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# TAX REVENUE AND ECONOMIC DEVELOPMENT IN NIGERIA

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## ABSTRACT

The study was conducted to investigate the impact of tax revenue on the economic development in Nigeria with reference to time frame that spanned from 1994 to 2021. The study employed gross domestic product per capita as measures of economic development and considered petroleum profit tax, value-added tax and custom and excise duty as tax revenue sources. also using inflation as the mediating variable Secondary data was employed from the annual report and repository of the Central Bank of Nigeria, the federal inland revenue services online report. The employed data analysis techniques in the study are the Stationarity, Autoregressive Distributive Lag, the stepwise, and the 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 petroleum profit tax revenue per capita, had a valuable influence on the economic development. Inflation rate was observed to positively and significantly moderate the relationship between tax revenue and economic development in Nigeria. The study therefore concludes that that tax revenue had selective effect on economic development in Nigeria. Based on these findings, the study recommended, among others that tax authorities should encourage individuals to pay tax so as to improve the growth of the economy which the companies would benefit from, Tax holidays or incentives should be given to companies and institutions and individuals who have been compliant to tax payment.

## KEYWORDS

Tax Revenue, Economic development, Petroleum profit tax, Value Added tax, custom and excise duty, gross domestic product per capita, Inflation



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## Introduction

Nigeria has experienced some growth in GDP, yet this growth does not translate into social development as high poverty, poor health, illiteracy and inequality level persist irrespective of the several tax reforms over the years. Statistics show that the contribution of tax revenue to the government total revenue remained low. Thus, going by the dictates of theoretical postulations, tax revenues are supposed to enhance the development of a nation through economic stimulation and creation of enabling environment for sectorial openness and activities. Bearing in mind this ideal situation and juxtaposing it with the Nigeria situation, one could not but perceive that this theoretical assumption is rarely a true reflection of what is practically on ground and this has remained an issue of academic debate. Researchers have come up with diverse opinion on whether the Nigerian tax revenues over the years has been able to affect the much-needed economic development.

The United Nations Development Program and the World Bank (WB) data show that Nigeria has a very poor tax system and has one of the lowest records of economic development based on gross domestic per capita. The direct impact of poor tax revenues on Nigeria's gross domestic product 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 petroleum profit tax, value added tax, and custom and export duties affect Nigeria's gross domestic product per capita and the possible mediating effect of inflation.

Numerous studies have been conducted by researchers attempting to measure the economic benefits of tax revenue in many countries including Nigeria. (Awa & Ibeanu, 2018); Sani & Ahmed, 2019, Okon&Osang 2020, Olaoye, Ogundipe&Oluwadare 2019). Note that there is burgeoning literature directed at the relationship between tax revenue 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 gross domestic product per capita in developing countries like Nigeria (Awa & Ibeanu, 2018; Sani & Ahmed, 2019 Okonkwo et al 2018). 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 measure gross domestic product per capita in particular.

Emphasis on product-oriented development indices is premised on the fact that any development that does not address the issue of productivity of a nation in term out output 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 by improvement in GDP first and other human variables. Various Researcher 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 Basse, (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 or development. None of them captured combination these mix tax revenue variables; personal income tax, company income tax and value added tax. In the same vein, none of them took note of the complete product aspects of economic development (Gross domestic product per capita GDPPC) nor do they consider the possible mediating effect of inflation in the relationship between tax revenue and economic development. 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. Thus, this current study is designed to examine the impact of tax revenue on economic development of Nigeria, using petroleum profit tax, value added tax and custom and exercise duty as indicators to capture tax revenue and gross domestic product per capita as indicator to capture economic development considering time period that spanned from year 1994 to 2021, the study also considered the mediating effect of inflation on the impact of tax revenue on economic development of Nigeria.

### The Objective of the study

The objectives of this study were to;

1. Examine the relationship between petroleum profit tax and gross domestic product per capita.
2. Determine the extent to which Custom and exercise duty relates to gross domestic product per capita.
3. Ascertain the relationship between Value added Tax and gross domestic product per capita.
4. Examine how inflation rate moderates the relationship between tax revenue and economic development in Nigeria.

### Research Questions

The research Questions developed to guide this study were

1. What is the relationship between petroleum profit tax and gross domestic product per capita?
2. To what extent does Custom and exercise duty relate to gross domestic product per capita.
3. What is the relationship between Value added tax and gross domestic product per capita?
4. Does inflation rate moderate the relationship between tax revenue and economic development in Nigeria?

### Statement of Hypotheses

The following null hypotheses are hereby stated in line with the objective of this study:

**H<sub>01</sub>:** There is no significant relationship between petroleum profit tax and gross domestic product per capita.

**H<sub>02</sub>:** There is no significant relationship between Custom and exercise duty and gross domestic product per capita.

**H<sub>03</sub>:** There is no significant relationship between value added tax and gross domestic product per capita

**H<sub>04</sub>:** Inflation rate does not moderate the relationship between tax revenue and economic development in Nigeria.

### Literature Review

#### Conceptual Review

#### Tax Revenue

The concept of tax revenue states that social and political objectives should be the major factors in selecting taxes. The concept advocated that a tax system should not be designed to serve individuals but should be to cure the ills of society as a whole. This is basically an exchange relationship between

tax payers and the state. The state provides certain goods and services to the members of the society and they contribute to the cost of these supplies in proportion to the benefits received. A country's tax system is a major determinant of other macroeconomic indexes. Specifically, for both developed and developing economics, there exists a relationship between tax structure and the level of economic growth. Indeed, it has been argued that the level of economic development has a very strong impact on a country's tax base and tax policy objectives vary with the stages of development (FIRS, 2015).

