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VALUE ADDED TAX REVENUE AND ECONOMIC GROWTH OF NIGERIA

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Abstract: The study ascertained the effect of value added tax revenue on the economic growth of Nigeria. The specific objective was to determine the extent to which VAT revenue affects gross domestic product and human development index of Nigeria. This study employed an *ex-post facto* research design. Secondary data were collected from the Nigerian tax report (2022) and Central Bank of Nigeria Statistical Bulletin (2022), covering a twelve-year period from 2011 to 2022. Descriptive analysis was carried out in the study while the null hypotheses were tested using Ordinary Least Square regression technique. The study found the following results: VAT revenue has a significant and positive effect on the gross domestic product of Nigeria; VAT revenue has a significant and positive effect on the human development index. The study recommends that civil society organizations and advocacy groups should advocate for the effective utilization of VAT revenue in funding social welfare programs and investing in critical sectors such as healthcare and education.

Keywords: Economic Growth, VAT Revenue, Gross Domestic Product, Human Development Index

1.0 Introduction

The ancient background of Value Added Tax (VAT) implementation in Nigeria dates back to the late 1980s (Umenweke & Nwoke, 2023). Before the introduction of VAT, Nigeria heavily relied on indirect taxes, such as sales tax and excise duties, as significant sources of revenue. However, these tax systems faced several challenges, including tax evasion, limited tax base, and administrative inefficiencies. In the early 1980s, the World Bank recommended that Nigeria adopt a VAT system to address the shortcomings of the existing tax regime and create a more efficient and equitable tax structure. The proposed VAT system aimed to capture a broader tax base by taxing the value added at each stage of production and distribution (Agbo & Nwadialor, 2020). As a result, the Nigerian government passed the VAT Act in 1993, establishing the legal framework for the implementation of VAT in the country (Bari, Khan & Ullah, 2022). The act outlined the rules, rates, exemptions, and administration of the VAT system. Initially, when VAT was introduced in Nigeria in 1993, the standard rate was set at 5%. This rate was relatively low compared to VAT rates in other countries, reflecting the government's cautious approach to avoid potential negative impacts on inflation and consumer spending (Etim, Jeremiah & Udonsek, 2020).

Over the years, the Nigerian government made several amendments to the VAT Act to address various challenges and align the system with changing economic conditions. These amendments affected VAT rates, exemptions, and administrative procedures (Nwankwo, 2022). In 2007, the VAT rate was increased from 5% to 10% to boost government revenue. Subsequently, there were discussions about further increases, but the government sought to strike a balance between revenue generation and the impact on businesses and consumers (Umenweke & Nwoke, 2023). To provide targeted support to specific sectors and encourage local production, Nigeria introduced multiple VAT rates. For instance, certain essential goods and services were granted reduced rates or exemptions, while luxury items attracted higher rates. Since its implementation, VAT has become a significant source of revenue for the Nigerian government. It has played a crucial role in funding public services, infrastructure projects, and social welfare programs. The Nigerian government continues to undertake reforms to enhance the efficiency and effectiveness of the VAT system (Nwankwo, 2022). These reforms aim to address tax evasion, improve tax compliance, and simplify administrative processes (Agbo & Nwadialor, 2020). Thus, the implementation of Value Added Tax in Nigeria was a strategic move to diversify the revenue base and improve the country's fiscal position. Over the years, VAT has evolved, and its impact on government revenue and the economy remains a subject of ongoing assessment and policy adjustments.

Value Added Tax (VAT) serves as a crucial component of a country's revenue generation system, holding immense significance in funding public services and facilitating socio-economic development (Adefolake & Omodero, 2022). Particularly in Nigeria, VAT assumes a pivotal role as a prominent source of government revenue, making substantial contributions to the national budget and providing support for a myriad of developmental initiatives (Adeyemi, 2023) that improve the country’s gross domestic product (GDP) and human development index. According to Daferighe, Emah and Offiong (2022), Value Added Tax revenue makes a significant contribution to the Nigerian economy, playing a pivotal role in supporting government finances and funding essential public services and development initiatives. As a consumption-based tax, VAT serves as a reliable source of income for the government, helping to diversify Nigeria's revenue base and reducing the country's overreliance on oil revenues. Given the volatility of global oil prices, VAT revenue provides a stable and predictable income stream, contributing to fiscal stability (Ehiedu, 2022).

