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TAX REFORMS AND ECONOMIC DEVELOPMENT IN NIGERIA

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Abstract
The study investigated the implications of various tax reforms on economic development in Nigeria over the period ranging from 1994 - 2023. The study employed the human development index as a measure of economic development and considered personal income tax, Education tax, company income tax, value-added tax, and petroleum profit tax. Time series data was employed from the yearly report and repository of CBN and FIRS online reports. The employed data analysis techniques in the study are the Stationarity, Autoregressive Distributive Lag, and Granger Causality tests. The study observed mixed stationarity at level and first difference. In the long run, it was observed that only the immediate past value of personal income tax per capita, company income tax per capita, petroleum profit tax income per capita, and education tax income per capita had a valuable influence on economic development. The study therefore concludes that tax revenue has mixed influence on economic development in Nigeria. In light of these findings, the study recommended that; more efficient and effective means and systems for supervision of tax revenue by tax agencies and regulatory bodies should be expedited. Tax agencies should seek means of encouraging taxpayers to pay their taxes to enhance the growth and development of the economic sectors which the taxpayers will also benefit from. Tax holidays and incentives should be expedited to institution, firms, and private individuals who are known to be highly compliant with their tax payments.

Keywords: Tax Reforms, Economic Development, Human Development Index, Company Income Tax, Petroleum Profit Tax.

Introduction

Assessing economic development requires a multifaceted understanding of various indicators that reflect the well-being and prosperity of a nation (Nwaiwu& Joseph, 2023; Nwaiwu& Amah, 2023; Herbert et al., 2018). The Human Development Index (HDI) provides a holistic measure of human development, incorporating factors such as life expectancy, education, and income (Awotomilusi, 2022), poverty index (Akpobi&Igbekoyi, 2019). Changes in HDI over time offer insights into progress towards achieving broader development goals and reducing inequalities. Per capita income serves as a key metric for evaluating the standard of living and economic well-being of the population (Adegbi&Fakile, 2021). Higher per capita income levels are indicative of greater prosperity and improved living standards. Finally, the poverty index measures the prevalence of poverty within a country, shedding light on the extent of economic hardship faced by segments of the population. A declining poverty index signifies progress in poverty alleviation efforts and inclusive economic growth (Nwaiwu& Okoro, 2018). Understanding the interplay between tax reforms and economic development in Nigeria holds significant implications for policy formulation, investment decisions, and international comparisons. Insights gleaned from this study can inform policymakers about the efficacy of past tax

reforms and guide the design of future fiscal policies to promote sustainable development. Moreover, investors, both domestic and foreign, can leverage this analysis to make informed decisions, contributing to economic growth and stability (Organization for Economic Co-operation and Development, 2017).

Tax reforms are integral to the economic development of any nation, and Nigeria, as a prominent African economy, has undergone significant changes in its tax landscape over the years (Ofurum, Bossco, Okonya&Amaefule, 2018; Nwaiwu, 2023). These reforms are multifaceted, encompassing alterations in tax policies, administration, and legislation, all aimed at bolstering revenue generation, fostering economic growth, and achieving sustainable development Ofurum, Bossco, Okonya&Amaefule, 2018; Nwaiwu, 2023). Tax reforms in Nigeria have traversed a historical journey marked by significant milestones, reflecting the country's evolving economic landscape, fiscal challenges, and policy imperatives. Prior to Nigeria's independence in 1960, the tax system was relatively rudimentary, characterized by a reliance on indirect taxes such as import duties, excise duties, and sales taxes. These taxes were primarily levied to finance colonial administration and support infrastructure development, with limited emphasis on equity or economic development objectives (Akintoro, 2022; PSV, 2020). Following independence, Nigeria embarked on a series of reforms to modernize its tax system and enhance revenue generation. The 1958 Income Tax Management Act laid the foundation for the taxation of income, profits, and gains, marking a significant departure from the colonial-era tax regime. Subsequent reforms in the 1960s and 1970s introduced new tax laws, expanded the tax base, and strengthened tax administration to support the country's development agenda (Saeed &Sheikah, 2017; Aizanman & Jiajarak, 2018; Ibe, 2023). The discovery of oil in commercial quantities in the 1970s heralded a period of economic transformation for Nigeria. Oil revenue became the primary driver of government finances, leading to a reduction in the relative importance of non-oil taxes. However, efforts to diversify the revenue base and reduce dependence on oil revenue gained momentum during this period, laying the groundwork for future tax reforms (Afaha, 2019). The 1980s witnessed Nigeria's adoption of structural adjustment programs (SAPs) in response to economic challenges such as declining oil prices, fiscal imbalances, and external debt. Tax reforms implemented during this period aimed to rationalize tax incentives, improve tax compliance, and enhance revenue mobilization to support economic stabilization and structural reforms (Herbert et al., 2018).

The return to democratic governance in 1999 marked a new phase in Nigeria's tax reform agenda. The introduction of Value-Added Tax (VAT) in 1993 represented a significant policy shift aimed at diversifying revenue sources and reducing reliance on oil revenue. Subsequent tax reforms focused on modernizing tax administration, improving taxpayer compliance, and enhancing transparency and accountability in revenue management. In recent years, Nigeria has continued to pursue tax reforms aimed at promoting economic growth, enhancing revenue generation, and fostering sustainable development. Reforms in areas such as Company Income Tax (CIT), Petroleum Profit Tax (PPT), and tax incentives have sought to create a more conducive business environment, attract investment, and stimulate economic activity (Aregbeyen&Fasanya, 2018; Nwaiwu, 2023). The United Nations Development Programme and the World Bank (WB) data show that Nigeria has a very poor tax system and has one of the lowest records of human development index. The direct impact of poor tax revenues on Nigeria’s human development index from academic perspective has not been properly established. The problem to be addressed in this quantitative case study will be to examine the extent to which tax

revenues in the form of personal income tax, company income tax, petroleum profit tax, value-added tax, education tax and import duties affect Nigeria's human development index (HDI).

Numerous studies have been conducted by researchers attempting to measure the economic benefits of tax revenue in many countries including Nigeria. Note that there is burgeoning literature directed at the relationship between tax revenue and human development index (HDI) and gross domestic product per capita in developed countries such as the United States and United Kingdom. But in contrast, very limited numbers of studies have addressed the possible relationship between tax revenue and human development index (HDI), as well as gross domestic product per capita in developing countries like Nigeria. In addition, most of these previous studies ended up treating tax revenue in a segmented manner. These past studies rarely brought out the difference between gross domestic product and economic development. Furthermore, these studies were limited in scope and in the availability of relevant data and did not touch on the direct measures of human development index (HDI) and gross domestic product per capita in particular.