Rostow-Musgrave model (1999) carried out research on growth of public expenditure when they focused mainly on the utilization of taxes as the major revenue source, concluded that, at the early stages of economic development, the rate of growth of public expenditure will be very high because government provides the basic infrastructural facilities and most of these projects are capital intensive, therefore, the spending of the government will increase steadily. The main purpose of tax is to raise revenue to meet government expenditure and to redistribute wealth and manage the economy (Jhingan, 2004). In this study three main source of tax revenue was considered and they are;

### **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 its account by any drilling, mining, extracting or other like operations or process, not including refining at a refinery in the course 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).

Evidence on record shows that the country has proven oil reserve of 36 billion barrels, condensate of 4 billion barrels, proven gas reserve of 187 trillion cubic feet and the present average daily production of oil is 2.6 million barrels (Agbogun, 2004, Egbogah, 2010). The administration of petroleum profit tax in Nigeria has mainly been focused on revenue generation to the detriment of stimulating economic growth and development (Ogbonna, 2009). Adegbe (2009) averred that oil sector is the main hub of the Nigerian economy and need to be sustained if the country is to achieve real economic growth. The institutional capacity to administer petroleum taxes effectively is woefully lacking in Nigeria petroleum tax system (Adegbe, 2011). The petroleum profit tax (PPT) is applicable to those companies engaged in petroleum operations as defined above. These operations include petroleum exploration, petroleum development, petroleum production and sale of crude oil, and the transportation by pipeline of crude oil to the port of export by, or on behalf of a company engaged in petroleum operations excluding the transportation by ocean-going vessels from the point of export to a foreign market.

### **Custom and Excise Duties**

Customs duties in Nigeria are the oldest form of modern tax revenue. Their introduction dates back to 1860 known as import duties, which represents taxes on imports into Nigeria, charged either as a percentage of the value of imports or as a fixed amount of contingent on quantity (Buba 2007). Customs duty is a major source of revenue for the Federal Government which is payable by importers of specified goods (Buyonge 2008). According to Buba (2007), excise duties were also introduced on

several goods to broaden the revenue base in Nigeria in 1962. Customs and excise duties is an important component of the non-oil revenue and has remained an important source of revenue before and after discovering of oil in Nigeria and over the years contributed significantly to national development. Import duty is a tax collected on imports by the customs authorities of a country. It is usually based on the value of the goods that are imported. Depending on the context, import duty may also be referred to as customs duty, tariff, import tax and import tariff. There are two distinct goals to import duties: to raise income for local government, and to give a market advantage to locally grown or produced goods that are not subject to import duties. A third related goal is sometimes to penalize a particular nation by charging high import duties on its products. Ultimately for consumers, the cost of the duty is added to the price paid for the good. As such, all other things being equal, the exact same good produced internally should cost less, giving an advantage to the local producers.

### Value added tax

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).

VAT is a consumption tax that is relatively easy to administer and difficult to evade and it has been embraced by many countries world-wide (Federal Inland Revenue Service, 1993). Value-added Tax Act, 1993 is the law that regulates the collection of tax due on goods or services. (Adereti 2011). It was introduced to replace the old sales tax. It is a consumption tax levied at each stage of the consumption chain, and is borne by the final consumer. It requires a taxable person upon registering with the Federal Inland Revenue services to charge and collect VAT at a flat rate of 5% of all invoiced amounts of taxable goods and services. (Ariyo, 1998).

The precedence for the introduction of VAT in Nigeria was based on the fact that taxation as an instrument of fiscal policy is vital in generating revenue to finance the activities of government, redistribute income, stabilize the economy as well as stimulate growth and development. This view was affirmed by Udoh & Ebong quoted by Damain (2010). According to Oserogho and Associate as quoted by Adereti, Sanini& Adesina (2011). VAT is a consumption tax levied at each stage of the consumption chain and borne by the final consumer of the product or service. Each person is required to charge and collect VAT at a flat rate of 5 percent on all invoiced amount on all goods and services, not exempted from paying VAT, and under the value added tax Act 1993 as amended. Where reverse is the case, the taxpayer is entitled to a refund of the excess VAT paid on more practically, to receive a tax credit of the excess VAT from the government. All exports are zero rated for VAT that is, no VAT is payable on exports. VAT is payable in the functional currency under which goods or services are exchanged. VAT is charged and payable on supply of all goods and services other than the following: (VAT exemptions): All medical and pharmaceutical products, basic food items, books and educational materials, plant, machinery and goods imported for use in the export processing zone or free trade zone, plant, machinery and equipment purchased for utilization of gas in downstream petroleum operations, tract. Till date value added tax rate in Nigeria is 5%. But there is a proposal now to increase it to 7%.