The collection and enforcement of Value Added Tax in Nigeria face several challenges, which can hinder the efficient administration of the tax system (Ehiedu, 2022). These challenges stem from various factors and can impact both the government's revenue collection and compliance by businesses. One of the most significant challenges in VAT collection is tax evasion and non-compliance by businesses and individuals. Some businesses may deliberately underreport their VAT liability or engage in fraudulent practices to avoid paying the correct amount of VAT. This can lead to significant revenue losses for the government, affecting its ability to fund public services and development projects. More also, a significant portion of economic activities in Nigeria operates within the informal economy. Many small businesses and informal traders may not be registered for VAT or may not accurately report their transactions (Umenweke & Nwoke, 2023). The lack of proper documentation and monitoring in the informal sector poses challenges for VAT enforcement and leads to potential revenue leakages. Even, the complexity of VAT regulations can be daunting for businesses, particularly small and medium-sized enterprises (SMEs) (Agbo & Nwadialor, 2020). Understanding and complying with the numerous VAT exemptions, and administrative requirements can be resource-intensive for businesses. This complexity may result in inadvertent errors or non-compliance. The efficiency and effectiveness of VAT collection depend on the

capacity and capability of the tax administration. Inadequate resources, technological infrastructure, and skilled personnel can hinder proper enforcement and monitoring of VAT compliance (Ehiedu, 2022). Insufficient funding and training for tax officials may result in reduced audit activities and weaker enforcement measures. VAT collection becomes more challenging in cross-border transactions involving imports and exports (Etim, Jeremiah & Udonsek, 2020). Ensuring the proper collection of VAT on imported goods and securing VAT refunds for exporters can be complex due to customs procedures, documentation requirements, and potential delays in the refund process. As a result of the challenges above, the potentials of VAT revenue towards enhancing the growth of the economy is often thwarted. It is against the issues raised above that this study is conducted.

The broad objective of the study is to examine the effect of VAT on the economic growth of Nigeria. The specific objectives are as follows:

1) To determine the effect of VAT revenue on gross domestic product of Nigeria.
2) To ascertain the effect of VAT revenue on human development index of Nigeria.

2.0 Review of Related Literature

2.1 Concept of Value-Added Tax

The Value-Added Tax (VAT) is a consumption tax imposed on the value added to goods and services at each stage of production or distribution (Akintola, Omotola, Oyinbodunmi & Akinyemi, 2022). It operates as a multi-stage tax, with businesses acting as intermediaries for tax collection. At each stage of the supply chain, businesses calculate the tax based on the value they add and pass it on to their customers. The tax burden accumulates through the production and distribution process until it is ultimately borne by the final consumer, who purchases the goods or services (Adefolake & Omodero, 2022). In conventional systems, tax is levied at each stage of production without considering the value added at previous stages, leading to an excessive tax burden and distortions in the market. VAT, on the other hand, applies only to the value added at each stage, making it more efficient and less distortionary (Akpokhio & Ekperiware, 2022).

One crucial feature of VAT is the mechanism of input tax credit. Businesses are allowed to deduct the VAT they paid on purchases and expenses (input tax) from the VAT they collected from their customers (output tax). The difference represents the net amount of VAT they owe to the government (Agbo & Nwadialor, 2020). This system ensures that businesses are only taxed on the value they contribute to the final product or service, avoiding the double taxation of intermediate goods. VAT is considered a consumption-based tax because it is ultimately borne by the end consumer who purchases the final product or service (Adefolake & Omodero, 2022). Individuals can control their tax burden to some extent by adjusting their level of consumption, making it relatively fair compared to income taxes.

Unlike sales taxes, which are added on top of the selling price, VAT is typically included in the advertised price of goods and services (Agrawal & Fox, 2021). This inclusivity enhances transparency for consumers, as they can easily identify the tax component in the total price. VAT is an essential source of revenue for governments worldwide. It provides a stable and predictable income stream that can be used to fund various public services, infrastructure development, and other government initiatives (Etim, Jeremiah & Udonsek, 2020). In the context of international trade, VAT plays a significant role. Many countries zero-rate or exempt exports from VAT to make their products more competitive in the global market. Conversely, imports are usually subject to VAT to create a level playing field for domestic industries (Xu, 2023).

2.2 Administration and Collection of VAT in Nigeria

The administration and collection of Value Added Tax (VAT) in Nigeria fall under the purview of the Federal Inland Revenue Service (FIRS). This governmental agency is responsible for overseeing VAT policies, ensuring compliance, and collecting VAT revenue from businesses operating within the country (Metu, Nwogwugwu & Okeyika, 2019). To achieve these objectives, the FIRS employs a structured approach to manage VAT operations effectively. One of the primary requirements for businesses operating in Nigeria is VAT registration. Entities with an annual turnover that exceeds the government's prescribed threshold must register for VAT with the FIRS (Nwankwo, 2022). Upon registration, these businesses become VAT agents and are entrusted with the responsibility of collecting VAT from their customers on behalf of the government.

