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Impact of Tax Revenue on Economic Development: Nigeria's Empirical Investigation (2000 - 2023)

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ABSTRACT: This study is on the effect of tax revenue on economic development in Nigeria. Tax revenue is a broad aspect of the economy that encompasses all economic activities that produce and do not produce any physical goods. The study analyzed the effect of petroleum profit tax, company income tax, and valued added tax on human development index. The study employed secondary data in analyzing the nature of the relationship between Tax revenue and Human Development Index. The Ordinary Least Squares (OLS) estimation technique was employed using data from 2000 to 2023 as sourced from the World Development Indicators (WDIs) and Federal Inland Revenue Service (FIRS). The study discovered that petroleum profit tax is, however, not positive and not statistically significant, valued added tax was positive and statistically not significant, and company income tax was negative and was also not significant statistically. As a result of this, the study therefore recommends that since tax revenue alone does not appear to have a significant impact on the human development index in Nigeria, it is important to explore and implement alternative strategies for economic development. Governments at all level should focus on improving tax policy and administration, including reducing tax evasion and improving tax collection mechanisms. This can help increase revenue generation and create a more conducive environment for economic development.

Keywords: Petroleum profit tax, company income tax, valued added tax, human development index

INTRODUCTION

Tax revenue impacts a country's rate of economic expansion and typically influences a country's gross domestic product (GDP). Because of this contribution, taxes encourage economic growth, which in turn boosts the country's economic growth by raising living standards and increasing employment (Nduka, Ananwude, & Osakwe, 2019). The government of any nation is saddled with enormous responsibilities which are

influenced greatly by the income generated by the government from different sources one of which includes taxes. To finance its operations, the Nigerian government is primarily reliant on taxes. Individuals or companies must pay a tax to the government, which is normally levied by the government. Taxes are a significant revenue source and a major income source for the government. Taxes are considered different from other sources of government revenue because it is a compulsory charge. In the 19th century, the main purpose for which tax was imposed was for the generation of revenue for the government, wealth redistribution, and regulatory objectives. These functions collectively support the provision of public goods and services, address social and economic inequalities, and influence economic and social behavior but today, it is seen to be used for different purposes other than fiscal purposes. Taxation being a major source of funding to all three tiers of government is highly important in helping the government achieve its macroeconomic objectives. According to Abomaye-Nimenibo (2018), taxation is a process established by the government to exert control over tax and tax collection. It is thus considered as the redistribution of wealth from the private to the public sectors of the economy to help the nation achieve some of its economic and social objectives which include providing essential facilities and services like proficient health care services, and quality roads, among others.

Taxation is the process of charging citizens with taxes, while tax itself is seen as a mandatory payment to be made by every citizen of a state. This payment of tax is called a civic duty as stated by Abomaye-Nimenibo,(2018).Taxes are frequently levied to limit the creation of certain products, and services which will in turn protect new business and local businesses, reduce the level of income disparity in society, also to regulate business, and keep inflation under control (Ekwunife, Nduka, & Ogini, 2022). Due to the significance of tax in bringing revenue to the government for various uses, its ability to affect consumption patterns lead to the growth of the economy, exert influence on economic variables, and its ability to affect consumption patterns, the government of every nation will strive to maximize the revenues from tax (Asaolu, 2018). The effectiveness and efficiency in administering tax leads to an increment in the revenue generated which helps the government to provide amenities for its citizens and also for the execution of capital projects, despite this, the fraudulent

affairs and schemes of tax authorities as well as incompetent tax personnel are seen to be threats and challenges that affect the revenues by channeling the funds from tax into their pockets (Asaolu, 2018). The primary goal of a tax system is to produce adequate incomes to cover the government's vital expenditures on commodities, and tax is widely regarded as the most effective instrument for improving the public sector's capabilities and debt repayment (Okoye & Ezejiofor, 2014). Aside from the problems seen in the taxation system in the present time, the purpose of charging tax has not only been for revenue generation for the state but also as a means for reallocation of wealth as well as regulation of the economy (Ojo, 2008). As a result, a tax system is regarded as a powerful tool that the government can employ to aid socioeconomic development (Nduka, Atueyi, Osakwe, & Mbanefo, 2021).