## Gross Domestic Product per capita (GDPPC)

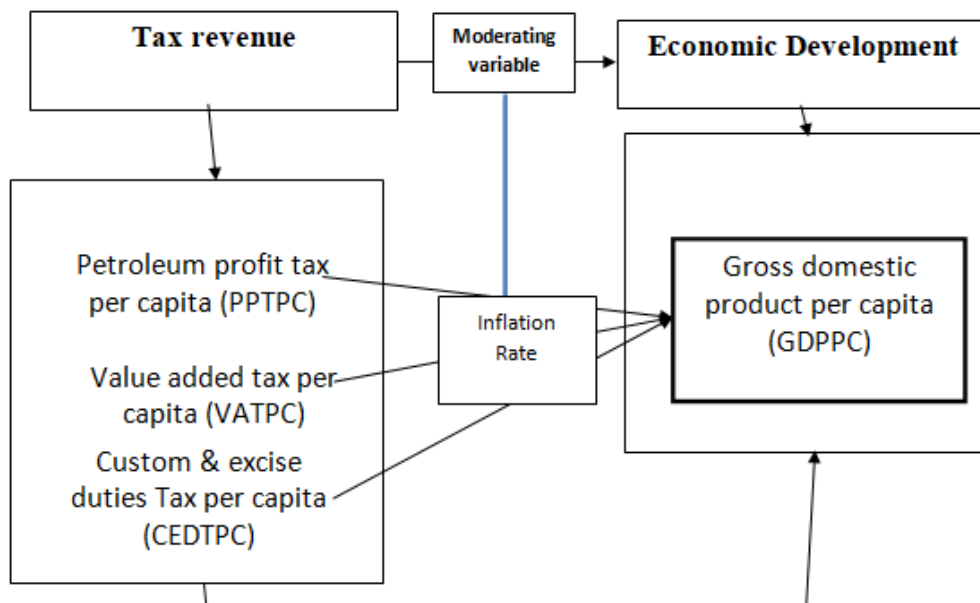
Gross domestic product per capita (GDPPC) is the total value of goods and services produced divided by the population in a country during a year. It is a production in relation to population. Nigeria is a middle-income, mixed economy and emerging market, with expanding manufacturing, financial, service, communications, technology and entertainment sectors. It is ranked as the 21st-largest economy in the world in terms of nominal GDP, and the 20th-largest in terms of purchasing power parity. It is the largest economy in Africa; its re-emergent manufacturing sector became the largest on the continent in 2013, and it produces a large proportion of goods and services for the West African subcontinent. In addition, the debt-to-GDP ratio is 11 percent, which is 8 percent below the 2012 ratio. (Nigerian National Bureau of Statistics, 2013).

Previously hindered by years of mismanagement, economic reforms of the past decade have put Nigeria back on track towards achieving its full economic potential. Nigerian GDP at purchasing power parity (PPP) has almost tripled from \$170 billion in 2000 to \$451 billion in 2012, although estimates of the size of the informal sector (which is not included in official figures) put the actual numbers closer to \$630 billion. Correspondingly, the GDP per capita doubled from \$1400 per person in 2000 to an estimated \$2,800 per person in 2012 (again, with the inclusion of the informal sector, it is estimated that GDP per capita hovers around \$3,900 per person). (Population increased from 120 million in 2000 to 160 million in 2010). These figures were to be revised upwards by as much as 80% when metrics were to be recalculated subsequent to the rebasing of its economy in April 2014. Although oil revenues contribute 2/3 of oil revenue, oil only contributes about 9% to the GDP. Nigeria produces only about 2.7% of the world's oil supply (in comparison, Saudi Arabia produces 12.9%, Russia produces 12.7% and the United States produces 8.6%). Although the petroleum sector is important, as government revenues still heavily rely on this sector, it remains a small part of the country's overall economy. This is the same thing with tax revenue, it has contributed an insignificant amount to the GDP over the years. (Nigerian National Bureau of Statistics, 2013).

The largely subsistence agricultural sector has not kept up with rapid population growth, and Nigeria, once a large net exporter of food, now imports some of its food products, though mechanization has led to a resurgence in manufacturing and exporting of food products, and the move towards food sufficiency. In 2006, Nigeria successfully convinced the Paris Club to let it buy back the bulk of its debts owed to them for a cash payment of roughly US\$12 billion.

Report from Citigroup (2011), predicted that Nigeria will get the highest average GDP growth in the world between 2010 and 2050. Nigeria is one of two countries from Africa among 11 Global Growth Generator countries. In 2014, Nigeria changed its economic analysis to account for rapidly growing contributors to its GDP, such as telecommunications, banking, and its film industry. (Glossary Nigeria, 2015).





**Figure 1 Conceptualized Framework of Tax Revenue and Economic development in Nigeria**

### Theoretical Farmwork

#### Wagner's law of increasing state activity theory

Wagner's Law is named after the German political economist Adolph Wagner (1835-1917), who developed a "law of increasing state activity" after empirical analysis on Western Europe at the end of the 19th century. He argued that government growth is a function of increased industrialization and economic development. Wagner stated that during the industrialization process, as the real income per capita of a nation increases, the share of public expenditures in total expenditures increases. The law cited that "The advent of modern industrial society will result in increasing political pressure for social progress and increased allowance for social consideration by industry."

Wagner (1893) designed three focal bases for the increased in state expenditure. Firstly, during industrialization process, public sector activity will replace private sector activity. State functions like administrative and protective functions will increase. Secondly, governments needed to provide cultural and welfare services like education, public health, old age pension or retirement insurance, food subsidy, natural disaster aid, environmental protection programs and other welfare functions. Thirdly, increased industrialization will bring out technological change and large firms that tend to monopolize. Governments will have to offset these effects by providing social and merit goods through budgetary means.