VAT agents are required to file regular VAT returns with the FIRS (Umenweke & Nwoke, 2023). These returns provide comprehensive details of the VAT collected from customers and the VAT paid on purchases and expenses (input tax) during a specific reporting period. The difference between the output tax (VAT collected) and input tax (VAT paid) determines the net VAT payable to the government. In Nigeria, there is a standard VAT rate set by the government, which is typically applied to most goods and services. However, certain goods and services may enjoy reduced VAT rates or exemptions, as determined by the government's fiscal policies.

One of the critical aspects of the VAT system is the input tax credit mechanism. Businesses are entitled to claim input tax credit, allowing them to deduct the VAT they paid on their purchases and expenses from the VAT they collected from their customers (Agbo & Nwadialor, 2020). The result is the net VAT liability, which businesses must remit to the government. To ensure compliance with VAT regulations, the FIRS conducts audits and compliance checks periodically. These efforts help to verify that businesses are accurately reporting and remitting the correct amount of VAT. Non-compliance or underreporting of VAT may lead to penalties and fines.

VAT collection from imports is handled by the Nigeria Customs Service at the point of entry. Importers are required to pay the VAT to the Customs Service, and the funds are subsequently remitted to the FIRS. For businesses engaged in export activities, there is a provision for VAT refunds (Umenweke & Nwoke, 2023). Exporters can claim refunds for the VAT paid on their inputs, as these inputs are not intended for domestic consumption. In support of efficient VAT administration, the FIRS collaborates with various government agencies, tax consultants, and stakeholders (Etim, Jeremiah & Udonsek, 2020). Additionally, the agency conducts taxpayer education programs to enhance awareness and understanding of VAT regulations and compliance requirements.

2. 3 Economic Growth

Economic growth, a cornerstone concept in economics, denotes the continual expansion of an economy's production of goods and services over time (Adeagbo, 2021). Typically gauged by the growth rate of Gross Domestic Product (GDP) or even Human Development Index (HDI), which encapsulates the total value of all goods and services produced within a nation's borders, it serves as a vital barometer of an economy's overall vitality and prosperity. This expansion signifies increased business activities, heightened employment opportunities, and an elevation in living standards for the populace (Odion, Amedu & Udeh, 2022). Economic growth, the steadfast engine propelling a nation forward, manifests through the broadening of its production landscape, heralding the emergence of a diverse range of goods and services (Ani & Onu, 2021). Beyond numerical metrics, economic growth becomes emblematic of a country's vigor and future potential (Adefolake & Omodero, 2022). Its ripple effects hold the promise of reshaping societies, improving living conditions, and

uplifting the collective well-being of the population (Adegboyo, Keji & Fasina, 2021), as reflected in real GDP or Human development index.

Real Gross Domestic Product (GDP) serves as an indicator of a nation's economic output, factoring in inflation (Nyiputen & Abijia, 2022). It tracks variations in the volume of goods and services produced across time. Real GDP, distinct from nominal GDP, factors in inflationary impacts (Nwobodo, Adegbie & Fakunmoju, 2022). While nominal GDP relies on current market prices, real GDP adjusts for changes in the economy's general price level over time, enabling the isolation of shifts in the quantity of goods and services produced (Daferighe, Emah & Offiong, 2022).

The Human Development Index (HDI) serves as a composite measure evaluating a nation's performance across three pivotal dimensions of human development: longevity, education accessibility, and living standards. Widely adopted, HDI offers a comprehensive assessment of a country's overall human development status (Audu & Ajibade, 2021). By amalgamating health, education, and living standards, HDI furnishes a singular score, encapsulating the holistic level of human development within a given nation.

Empirical Review

Adeyemi (2023) investigated the effect of Value-Added Tax on Nigeria's economic growth, utilizing an ex-post facto research design and analyzing data from 1980 to 2020 sourced from the Central Bank of Nigeria (CBN), Federal Inland Revenue Services (FIRS), and the National Bureau of Statistics (NBS). Applying the Autoregressive Distributive Lag Model (ARDL), the study found a significant and positive relationship between VAT and real gross domestic product (GDP) in Nigeria.

Adefolake and Omodero (2022) assessed the effects of VAT revenue on the economic growth of Nigeria utilizing time series data spanning from year 2000 till 2021. The study employed 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. Johansen co-integration test was conducted and it revealed a long-run relationship. Consequently, the study utilized the Vector Error Correction Model to evaluate the effects of VAT on GDP. The findings reveal that VAT has positive and significant effects on GDP.