Taxation is one of the main economic tools used by governments to regulate the macro-economy and mobilize revenue for the budget towards the goals of economic growth, poverty alleviation, and social justice. Since the early twentieth century, governments across countries have undertaken extensive tax reforms to pursue growth goals, especially in low-middle-income countries, where the tax revenue and GDP are only 14–15%, compared to 30% in developed countries. Thus, policymakers in developing countries are concerned about funding public spending activities aimed at economic development (Ogunewe, Ananwude, & Nduka, 2020; Aniefor, Nduka, Ananwude, & Ezeaku, 2021). However, increasing tax revenue leads to many objections since it directly affects several aspects of the economy. Therefore, such countries are always cautious while adjusting tax policies to increase revenue. Although there have been numerous efforts to promote the economy, with many encouraging achievements, low, and middle-income countries seem to not have kept pace with the development of other countries. In 2000, the per capita income of low-middle-income countries was USD 740 per person per year. It had become approximately USD 2,500 per person per year by 2020 (World Bank, 2021), compared to developed countries, which had an average per capita income of USD 14,000 per person per year in 2020. Moreover, the U.S. GNI per capita for 2022 was $76,370, a 7.72% increase from 2021. U.S. GNI per capita for 2021 was $70,900, a 9.67% increase from 2020. U.S. GNI per capita for 2020 was $64,650, a 2.24% decline from 2019 unlike in Nigeria where we had a GDP per capita of USD 2,207

in 2022, compared to USD 2,959 a decade earlier resulting in a reduction in the per capita income.

However, the emergence of sustainable development goals is associated with economic revolution with the view to attain economic development (Nduka, Ananwude, & Osakwe, 2019). Western countries began to realize economic development to significantly impact the environment and social balance in the second half of the 19th century. Multiple ecological and socioeconomic catastrophes have occurred worldwide, raising awareness of the need for a more sustainable approach to attaining development. Myles (2000) and Nellen and Miles (2007) argued that sustainable economic development is a thought-out approach that embraces progress while utilizing resources more wisely, considering both the short- and long-term advantages for our nations and the people living in any Nation of the world. Sustainable development strategies aid a country in adjusting its growth rate based on the problems posed by climate change, thereby protecting vital natural resources for current and future generations (World Bank, 2021). It is predicted that there will be Nine hundred billion people on the Earth by 2050 (Neupane, 2022) and economic development cannot be overemphasized as it is an important factor that sustains individuals living in a geographical region.

Problem Statement

Nigeria's domestic revenue mobilization has been one of the lowest and poorest in the world. This has had a severe limiting impact on economic development and the creation of an enabling environment for investments (Amahalu & Obi, 2020). The Organization for Economic Co-operation and Development (OECD)'s Revenue Statistics in Africa 2021reported that Nigeria's tax-to-gross Domestic Product (GDP) in 2020 by an abysmal 6%, the tax-to-GDP ratio in Nigeria increased by 0.6 percentage points from 5.7% in 2017 to 6.3% in2018. As stated earlier, Nigeria has one of the lowest tax collection rates in the world at approximately 10.8 percent of gross domestic product (GDP). However, tax receipts did rise by 56 percent in 2022 to a record ₦10 trillion ($13bn). However, when compared with the same index across other African countries over the same period, it was apparent that Nigeria's tax revenue generation was significantly low for the level of economic activities in the country. Specifically, the 26 African countries (including Ghana and Botswana) reviewed in the OECD's study reported an average tax-to-

GDP ratio of 17.2% (11.5 basis points higher than Nigeria's ratio). The Federal Government implemented tax amnesty initiatives between 2016 and 2018 to drive up tax revenue and expand the tax base. However, these initiatives have proven insufficient to stimulate the type of revenue growth required. As of 2018, the nation's tax-to-GDP ratio was estimated at roughly 6.3%, a slow and unimpressive growth from 2017. Recent data from the National Bureau of Statistics indicates that Nigeria's GDP was ₦N31.79 trillion in 2019, while the total government collection in taxes was barely ₦1.5 trillion in 2019. Also, in 2019, the Nigerian GDP was reduced from ₦72 billion to ₦70 billion in 2020 but improved in 2022 by 7.4%. This produced a tax to GDP of about 4.7%, which was a decline from prior periods in 2019 and 2020 especially during the pandemic period. Other challenges of national development in Nigeria include; a lack of good governance, pervasive corruption, over-dependence on crude oil, and lack of IT executive capacity.

Existing taxation literatures have documented studies on tax revenue and development with a focus on Nigeria. In such a context, it becomes pertinent to empirically find out if tax revenues impact Economic development. Some studies significantly find a positive relationship between tax revenue and economic development (Okeke, Mbonu & Amahalu, 2018; Jimoh, Adegoriola & Adeyemo, 2020). A similar study found a negative relationship (Owolabi, Ogunleye & Inimgba, 2019), while, Nyasha and Odhiambo (2019) showed no effect, thereby creating a knowledge gap for further studies. Furthermore, the drive by the management of the Federal Inland Revenue Service (FIRS) and the various tax reforms introduced by the government to shore up revenue from taxation, as well as the projected impact on economic growth, necessitates a critical examination of the impact that taxation revenue has on Nigeria's economic growth and development. This is because of the projected impact on economic growth. The goal of the study is to determine the rate of influence tax revenue has on the expansion of the economy.