Wagner's law of increasing state activity states that as per capita income in an economy grows; the relative size of the public sector will grow. He divides government expenditure into three categories, namely, administration and defense, cultural and welfare functions, and provision of direct services by government in cases of market failure. Rather than allow for monopoly to emerge, government usually create statutory corporations such as Distribution Company of Nigeria (DISCON), Water Boards, aviation, telecom, Post Office inter alia cushion harsh economic situation of her citizens. He further posits that as the economy becomes industrialized, urbanization and high-density living result. This invariably leads to externalities (market failure) and congestion which require government intervention and regulation (Ayuba, and Hegstad, 2014).

The growth in public expenditure on education, recreation, health, and welfare services is explained in terms of their income-elastic want (Ayuba, and Hegstad, 2014). Wagner further submits that as real income increases public expenditure on education, health, transportation, road network etc would

increase more than in proportion. This explains the rising ratio of government expenditure to gross national product (GNP) as reported by Nyong (2005) in his public policy assessment of Nigeria expenditure situation.

### Empirical Review

Some empirical studies that are directly related to the current study are follows

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.

Okonkwo et al., (2022) ascertained the relationship between Tax Revenue and Productivity of Nigeria for sixteen years ranging from 2005-2020. Specifically, this study ascertained the relationship between Value Added Tax, Petroleum Profit Tax, Personal Income Tax and Gross Domestic Product per Capita. The time series data sets used in this study were obtained from Central Bank of Nigeria Statistical Bulletin, Securities and Exchange Commission Office publications, National Bureau of Statistics publications and World Bank Statistical Bulletin for the study period. Longitudinal research design was employed. Inferential statistics using Augmented Dickey-Fuller (ADF) test, Pearson correlation coefficient, Ordinary Least Square regression analysis, Granger Causality test, Johansen Co-integration test and Error Correction Model were applied to test the hypotheses of the study. The specific findings showed that there is a significant but negative relationship between Value Added Tax and GDP per Capita ( $\beta_1 = -0.383441$ ;  $p\text{-value} = 0.0342$ ); a significant but negative relationship between Petroleum Profit Tax and GDP per Capita of Nigeria at 5% level of significance ( $\beta_2 = -0.385457$ ;  $p\text{-value} = 0.0305$ ); a significant but negative relationship between Personal Income Tax and GDP per Capita of Nigeria at 5% level of significance. The study recommended inter alia that Federal Government should take strict measures to close all administrative loopholes in the administration and management of tax in Nigeria. If this is done, the revenue accruable from taxation will increase and boost provision of social amenities and infrastructures in Nigeria.

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.

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.

Odu (2022) investigated the effect of Value-added Tax (VAT) on revenue generation and economic growth in Nigeria. It specifically examined the effect of VAT on Gross Domestic Product (GDP) and the total revenue generated in Nigeria for the period (1994-2018) as well as the trend of VAT in the period under review. Time-series data were employed in the study to run the regression for VAT on total tax revenue and GDP. The vector error correction and autoregression models were used in the regression. VAT, total tax revenue and GDP were included in the data at the end of each year for the period (1994-2018). In other to accommodate the long-run properties of the variables, tests for stationarity and co-integration were carried out. The study finds that VAT has a significant effect on total tax revenue with a two-year lag and it increasingly explains changes in total tax revenue with time. The study also shows that VAT has a significant and negative effect on GDP with a one-year lag. The trend in VAT has a positive coefficient, indicating that VAT increases with time. In view of the findings, the study, therefore, recommends that government should critically evaluate the process of VAT collection, eliminate bureaucratic procedures and improve transparency so that economic units can synchronise their efforts with those of tax authorities.

## Methodology

**Research Design:** Research design is a term used to describe a number of decisions which need to be taken regarding the collection of data before ever the data are collected. The research design chosen for this work is quasi-experiment design which is a design that test causal hypothesis.

**Method of Data Collection:** The data for this study will be collected mainly from the secondary sources. These sources include; 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 1990 to 2021. Note that, the United Nations/World Bank data on human development index which was conceptualized in 1990 only capture the period of 2002 and above. So, the researcher used the same formula approved by UN in computing the values for the missing years (1990-2001).

**Operational Measures of the Variables:** At this juncture, it is important to show how the variables under study are to be measured in form of the operational use and have quantitative values of them. As such, the dependent and independent variable shall be stated with their expected relationship. That is the relationship between the dependent variable which is the economy development of Nigeria (proxy by Human development Index HDI and Gross Domestic product per capita GDPPC) and the

independent variable whose dimensions are personal income tax, company income tax, petroleum profit tax, value added tax, education tax and custom and excise duties.

### Measures independent variables and dependent variable

#### Dependent Variable (Economic development Captured with-Gross Domestic Product per capita)

The study employed end of the year value of Gross Domestic Product per capita (GDPPC) as dependent variable in this study to capture the Nigerian Economy. By this, we mean, the monetary value of all goods and services produced in a geographical confine divided by the total population during a particular period usually a year.