Emphasis on human oriented development indices is premised on the fact that any development that does not address the issue of human capital is not complete. Some economic historians including United Nations, World Bank and Ake, (2010) have argued that certain preconditions, such as substantial advancements in human capital must be present for a developing country such as Nigeria to effectively generate or recoup sustainable economic benefits from tax revenue. It argues therefore that the national policies should be guided not only by improvement in GDP but also a broader measure of development using the HDI and other human capital variables. Various Researcher lbraham 1990 literatures on this subject matter are inadequate. For instance, Awa and Ibeanu, (2018), Sani and Ahmed, (2019), Okon and Osang (2020), Olaoye, Ogundipe and Oluwadare(2019), Olugbemi and Bassey, (2019), Amahalu, (2018) and many other scholars carried out related studies but they all focused on two or three of tax revenue and economic growth and development. None of them captured combination six tax revenue variables such as personal income tax, company income tax, petroleum profit tax, value-added tax, education tax and import duties. In the same vein, none of them took note of the human aspects of economic human development index (HDI) and gross domestic product per capita (GDPPC). This has created a knowledge gap in academic literature, hence the bridging of this gap by the inclusion of the missing proxies is a point of departure for this current study.

Literature Review and Hypotheses Development

Conceptual Framework

Economic Development:

The concept of eeconomic development can be said to be an improvement in wellbeing of low-income earners, reduction in illiteracy level, mass poverty reduction, diseases control and early death control, the quantum of goods and services that undelaying the structure of production in an economy, restructuring of economy in a better way that will produce employment to the majority of working class not to the few privileged, economic development also provide an avenue where majority participate in the decision making about the improvement of their welfare.

Human Development Index (HDI)

This is a tools or a statistical composite developed by United Nations in order to rank and measure nations level of economic and social development. This index is determine by life expectancy, education and literacy level, and per capita income which are the indicators used to ranks nations, it is possible with this index to monitor changes in development level over a period of time and to equally compare the level of such development among the nations. For example, a nations which scores a high HDI is when the life span is higher, education and literacy level is higher, and GDP per capita is also higher. HDI was introduced to place emphasis on individual more especially on their desire to realize better standard of living through job satisfaction. One important goal of developing human development index is to stimulate public economic policy (World Bank,2017).

Tax Reforms

Tax reforms represent a multifaceted process aimed at restructuring, refining, and revitalizing the tax system of a nation. In Nigeria, this concept carries significant weight due to its implications for economic development, fiscal sustainability, and social equity. Tax reforms in Nigeria are integral to the country's economic development agenda, with far-reaching implications for revenue generation, economic growth, social equity, and fiscal sustainability. By addressing the diverse objectives, drivers, challenges, and impacts of tax reforms, Nigeria can harness the transformative potential of taxation to build a more prosperous, inclusive, and resilient society. However, realizing this vision requires sustained political commitment, institutional strengthening, stakeholder engagement, and evidence-based policy formulation and implementation. Through continuous dialogue, cooperation, and innovation, Nigeria can navigate the complexities of tax reforms and unlock new pathways to prosperity for its citizens.

Personal Income Tax

In Nigeria, the Personal Income Tax Rate is a tax collected from individuals and enterprises which is imposed on different sources of income like income from trade, business, professional or vocation, income from employment, pensions, interest and dividends. The benchmark we use refers to the Top Marginal Tax Rate for individuals. Revenues from the Personal Income Tax Rate are important source of income for the government of Nigeria. The Personal Income Tax Rate in Nigeria start from 7 to 24 percent. Personal Income Tax Rate in Nigeria averaged 24.00 percent from 2011 until 2016, reaching an all-time high of 24.00 percent in 2012 and a record low of 24.00 percent in 2012 (CBN, 2017).

Companies Income Tax

A Company is defined by Section 93 (1) of the Companies Income Tax Act CAP 60 Laws of the Federation of Nigeria (LFN), 1990 as “any company or corporation other than a corporation sole, established by or under any law in force in Nigeria or elsewhere”. The registration of limited liability companies is being carried out by the Corporate Affairs Commission (CAC) in Nigeria. The world Limited (Ltd) or Public Company (Plc) is expected to end each name of a registered company. According to (CAMA 1990), a company duly registered in accordance with the provision of the Companies and Allied Matters Act (hereinafter referred to as CAMA 1990) or any enactment replaced by it is what the Act recognizes as a company in Nigeria. Although CAMA 1990 defines a foreign company to mean company incorporated elsewhere than in Nigeria, it does not recognize its existence in Nigeria for business activities. It only

defines it for the purpose of identifying it to comply with the mandatory incorporation processes before carrying on business in Nigeria and to benefit from exemption from registration.

Petroleum Profit Tax

Companies engaged in petroleum operations in Nigeria are subject to tax under Petroleum Profit Tax Act (PPTA) of 1959 as amended. The winning or obtaining and transportation of petroleum or chargeable oil in Nigeria by or on behalf of a company for it account by any drilling, mining, extracting or other like operations or process, not including refining at a refinery in the cause of a business carried on by the company engaged in such operations, and all operations incidental thereto and any sale of or any disposal of chargeable oil by or on behalf of the company (PPTA, 2010). Petroleum taxation is the instrument of choice for sharing wealth between host governments and international oil companies. It is a direct tax, levied annually on net profit of a petroleum tax payer, who is carrying on the business of petroleum exploration and production (Evans & Hunt, 2011).

Value-Added Tax (VAT)

Nigeria adopted value-added tax (VAT) through the VAT Act No. 102 of 1993, with effective date of 1st January 1994 based on the report of Sylvester Ugo led study group set up in 1991 by the government to review the system of indirect taxes in Nigeria (Odusola, 2006). The Act repealed the sales tax Act, 1986. The sales tax lasted only for six (6) years before it was repealed. The Act is now known as value-added tax Act, Cap. V1,(LFN 2004). It was last amended in 2007 (ICAN, 2009).

Theoretical Framework

Keynesian Theory of income and Expenditure

The Keynesian theory on income and public expenditure is one of the most notable theories on public expenditure of which budget is one of the major instruments (Pradhan, 2021). Keynes argued that the solution to the great depressing was to stimulate the economy (inducement to invest) through some combination of two approaches which include a reduction in interest rates (monetary policy) and government investment in infrastructure (fiscal policy). By reducing the interest rate at which the central bank lends money to commercial banks, the government sends a signal to commercial banks that they should do the same for their customers (Anisere-Hameed, 2021). Investment by government in infrastructure injects income into the economy by creating business opportunity, employment and demand and reversing the effects of the aforementioned imbalance. Government sources the funding for this expenditure by borrowing funds from the economy through the issue of government bonds, and because government spending exceeds the amount of tax income that the government receives, this creates a fiscal deficit (Chand, 2006).

Diffusion Theory of Taxation

According to diffusion theory of taxation, under perfect competition, when a tax is levied, it gets automatically equitably diffused or absorbed throughout the community. Promoters of this theory, describe that when a tax is levied on a commodity by state, it will automatically pass on to consumers. Every single person bears burden of tax according to his or her ability to bear it. For example, when a specific tax is imposed on a commodity the manufacturer raises prices of commodity by the amount of

tax. Consumers buy commodity according to his or her capacity as such share the burden of the tax. According to Mansfield: "It is factual that a tax laid on any place is like a pebble falling into a lake and making circles till one circle produces and gives motion to another". This quotation explains that just as a pebble gets diffused in a lake, likewise a tax imposed on a certain product or services is also absorbed and its weight is felt equally among various sections of society. Promoters of this theory assume perfect competition in the market but in world of reality, it is imperfect competition which prevails. If tax becomes automatically diffused in a society, then most of fears of finance minister will be over. He will simply levy tax and collect money from citizens without considering about the final resting place of tax. In reality it was discovered that taxes do not get distributed evenly. Some taxes doesn't change they remain where they are imposed first while some are shifted to the society partly or wholly.