Akintola, Omotola, Oyinbodunmi, and Akinyemi (2022) investigated the impact of VAT revenues on Nigeria's economic development. The data for the research were obtained from the CBN statistical bulletin and the World Bank data, covering the period from 2006 to 2019. Employing multiple regression analysis, which incorporated a fusion of time series dimensions, the study revealed that value-added tax had a non-significant and negative effect on Nigeria's gross domestic product (GDP).

Akpokhio and Ekperiware (2022) investigated the impact of value-added tax on Nigeria's economic growth and development over the period from 1981 to 2021. The research employed both descriptive analysis and the ARDL model. Secondary data was utilized, sourced from the CBN Statistical Bulletin and the Federal Inland Revenue Service. The unit root test results indicated that the variables were observed at levels and at first difference, suggesting the need for an ARDL long-run relationship among them. Ultimately, the study revealed that value-added tax had a non-significant and negative effect on Nigeria's economic growth and development.

Alfred and Heman (2022) investigated the influence of value-added tax on Nigeria's economic growth. The research utilized mainly secondary data sourced from the Central Bank of Nigeria and the National Bureau of Statistics, covering a twenty-six-year period from 1994 to 2020. Analyzing the data using a regression statistical

model, the study tested the statistical significance of the variables. Ultimately, the analysis revealed that VAT had a positive and significant impact on Nigeria's economic growth.

Ashiedu, Okafor, Amahalu, and Obi (2022) examined the impact of VAT revenue on the national development of Nigeria over a period of twenty-two years from 1999 to 2020. They measured national development using Per Capita Income. The research utilized an ex-post facto research design and collected secondary data from various sources, including the Federal Inland Revenue Service (FIRS) bulletin, Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), and the World Bank statistical bulletins. The study employed several statistical tests and analyses, such as Pearson correlation, Augmented Dickey-Fuller (ADF) test, Ordinary Least Square regression analysis, Granger Causality test, Johansen Co-integration test, and Error Correction Model. It was found that Value Added Tax had a significant negative effect on Per Capita Income.

Daferighe, Emah, and Offiong (2022) conducted a study to investigate the role of Value Added Tax in contributing to economic development in Nigeria. The research covered the period from 1994 to 2013, and time series data were collected from the Central Bank of Nigeria (CBN) statistical bulletin. The evaluation of the models was carried out using the step-wise multiple regression technique, revealing that VAT alone explained approximately 94.40% of the variation in Real Gross Domestic Product (RGDP) with an adjusted R2 of 0.9440. The findings indicated a positive and significant relationship between VAT and economic development in Nigeria.

Ehiedu (2022) investigated the impact of VAT revenue volatility on economic growth in Nigeria over a 28-year period from 1994 to 2021. The data for the research were sourced from the CBN Statistical Bulletin and Annual Report. Various statistical techniques, including descriptive statistics, correlation matrix, unit root test, Autoregressive Distributed Lag (ARDL) Bound Co-integration test, and ARDL Co-integrating, were used for data analysis. The study's findings indicated that VAT had a significant positive effect on GDP, suggesting that VAT revenue volatility played a favorable role in contributing to Nigeria's economic growth during the specified period.

Garga (2022) ascertained the impact of Value-Added Tax on the economic growth of Nigeria from 1970 to 2020. The primary sources of secondary data were obtained from the annual reports of the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), and Federal Inland Revenue Service (FIRS). To assess the effect of VAT on economic growth, the Ordinary Least Squares (OLS) model was utilized. The study also employed the Augmented Dickey-Fuller (ADF) test to establish the stationarity of the time series data, while linear and multiple linear regression analyses were used to determine the impact of the independent variable on the dependent variable. The findings revealed that VAT influenced economic growth.

Ihenyen and Ogbise (2022) explored the correlation between VAT revenues and economic growth in Nigeria from 2010 to 2020. The data analysis was performed using multiple linear regression with the Microsoft Excel package. The findings revealed that value-added tax had a positive impact on Nigeria's economic growth.

Nwachukwu, Nwoha, and Inyama (2022) conducted a study to investigate the impact of VAT on the economic growth in Nigeria spanning from 1987 to 2021. The research utilized an ex-post facto research design. The data were analyzed using econometric techniques, including Descriptive Statistics, Augmented Dickey-Fuller Tests for Unit Roots, and Ordinary Least Square (OLS) regression. The study's findings revealed that value-added tax had a positive and significant effect on the gross domestic product in Nigeria.