In Nigeria, the per capita doubled from \$1400 per person in 2000 to an estimated \$2,800 per person in 2012 (again, with the inclusion of the informal sector, it is estimated that per capita hovers around \$3,900 per person). (Population increased from 120 million in 2000 to 160 million in 2010). These figures were to be revised upwards by as much as 80% when metrics were to be recalculated subsequent to the rebasing of its economy in 2014. Thus, after the height achieved in 2012, the per capita income has been fluctuating starting from \$2,944, \$3,182, \$2,677 and \$1,976 in 2013, 2014, 2015, 2016 and 2016 respectively (CBN, 2019).  $GDPPC = PPTPC, VATPC, CEDPC > 0$

#### Independent variable (Tax Revenue captured with PPTPV, VATPC and CETPC)

##### Petroleum profit tax revenue per capita

This is the total tax derived from the petroleum operation divided by the total population of a given geographical location during a particular period usually one year. According to Buba (2007), Nigerian law by virtue of the Petroleum Profits Tax Act 1990 requires all companies engaged in the extraction and transportation of petroleum to pay tax. The taxable income of a petroleum company comprises proceeds from the sale of oil and related substances used by the company in its own refineries plus any other income of the company incidental to and arising from its petroleum operations. Adereti (2011) explained that the taxable income of a petroleum company is subject to tax at 85%, but this percentage is lowered to 65.75% during the first 5 years of operation but where oil companies operate under production sharing contracts, they will be liable to tax at a rate of 50%. This makes the foreign trade sector the major source of revenue in the 1960s. Most past results like that of Ogbonna and Ebimobowei (2011), reported that PPT has a positive impact on Nigeria's economy. So, in this study, the apriori of petroleum profit tax is expected to be a positive function of Gross Domestic Product (GDP), Thus, on the apriori  $HDI/PPTPC = > 0; GDPPC/PPTPC = > 0$

##### Value Added Tax Revenue per capita (VATPC)

This is the total tax revenue derived from consumption of good and services (VAT) divided by the total population of a given geographical area during a particular period usually one year. It is a consumption tax levied at each stage of the consumption chain, and is borne by the final consumer. It requires a taxable person upon registering with the Federal Inland Revenue Services to charge and collect VAT at a flat rate of 5% of all invoiced amounts of taxable goods and services. (Ariyo, 1998).

Adereti (2011) explained that evidence so far supports the view that VAT revenue is already a significant source of revenue in Nigeria. For example, actual VAT revenue for 1994 was N8.189

billion, which is 36.5% higher than the projected N6 billion for the year. Similarly, actual VAT revenue for 1995 was N21 billion compared with the projected N12 billion. In terms of contributions to total federally collected revenue, VAT accounted for about 4.06 % in 1994 and 5.93% in 1995. As much as N404.5 billion was collected on VAT (5.1% of total revenue) in 2008. Every person, whether resident in Nigeria or non-resident in Nigeria, who sells goods or renders services in Nigeria under the VAT Act (as amended) is obligated to register for VAT within six months of its commencement of business in Nigeria. Registration is with the Federal Inland Revenue Services (FIRS). Thus, on the apriori:  $GDPPC/VATPC = >0$

### Custom and excise duties

Customs duty is a major source of revenue for the Federal Government which is payable by importers of specified goods (Buyonge 2008). According to Buba (2007), Customs and excise duties were also introduced on several goods to broaden the revenue base in Nigeria in 1962. Customs and excise duties is an important component of the tax revenue and has remained an important source of revenue before and after discovering of oil in Nigeria and over the years contributed significantly to national development. It is a tax collected on imports by the customs authorities of a country. Thus, on the apriori,  $GDPPC/CEDPC = >0$  Thus on the aggregate, apriori is expected to be  $\beta_1 - \beta_6 > 0$

**Data Analysis Technique:** The model was estimated using the Ordinary Least Square (OLS) techniques. Regression analysis is a statistical tool which helps to predict one variable from the other variable on the basis of assumed nature of the relationship between the variables. The following statistic would be analyzed in solving the problem under study.

### Model Specification

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

$$GDPPC_t = f(PPTPC_t, VATPC_t, CEDTPC_t) \dots \quad (i)$$

Where:

GDPPC = Gross Domestic Product per capita

PPTPC = Petroleum profit tax revenue per capita

VATPC = Value Added Tax revenue per capita

CEDT = Custom and excise duty 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:

$$GDPPC_t = \beta_0 + \beta_1 PPTPC_t + \beta_2 VATPC_t + \beta_3 CEDTPC_t + \dots + \beta_7 GDPPC_{t-x} + \beta_{10} PPTPC_{t-x} + \beta_{11} VATPC_{t-x} + \beta_{13} CEDTPC_{t-x} + \beta_{14} INF_{t-x} + \mu_t \quad (iv)$$

Where:

The variables remain as explained above

$\beta_0$  = Constant Parameter

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$  = Estimation parameters

$\mu$  = Error terms  
 Apriori  $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0, \beta_6 > 0$

**Methods of Data Analysis**

To understand the nature and type of relationship between employed variables, the study employs the descriptive statistics, Stepwise Autoregression evaluation, ARDL Bound’s Test, ARDL Long run/Error Correction Estimations, and Granger Causality Test.