Benefit Theory of Taxation

According to this theory, the state should levy taxes on citizens
according to the benefit awarded to them. The more benefits an individual derives from the activities of the state, the more he should pay to the government, then those who required more of government services that is the poor ones will not be able to benefit more due to the very little tax payment and those who are not in dear need that is the rich people will benefit more due to tax payments and with this there will not be even distribution of economic development. The benefits theory would indicate that a citizens should be able to enjoy personal tax benefits to the level of his/ her tax contribution to the state.

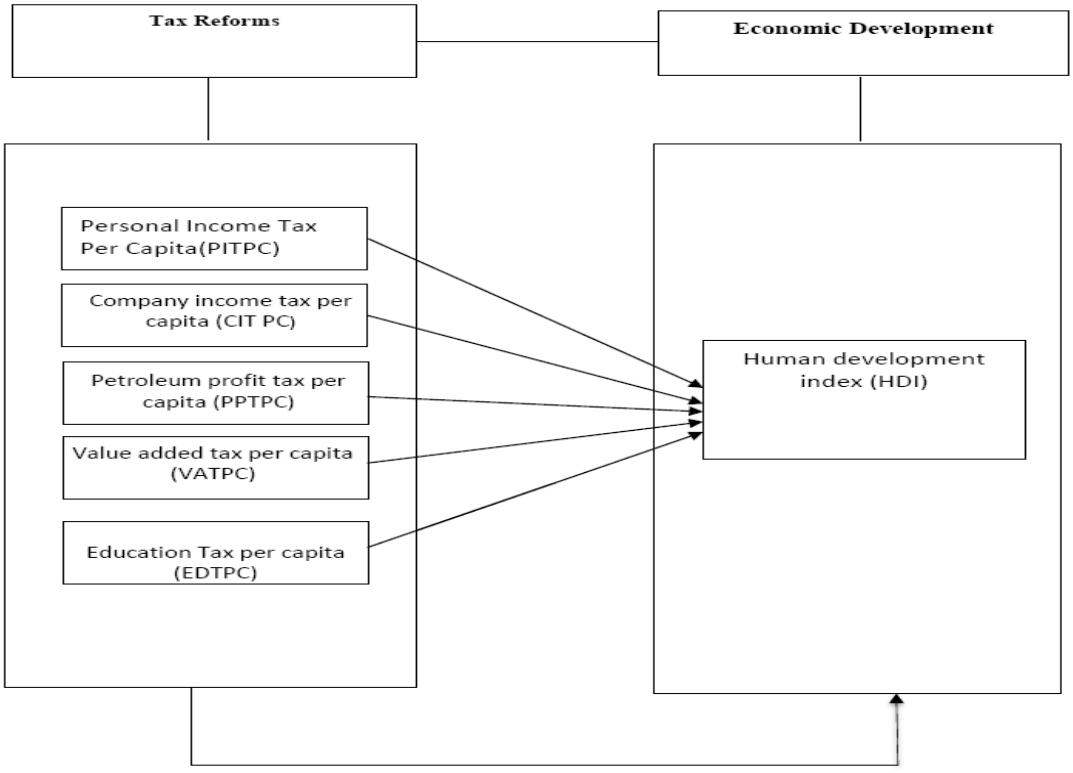

Figure 1 Conceptualized Framework of Tax Reforms and Economic Development in Nigeria
Source: personal Income tax Per Capita (Awolomdusi, 2022), Companies Income tax Per Capita (Nwaiwu & joseph, 2023), Petroleum Profit Tax Per Capita (Odu, 2022), Value Added Tax Per Capita (Nwaiwu & Amah, 2023), Education tax Per Capita (Bahaa, 2021)

Empirical Review

Various works have been conducted in the past as regards this subject matter, most of them used different methodology and came up with different results while other had same results. for instance,

Lin and Lin (2023) evaluated the influence of tax reforms on growth and development of China. The study employed a systematic review design and evaluated 50 studies in China. The paper shows that an introduction of a housing property tax in China increases physical and human capital accumulation and growth rate of output in the long run no matter the revenue from housing property tax is used for reducing government debt, personal income tax, or capital income tax, or for increasing government education expenditure. The tax reform has a strong inter-generations redistribution effect, i.e., it increases the welfare of future generations but reduces the welfare of current generations.

Werekoh (2022) examined the effects of tax reform on economic development with its moderating role of tax compliance. The descriptive research design with quantitative approach was employed. The population of the study consist is 10,000 SMEs operating in Kumasi currently with a sample size of 400 SMEs. The instrument for data collection in this study was questionnaire. The data that was collected was analysed using SPSS. The findings demonstrated that in formulating strategies to enhance voluntary compliance, it is crucial for the relevant authorities to be aware of, understand and appreciate taxation taxpayers' compliance behaviour and the need to provide tax education services. The results indicated that tax compliance enhanced the effectiveness of taxation to impact on economic development. The moderating role of tax compliance in the relationship between taxation and economic development was low but positive.

Adefolake and Omodero (2022) assessed the effects of tax revenue on the economic growth of Nigeria utilizing time series data spanning from year 2000 till 2021. The study's specific goal is to evaluate the influence of hydrocarbon tax, corporation income tax and Value-added Tax on Nigeria's economic growth. The study employs secondary form of data which have been sourced from CBN statistical bulletin and published Federal Inland Revenue Statement. Ex-post facto research design is used for this study. The data collected are analyzed and tested for unit root using Augmented Dickey Fuller method. The study variables which comprise GDP, PPT, CIT and VAT are found to be stationary at first difference. Thus, a Johansen co-integration test is also conducted and it reveals a long-run relationship. Consequently, the study utilizes the Vector Error Correction Model to evaluate the effects of PPT, CIT and VAT on GDP. The findings reveal that PPT and VAT have positive and significant effects on GDP. It also reveals that CIT has a negative and significant effect on GDP. Based on these findings, the inquiry suggests that trainings and workshops should be organized by government tax agencies to the Nigerian public and companies on the importance and benefits of tax revenue to the economy. The tax authorities should also endeavour to encourage companies to pay tax so as to improve the growth of the economy which the companies are meant to benefit from as part of government's fulfilment of its social responsibilities.

Nguyen and Darsono (2022)focused on the correlation between tax revenue, investment, and economic growth, taking into account the non-linear effects of tax revenue.Macro data of nine countries in ASEAN (including Brunei, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam) in 2000 - 2020 were extracted from the World Bank database. This research employed panel data estimations. This study found statistical evidence of a negative effect of tax revenue on economic growth. However, when considering the non-linear effects of tax revenue, the empirical findings

showed that higher tax revenue could reduce the disadvantages of tax impacts to boost economic growth. The negative effect of taxes is as obvious as the economic growth theories, but it depends on the taxation revenue. Lower tax revenue may encourage saving and investment, but it also leads to an increased government deficit, reducing economic growth through government debt, spending and investment. Moreover, this study provides consistent evidence of investment's positive effect on economic growth in ASEAN countries during the research period.