LITERATURE REVIEW

Tax is a mandatory and also a compulsory, non-repayable remittance made to the government for products and services utilized. It is normally paid by private businesses and consumers to the government. The government is empowered to control,

administer, and make provisions for laws, rules, regulations, and policies that will regulate and guide the tax system to ensure all taxes are properly administered and all revenue generated is reimbursed to the government. Nigeria's government is one of those countries that has the legal authority to impose any type of tax on its population at any rate it deems fit. Obidike, Onyeka, and Nduka (2022) believes that utilizing taxation as a fiscal policy tool to help attain economic development is complex for developing countries as there is a reduction in the rate of tax revenue generated. Moreover, tax is a non-refundable obligatory exchange of assets from the private area to the public area and it is typically forced on everyone to pay, including partnerships and establishments without a plan of action is expected to be obliged because of the guaranteed benefits for the duty paid. Logan, Okanya, Nduka, Manasseh, Ede, Onoh, Omeje, Ozioko, and Agu (2021) maintained that tax is a liability on account of the taxpayer as a reasonable contribution to the available fund required for use by the government in providing the necessary infrastructure for its citizens. Monogbe, Akinpelumi, Achugbu, and Nduka (2016) confirmed that taxation is a fiscal policy tool used in controlling inflation. In inflationary times, the government should increase direct tax thereby straining away excess purchasing power. There should be selective indirect taxes to be employed in controlling inflation with the elasticity of the demand and supply of the commodities. Commodities with low demand elasticity and high supply elasticity will not increase inflation when taxation is increased. Commodities that are necessities should be taxed lower, while luxuries should be highly taxed as this will reduce the inflationary. Economic development refers to the process of improving the economic well-being and quality of life of a community or country. It involves various programs, policies, and activities aimed at fostering growth, creating jobs, and enhancing the prosperity of a region. Economic development can be understood in different ways, depending on the context and the community's priorities (Anusi & Nduka, 2022). Economic development is a concerted effort on the part of the responsible governing body in a Nation or region to promote fiscal stability and sustained economic growth. It requires collaboration between various stakeholders, including government agencies, businesses, and community members, to create a healthy economy and enhance the prosperity and quality of life for all (Nduka, Achugbu, & Ucheahara, 2016). Moreover, Economic development refers to the ability of

a nation to improve the lives of its citizens. Measures of improvement may be material, such as an increase in the gross domestic product, per capita income, or social, such as literacy rates and availability of healthcare (IMF, 2016).

This study is anchored on the Laffer Curve Theory of tax. Professor Arthur Laffer proposed the Laffer curve theory in 1974 which explicates the theoretical relationship between the tax rate and government revenue derived from taxation. The Laffer curve simply demonstrates the idea that a change in tax rate will affect tax revenue in two different ways which are the arithmetic effect and the economic effect (Laffer, 2004). The arithmetic effect states that depletion in tax rate will bring about a cutback in tax revenue (per currency of the tax base) proportionate to the reduction in tax rate, and vice versa. The Economic Effect, on the other hand, recognizes that a lower tax rate will have a favorable influence on work, output, employment, and, as a result, the tax base, by helping to grow activities through incentives. The arithmetic effect is the polar opposite of the economic effect. As a result, when the economic and arithmetic effects of tax rate transposes are combined, the impact of a change in tax rates on total tax collection is less apparent. Subsequently, increased taxes will pose a large burden on the economic growth of any nation. The heavy tax burden makes consumers spend more money thereby leading to a decrease in demand which makes, in the long term, the reduction in the tax base balance of the rapid increase in tax revenue. This is the shaded part of the Laffer curve called the Prohibitive Range where the curve moves backwards. A tax increase above the Prohibitive Range will result in a reduction in government revenue (Laffer, 2004).

Empirically, Mominur (2023) studied the impact of taxes on the 2030 agenda for sustainable development: Evidence from Organization for Economic Co-operation and Development (OECD) countries. Multiple ecological and socioeconomic problems have occurred worldwide, raising the awareness of sustainability. This study aims to examine the impact of taxes on Sustainable Development Goals (SDGs) in the context of Organization for Economic Co-operation and Development (OECD) countries. This research used effective average tax (EAT), tax on personal income (TPI), tax on corporate profits (TCP), and tax on goods and services (TGS) as the variables of taxes, and employed secondary data from 38 OECD countries covering 2000–2021. The results showed that EAT, TPI,

TCP, and TGS are positively associated with SDGs. However, the change in TPI has a smaller effect on SDGs than the change in EAT TCP or TGS. The result of panel causality indicated that EAT, TPI, and TGS have a unidirectional causal relationship with SDGs. The study also found that TCP has a bi-directional causal relationship with SDGs. Moreover, the findings indicated that the OECD countries need to focus on tax policies to achieve the 2030 Agenda for Sustainable Development.