**Results and Discussions**

**Descriptive statistics results**

The employed variables all have unique and peculiar trends. A direct analysis without the observation of this trend would limit the nature of the conclusion and generalization made by the study. In light of this, the study employs descriptive statics of employed variables as presented as follows;

**Table 1: Descriptive Statistics of Gross Domestic product Per Capita (GDPPC), Petroleum profit tax revenue per capita (PPTPC), Value added tax revenue per capita (VATPC), Custom and excise duty per capita (CEDTPC), and Inflation rate (INF) in Nigeria over the period of 1994 to 2021.**

	GDPPC	PPTPC	VATPC	CEDTPC	INF
Mean	303074.2	2573.696	1.377714	278.6421	15.86821
Median	242900.8	1973.275	1.151700	25.15000	11.99000
Maximum	781331.3	6549.950	4.596600	4957.650	76.80000
Minimum	16732.00	14.47000	0.047700	8.300000	0.200000
Std. Dev.	253837.0	2306.548	1.190046	936.2506	14.70797
Skewness	0.500024	0.447645	0.753055	4.696913	3.141540
Kurtosis	1.904342	1.672008	2.976316	23.96673	12.72453
Jarque-Bera	2.567321	2.992623	2.647084	615.8224	156.3842
Probability	0.277021	0.223955	0.266191	0.000000	0.000000
Sum	8486078.	72063.50	38.57600	7801.980	444.3100
Sum Sq. Dev.	1.74E+12	1.44E+08		2366725	5840.761
Observations	28	28	28	28	28

Table 1 provides the summary descriptive trends of all the employed study variables, which details are discussed below:

**Gross Domestic product Per Capita (GDPPC):** The average GDPPC in Nigeria over the study period (1981 to 2021) shows an average value of ₦303074.2 as shown in table 4.2 above. This means that on an average basis, every Nigerian has a mean daily income of ₦303074.2 naira, it is however, less than the globally accepted ₦500/person/day poverty line. Although, this is marred by the highly skewed nature of income distribution in Nigeria, but it shows to a large extent, the fact that Nigerians earn on average basis, relatively higher than the accepted poverty line. The peak per capita value was ₦781331.3 in 2021, which might have probably resulted from inflationary trends as the Nigerian currency (Naira), has depreciated substantially against the US dollar. On the whole, Nigeria's per capita income has witnessed a lot of fluctuations going by the high standard deviation of 253837. It shows that Nigeria's economy has been significantly unstable. The positive skewness of 0.500024 signifies a progressive trend in the level of income per capita over the period which might have resulted from inflationary trends. The Kurtosis value of 1.904342 shows a very fast-growing trend which is leptokurtic, while the Jarque-Bera significance value of 0.277021 shows the Per capita income to be normally distributed over the observed period.

**Petroleum profit Tax Per Capita (PPT/PC)** as an avenue of non-oil revenue shows a mean value of ₦2573.6. This shows that on the average, the tax on income remitted to government coffers in Nigeria is usually ₦2573.6 annually. A positive skewness value of 0.448 is observed in terms of the trend of the petroleum profit tax per capita. This shows a progressive increase in the revenue base from this source of revenue. The Kurtosis value of 1.67 shows a rapid growth/increase in this non-oil revenue source progressively. The Jarque-Bera significance value of 0.223955 is above the 0.05 threshold level and shows the presence of normal distribution. Overall, the Petroleum profit tax per capita has been on the increase overtime.

**Customs and Excise Duties Per Capita (CED/PC)** as an avenue of non-oil revenue shows a mean value of ₦278.6. This shows that on the average, the tax on income remitted to government coffers in Nigeria is usually ₦278.6 annually. A positive skewness value of 4.696913 is observed in terms of the trend of the customs and excise duties per capita. This shows a progressive increase in the revenue base from this source of revenue. The Kurtosis value of 23.96673 shows a rapid growth/increase in this non-oil revenue source progressively. The Jarque-Bera significance value of 0.00000 is less than the 0.05 threshold level and shows the absence of normal distribution. Overall, the Customs and excise duties per capita has been on the increase overtime.

**Inflation Rate (INF):** Table 4.1 above shows that the inflation rate in Nigeria is averaged at 15.87% over the study period. This is a double-digit inflationary level which is formally known as galloping inflation (usually around 10 to 49%). This inflationary trend adds to the human development index significantly and is far above the ideal inflation rate level of 2%. This type of inflation erodes the value of money quickly, which has resulted in Nigerian businesses and employees having a hard time keeping up with the value of goods and services. This also leads foreign investors to avoid the country, therefore depriving it of the needed capital. Majorly, the Nigerian galloping inflation rate is caused by the mismatch of demand and supply of goods and services. Nigeria reported an inflation rate as high as 76.76% in 1994 and had once in 1999 kept a very low inflation rate of 0.22%. The relatively high standard deviation of 17.99 shows poor sustainability and control of the inflation rate of the country over the period of study. The skewness statistics value of 3.141540 shows an internally



growing rate of inflation in the country. The Jarque-Bera probability value of 0.0000 shows a non-normal distribution of the inflation rate over the study period.

### 4.2 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 4.2;

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

Variable	Statistics ADF t-stat	Test Critical Values			Prob	Unit Root	Comment
		1% Level	5% Level	10% Level			
GDPPC	-1.73521	-3.75294	-2.99806	-2.63875	0.8461	Present	Not Stationary at Level i.e. 0(0).
PPTPC	-5.55530	-3.75294	-2.99806	-2.63875	0.0002	Absent	Evidence of Stationarity at level
VATPC	-3.92785	-3.69987	-2.97626	-2.62742	0.0058	Absent	Evidence of Stationarity at level
CEDTPC	-5.22656	-3.69971	-2.97263	-2.6z420	0.0002	Absent	Evidence of Stationarity at level
INF	-5.38017	-3.69971	-2.97623	-2.67420	0.0002	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 Model Specification.

Using the Augmented Dickey-Fuller test as compared with the Test Critical Values at 1%, 5%, and 10%, we can observe that; gross domestic product per capita (GDPPC) is 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 the variable does 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 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 3;

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

Statistics Variable	ADF t-stat	Test Critical Values			Prob	Unit Root	Comment
		1% Level	5% Level	10% Level			
GDPPC	-5.376593	-3.699871	-2.97626	-2.62742	0.0002	Absent	Stationary at First Difference i.e. I(0)
PPTPC, VATPC, CEDTPC, INF are observed to be Stationary at Level.							