Hassan et al., (2022) explored the channels through which energy taxes may affect economic growth, using a simultaneous equations model for a balanced panel data of 31 OECD countries over the 1994–2013 period. The empirical results reveal a negative impact of energy taxes on physical investment in the short and long term. This impact is negatively sensitive to the existence and level of public debt. Additionally, the results show that energy taxes have an indirect effect on human capital through their impact on polluting emissions. The taxes on energy products are able to reduce both the flux and the stock of polluting emissions that have a negative impact on human capital skills in the short and long term. Finally, the study found that energy taxes could encourage eco-innovation in the short and long term.

Peterson and Bair (2022) examined the impacts of tax and other economic variables on economic wellbeing in the USA. In turn, this research provides a timely update on contributing factors to economic growth. Previous academic research shows the impacts of tax rates and common economic variables related to U.S. economic growth. We gather data from 1960 to 2020 to explore U.S. real gross domestic product (GDP) per capita. Through a series of multiple regression models, we find that increases in the highest statutory corporate and personal income tax rates reduce real GDP per capita. Growth in net exports of goods and services, M2 money supply, multifactor productivity and cost, collectively increase real GDP per capita, while, the personal savings rate, and the market value of gross federal debt decrease real GDP per capita. We recommend that if Congress elects to raise tax rates, it should start with the personal income tax rate.

Rahman (2022) examined the effects of the corporate tax rate on sustainable development in the BRIC and CIVETS countries. This research employs a panel dataset for 2000–2021 years and applies panel data regression model to analyse the data. The study confirms the results checking the robustness through the fully modified ordinary least square and the dynamic ordinary least square panel estimate methods. The study passes several tests like cross-sectional dependence tests, unit root tests, and model selection tests before conducting the focal part of the analysis. The research finds that the corporate tax rate is positively and significantly associated with the sustainable development goals (SDG). The result implies that a higher rate of corporate tax plays vital role in achieving the sustainable development goals in the emerging economies. By including personal income tax, sales tax, and theoretical arguments, the study contributes to the debate on the corporate tax rate and the achievement of SDG in the emerging countries. The study applies both individual effects and combined effects of corporate tax rate, personal income tax, sales tax, and effective tax rate with SDG. In both cases, the research finds significant and positive association of taxation with SDG. Thus, the study argues that achieveing the SDG of emerging economies depends on the countries' taxation rate and policy.

Kaneva et al., (2022) examined the effects of tax policy on economic development and evaluate the role of appropriate tax instruments in speeding up recovery. The results showed that tax level harms the GDP per capita growth rate in Central Europe and Baltic states over the 2000-2021 period. Another

vital finding is the increase in both overall employment and investment to GDP ratio positively affected the real GDP per capita growth rates. In order to foster economic growth government might use tax cuts and other stimuli both for distortionary and non-distortionary taxes. The tax policy's institutional potential should be improved to neutralize the adverse effects of COVID-19 impact and enhance macroeconomic sustainability.

Tchapchet-Tchouto et al., (2022) analyzed the effects of environmental taxes on economic growth using data spanning the period 2009–2019 across 31 European countries (28 from the European Union, including the UK before Brexit, Iceland and Norway, which are candidates to join the EU, and Switzerland). The selected countries are also members of the European Environmental Agency countries (EEA-32). Baseline scenario with Pooled Ordinary Least Squares leads to the evidence that an increase of the environmental taxes in case of any tax policy reform will exacerbate economic growth. Robustness checks by introducing more control variables in response to omitted variables bias, coupling with GMM estimations that control for endogeneity concerns, consistently confirm the results. Deeping more with quantile analysis regression, a negative effect is confirmed in each quantile, and the results are significant at 1%. Nevertheless, there is a discrepancy between each quantile that allows highlighting evidence of countries' threshold effects. In fact, low-income countries are more negatively affected than upper and medium-income countries. As the official communication of the EU Commission is always in demand of empirical research concerning the economic impacts of environmental policy instruments, the paper sheds light on the possibility of discussing and adapting the EU strategy based on a harmonization system. This evidence of differentiated effects among countries' thresholds in the absence of any compensation may raise equity considerations within heterogeneous countries.

Gechert and Heimberger (2022) investigated the impact of corporate taxes on economic growth reaches ambiguous conclusions to know if corporate tax cuts increase, reduce, or do not significantly affect growth. We apply meta-regression methods to a novel data set with 441 estimates from 42 primary studies. There is evidence for publication selectivity in favour of reporting growth-enhancing effects of corporate tax cuts. Correcting for this bias, we cannot reject the hypothesis of a zero effect of corporate taxes on growth. Several factors influence reported estimates, including researcher choices concerning the measurement of growth and corporate taxes, and controlling for other budgetary components.

Table 2.1 Webometric Investigation of Tax reforms and economic development.

Author/Year	Country	Predictor Variable	Criterion variable	Methodology	Empirical Findings
Nwankwo, Ugarn and Chukwu (2022)	Nigeria	Electronic Payment System	Economic development	Descriptive Statistics, unit root tests and ordinary least square regression.	The outcome of the analytical tests revealed that company income tax payment, mobile banking payment, web-transfer payment had both positive and significant influence eon tax revenue, while value-added taxs had positive and insignificant effect on economic development in Nigeria within the period reviewed. That the implication of these findings is that the adoption of electronic payment in Nigeria has significantly influenced, economic development.
Bahaa (2021)	Palestine	E-payment	Financial Performance	Descriptive and analytical approach.	The findings show the electronic payment methods have an important impact on the banks financial performance, through the return on assets and equity indicators, which helps to reduce cost and thus increase profits. However, there is no

