

Value Added Tax and Economic Growth of Nigeria (2003-2022)

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Abstract

This study empirically examined the relationship between value added tax and economic growth of Nigeria. Time series data on Value Added Tax (VAT) revenue, Total (Federal Government) Revenue (TR), Total (Federal Government) Expenditure (TE) and Gross Domestic Product (GDP) from 2003 to 2022 sourced from the Central Bank of Nigeria (CBN) were analysed, using both simple regression analysis and descriptive statistical method. VAT was used as the independent variable while TR, TE and GDP were used as the dependent variables. Findings showed that VAT revenue accounts for a significant variation in TR, TE and GDP in Nigeria. A very significant and positive correlation also exist between VAT revenue and TE but that the contribution of VAT to TE cannot be directly traceable to any specific expenditure of government like health, education or payment of salaries. The study therefore recommends that government should use a certain percentage of VAT revenue to finance critical sectors of the economy like agriculture, power or health which have direct bearing on the citizens. This can be achieved by establishing a Value Added Tax Fund (VATFund) as is the case with Tertiary Education Trust Fund (TETFund) and other Trust Funds of government.

Keywords: Value Added Tax, Total Federal Government Expenditure, Total Federal Government Revenue, Economic Growth, Nigeria.

1.0 Introduction

Value Added Tax (VAT) is a tax on estimated market value added to a product or service at each stage of its manufacture or distribution and the additions are ultimately borne by the final consumer. End users of products and services bear the tax burden or incidence because they cannot recover the tax paid on consumption of goods and services. On the other hand, businesses can recover VAT they pay on goods and services because those goods and services are like intermediates or raw materials as they can be used to produce further goods and services that will be sold to other businesses or individuals in the economic chain of supply. Odunsi (2022) and Olatunji (2009) looked at VAT as a tax on the supply of goods and services which is eventually borne by the final consumer but collected at each stage of production and distribution chain.

Countries introduced Value Added Tax (VAT) because they are dissatisfied with their existing tax structure. The VAT was introduced in Nigeria in 1993 (but became operational in 1994) by the then Federal Military Government. Prior to that, Sales Tax was under the jurisdiction of the States and generally poorly administered with marginal contribution in terms of revenue (Sanni, 2012). VAT as a multi-level tax is governed by Value Added Tax Act Cap V1, LFN 2004 (as amended). The rate was 5% but the Finance Act, 2021 further amended some provisions of the Value Added Tax Act, Cap. V1, LFN 2004 (as amended). Section 4 of the VAT Act is amended by changing the VAT rate from 5% to 7.5%. VAT rate was changed to 7.5% with effective date from the 1st of February, 2020. Consequently, all taxable supply of goods and services from the 1st of February, 2020 is chargeable at the new rate of 7.5% in Nigeria.

By the introduction of VAT, it was intended that government revenue priorities will shift from oil revenue which is vulnerable to international petroleum price fluctuation to more stable internally generated revenue (Odunsi, 2022; Olatunji, 2013). Egolum and Ugonabo (2021); Okele (2003) considered internally generated revenue as the heart of efficient fiscal policy as the resources needed for societal development can be taken from various enterprises and made available for public good.

While there seems to be a consensus among many researchers as to the positive contribution of VAT on the economic growth and development of Nigeria (as can be seen in the works of Adereti, Adesina & Sanni, 2011;; Ajakaiye, 2000; Cole, Aroyewuni, Soetan & Akintola, 2021; Obareti & Uwaifo, 2020; Olatunji, 2013; Sanni, 2012), there are some that have a contrary view (as highlighted in the works of Okoyeuzu, 2013; Fasoranti, 2013; Basila, 2010). This study is thus motivated by the conflicting results reported by these scholars.

The study also seeks to establish the relationship between VAT and Total (Federal Government) Revenue; VAT and Total (Federal Government) Expenditure and VAT and GDP. Overall, the study seeks to establish how VAT has helped the growth of the Nigerian economy as measured by GDP, TR and TE. This study is thus undertaken to add to whatever scarce studies that already existed in this aspect of VAT. It will help increase awareness of what the government can do to improve operations and utilization of VAT, and finally, be a form of update on existing works by extending the time frame to 2022 to provide a clearer analysis of the current economic reality in Nigeria. This will also close the gap identified in prior research works. This study therefore examined the nexus between value added tax and economic growth in Nigeria.

2.0 Literature Review and Hypotheses Development

The Concept of Value Added Tax

Value Added Tax (VAT) is a consumption tax levied at each stage of the consumption chain and borne by the final consumer of the product or service (Odunsi, 2022; Oserogho & Associates, 2008). Tabansi (2001) considers VAT as a tax charged on consumption of goods made locally or imported into the country. From a buyer's perspective, it is a tax on the purchase price, while the seller views it as a tax only on the value added to a product, material or service. Similarly, Olatunji (2009) define VAT as a tax on the supply of goods and services which is eventually borne by the final consumer but collected at each stage of the production and distribution chain. Olatunji (2013) looks at VAT as tax on spending. Oldman and Woods (1994) consider VAT as a multi-stage consumer tax levied on the difference between a firm's sales and the value of its purchased inputs used in producing goods. Emmanuel (2013) defines VAT as a tax on estimated market value added to a product or service at each stage of its manufacture or distribution and the additions are ultimately borne by the final consumer. The key element identified by various scholars in defining VAT is that VAT is a "consumption" tax levied on a variety of goods and services, both locally and imported (as far as they are not specifically exempted by the VAT Act 1993, as amended). To this end, it is safe to say that a person, who does not consume VATable goods and services, pays no VAT.