Etoama (2023) conducted a study to investigate the impact of tax revenue on the economic development in Nigeria concerning a time frame that spanned from 1994 to 2021. The study employed gross domestic product per capita as a measure of economic development and considered petroleum profit tax, value-added tax, and customs 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, stepwise, and Granger Causality tests. The study observed mixed stationarity at the 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 economic development. The inflation rate was observed to positively and significantly moderate the relationship between tax revenue and economic development in Nigeria.

Oladapo and Olalekan (2023) study seeks to establish the impact of tax revenue and infrastructural development (through investment) on economic growth in Nigeria. It is expected that tax revenue should serve as an incentive for infrastructural development to strive and yield economic growth. The data used in the study was obtained majorly from World Development Indicator (WDI) Database 2022. Tax revenue was proxied as the actual total tax revenue collected from VAT, CIT, and PPT. This formed the independent variables as well as Gross Capital Formation (GCF) to represent infrastructural development. While the dependent variable is RGDP. The ARDL model was employed after variables were stationary at both levels and the first difference. The study found a significant long-run relationship among the variables. Specifically, PPT was found to be a strong contributor to economic growth in Nigeria. VAT was only positively significant

at 15% accounting for economic growth. GCF and CIT were not significant in the study.

Nyamadi (2023) study investigated the causal flow between government tax revenue and economic growth in Ghana using time series data from 1970-2021. The study employs the Auto-auto-regressive Distributed Lag (ARDL) bounds test approach and Granger Causality test to investigate the long-run and short-run relationship between government tax revenue and economic growth. The findings of this study indicated that there is a significant correlation between total tax revenue and economic growth with an 87% speed of adjustment in the short run towards equilibrium level in the long run. Empirically, the analysis also indicates evidence of long-run equilibrium correlation. Thus, the Granger Causality test indicated positive and statistically significant unidirectional causal flow from tax revenue to economic growth. Based on the findings, policymakers should consider the tax revenue-led growth policies for effective formulation and implementation to enhance the nature of the Ghanaian economy.

Thuy, Xuan, and Quang (2023) investigated the impact of tax revenue on economic growth in the context of increasing trade openness in developing countries by using the data of 29 developing countries with accelerating economic growth during the period 2000– 2020. This study further applies the Fixed Effect Model (FEM) and the Generalized Least Squares (GLS) estimation methods for panel data to test the proposed hypotheses. The research results show that tax revenue positively affects economic growth in general.

Kofi, David, Frank, and Isaac (2022) assessed the impact of tax reforms on tax revenue mobilization in Ghana. The autoregressive distributed lag model together with dynamic ordinary least squares and fully modified least squares techniques were employed on a time-series data spanning from 1980–2018. Exploiting data from IMF monitoring of fund arrangements database, an index of tax reforms is constructed as a function of the number of successfully implemented tax-related reforms and policy measures per year over the study period. Having established the presence of co-integration between tax revenue and its determinants, this paper finds strong evidence that tax-related reforms exert a positive and significant impact on tax revenue generation in Ghana. Among other covariates, the results show that the tax base (real GDP), public debt, and education

(human capital index) significantly boost tax revenue in the long run.

Chindengwike (2022) studied the Influence of value added tax revenue on private domestic investment in developing countries. The study's overarching goal is to assess the influence of Value Added Tax (VAT) revenue on private domestic investment in emerging countries. The study used a time series research design, a case study of one country, Tanzania. Annual time series data from 1998 to 2020 were used in the study. The tax income (VAT) data is taken from the Tanzania Revenue Authority website and the Bank of Tanzania. In contrast, the data on private domestic investment as Gross fixed capital formation of the private sector as a percentage of GDP is obtained from the World Bank, following the first tests for heteroscedasticity, multi-collinearity, unit roots, lag length selection, and co-integrating vectors. The long-run and short-run correlations were then computed. The findings demonstrated that in the long run, the value-added tax is negatively associated with private domestic investment. The analysis showed a negative association between the degree of investment and the value-added tax parameter estimates.

Desta (2022) examined the factors Affecting Tax Revenue in Ethiopia using the Autoregressive Distributed Lag Approach. Tax revenue is the key source of revenue for governments in both advanced and emerging countries regarding funding public spending. The main goal of this research is to look at the factors affecting tax revenue in Ethiopia from 1996 to 2020 using time series data. The impact of agricultural GDP, service-to-GDP, inflation, corruption, political stability, and tax reformation on the ratio of tax revenue to GDP was investigated in this study. The short-run and long-run associations between the variables were determined using the autoregressive distributed lag (ARDL). The outcomes of the study reveal that inflation has a positive relationship with tax; however, agriculture GDP hurt tax revenue in the short run over the study period. Political stability, service-to-GDP, and inflation, on the other hand, have a positive long-run impact on tax collection, whereas corruption has a negative impact.