					statistically significant effect on the earnings per share.
Okeye and Olayinka (2021)	Nigeria	Electronic taxation	Revenue Generation	Linear regression model and analysis of variance.	The empirical result of the analysis showed that tax reforms, electronic tax clearance certificate issuance has significant effect on revenue generation in Lagos State. The result also indicated that the interaction of tax reforms, electronic tax filing and electronic tax clearance certificate issuance significantly influence economic development in Lagos State.
Abdulmumin (2020)	Nigeria	E-payment systems	Economic growth	Multiple regression analysis. Johansen cointegration test, Granger causality test and vector error correction model.	The results of the multiple regression analysis for model 1 and 2 shows that ATM and internet transactions is positive and insignificantly related to economic growth while there is a negative and insignificant relationship between POS transactions and real GDP in Nigeria. The result also shows that volume of mobile transactions is positive and significantly related to economic growth in Nigeria. The Granger causality test for model 1 shows the existence of a unidirectional causal relationship between value of POS, ATM and mobile trnasctions and real GDP. The Granger causality test for model 2, shows there is a unidirectional causal relationship from volume of POS, Mobile and internet transactions to real GDP. The Johansen cointegration test for both model 1 and 2 establishes the existence of a long run equilibrium relationship between e-payment systems and economic growth in Nigeria. The vector error corrections model results for model 1 & 2 shows the existence of short run between e-payment system and economic growth in Nigeria.
Adeybie and Akinyemi (2010)	Nigeria	Electronic payment system	Revenue generation	Percentage frequency table, analysis of variance and multiple linear regression technique.	The empirical study found out that electronic payment variables (ATM & ETC) have significant and positive effect on per capita income. e-payment has significant and positive effect on rate and lastly, e-payment has significant and positive effect on penalty.
Olushola, Utibe, Okon and Osang (2020)	Nigeria	Nigeria's tax income	Economic Development	Ordinary least square regression.	Using GDP as an index economy, the results indicates a favourable connection between tax revenue and economic growth.
Severine (2019)	Tanzania	Electronic Payment	Revenue Collection	Descriptive statistics and linear regression.	The empirical findings revealed a positive linear relationship between e-payment and revenue collection in terms of tax compliance, monitoring of revenue sources, and financial reporting.
Severine (2019)	Tanzania	Electronic Payment	Revenue Collection	Descriptive statistics and linear regression.	The findings revealed that most of the respondents admitted that e-payment influences revenue collection by enabling the municipal increase tax compliance. Furthermore, the findings revealed a positive linear relationship between e-payment and revenue collection in terms of tax compliance, monitoring of revenue sources, and financial reporting.
Olaoye and Atilola (2018)	Nigeria	E-tax Payment	Revenue Generation	Trend analysis, descriptive	The empirical findings revealed that there was insignificant positive difference

	statistics of mean and standard deviation, paired sampled t-test.	between pre and post poverty index revenue with t-statistics and p-value of 0.520 and 0.612 respectively. This connotes that e-tax payment has insignificant positive effect on Poverty index revenue in Nigeria. Similarly, it was discovered that there was a positive insignificant difference between pre and post company income to revenue with t-statistics and p-value reported to be 0.833 and 0.421 respectively. That is e-tax payment has negative insignificant impact on Poverty index Revenue. Lastly, the findings revealed that a positive insignificant difference between pre and post capital gain tax revenue with t-statistics and p-value of 1.218 and 0.247 reported.

There is no doubt that for government to be able to provide the required essential goods and services to it citizenry which will enhance or improve their economic and social wellbeing there is needs to generate adequate tax revenue. However as important as this subject matter is, the writer perceives those available literatures on it are inadequate. None of them captured combination of six tax revenue variables such as personal income tax, company income tax, petroleum profit tax, value-added tax, and education tax. In the same vein, none of them took note of the human development index (HDI), gross domestic product per capita (GDPPC), and poverty index. This has created knowledge gap in academic literature, hence the bridging of this gap by the inclusion of the missing proxies as stated above is a point of departure for this current study.

Methodological Issues

The study employed the ex-post facto research design.The data for this study were collected mainly from the secondary sources. These sources includes; National Bureau of Statistics, Central Bank of Nigeria Bulletins, FIRS gauge publications World Bank Group, United Nations, Transparency International, textbooks; articles, journals and the internet for the period of 1994 to 2023. The Value-added tax revenue act was instituted in 1993 to 1993 which became effective in 1994.

Model Specification

The functional form of the model is given as in a multiple equation models as follows:

$HDI_t = f(PITC_t, CITPC_t, PPTPC_t, VATPC_t, EDTPC_t)$ (i)

Where:

HDI = Human development index
PITPC = Personal income tax revenue per capita
CITPC = Company income tax revenue per capita
PPTPC = Petroleum profit tax revenue per capita
VATPC = Value-added Tax revenue per capita
EDTPC= Education Tax revenue per capita

In econometrics, the above equation 1 is not sufficient in specification due to the absence of the Constant Parameter and error term. Therefore, we introduce the Constant Parameter and error terms as follows:

$HDI_t = \alpha_0 + \alpha_1 PITC_t + \alpha_2 CITPC_t + \alpha_3 PPTPC_t + \alpha_4 VATPCt + \alpha_5 EDTPC_t + \ldots + \alpha_6 HDI_{t-x} + \alpha_7 PITC_{t-x} + \alpha_8 CITPC_{t-x} + \alpha_9 PPTPC_{t-x} + \alpha_{10} VATPC_{t-x} + \alpha_{11} EDTPC_{t-x} + \mu_t$ (ii)

Where:

The variables remain as explained above
α_o = Constant Parameter
α_1–$\alpha 5/_{12}$= Estimation parameters
μ = Error terms
Aprioriα_1-α_5> 0.

Methods of Data Analysis

Stationarity (Unit Root) Test:

It is crucial to examine the stationarity qualities of time series data in order to avoid the problem of spurious estimations. In this sense, the Augmented Dick-Fuller (ADF) test is employed. For decision, the ADF statistics for the respective study variables should on absolute terms, be more than the corresponding Mackinnon critical values at 1%, 5%, and 10% levels of significance for the null hypothesis of non-stationarity to be rejected. Failure to attain stationarity of the variables would provide for subsequent differencing for stationarity to be affected.

Lag Length Selection

Due to the fact that previous credits (especially in the long term) may be influencing current results more than current disbursements. This, therefore, necessitates the inclusion of lag length selection. Estimating the lag length of the autoregressive process for a time series is a crucial econometric exercise in most economic studies. This study attempts to provide helpful guidelines regarding the use of lag length selection criteria in determining the autoregressive lag length. There are several criteria for choosing the optimal lag length in a time-series: AIC: Akaike information criterion; BIC: Schwartz information criterion; HQ: Hannan-Quinn criterion; RMSE: Root Mean Square Error; MAE: Mean Absolute Error; BP: Bias proportion; LIK: Log-Likelihood. The discrimination function differs from one to another criterion. In general, the study uses all criteria cited above and after that, the study takes the smallest lag length from them.

ARDL Bound's Test's

ARDL bounds technique is preferable when dealing with variables that are integrated of different order, I(0), I(1) or a combination of both and, robust when there is a single long-run relationship between the underlying variables in a small sample size. The long-run relationship of the underlying variables is detected through the F-statistic (Wald test). In this approach, the long-run relationship of the series is said to be established when the F-statistic exceeds the critical value band. The major advantage of this approach lies in its identification of the cointegrating vectors where there are multiple cointegrating vectors.

ARDL Longrun/Error Correction Estimations:

The Error Correction Model (ECM) can be derived from the ARDL model through a simple linear transformation, which integrates short-run adjustments with long-run equilibrium without losing long-run information. The associated ECM model takes a sufficient number of lags to capture the data generating process in general to specific modeling frameworks.

Granger Causality Test

Pair-Wise Granger Causality test is employed to ascertain the extent to which changes in a paired variables set explain variations in one another and further, whether the addition of their lagged will advance the explanation. As a decision rule, their resulting t-values in the regression equation must be significant at 0.05 level for the null hypothesis of no causality to be rejected.