Nwobodo, Adegbie, and Fakunmoju (2022) conducted a study to investigate the impact of VAT on Nigeria's economic growth. The research employed an ex-post facto research design, covering the period from 1995 to 2019. To analyze the data, the researchers used the Autoregressive Distributed Lag (ARDL) method, and a unit root test was conducted on the study variables, revealing mixed levels of stationarity. The findings indicated that VAT had a significant positive effect on real GDP in Nigeria.

Odu (2022) conducted an investigation to explore the impact of Value-added Tax on revenue generation and economic growth in Nigeria. The study specifically examined the influence of VAT on Gross Domestic Product (GDP) and the total revenue generated in Nigeria over the period from 1994 to 2018. Additionally, the study analyzed the trend of VAT during the same timeframe. Time-series data were utilized in the research to perform regression analyses for VAT on total tax revenue and GDP. Both the vector error correction and autoregression models were employed in the regression. The findings revealed that VAT had a significant effect on total tax revenue with a two-year lag, and its explanatory power on changes in total tax revenue increased over time.

Ogbonna, Emmanuel, and Ngozi (2022) investigated the impact of taxation on economic growth in Nigeria. The research employed an ex-post-facto research design and collected data from the years 1995 to 2021. Data collection utilized a secondary source method, gathering relevant information from the Central Bank of Nigeria (CBN) Annual Statistical Bulletin and the Federal Inland Revenue Services (FIRS) Annual Report. The data analysis involved the adoption of the Autoregressive Distributed Lags (ARDL) technique. The study's findings revealed that value-added taxes derived from the digital economy had a significant effect on economic growth in Nigeria.

Okerekeoti (2022) conducted a study to investigate the impact of value-added tax on economic growth in Nigeria, using Gross Domestic Product (GDP) as a proxy for economic growth. The research employed an Ex Post Facto research design and collected data from the Central Bank of Nigeria Statistical Bulletin covering the years 2000 to 2020. Regression analysis was performed using Eviews version 9.0 statistical software package. The study's findings indicated that value-added tax had a positive and significant effect on the Nigerian economy.

Okoroafor and Okereke (2022) conducted a study to examine the impact of value-added tax exemptions on the performance of firms in the Nigerian manufacturing sector. The research utilized time series panel data, spanning from 2014 to 2020, and focused on ten selected firms that were exempted from VAT. The study employed a pooled Ordinary Least Square (OLS) regression model and conducted LLC, ADF, PP panel unit root tests, which confirmed that all series were stationary at I(1). The findings revealed a positive and significant effect of VAT exemptions on firm performance in the Nigerian manufacturing sector.

Audu and Ajibade (2021) conducted a study to investigate the impact of Value Added Tax on human development across states in Nigeria, using the framework of the endogenous growth theory. The research employed an Ex-post facto research design, analyzing secondary data collected from all 36 states in Nigeria during the period from January 2017 to December 2017. The regression analysis results indicated that VAT allocation had a minimal positive effect on the quality of life in Nigeria. However, the study found that VAT allocation did not significantly influence human development among states in Nigeria.

Egolum and Ugonabo (2021) conducted a study to investigate the impact of Value Added Tax on Economic Development in Nigeria from 1994 to 2018. The study formulated two hypotheses aligned with its objectives. Adopting a time series research design, the researchers collected data for the study from various sources, including the CBN statistical bulletin, Federal Inland Revenue bulletin, and Joint Tax Board bulletin for the specified period.

Pearson coefficient of correlation and simple regression analysis were employed to test the hypotheses. The findings revealed a positive and statistically significant relationship between Value Added Tax and economic development in Nigeria.

3.0 Methodology

This study employs an *ex-post facto* research design, which aims to establish facts and draw conclusions about past events. It involves a systematic and objective inquiry into past events, developments, and experiences, where the researcher lacks control over the variables being studied. Thus, this study adopts *ex-post facto* research design in order to assess how value-added tax revenue influences the Nigerian economic growth.

This study made use of secondary data that were collected from the Nigerian tax report (2022) and Central Bank of Nigeria Statistical Bulletin (2022), covering a twelve-year period from 2011 to 2022. The study employed descriptive analysis, which involved calculating the mean, maximum values, minimum values, and standard deviation. Additionally, the null hypotheses were tested using the Ordinary Least Square regression, facilitated by Eviews statistical software. When the p-value obtained from the results is greater than 0.05, the null hypotheses is accepted, and the alternate hypotheses is rejected. On the other hand, if the p-value is less than 0.05, the null hypotheses is rejected, and the alternate hypotheses is accepted. The linear models tested are presented below:

1. $GDP = \beta0 + \beta1(VAT) + \varepsilon$
2. $HDI = \beta0 + \beta1(VAT) + \varepsilon$

$\beta0$ = intercept,

$\beta1$ = coefficient of the VAT variable

ε = error term.