Ehiedu (2022) examined the analysis of the impact of tax revenue (TR) volatility on economic growth (EG) in Nigeria between the periods of 1994-2021, which is 28 years. This was done using the measures of TR volatility, namely; Petroleum Profit Tax Volatility

(PPTV), Value Added Tax Volatility (VATV), Company Income Tax Volatility (CITV), and Custom and Excise Duties Volatility (CEDV) about economic growth proxied with Gross Domestic Product (GDP). The data was sourced from the CBN Statistical Bulletin and Annual Report and analyzed with descriptive statistics, correlation matrix, unit root test, Auto-regressive Distributed Lag (ARDL) Bound Co-integration test, and ARDL Co-integrating and Long form. The findings showed that PPTV has a p-value of 0.0089 and a p-value of 0.0051 in the short and long run (S&LR) respectively. Hence, PPTV had a considerable effect on GDP in the S&LR; VATV has a p-value of 0.0067 and 0.0001 both on the S&LR. Thus, VATV had a considerable effect on GDP in the S&LR; CITV has a p-value of 0.1838 and a p-value of 0.1892 in the S&LR respectively. Thus, CITV had an inconsequential effect on GDP in the S&LR and CEDV has p-values of 0.0253 and 0.0021 both on the S&LR. Hence, CEDV has a considerable effect on GDP in the L&SR. Measures of tax revenue volatility used have mixed effects on RGDP. It is only PPTV, VATV, and CEDV that have considerable effects on GDP in S&LR while CITV exerts an inconsequential effect on RGDP in S&LR.

Adegbite (2022) examine the effect of CIT revenue on the growth of Sub-Sahara counties in Africa. Data from ten Sub-Sahara countries which comprised Nigeria, Liberia, Sierra Leon, Ghana, South Africa, Senegal, Benin, Burkina-Faso, Guinea, and Mali were collected from year 2000 to 2019. However, the data were sourced majorly from the World Development Indicator (WDI) and analyzed using Panel data analysis and ARDL. Based on our findings, the Coefficients of all the variables, especially CIT are negative and insignificant, this is to validate the speed of adjustment of 1.8% (coefficient of -1.86124), meaning that a 1% change in CIT brings down GDP by 1.8% in the long run but in the short run, 1% change in CIT logically bring down GDP by 0.5% (coefficient of 0.596384). Conclusively, company income tax revenue negatively affected the growth of Sub-Sahara countries in Africa throughout the study both in the short and long run.

Joseph and Nwankwo (2022) studied the comparative effect of tax revenue on economic growth of selected African countries. It was stated that Tax revenue is often seen as a substitute for sustainable financing within a steady and predictable fiscal setting to promote economic growth and guarantee government financing of social and

infrastructural needs of the citizenry. The study's objective is to examine the effect of tax revenue on the economic growth of ten selected countries from the five sub-regions of Africa such as West Africa, Southern Africa, North Africa, Eastern Africa, and Central Africa. The study applied multiple OLS regression techniques as a statistical tool of analysis. The study reveals CIT, PIT, CED, and VAT as a whole do not significantly affect the GDP of Botswana, Cameroun, Tunisia, DR/Congo, Egypt, Ghana, Kenya, Nigeria, and Uganda. On the contrary, CIT, PIT, CED, and VAT as a whole have a significant effect on the gross domestic product of South Africa.

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.

Nguyen and Darsono (2022) focused on the impacts of tax revenue and investment on economic growth in Southeast Asian countries 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.

Ashiedu (2022) determined the effect of Tax Revenue on the National Development of Nigeria for a twenty-two-year period covering from 1999-2020. Personal Income Tax, Company Income Tax, and Value Added Tax were used to proxy Tax Revenue, while the dependent variable; National Development was measured by Per Capita Income. In line with the objectives of the study, three hypotheses were formulated. An ex-post facto research design was employed. Secondary data were obtained from the publications of the Federal Inland Revenue Service (FIRS) bulletin, Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), and the World Bank statistical bulletins and were analyzed using E-Views 10.0 statistical software. The study employed inferential statistics using Pearson correlation, Augmented Dickey-Fuller (ADF) test, Ordinary Least Square regression analysis, Granger Causality test, Johansen Co-integration test, and Error Correction Model. Findings from the empirical analysis showed that there is a significant negative relationship between Personal Income Tax, Company Income Tax, Value Added Tax, and Per Capita Income at a 5% level of significance.

Ezekwesili and Ezejiofor (2022) ascertained the effect of tax revenue on the economic growth of Nigeria. The specific objectives are to: ascertain the effect of Tax Revenue on the Inflation Rate of Nigeria, and determine the effect of Tax Revenue on the Interest Rate of Nigeria. Ex Post Facto research design was adopted. The data were sourced from the Central Bank of Nigeria (CBN), Statistical Bulletin, and Annual Abstract of Statistics from the National Bureau of Statistics (NBS). Regression analysis: predicts the value of a variable based on the value of the other variable and explains the effect of changes in the values of the variable on the values of the other variables with the aid of E-view 9.0. The findings conclude that tax revenue has no significant effect on the inflation rate and interest rate of Nigeria at a 5% level of significance.