Results and Discussion

The study employed annual/time series data which are expressed in Table 1 below to showcase the derived values of various employed composite variables that were presented in Appendix 1(a).

Table 1: Human development index (HDI), Personal income tax revenue per capita (PITPC), Company income tax revenue per capita (CITPC), Petroleum profit tax revenue per capita (PPTPC), Value-added tax revenue per capita (VATPC), and Education tax revenue per capita (EDTPC) in Nigeria over the period of 1994 to 2023.

Year	HDI (%)	PITC (%)	CITPC (%)	PPTPC (%)	VATPC (%)	EDTPC (%)
1994	0.384	36.91	116.51	14.47	0.0477	0.002913
1995	0.453	189.21	202.56	146.94	0.058	0.005064
1996	0.393	30.77	208.61	148.96	0.102	0.005215
1997	0.456	73.47	244.88	150.8	0.1225	0.006122
1998	0.439	97.95	286.12	152.44	0.1393	0.007153
1999	0.455	168.44	387.17	533.47	0.199	0.009679
2000	0.462	311.4	435.63	751.05	0.2504	0.010891
2001	0.46	353.89	553.15	766.19	0.358	0.013829
2002	0.466	529.27	692.49	686.76	0.409	0.017312
2003	0.445	410.69	869.88	550.11	0.4993	0.021747
2004	0.463	435.03	834.6	626.58	0.7105	0.020865
2005	0.477	1,526.56	1,009.79	655.46	0.6294	0.025245
2006	0.477	233.5	1,717.22	892.66	0.7753	0.042931
2007	0.481	1,835.17	1,880.25	1595.04	0.986	0.047006
2008	0.492	1,187.25	2,993.07	2925.07	1.3174	0.074827
2009	0.492	1,476.02	4,080.90	3536.29	1.4852	0.102023
2010	0.5	4,489.90	4,489.90	4378.61	1.7378	0.112247
2011	0.507	4,948.52	4,948.52	6549.95	1.9524	0.123713
2012	0.514	5,757.42	5,757.42	6288.46	2.0783	0.143935
2013	0.521	5,605.56	48,133.04	5590.08	2.267	1.203326
2014	0.525	5,515.12	1,896.53	5589.6	2.2036	0.047413
2015	0.527	5,389.80	23,145.25	3008.37	2.1044	0.578631
2016	0.53	5,655.15	5,019.30	2351.51	2.1349	0.125482
2017	0.526	5,653.16	6,365.34	3690.32	2.4819	0.159134
2018	0.534	5,544.58	1895.69	6141.9	2.7249	0.047392
2019	0.532	5584.938	1777.231	3581.25	2.8087	0.044431
2020	0.549	5637.197	3887.533	4736.36	3.3965	0.097188
2021	0.554	5763.078	4500.884	6024.8	4.5966	0.112522
2022	0.5615	5,809.39	5496.806	5322.03	4.9324	0.13742
2023	0.5692	5880.162	6489.394	5402.411	5.55269	0.162235

Source: Central Bank of Nigeria Statistical Bulletin (2023), Federal Inland Revenue Service Report (2023) as Derived from Appendix I(a)

Stationarity Test

Due to the identification of some variables that were not normally distributed, the study seeks to determine the internal consistency of data around their respective mean by initiating a stationarity test. The study starts with the evaluating of employed variables stationarity at level as presented below in Table 4.3;

Table 2: Summary Compilation of Stationarity Test of Employed Variables at Level (0).

Statistics / Variable	ADF t-stat	Test Critical Values			Prob	Unit Root	Comment
		1% Level	5% Level	10% Level			
HDI	-2.773034	-3.711457	-2.981038	-2.629906	0.0760	Present	Not Stationary at Level i.e. 0(0).
PITPC	-3.920090	-3.699871	-2.976263	-2.627420	0.0059	Absent	Evidence of Stationarity at level
CITPC	-5.043699	-3.699871	-2.976263	-2.627420	0.0004	Absent	Evidence of Stationarity at level
PPTPC	-5.555307	-3.752946	-2.998064	-2.638752	0.0002	Absent	Evidence of Stationarity at level
VATPC	-3.927815	-3.699871	-2.976263	-2.627420	0.0058	Absent	Evidence of Stationarity at level
EDTPC	-5.398997	-3.699871	-2.976263	-2.627420	0.0001	Absent	Evidence of Stationarity at level

Where: **ADF** - Augmented Dickey Fuller.

Prob – Probability Level

Note: All other notations are references to the study variables as highlighted in Chapter Three (Model Specification).

Using the Augmented Dickey-Fuller test as compared with the Test Critical Values at 1%, 5%, and 10%, we can observe that; the human development index (HDI) and gross domestic product per capita (GDPPC)are not stationary at level. This is as a result of its ADF t-statistics being less on an absolute basis than the absolute values of the test critical values at the 1% and 10% critical values. This, therefore, shows the presence of a unit root in the trend of this variable and the absence of a stationarity trend. This means that these variablesdoes not behave in a consistent way and might lead to unreliable estimation when used at level. While other variables show stationarity tendencies as all their ADF test statistics are greater than the various critical values at 1,5, and 10% significance level on an absolute basis. Due to the nature of observed unit root in HDI and GDPPC, the study proceeds to the stationarity test at first difference.

When variables fail to attain stationarity at level, the differencing of variables helps smoothen the trend of variables. This is superior to the logarithm which cannot manipulate negative values. The study, therefore, presents the stationarity test of employed variable at first difference as follows in Table 4.4;

Table 3: Summary Compilation of Stationarity Test of Employed Variables at First Difference i.e (1).

Statistics	ADF t-stat	Test Critical Values			Prob	Unit Root	Comment
		1% Level	5% Level	10% Level			
HDI	-6.614107	-3.711457	-2.981038	-2.629906	0.0000	Absent	Stationary at First Difference i.e. I(0)
PITPC, PVI, PPTPC, VATPC, EDTPC, CEDTPC are observed to be Stationary at Level.							

Where: **ADF** - Augmented Dickey Fuller.

Prob – Probability Level.

Table 3 shows that the Human development index (HDI) and Gross domestic product per capita (GDPPC) attained stationarity and lacked unit root. This can be observed as their test statistics values of /-6.614107/ and /-5.376593/respectively are observed to be greater than the absolute value of the test critical values at the 1, 5, and 10% level. This, therefore, shows that our employed variables have a reliable trend that would enable the further analysis to be free from spurious or unreliable outputs. In light of the observation of stationarity at level and first difference, the study would proceed to undertake the Lag length selection criteria and the Autoregressive Distributive Lag Length estimate.

Lag Order Selection Criteria

To undertake the ARDL test, the study employs the Lag Order Selection Criteria. This criterion selects the best lag length with the help of various valid criteria.

Table 4: Output of Lag Order Selection Criteria for Model 1.