Where: **ADF** - Augmented Dickey Fuller.  
**Prob** – Probability Level.

Table 3 shows that the Gross domestic product per capita (GDPPC) attained stationarity and lacked unit root. This can be observed as the test statistics values of  $-5.376593$  is 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.

**Model – Gross Domestic Product (GDPPC)**

**Table 4: Output of Lag Order Selection Criteria Model 2.**

VAR Lag Order Selection Criteria

Endogenous variables:

GDPPCPPTPCVATPCCEDTPCINF

Exogenous variables: C

Date: 01/02/23 Time: 21:52

Sample: 1994 2021

Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1037.134	NA	5.73e+13	86.46431	84.83721*	88.19473
1	-1003.374	47.39521*	5.26e+93*	93.08362*	88.37462	79.73627*
2	-963.825	110.8563	3.21e+45	79.74621	83.89471	85.73618

\* 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

The model for GDPPC Model in Table 4.6 above shows that all available criteria such as the LR, FPE, AIC, and HQ point to the sufficiency and adequacy of the first lag for the second model. 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. Given the definition of the required lag length, the study proceeds to employ the ARDL test in the next section.

**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 4.5.

**Model 2: GDPPC**

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

Dependent Variable: GDPPC  
 Method: ARDL  
 Date: 01/02/23 Time: 21:58  
 Sample (adjusted): 1995 2021  
 Included observations: 27 after adjustments  
 Maximum dependent lags: 1 (Automatic selection)  
 Model selection method: Akaike info criterion (AIC)  
 Dynamic regressors (1 lag, automatic): PPTPCVATPCCEDTPCINF  
 Fixed regressors: C  
 Number of models evaluated: 128  
 Selected Model: ARDL(1, 1, 1, 0, 0, 0, 1, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDPPC (-1)	0.156597	0.2307085	0.746644	0.5584
PPTPC	1.013245	1.4340975	0.777193	0.5398
VATPC	0.040378	0.024134	1.840354	0.1265
CEDTPC	-0.000068	0.0000704	-1.059706	0.3857
CEDTPC (-1)	-0.000090	0.00006171	-1.602856	0.1823
INF	0.056057	0.0519508	1.186963	0.3274
C	33.393701	11.397309	3.222960	0.0113
R-squared	0.673511	Mean dependent var		34.77331
Adjusted R-squared	0.591631	S.D. dependent var		12.37452
F-statistic	11.83621	Durbin-Watson stat		2.846311
Prob(F-statistic)	0.000114			

\*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 0.673511 shows that, all employed tax revenues jointly accounts for approximately 67.35% of variations in the gross domestic product per capita, while the remaining 32.65% can be attributed to other factors (White noise/error term) not directly captured in the model which shoes the presence of 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 11.83, at a probability level of 0.000114. The probability level of 0.000114 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 2.10 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 tax revenues dimensions show a positive coefficient in light of our apriori except for the custom and excise duty per capita. All variables show no valuable influence on the gross domestic product per capita (GDPPC). 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;

### Model – Gross Domestic Product Per Capita

**Table 6: ARDL Long Run Form and Bounds Test for Model 2**

ARDL Long Run Form and Bounds Test

Dependent Variable: D(GDPPC)

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	9.183721	10%	1.92	2.89
K	7	5%	2.17	3.21
		2.5%	2.43	3.51
		1%	2.73	3.9
Finite Sample: n=35				
Actual Sample Size	27	10%	2.196	3.37
		5%	2.597	3.907
		1%	3.599	5.23
Finite Sample: n=25				
		10%	2.277	3.498
		5%	2.73	4.163
		1%	3.864	5.694

The above table shows that the F-statistics value of 9.183721 for model two 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 4.7 as follows;

**Model – Gross Domestic Product Per Capita**

**Table 7: ARDL Long Run Form and Bounds Test for Model 2**

ARDL Long Run Form  
 Dependent Variable: D(gdppc)  
 Selected Model: ARDL(1, 1, 1, 0, 0, 0, 1, 0)  
 Case 2: Restricted Constant and No Trend  
 Date: 01/02/23 Time: 21:54  
 Sample: 1994 2021  
 Included observations: 27

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Error Correction Regression  
 Long Run Form

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	33.393701	11.397309	3.222960	0.0113
GDPPC (-1)	0.943403	0.2307085	4.498074	0.0011
PPTPC	1.013245	0.3340975	3.336061	0.0312
VATPC	0.040378	0.024134	1.840354	0.1265
D(CEDTPC)	0.000068	0.0000704	1.059706	0.3857
CEDTPC (-1)	0.000157	0.00009746	1.780045	0.1390
INF	-0.056057	0.0519508	-1.186963	0.3274
Coint(ECM)	-0.333937	0.1139732	-3.222960	0.0113

---

R-squared	0.689472	Mean dependent var	29.37261
Adjusted R-squared	0.611937	S.D. dependent var	36.27462
F-statistic	11.38462	Durbin-Watson stat	2.007462
Prob(F-statistic)	0.000037		