4.0 Data Analysis

4.1 Descriptive Statistics

Table 1 shows the data presentation on VAT revenue, GDP and HDI.

Table 1 Presentation of Data

Year	VAT (₦' Billion)	Real GDP (₦' Billion)	HDI (%)
2011	659.20	58180.35	.46
2012	710.60	60670.05	.50
2013	802.70	63942.85	.47
2014	802.96	67977.46	.50
2015	767.33	69780.69	.52
2016	828.20	68652.43	.52
2017	972.35	69205.69	.53
2018	1108.04	70536.35	.53
2019	1189.98	72094.09	.54
2020	1531.17	70800.54	.54
2021	2072.85	73382.77	.54
2022	2511.52	74752.42	.53

Source: Researcher's Compilation from CBN Bulletin and Tax Report (2022)

Based on the data presented in Table 1, there is a clear upward trend in the Value Added Tax (VAT) revenue of Nigeria from 2011 to 2022. The VAT revenue starts at ₦659.20 billion in 2011 and steadily increases over the years, reaching its highest point of ₦2511.52 billion in 2022. This trend suggests a consistent growth in VAT revenue collection over the specified period. It indicates an expansion in economic activity and consumption within the country, as VAT is typically levied on the sale of goods and services at each stage of production and distribution. The substantial increase in VAT revenue from 2019 to 2022, where it more than doubles from ₦1189.98 billion to ₦2511.52 billion, may reflect both economic growth and policy changes that could have affected VAT rates or enforcement.

Similarly, there is an overall upward trend in the Real Gross Domestic Product (GDP) of Nigeria from 2011 to 2022. The Real GDP starts at ₦58,180.35 billion in 2011 and gradually increases over the years, reaching its highest point of ₦74,752.42 billion in 2022. However, there are some fluctuations and slight deviations from the overall upward trajectory, particularly between 2015 and 2019, where the Real GDP experiences relatively modest growth or remains relatively stable. The increase in Real GDP from 2019 to 2022, despite the challenges posed by the COVID-19 pandemic in 2020, suggests resilience and potential recovery in the Nigerian economy.

Finally, there is a gradual upward trend in the Human Development Index (HDI) of Nigeria from 2011 to 2022. The HDI starts at 0.46 in 2011 and increases steadily over the years, reaching its highest point of 0.54 in 2019, where it remains seemingly constant until 2022. The slight decrease in HDI from 2019 to 2022, where it drops back to 0.53, may indicate a potential slowdown or stagnation in the rate of progress in certain dimensions of human development during those years.

The output of the descriptive analysis is shown below:

Table 2 Descriptive Statistics

	VAT	GDP	HDI
Mean	1163.075	68331.31	0.514083
Median	900.2738	69493.19	0.523500
Maximum	2511.518	74752.42	0.538000
Minimum	659.2000	58180.35	0.459000
Std. Dev.	588.4138	5008.672	0.026186
Skewness	1.320881	-0.834086	-1.082983
Kurtosis	3.464849	2.686928	2.886428
Jarque-Bera	3.597493	1.440405	2.352154
Probability	0.165506	0.486654	0.308487
Sum	13956.91	819975.7	6.169000
Sum Sq. Dev.	3808539.	2.76E+08	0.007543
Observations	12	12	12

Source: Analysis Output using Eviews 12 (2024)

The mean VAT revenue collected over the period under study is ₦1163.075 billion, with a maximum of ₦2511.518 billion and a minimum of ₦659.200 billion. The standard deviation of VAT revenue is relatively high at ₦588.4138 billion, indicating significant variability in the collected revenue. The skewness value of 1.320881 suggests that the distribution of VAT revenue is positively skewed, meaning there are more observations on the lower end of the distribution with a few high outliers. The kurtosis value of 3.464849 indicates that the distribution

of VAT revenue has heavy tails and is leptokurtic. Moreover, the probability of the Jarque-Bera test, with a value of 0.165506, suggests that the distribution of VAT revenue may not significantly deviate from a normal distribution.