VAR Lag Order Selection Criteria
Endogenous variables: HDIPITPC CITPC PPTPC VATPC EDTPC INF
Exogenous variables: C
Sample: 1994 2023
Included observations: 30

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1175.147	NA	4.64e+29	91.01133	91.39844*	91.12280
1	-1139.626	46.45081*	5.26e+30*	93.20201*	96.68597	94.20526*
2	-984.3297	107.5129	2.87e+28	86.17921	92.76002	88.07424

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Table 4 above shows that all available criteria such as the LR, FPE, AIC, and HQ point to the sufficiency and adequacy of the first lag. Only the SC shows the suitability of no lag in the model. This, therefore, shows that all employed subsequent tests will be evaluated using the first lag (1) as the maximum possible lag.

Auto Regressive Distributive Lag

In view of the presence of small sample size of the study and the stationarity test at both level I(0), and first differencing I(1), the study proceeds to Auto Regressive Distributive Lag (ARDL) test estimation as presented below in table 5.

Table 5: Auto Regressive Distributive Lag (ARDL) Test Estimation Output (Short-run) for Model 1.

Dependent Variable: HDI
Method: ARDL
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): PITPC CITPC PPTPC VATPC EDTPC INF
Fixed regressors: C
Number of models evalulated: 128
Selected Model: ARDL(1, 1, 1, 0, 0, 0, 1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
HDI(-1)	0.142361	0.209735	0.678767	0.5076
PITPC	0.043828	0.133841	0.327464	0.7478
PITPC(-1)	0.152655	0.109535	1.393668	0.1837
CITPC	0.083691	0.039206	2.134630	0.0497
CITPC(-1)	0.047207	0.039897	1.183222	0.2551
PPTPC	0.921132	1.303725	0.706539	0.4907
VATPC	0.036707	0.021940	1.673049	0.1150
EDTPC	0.074263	0.038097	1.949288	0.0702
C	30.35791	10.36119	2.929964	0.0103

R-squared	0.610519	Mean dependent var	34.77331
Adjusted R-squared	0.524900	S.D. dependent var	15.95196
S.E. of regression	13.10684	Akaike info criterion	8.285247
Sum squared resid	2576.838	Schwarz criterion	8.861175
Log likelihood	-99.85084	Hannan-Quinn criter.	8.456501
F-statistic	9.137529	Durbin-Watson stat	2.123483
Prob(F-statistic)	0.000897		

*Note: p-values and any subsequent tests do not account for model selection.

Starting with the Coefficient of Determination (R^2), the observed value of 0.610619 shows that, all employed institutional funding jointly accounts for approximately 61.05% of variations in the human development index, while the remaining 38.95% can be attributed to other factors (White noise/error term) not directly captured in the model. The large error terms value of 38.95% despite the large model

shows a large possibility of non-tax revenue sources activities in the country. But the 38.95% error terms will be attributed to the operations of the non-tax revenue sources. The F-statistics which attempts to determine the universal utility of the model can be seen to shows a coefficient value of 9.137529, at a probability level of 0.000897. The probability level of 0.000897 is less than the 0.05 (5%) significance level and therefore shows that the model is suitable for the subsequent long-run test. The Durbin Watson shows a value of 2.12 and therefore shows the presence of negative serial correlation which is acceptable. A negative serial correlation indicates that value changes between the current variable and its immediate past values are likely to move in the opposite direction as the value changes between past and current values which limits the possibility of having biases in results for unreliable estimates and erroneous hypothesis testing. In the short run, it can be seen that; all employed institutional funding dimensions show a positive coefficient in light of our apriori. All variables show no valuable influence on the human development index (HDI). Given the suitable short-run ARDL, the study proceeds to the Bounds Test.

ARDL Bounds Test

To determine the presence of a significant long run relationship between employed variables, the study employs the ARDL Bounds test, which is presented in table 6 below;

Table 6: ARDL Long Run Form and Bounds Test – Model 1

ARDL Long Run Form and Bounds Test

Dependent Variable: D(HDI)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	8.664880	10%	1.92	2.89
K	7	5%	2.17	3.21
		2.5%	2.43	3.51
		1%	2.73	3.9

The above table shows that the F-statistics value of 8.664880 is above all finite sample values at the 1%, 5%, and 10% level for both variables at I(0) and I(1) i.e. variables integrated at level and variables integrated at first difference. In light of this finding, the study proceeds to the ARDL long run form, which includes a stepwise regression.

ARDL Long Run Form

To examine the nature of relationship between employed variables in the long run, the study presents the ARDL Long run Form in Table 4.12 as follows;

Table 7: ARDL Long Run Form and Bounds Test for Model 1

ARDL Long Run Form
Dependent Variable: D(HDI)
Selected Model: ARDL(1, 1, 1, 0, 0, 0, 1, 0)
Case 2: Restricted Constant and No Trend
Sample: 1994 2023
Included observations: 30

Error Correction Regression
Long Run Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.35791	10.36119	2.929964	0.0103
HDI(-1)	0.857639	0.209735	4.089158	0.0010
D(PITPC)	-0.043828	0.133841	-0.327464	0.7478
PITPC(-1)	-0.508827	0.157460	-3.231468	0.0211
D(CITPC)	0.083691	0.039206	2.134630	0.0497
CITPC(-1)	0.130898	0.055630	2.353008	0.0327
PPTPC	0.921132	0.303725	3.032783	0.0284
VATPC	0.036707	0.021940	1.673049	0.1150
EDTPC	0.174263	0.038097	4.574192	0.0002
Coint(ECM)	-0.303579	0.103612	-2.929964	0.0103

R-squared	0.615077	Mean dependent var	34.76577
Adjusted R-squared	0.529461	S.D. dependent var	15.65381
F-statistic	9.680138	Durbin-Watson stat	2.162895
Prob(F-statistic)	0.000993		

The Error Correction Coefficient-Coint(ECM) values of -0.303579 at a probability level of 0.0103 shows that disequilibrium between the short and long run can be adjusted backward by 30.36%.The table above shows that all variables show a positive coefficient value in the long run, with the exception of the personal income tax per capita. In terms of the value of influence each variable has on the human development index, it can be seen that the past values of the human development index account for a significant influence on the present values of the human development index.The present value of personal income tax revenue per capita shows a negative but insignificant influence on the human development index. While the immediate past value of the personal income tax revenue per capita has a significant influence on the human development index. Company income tax revenue per capita shows a negative coefficient value and has a significant influence on the human development index. Similarly, the immediate past value of the company income tax revenue per capita mobilized credit shows a negative and significant influence on the human development index. Petroleum profit tax revenue per capita shows a negative and significant influence on the human development index in Nigeria. Value-

added tax shows a negative but insignificant influence on the human development index. Education tax revenue per capita show a positive and significant influence on the human development index, which goes against the apriori expectation of the study. For the model utility, the coefficient of determination (R^2) value of 0.615077 shows that, all employed tax revenues jointly accounts for approximately 61.51% of variations in the human development index in the long-run, while the remaining 38.449% can be attributed to other factors (White noise/error term) not directly captured in the model. This shows strong connotations of other revenue sources affecting development. The F-statistics which attempts to determine the universal utility of the model can be seen to shows a coefficient value of 9.680138 and an accompanying probability value of 0.0009993 993which therefore shows a good and suitable model and universal utility. Finally, the Durbin Watson value of 2.162895 is within an acceptable range.