Wilhelm Von Siemens (1918) was the first person to advocate for Value Added Tax followed by Maurice Laure (1954) who introduced it in France the same year. They argued that Value Added Tax is better than sales taxes because according to them, sales taxes and tariffs encourage cheating and smuggling (Emmanuel, 2013). Value Added Tax is formally charged at a flat rate of 5% (now 7.5%). Each registered person is required to charge and collect VAT at this flat rate on all invoiced amounts on all goods and services not exempted from paying VAT under the VAT Act 1993, as amended. Where the VAT collected

on behalf of the government (output VAT) in a particular month is more than the VAT paid to other persons (input VAT) in the same month, the difference is required to be remitted to the government on a monthly basis by the taxable person. But where reverse is the case, the tax payer is entitled to a refund of the excess VAT paid or more practically, to receive a tax credit of the excess VAT from the government (Oserogho & Associates, 2008; Olatunji, 2009).

Value Added Tax is imposed on the net sales value of non-exempt, qualifying goods and services in Nigeria. It is levied on any individual, corporation sole, group, body corporate or organization that consumes, procures or imports taxable goods or services (Okoyeuzu, 2013). VAT is charged on the product when value is added both at the production stage and at final sale (Usman & Adejare, 2013). Usman and Adejare (2013) further asserted that the yield from VAT is a fair and accurate measurement of the economic growth since purchasing power (which determines yield) increases with economic growth. VAT is a self-assessed tax that is relatively easy to administer and difficult to avoid or evade. Advocates of VAT argue that it is an efficient method of raising revenue and would allow concomitant reduction in income tax. On the other hand, opponents argue that VAT is a regressive tax that puts too much burden on those who are less able to afford its payment. To reduce this burden, they say, necessities should attract lower rates than luxuries (Fasoranti, 2013; Carlson & Patrick, 1989).

In emphasizing the importance of VAT, Bartlett (2006) described it as the best strategy tax economists have ever devised for raising revenue without investing a lot in enforcement and economic incentives. He further asserted that the impact of VAT on incentives is minimal as it is only applied to consumption. On the contrary, Engen and Skinner (1992) argued that VAT undermines economic growth in two ways. Firstly, it reduces incentives to engage in productive behaviour by driving a large wedge between pre-tax income and post-tax consumption. Secondly, it facilitates the transfer of resources from the productive sector to the public sector thereby reducing job opportunities and also leading to diminishing economic efficiency. Despite the opposing view on VAT, it has helped raised non-oil revenue in many countries of the world. It has been described as a veritable source of revenue to the government. VAT accounts for about 50% of total state revenue in France and 30% of total tax revenue in Cote d'Ivoire, Kenya and Senegal (Adereti et.al. 2011; Fasoranti, 2013). Ajakaiye (2000) opined that VAT contributes about 20% to Total (Federal Government) Revenue in the less developed countries.

The Concept of Economic Growth and Development

Economic development means more than economic growth. Kiely (2001) looked at economic development as the increase in the number of people in a nation's population with sustained growth from a simple low-income economy to a modern high-income economy. Its scope includes the processes and policies by which a nation improves the economic, political and social well-being of its people.

Contrasting economic growth from economic development, Weil (2008) opined that economic development refers to social and technological progress. It implies a change in the way goods and services are produced, not merely an increase in production achieved using the old methods of production on a wider scale. Economic growth on the other hand implies only an increase in quantitative output; it may or may not involve a change in Gross Domestic Product (GDP). GDP is the aggregate value-added by the economic activity within a country's borders. Economic development typically involves improvement in a variety of indicators such as literacy rate, life expectancy and poverty rate. A country's economic development is related to its human development, which encompasses among other

things, health, road network, security, level of agricultural mechanization, standard of living and education (Kiely, 2001).

A closely related idea is the difference between extensive and intensive economic growth. Extensive growth is growth achieved by using more resources (land, labour and capital). Intensive growth is growth achieved by using a given number of resources more efficiently (productively). Intensive growth requires development in the areas of personal safety and freedom from fear of society (Zhang, 1996). Development must therefore be conceived of as a multi-dimensional process involving major changes in social structures, popular attitudes and national institutions as well as acceleration of economic growth, the reduction of inequality and the eradication of poverty. Development in its essence must represent the whole gamut of change by which an entire social system responds to diverse basic needs and desires of individuals and social groups within that system, moves away from a condition of life usually perceived as unsatisfactory toward a condition of life regarded as materially and spiritually better.