Edori (2022) examined the impact of tax revenue and Nigeria's economic growth. To achieve this objective, data was gathered through secondary means. Tax revenue is

proxy by petroleum profit tax, and companies income tax, while economic growth is proxy by gross domestic product, and consumer price index. This study used time series data for a period of 32 years (1990- 2021) OLS model is used to run the multiple regression analysis. The F-value of 160.4760 with a corresponding P-value of P<0.0000 which is less than the 0.05 (5%) significant level lends credence to the fitness of the model and its overall significance. Therefore, tax revenue has a significant influence on economic growth in Nigeria (CPI) while the F-value of 371.8931 with a corresponding P-value of P<0.0000 which is less than 0.05 (5%) significant value lends credence to the fitness of the model and its overall significance. Therefore, tax revenue has a significant influence on economic growth in Nigeria (GDP).

Ayeni and Afolabi (2020) assessed the effects of tax revenue on the economic growth of Nigeria utilizing time series data spanning from the 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 a secondary form of data which has been sourced from CBN statistical bulletin and published Federal Inland Revenue Statement. An ex-post facto research design is used for this study. The data collected are analyzed and tested for unit root using the 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.

MacCarthy, Muda, and Sunu (2022) assessed the effect of taxes on economic growth nexus in Ghana. The study used annual time series data collected from 1972 to 2019. The study used the Johansen Co-integration technique, vector error correction model, and Granger causality test to assess the causal relationship between tax revenue and economic growth in Ghana. The Co-integration test was used to establish the long-run relationship. In contrast, the Granger Causality test was used to establish the short-run relationship between the variables used in the model. The study revealed that the model has a speed of

adjustment of 61.4% to restore the short-run relationship to the long-run equilibrium path. Furthermore, the study found a unidirectional relationship between tax revenue variables and economic growth. Again, the study found support for a positive and significant nexus between direct tax revenue and economic growth and a significant and negative nexus between indirect tax revenue and economic growth.

Gurdal, Aydin, and Inal (2021) in this study, the relationship between tax revenue, government expenditure, and economic growth has been examined for Canada, France, Germany, Italy, Japan, the UK, and the USA the G7 countries using annual data from 1980 to 2016. The study used two different panel causality approaches to make a comparison. According to the time domain panel causality test results, there is bidirectional causality between economic growth and government expenditure but a unidirectional causality between tax revenue and government expenditure. Moreover, there is no causal relationship between economic growth and tax revenue. On the other hand, frequency domain causality results show that there is a bidirectional short- and long-run causality between economic growth and tax revenue, and long-run causality between economic growth and government expenditure.

Attah, Nenbee, and Wamkko (2021) examined the role of tax revenue in engineering economic growth in the Sub-Saharan Africa (SSA) region, analyzing data for 12 regional countries obtained from secondary sources such as the OECD database and World Bank World Development Indicators (WDI), covering the period 2005-2020, and analyzed using the fixed effect method, which accounts for possible heterogeneity among the SSA countries. Economic growth was measured using real gross domestic product, and tax revenue by ratio of tax revenue to GDP. The study controlled for other economic growth drivers such as trade openness, foreign direct investment, exchange rate, domestic investment, and money supply. The salient findings indicated that taxation hampers the economic growth of SSA countries and that domestic investment and favorable exchange rates promote economic growth in the SSA region, but domestic investment has a greater stimulating impact.

Gnangnon (2020) explored tax revenue instability and tax revenue in developed and developing countries. The analysis used an

unbalanced panel data set of 146 countries over the period 1981–2016, as well as the two-step system generalized methods of moment approach. The empirical analysis has suggested that non-resource tax revenue instability influences negatively the non-resource tax revenue share of gross domestic product. The magnitude of this negative effect is higher in less developed countries than in relatively advanced countries. This negative effect materializes through public expenditure instability: non-resource tax revenue instability exerts a higher effect on non-resource tax revenue share as the degree of public expenditure instability increases. Finally, non-resource tax revenue instability exerts a higher negative effect on non-resource tax revenue share as economic growth volatility rises, inflation volatility increases, and terms of trade instability increase.

Salome, Ibanichuka, and Akani (2016) carried out a time series of analyses of the effect of tax revenue on the economic development of Nigeria from 1995 to 2014, to find out if tax revenue represented by Value Added Tax (VAT), Company Income Tax (CIT), and Customs and Excise Duties (CED) could affect economic development proxied by Human Development Index for the period of the study. The data were analyzed using Multiple Regression Analyses in line with the research objectives of the study. The findings revealed that revenues collected by the federal government through CIT, VAT, and CED have a positive relationship with the Human Development Index.