The mean GDP over the period is ₦68331.31 billion, with a maximum of ₦74752.42 billion and a minimum of ₦58180.35 billion. The standard deviation of GDP is 5008.672 billion, indicating moderate variability in the GDP values. The negative skewness value of -0.834086 suggests that the distribution of GDP is negatively skewed, meaning there are more observations on the higher end of the distribution with a few low outliers. The kurtosis value of 2.686928 indicates that the distribution of GDP has less heavy tails compared to the normal distribution, but still exhibits some peakedness. Additionally, the probability of the Jarque-Bera test, with a value of 0.486654, suggests that the distribution of GDP may not significantly deviate from a normal distribution.

The mean HDI over the period is 0.514083, with a maximum of 0.538 and a minimum of 0.459. The standard deviation of HDI is 0.026186, indicating relatively low variability in the HDI values. The negative skewness value of -1.082983 suggests that the distribution of HDI is negatively skewed, meaning there are more observations on the higher end of the distribution with a few low outliers. The kurtosis value of 2.886428 indicates that the distribution of HDI has less heavy tails compared to the normal distribution but still exhibits some peakedness. Additionally, the probability of the Jarque-Bera test, with a value of 0.308487, suggests that the distribution of HDI may not significantly deviate from a normal distribution.

4.2 Test of Hypotheses

The null hypotheses of the study were tested using the Ordinary Least Square regression, facilitated by Eviews statistical software.

4.2.1 Test of Hypothesis I

H_{01}: VAT revenue has no significant effect on gross domestic product of Nigeria.

Table 3: Test of Hypothesis I

Dependent Variable: GDP
Method: Least Squares
Date: 02/05/24 Time: 08:48
Sample: 2011 2022
Included observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VAT	6.192761	1.846797	3.353245	0.0073
C	61128.66	2386.675	25.61248	0.0000

R-squared	0.529284	Mean dependent var	68331.31
Adjusted R-squared	0.482213	S.D. dependent var	5008.672
S.E. of regression	3604.112	Akaike info criterion	19.36855
Sum squared resid	1.30E+08	Schwarz criterion	19.44937
Log likelihood	-114.2113	Hannan-Quinn criter.	19.33863
F-statistic	11.24425	Durbin-Watson stat	0.385831
Prob(F-statistic)	0.007325		

Source: Analysis Output using Eviews 12 (2024)

The regression results in Table 3 assesses whether VAT revenue has a significant effect on the Gross Domestic Product (GDP) of Nigeria. The adjusted R-squared value of 0.482213 indicates that approximately 48.22% of the variability in GDP can be explained by the VAT revenue variable in the regression model. Additionally, the F-statistic of 11.24425 with a probability value of 0.007325 suggests that the overall regression model is statistically significant at the 5% level, providing further support for the alternate hypothesis. The constant term has a coefficient of 61128.66, with a probability value of 0.0000, indicating that it is also statistically significant.

The coefficient for the VAT variable is 6.192761, with a probability value of 0.0073. This suggests that for every unit increase in VAT revenue, GDP is expected to increase by approximately ₦6.19 billion, holding other variables constant. Since the p-value of 0.0073 is less than 0.05, we accept the alternate hypothesis and conclude that VAT revenue has a significant positive effect on the Gross Domestic Product of Nigeria ($p<0.05$).

Test of Hypothesis II

H_{02}: VAT revenue has no significant effect on human development index of Nigeria.

Table 4: Test of Hypothesis II

Dependent Variable: HDI
Method: Least Squares
Date: 02/05/24 Time: 08:49
Sample: 2011 2022
Included observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VAT	0.000027	0.000011	2.371428	0.0392
C	0.483029	0.014550	33.19712	0.0000

R-squared	0.359946	Mean dependent var	0.514083
Adjusted R-squared	0.295940	S.D. dependent var	0.026186
S.E. of regression	0.021972	Akaike info criterion	-4.647045
Sum squared resid	0.004828	Schwarz criterion	-4.566227
Log likelihood	29.88227	Hannan-Quinn criter.	-4.676966
F-statistic	5.623673	Durbin-Watson stat	0.876433
Prob(F-statistic)	0.039182		

Source: Analysis Output using Eviews 12 (2024)

The regression results in Table 4 examines the effect of VAT revenue on the Human Development Index (HDI) of Nigeria. The adjusted R-squared value of 0.295940 indicates that approximately 29.59% of the variability in HDI can be explained by the VAT revenue variable in the regression model. Additionally, the F-statistic of 5.623673 with a probability value of 0.039182 suggests that the overall regression model is statistically significant at the 5% level, providing further support for the alternate hypothesis. The constant term has a coefficient of 0.483029, with a probability value of 0.0000, indicating that it is also statistically significant.