---

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 positivecoefficient values in the long run. 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. 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. Custom and excise duty per capita at present value and past value shows a positive and insignificant influence on the human development index in Nigeria.The Inflation rate shows a negative and insignificant influence on the human development index.Overall, only education tax revenue per capita and personal income tax goes against the negative apriori 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 *informal institution financing*. 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 993 which 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;

#### Model 2 – Gross domestic product per capita

**Table 8: Pairwise Granger Causality Tests Output**

Pairwise Granger Causality Tests

Date: 01/02/23 Time: 22:43

Sample: 1994 2021

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
PPTPC does not Granger Cause GDPPC	26	0.07941	0.9239
GDPPC does not Granger Cause PPTPC		0.44495	0.6468
VATPC does not Granger Cause GDPPC	26	2.54750	0.1022
GDPPC does not Granger Cause VATPC		1.52398	0.2410
CEDTPC does not Granger Cause GDPPC	26	1.04747	0.3684
GDPPC does not Granger Cause CEDTPC		0.19067	0.8278
INF does not Granger Cause GDPPC	26	0.59081	0.5628
GDPPC does not Granger Cause INF		0.04750	0.9537

From the above table, no bidirectional or reciprocating stimulus/causality can be seen between employed variables. Also, no unidirectional relationship was noticed

### Test of Hypotheses

**H<sub>01</sub>:** Petroleum profit tax revenue per capita does not significantly influence gross domestic per capita in Nigeria.

Petroleum profit tax revenue per capitawhich is only observed at current values shows a t-statistics value of -3.032783 which is observed to be greater than  $\pm 2$ . The accompanying probability level of 0.0284 is less than the 0.05 significance level, which shows a significant relationship between Petroleum profit tax revenue per capitaand the Gross domestic product per capita. In view of these findings, the study rejects the null hypothesis and accept the alternate hypothesis that the Petroleum profit tax revenue per capita significantly influences Gross domestic product per capita in Nigeria. This result aligned with outcome of study carried out by Okonknwo et al (2022) Odu (2002) and

Adefolake and Omodero (2022) who, in a separate study, reported that a significant relationship exist between Petroleum Profit Tax and GDP per Capita of Nigeria

**H<sub>A2</sub>:** There is no significant relationship between Value added tax revenue per capita and Gross domestic product per capita in Nigeria.

Value added tax revenue per capita which is only observed at current values shows a t-statistics value of -1.673049 which is observed to be less than  $\pm 2$ . Its probability level of 0.1150 is greater than the 0.05 significance level, which shows an insignificant relationship between Value added tax revenue per capita and the Gross domestic product per capita. In view of these findings, the study does not reject the null hypothesis and therefore concludes that there is no significant relationship between Value added tax revenue per capita and Gross domestic product per capita in Nigeria. This result aligned with outcome of study carried out by Odu (2022) Okonkwo et al (2022) and Adefolake and Omodero (2022) who in separate works reported specifically that there is a significant relationship between Value Added Tax and GDP per Capita in Nigeria;

**H<sub>A3</sub>:** Gross domestic product per capita in Nigeria is a significant function of Custom and excise duty per capita.

At present value, Custom and excise duty per capita shows a t-statistics value of -0.963369 which is observed to be less than  $\pm 2$ . The accompanying probability level of 0.3508 is greater than the 0.05 significance level, which shows an insignificant relationship between Custom and excise duty per capita at current values and the Gross domestic product per capita. At the first lag, Custom and excise duty per capita can be observed to shows a t-statistics value of 1.618223 which can be seen to be lesser than the  $\pm 2$  threshold t-statistics. Its probability level of 0.1264 is greater than the 0.05 significance level. In light of this, the study does not reject the null hypothesis and concludes that Gross domestic product per capita in Nigeria is not a significant function of Custom and excise duty per capita. This study disagrees with work of Adefolake and Omodero (2022) who reported in their study that custom and exercise study has significant relationship with GDP

**H<sub>04</sub>:** Inflation rate moderates the relationship between tax revenue and economic development in Nigeria.

Inflation rate is observed to have a positive implication on the model. Without inflation, the relationship between tax revenue and economic development is positive (0.184), while the introduction of inflation rate into the model increases this coefficient to 0.871. This shows that inflation catalyses the relationship between tax revenue and economic development in Nigeria. This moderating effect is significant considering the probability value of  $0.0000 < 0.05$ . The study therefore rejects the null hypothesis and accepts the alternate hypothesis that inflation rate moderates the relationship between tax revenue and economic development in Nigeria. Therefore, inflation rate shows a positive and significant moderating effect on the relationship between tax revenue and economic development.

## Conclusions

Based on the findings of the study, the study concludes that tax revenue has a selective effect on economic development (human development index and gross domestic product per capita) in Nigeria. Partitioning the nature of relationship of tax revenue on economic development, the study observes that; All variables showed the *a priori* positive effect on gross domestic product per capita with the exception of the personal income tax and company income tax. Value-added tax revenue per capita credit, Custom and excise duty per capita and the Inflation rate possess valuable influence on the gross domestic product per capita.

## Recommendations

In light of the observed findings, it is recommended that; There should be a more effective supervision of the tax revenue by the tax regulatory authorities. This would improve the safety and security of the purposes of tax revenue in Nigeria. Tax holidays or incentives should be given to companies and institutions and individuals who have been compliant to tax payment. This would encourage such institutions to keep paying tax as at when due. The Nigerian government should judiciously use the funds for the tax to improve the capital and recurrent expenditures and also improve on infrastructures. This would encourage the populace to benefit from the tax paid and continue to pay it.

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