1. METHODOLOGY

This study was carried out using a time series analysis and a multiple regression method. The ex-post facto research design was adopted for the study. The ex-post facto research design was employed because secondary data were used for the study. The study employed secondary data in analyzing the nature of the relationship between tax revenue and human development index (measured using real GNI) and the vector of independent variables: petroleum profit tax, company income tax, and value added tax. However, we used only secondary data sources without any identifiable information, and publicly available data that span from 2000 to 2022 which was sourced from the World Bank, World Development Indicators (WDIs) and Federal Inland Revenue Service (FIRS).

The functional form of the model is given in the multiple Regression equation model according to Oladapo (2023) as stated:

$$HDI_t = f(PPT, CIT, VAT) \quad 3.1$$

Where:
HDI = Human Development Index (proxied as GNI, PPP)
PPT = Petroleum profit tax per capita
CIT = Company income tax per capita
VAT = Value-added tax per capita

In econometrics, equation 3.1 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 but firstly, state the mathematical model as follows:

$$HDI = PPT + CIT + VAT \quad 3.2$$

$$HDI_t = \beta 0 + \beta_1 PPT_t + \beta_2 CIT_t + \beta_3 VAT_t + \mu t \quad 3.3$$

Where:
The variables remain as indicated in equation 3.1
βo = Constant parameter
β1, β2, β3 = Estimation parameters
μ = Error term

DATA ANALYSIS AND RESULTS

Table 4.1 describes the basic features of the data employed in the study. It provides simple summaries of the samples and measures covering observations for each data series. Firstly, over the period under review, the HDI which proxies human development index averaged ₦5.95E+11 trillion. The mean of value added tax is ₦346.2964 trillion The 4.1 reveals a positive average value of ₦8324.548 trillion for company income tax and ₦1135.007 trillion for petroleum profit tax. These values mean that within the period under consideration ₦1171.357 trillion and its minimum value is ₦30.64380 trillion. The maximum value for company income tax is ₦17479.0 trillion and its minimum value is ₦51.10000. The maximum value for petroleum profit tax is ₦4209.017 trillion and its minimum value is ₦24.600000 trillion. The large differences between the maximum and minimum values show that the data used for the study are homogeneous.

Table 4.1 Descriptive Statistics of Data

	HDI	PPT	CIT	VAT
Mean	5.95E+11	1135.007	8324.548	346.2964
Median	7.57E+11	878.6000	666.0600	318.0000

Maximum	1.25E+12	4209.017	174799.0	1171.357
Minimum	-5.809989	24.60000	51.10000	30.64380
Std. Dev.	4.68E+11	1214.872	36295.74	295.1293
Skewness	-0.344942	1.018155	4.474956	1.256712
Kurtosis	1.451340	3.047918	21.03570	4.222037
Jarque-Bera	2.754525	3.975989	388.3882	7.485231
Probability	0.252268	0.136970	0.000000	0.023692
Sum	1.37E+13	26105.17	191464.6	7964.816
Sum Sq. Dev.	4.81E+24	32470108	2.90E+10	1916228
Observations	23	23	23	23

Source: Data output via E-views 12 .0

The correlation matrix is to check for multi-collinearity and to explore the association between each explanatory variable and the dependent variable. Table 4.2 shows that HDI has a positive association with PPT (0.819921), CIT (0.267657), and VAT (0.846592). PPT has a strong positive association with CIT (0.173074) and VAT (0.892383). CIT also has a strong positive association with VAT (0.471449). In checking for multi-collinearity, the study observed that no three explanatory variables were perfectly correlated.

Table 4.2: Correlation Analysis

	HDI	PPT	CIT	VAT
HDI	1.000000	0.819921	0.267657	0.846592
PPT	0.819921	1.000000	0.173074	0.892383
CIT	0.267657	0.173074	1.000000	0.471449
VAT	0.846592	0.892383	0.471449	1.000000

Source: Data output via E-views 12 .0

The R-squared in Table 4.3 which is the coefficient of determination or measure of goodness of fit of the model, tests the explanatory power of the independent variables in any regression model. From our result, the R-squared (R^2) is 93%. This shows that our model displayed a good fit because the R^2 is closer to 100%, these explanatory variables can impact up to 73% out of the expected 100%, leaving the remaining 7% which would be accounted for by other variables outside the models as captured by the error term. The F-statistics measures the overall significance of the explanatory parameters in the model, and it shows the appropriateness of the model used for the analysis while the probability value means that the model is statistically significant and valid in explaining the outcome of the dependent variables. From Table 4.3, the calculated value of the f-statistics is 58.95628 and its probability is 0.000000 which is less than 0.05. This means that the parameter estimates are statistically significant in