The coefficient for the VAT variable is 0.000027, with a probability value of 0.0392, indicating that the coefficient is statistically significant at the 5% level. This suggests that for every unit increase in VAT revenue, the HDI is

expected to increase by approximately 0.000027, holding other variables constant. Since the p-value is less than 0.05, we accept the alternate hypothesis and conclude that VAT revenue has a significant positive effect on the Human Development Index of Nigeria.

4.3 Discussion of Findings

Our analysis reveals that VAT revenue has a significant positive effect on the Gross Domestic Product (GDP) of Nigeria. This finding is consistent with economic theory, which suggests that an increase in VAT revenue can stimulate economic growth through various channels. Firstly, VAT revenue provides the government with additional funds to invest in infrastructure, education, and healthcare, which can enhance productivity and competitiveness in the economy. Secondly, VAT can encourage savings and investment by reducing consumption, thereby freeing up resources for investment in productive activities. Finally, VAT can promote fiscal discipline and stability, leading to improved investor confidence and long-term growth prospects. Therefore, the positive relationship between VAT revenue and GDP underscores the importance of fiscal policy in driving economic development in Nigeria. Adeyemi (2023) and Adefolake and Omodero (2022) were of the view that these VAT revenues contribute positively to Nigeria's economic growth. According to the studies by Garga (2022); Ihenyen and Ogbise (2022); and Nwachukwu, Nwoha, and Inyama (2022), value-added tax had a positive and significant effect on the gross domestic product in Nigeria.

Similarly, our analysis indicates that VAT revenue has a significant positive effect on the Human Development Index (HDI) of Nigeria. This finding highlights the role of government revenue in supporting human development outcomes, such as health, education, and living standards. VAT revenue can contribute to improvements in HDI by financing public services and social welfare programs that directly benefit the population. For instance, investments in healthcare infrastructure and education initiatives funded by VAT revenue can lead to better health outcomes and increased access to quality education, thereby raising the overall level of human development in the country. Additionally, VAT revenue can help reduce income inequality by funding redistributive policies and social safety nets, which can further enhance human development outcomes for marginalized groups. Therefore, the positive association between VAT revenue and HDI underscores the importance of inclusive and sustainable fiscal policies in promoting human development in Nigeria. However, while Akpokhio and Ekperiware (2022) found that value-added tax had a non-significant and negative effect on Nigeria's economic development and Ashiedu, Okafor, Amahalu, and Obi (2022) found that value added tax had a significant negative effect on Per Capita Income, the finding by Ehiedu (2022) showed that VAT had a significant positive effect on economic growth of Nigeria.

5.0 Conclusion and Recommendations

VAT, as a key source of government revenue, has been subject to debate regarding its implications for economic development and human well-being. In this study, we examined the relationship between VAT revenue and two critical indicators of Nigeria's economic growth: Gross Domestic Product (GDP) and Human Development Index (HDI). The study found that VAT revenue has a significant positive effect on the GDP and HDI of Nigeria, driven by its contribution to government revenue, investment, and economic activity.

Thus, by channeling VAT revenue into productive investments, the government can stimulate economic activity, create employment opportunities, and enhance productivity, thereby contributing to overall GDP growth. Additionally, VAT revenue can also indirectly boost GDP by encouraging consumption and investment. VAT revenue contributes to government revenue, which can be allocated to social welfare programs, education,

healthcare, and other initiatives aimed at improving human development indicators. This is because VAT revenue has the potential to positively influence HDI through increased government spending on social services, although its impact may be tempered by various structural and institutional challenges, highlighting the importance of complementary policies and reforms to ensure that VAT revenue translates into tangible improvements in human development outcomes.

In conclusion, our findings suggest that VAT revenue plays a vital role in driving both economic growth and human development in Nigeria. By generating additional funds for government expenditure, VAT revenue can support investments in infrastructure, education, and healthcare, thereby stimulating economic activity and improving living standards. Moreover, VAT revenue can contribute to human development outcomes by financing social welfare programs and reducing income inequality. Therefore, prioritizing effective tax policies and prudent fiscal management helps to harness the potential of VAT revenue in fostering sustainable and inclusive development in Nigeria. In view of the above, we make the following recommendations:

1. The policymakers and tax authorities responsible for fiscal policy and revenue management should consider optimizing VAT collection mechanisms and ensuring transparency in revenue allocation.
2. Civil society organizations and advocacy groups should advocate for the effective utilization of VAT revenue in funding social welfare programs and investing in critical sectors such as healthcare and education.

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