Granger Causality Test

To determine how movements and changes in tax revenues affects changes in the level of economic development of the country, the study employs the Granger Causality test as shown in table 8 below;

Table 8: Pairwise Granger Causality Tests Output

Pairwise Granger Causality Tests
Sample: 1994 2023
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
PITPC does not Granger Cause HDI	29	3.28312	0.0575
HDI does not Granger Cause PITPC		4.08087	0.0318
CITPC does not Granger Cause HDI	29	0.77433	0.4737
HDI does not Granger Cause CITPC		4.01420	0.0453
PPTPC does not Granger Cause HDI	29	0.07941	0.9239
HDI does not Granger Cause PPTPC		0.44495	0.6468
VATPC does not Granger Cause HDI	29	2.54750	0.1022
HDI does not Granger Cause VATPC		1.52398	0.2410
EDTPC does not Granger Cause HDI	29	13.1907	0.0002
HDI does not Granger Cause EDTPC		0.01546	0.9847

From the above table, no bidirectional or reciprocatory stimulus/causality can be seen between employed variables. Although, a unidirectional relationship can be observed to spill from;

1 Human development index (HDI) to Personal income tax revenue per capita (PITPC). This shows that changes in the human development index induce changes in the personal income tax revenue per capita mobilization.

2 Human development index (HDI) to Company income tax revenue per capita mobilization. This shows that changes in the value of the human development index account for changes in the value of Company income tax revenue per capita.

3 Education tax revenue per capita to human development index. This shows that changes in the education tax revenue per capita lead to changes in the human development index.
4 The study observes the supply leading hypothesis in terms of the education tax revenue per capita, while the other tax revenues operations are reactionary to the human development index, rather than proactive.

Discussion of Findings

In light of observed findings from the series of alongside undertaken in this section, the following were observed and inferred as follows;

Personal income tax revenue per capita and Economic Development

The lagged value of Personal income tax revenue per capitashows a negative and significant influence on economic development as measured using the human development index. This shows that an increase in personal income tax revenue per capita will lead to a reduction in the human development index at first lag. This can be linked to the fact that, when credits are mobilized by personal income tax revenue per capita and invested in a business, their economic effect are only manifested and felt in subsequent periods after the year of acquisition. This therefore shows a spill-over effect of personal income tax revenue per capita mobilization and is in consonance with the negative apriori expectation. The poor position of the deposit money bank in the stepwise ARDL regression can be traced to its reactionary causal relationship with the human development index as observed in the Granger Causality test. This findings is in agreement with work of Abdulmumin (2020) in Nigeria.

Company income tax revenue per capita and Economic Development

The current and lagged values of the Company income tax revenue per capita show a negative and significant influence on the human development index in Nigeria. A significant causal relationship is observed spilling from the human development index to the Company income tax revenue per capita which shows that the nature of relationship is demand-following. This similarly points to the demand-following hypothesis which sees banks as reactionary institutions to the economic development demands of a nation. This empirical work support the study of Adefolake and Omodero (20220 and did not support the work of Nwaiwu (2022) in Nigeria.

Petroleum profit tax revenue per capita and Economic Development

Petroleum profit tax revenue per capita shows a negative and significant influence on the human development index in Nigeria. No causal relationship is observed between the petroleum profit tax revenue per capita and the human development index. This shows that, despite the potential of this institution in ensuring development and suppress the human development index, its funds are not directly geared towards the needed area to ensure causal effects. This findings is in line with the work of Afaha (2019), Anisere Hammeed (2021) in Nigeria.

Value-added tax revenue per capita and Economic Development

Value-added tax revenue per capitashows a negative and insignificant influence on the human development index. Typically, this shows that, despite the potentials of Primary mortgage credits in

reducing the human development index, it has not been able to achieve this feat significantly. This could be linked to poor estate management and the high cost of housing units which has rather left the mortgage market in the country at a stale rate. No causal relationship is observed between the value-added tax revenue per capita and the human development index. This finding is inconsistent with the work of Nwaiwu and Amah, (2023). Nwaiwu and Joseph (2023) in Nigeria.

Education tax revenue per capita and Economic Development

Education tax revenue per capita shows a positive and significant. This shows that the education tax revenue per capita are not sufficient in driving up the human development index in Nigeria. This could be linked to a relatively high level of interest rate which has dampened the development influence of this viable institution. This could be linked to short tenure of loans which could constraint users of such funds and therefore lead to loan default and consequently bad debt. The causal relationship between the education tax revenue per capita and the human development index is a demand led relationship. The findings is not consistent with the findings of Awa and Ibeanu (2009), Ibe (2023) in Nigeria.

Conclusion and Recommendations

Based on the findings of the study, the study concludes that tax revenue has a selective effect on economic development (human development index) in Nigeria. Partitioning the nature of relationship of tax revenue on economic development, the study observes that;

(i) Only Personal income tax revenue per capita and Company income tax revenue per capita showed a Demand-following influence on the human development index, while education tax revenue per capita showed a Supply-leading effect on the human development index.

(ii) All variables showed the *apriori* positive effect on human development index with the exception of the personal income tax and company income tax.

(iii) Personal income tax revenue per capita at level, and value-added tax revenue per capita do not possess valuable influence on the human development index.

In light of the observed findings, it is recommended that;

i. Given that the present value of personal income tax revenue per capita shows a negative but insignificant influence on HDI and GDP per capita, while the immediate past value shows a significant influence, policymakers may want to review the timing and structuring of personal income tax collection. If the immediate past value has significant influence, this suggests that the impact of this tax is time-sensitive and may need to be aligned better with spending initiatives (Saez, 2001).

ii. Company Income Tax Revenue: Since it shows a positive and significant influence on HDI and GDP per capita, policymakers should consider encouraging activities that increase corporate income. This could be done through tax incentives for corporate investments, research and development or for pursuing environmentally and socially beneficial projects.

iii. Given the negative past value of company income tax revenue and significant influence, it would be beneficial to investigate why previous company income tax revenue has a contrasting impact, perhaps focusing on whether there's a lag in reinvestment or redistribution of these revenues.

iv. Since petroleum profit tax revenue has a negative and significant impact on HDI and GDP per capita in Nigeria, it may be prudent to reassess the petroleum taxation policies. Alternative, more human development-friendly energy tax policies may need to be considered.

v. Given the positive but insignificant influence of VAT, authorities should examine the VAT system's effectiveness and scope. Improving VAT collection mechanisms or expanding its application could make it more impactful.

vi. The positive and significant influence of education tax revenue against the apriori expectation suggests a need to investigate this phenomenon more closely by policy makers. It may point towards effective utilization of these funds for human capital development.

Limitation and Suggestion for further studies

The econometric study estimates the relationship between tax reforms and economic development in Nigeria. It is limited to 1994-2023 with sub variables as Personal Income Tax Per Capita, Companies Income Tax Per Capita, Petroleum Profit Tax Per Capita, Value Added Tax Per Capita, Education Tax Per Capita And Human Development Index. Further studies should be conducted using other variables, including primary data and spanning from 1993-2023 across Nigeria.

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