explaining the relationship in the dependent variable. The t-statistics helps in measuring the individuals' statistical significance of the parameters in the model from the result report. It is observed from Table 4.3 that VAT was positive and statistically not significant at 5% with its t-values as 0.922875 and p-values as 0.3690. This implies that they have not contributed significantly to the Human Development Index (HDI) at the rate of 5% level of significance. PPT is, however, not positive and not statistically significant at 5% with its absolute t-value as 0.273991 and p-value as 0.7874. This implies that PPT does not contribute significantly to the Human Development Index (HDI) at the rate of a 5% level of significance.CIT was negative and was also not significant statistically because the absolute t-value of 0.400944 and p-values to be 0.6935 were greater than 0.05 at the rate of a 5% level of significance. This implies that CIT does not contribute significantly to the Human Development Index (HDI) at the rate of a 5% level of significance. Moreover, our model is free from the problem of autocorrelation because the Durbin-Watson value is 1.968326 which is approximated as 2 (that Means, the absence of autocorrelation in the model used for the analysis). The priority criteria are determined by the existing accounting theory and state the signs and magnitude of the variables from the result. The explanatory variables; PPT and CIT had a negative sign and their values are18507022 and 457635.0 respectively. In the Model, this implies that an increase in VAT increases the Human Development Index by 3.02E+10 and 0.3690 respectively. CIT has a negative sign and its absolute value is 457635.0. In the Model, this also implies that a decrease in CIT decreases the Human Development Index (HDI) by 457635.0, and this does not conform to our theoretical expectations but VAT conforms.

Table 4.3: HDI →PPT + CIT + VAT

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PPT	-18507022	67546137	-0.273991	0.7874
CIT	-457635.0	1141393	-0.400944	0.6935
VAT	3.02E+08	3.27E+08	0.922875	0.3690
C	5.27E+10	5.20E+10	1.013288	0.3251
HDI (-1)	0.860120	0.119637	7.189419	0.0000
R-squared	0.932760	Mean dependent var		6.22E+11
Adjusted R-squared	0.916939	S.D. dependent var		4.60E+11
S.E. of regression	1.33E+11	Akaike info criterion		54.25554
Sum squared resid	2.99E+23	Schwarz criterion		54.50350
Log likelihood	-591.8109	Hannan-Quinn criter.		54.31395
F-statistic	58.95628	Durbin-Watson stat		1.968326
Prob (F-statistic)	0.000000			

Source: Data output via E-views 12 .0

Discussion of Results

This study used the human development index as a dependent variable; while tax revenue was represented by petroleum profit tax, company income tax, and value added tax. The findings show that the impacts of value added tax were positive and statistically not significant at 5% with its t-values as 0.922875 and p-values as 0.3690. This implies that they have not contributed significantly to the human development index. Petroleum profit tax is, however, not positive and not statistically significant. This implies that petroleum profit tax does not contribute significantly to the human development index. Company income tax was negative and was also not significant statistically. This implies that company income tax does not contribute significantly to the human development index. The findings of this study were not totally in alignment with some of the previous studies carried out on related studies. For instance, Salome, Ibanichuka, and Akani (2016) showed a very positive and significant relationship between the components of tax revenue and the growth of the Nigerian economy. However, the findings of this study are supported by Owolabi, Ogunleye & Inimgba, (2019) who found a positive effect on the relationship between tax revenue and economic development in Nigeria. The negative and significant effect on economic growth by company income tax is not contrary to the a priori expectation of this study. This might be due to the incidence of tax evasion and avoidance among the companies in Nigeria. In addition, government policy on tax matters tends to discourage some companies from paying tax. For instance, the continuous increase in double and multiple taxes on company incomes, especially as regards the infant companies could make them evade or avoid taxes.

2. CONCLUSION AND RECOMMENDATIONS

This research investigated the effect of tax revenue on economic development in Nigeria, specifically focusing on the impact of petroleum profit tax, company income tax, and value added tax on the human development index. The findings of the study indicate that value added tax had a positive impact on the human development index, but the impact was not statistically significant. On the other hand, petroleum profit tax was not found to have a positive impact on the human development index, and the impact was also

not statistically significant. Similarly, company income tax was found to have a negative impact on the human development index, but this impact was not statistically significant. The study concluded that neither petroleum profit tax, company income tax, nor value added tax have a significant impact on the human development index in Nigeria. These results suggest that other factors beyond tax revenue may play a more significant role in driving economic development and improving the human development index in the country.

Since tax revenue alone does not appear to have a significant impact on the human development index in Nigeria, it is important to explore and implement alternative strategies for economic development. This could include focusing on sectors such as education, healthcare, infrastructure development, and job creation to foster sustainable economic growth and improve the overall well-being of the population. Even though the impact of taxes on the Human Development Index was not significant in this study, it is still important to ensure an efficient and effective tax system. Governments should focus on improving tax policy and administration, including reducing tax evasion and improving tax collection mechanisms. This can help increase revenue generation and create a more conducive environment for economic development. To drive economic development and improve the Human Development Index, it is important to foster collaboration and partnerships between the government, private sector, civil society organizations, and international stakeholders. By working together, these stakeholders can combine resources, expertise, and efforts to implement comprehensive development strategies that go beyond tax revenue.

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