., & Musgrave, P. B. (1989). Public finance in theory and practice (5th ed.). New York, NY: McGraw-Hill.
- National Bureau of Statistics. (2020). Poverty and inequality in Nigeria 2019. Abuja: NBS.



- Nkoro, E., & Uko, A. K. (2016). Autoregressive Distributed Lag (ARDL) cointegration technique: Application and interpretation. *Journal of Statistical and Econometric Methods*, 5(4), 63–91.
- Nnamaka, U. C. (2022). Investigating taxation and income inequality in Nigeria. *African Journal of Business and Economic Development* | ISSN, 2782, 7658.
- Nnamaka, U. C., & Nwanyanwu, K. U. (2022). Investigating taxation and income inequality in Nigeria. *African Journal of Business and Economic Development*, 2(1), 49–60.
- Nwachukwu, G. I. (2025). Government expenditure, tax structure, and income inequality: Evidence from Nigeria. *Economics and Social Policy Research Journal*, 13(2), 1–24.
- Oates, W. E. (1988). On the nature and measurement of fiscal illusion: A survey. In G. Brennan, B. S. Grewal, & P. Groenewegen (Eds.), *Taxation and fiscal federalism: Essays in honour of Russell Mathews* (pp. 65–82). Sydney: Australian National University Press.
- Oates, W. E. (2005). Toward a second-generation theory of fiscal federalism. *International Tax and Public Finance*, 12(4), 349–373. <https://doi.org/10.1007/s10797-005-1619-9>
- OECD. (2019). *Under pressure: The squeezed middle class*. Paris, France: OECD Publishing.
- Okonkwo, O. N., & Chukwu, B. E. (2021). Collateral requirements and access to export finance by SMEs in Nigeria. *Journal of Small Business and Entrepreneurship Development*, 9(1), 1–15
- Olapade, O. B., & Afolabi, A. (2021). Public expenditure patterns and fiscal management in developing economies. *International Journal of Public Administration*, 44(6), 481–492.
- Omes, I., & Appah, E. (2021). Stamp duty administration and revenue performance in Nigeria: An empirical review. *Nigerian Journal of Taxation*, 8(2), 45–59.



- Omes, I., & Appah, E. (2021). Taxes and income inequality in Nigeria: Cointegration and error correction mechanisms evidence from 1980–2018. *Journal of Accounting and Management*, 11(2), 14–30.
- Omodero, C. O. (2019). The role of tax revenue and foreign direct investment in promoting economic progress in Nigeria. *Annals of Spiru Haret University, Economic Series*, 19(2), 39–55.
- Omodero, C. O. (2020). The consequences of indirect taxation on consumption in Nigeria. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 105.
- Oseni, A. I. (2017). The effects of value added tax on government's revenue generation profile in Nigeria: A conceptual approach. *International Journal of Economics and Financial Management*, 2(4), 12–24.
- Osho, A. E., Ajibola, I. O., & Omolola, R. A. (2019). The impact of capital gains tax on investment, social and economic development in Nigeria. *European Journal of Business and Management*, 11(2), 30–38.
- Ouedraogo, I., Dianda, I., Ouedraogo, P. P. R., Ouedraogo, T. R., & Konfe, B. (2025). The effects of taxation on income inequality in sub-Saharan Africa. *Comparative Economic Studies*, 67(1), 84–149.
- Oyedokun, G. E., Christopher, M., & Ogunleye, A. (2021). Tax policy and revenue generation in Nigeria. *International Journal of Research in Business, Economics and Management*, 5(4), 15–27.
- Peacock, A. T., & Wiseman, J. (1961). The growth of public expenditure in the United Kingdom. Princeton, NJ: Princeton University Press.
- 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.
- Pesaran, M.H., & Pesaran, B., (1997). Working with Microfit 4.0. Camfit Data Ltd, Cambridge.
- Piketty, T. (2020). Capital and ideology. Cambridge, MA: Belknap Press.



- Rivera-Williams, J. (2025). A Multiple Perspective Analysis on Urban Poverty in Developing Nations: A Case Study on Nigeria, Colonial Implications, and Modern-Day Outcomes.
- Stock, J. H., & Watson, M. W. (2015). Introduction to Econometrics (3rd ed.). Boston, MA: Pearson Education.
- Sun, L., & Nishigaki, Y. (2025). Effect of comprehensive income and consumption taxes on human capital, economic growth, and income distribution: Endogenous economic growth and empirical evidence. *Economies*, 13(7), 201.
- Tamunotonye, F. A. (2025). Government spending, taxation, and income inequality in Nigeria. *Journal of Global Business and Economic Research*, 12(2), 1-21.
- Tanzi, V., & Schuknecht, L. (2000). Public spending in the 20th century: A global perspective. Cambridge, UK: Cambridge University Press.
- Thilanka, H. R. A. C., & Ranjith, J. G. S. (2021). The effect of tax composition on income inequality: Sri Lankan experience. *Sri Lanka Journal of Economic Research*, 8(2), 3–20.
- Urama, N. E., Ogunleye, E. K., & Adeyeye, F. M. (2017). Incidence of value-added taxation on inequality in Nigeria. *African Development Review*, 29(1), 127–139.
- Wolde-Rufael, Y. (2010). Bounds test approach to cointegration and causality between nuclear energy consumption and economic growth in India. *Energy Policy*, 38(1), 52–58.
- World Bank. (2020). Poverty and shared prosperity 2020: Reversals of fortune. Washington, DC: World Bank.