This study seeks to establish a link between VAT and Economic Growth of Nigeria. It is more ideal to talk about economic growth of Nigeria than economic development as most of the indices of economic development are either inadequate or entirely absent in Nigeria. The study hypothesized that:

Ho₁: There is no significant relationship between Value Added Tax and Total (Federal Government) Revenue.

Ho₂: There is no significant relationship between Value Added Tax and Total (Federal Government) Expenditure.

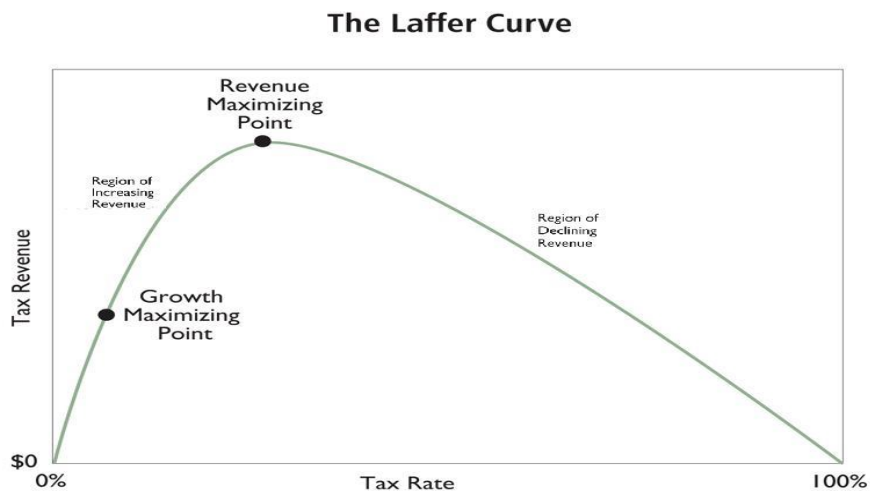
Ho₃: There is no significant relationship between Value Added Tax and Gross Domestic Product.

Theoretical Framework

This study is based on the following theories.

The Laffer curve Theory: This theory was propounded by Professor Laffer in 2004. The theory explains the theoretical presentation of the relationship between government revenue raised by taxation and all possible rates of taxation. The theory demonstrates with a curve (the Laffer curve) the tax rate that will generate much revenue for the government. The curve considers the amount of tax revenue raised at the extreme rate of 0% and 100%. Laffer concluded that 100% tax rate raises no revenue in the same way that a 0% tax rate raises no revenue. This is because at 100% rate, there is no incentive for a rational taxpayer to earn income, thus, the revenue raised will be 100% of nothing. Similarly, at 0% tax rate, taxpayers pay nothing in tax to the government. It follows therefore that there must exist at least a rate between where tax revenue would be at maximum. One potential result of this theory is that, increasing tax rate beyond a certain point will become counter-productive for raising further tax revenue because of diminishing returns (Okoye & Gbegi, 2013).

Figure 1
Laffer curve



Ibn Khaldun's Theory: This theory explains two different effects VAT rate has on revenue - the Arithmetic effect and the Economic effect. The two effects have opposite result on revenue in case the VAT rate is increased or decreased. According to the Arithmetic effect, if VAT rate is lowered, the VAT revenue will also be lowered by the amount of the decrease in the rate. Reverse is the case for an increase in VAT rate (Ishlahi, 2006). The Economic effect however recognizes the positive impact that lower VAT rate has on work, output and employment and also the tax base by providing incentives to increase these activities. On the other hand, raising VAT rate has the opposite economic effect by penalizing participation in any tax activities. At a very high VAT rate, negative Economic effect dominates positive Arithmetic effect thereby reducing the VAT revenue (Ishlahi, 2006).

Review of Empirical Studies

A number of research works has been done on the relationship between Value Added Tax and the Economic growth. Some of the works are reviewed below in reverse chronology:

Odu (2022) evaluated the effect of Value-added Tax on revenue generation and economic growth in Nigeria for the period 1994-2018 as well as the trend of VAT in the period under investigation. Time-series data were employed using regression analysis. The findings of the study showed 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. It also revealed 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. Cole et al. (2021) investigated the nexus between Value Added Tax and economic growth in Nigeria from 2004 - 2018 using secondary data analysed with the aid of regression analysis. The findings of the study showed a significant positive relationship between VAT and economic growth in Nigeria. Olarotimi and Alor (2021) explored the dynamic impact of Vat on economic growth in Nigeria using Augmented Dicky Fuller (ADF) unit root test and dynamic OLS to analyse data from 1994-2019. The result revealed a significant positive relationship between VAT and economic growth.

Onoja and Ibrahim (2020) examined the relationship between tax revenue and economic growth in Nigeria from 2003 to 2017 using regression analysis. They found that VAT has a significant relationship

with GDP. This is in consonance with the findings of Harvest and Ataisi (2022) on the relationship between VAT and economic growth in Nigeria from 2000-2020 that found a significant relationship between VAT and GDP. Chigbu and Ali (2014) explored the Econometric analysis of the Impact of value added tax on economic growth in Nigeria from 1994-2012 Using the Engle and Granger co integration technique, the result showed that VAT has positive effect on economic growth proxied by real GDP. The results also revealed absence of both long-run and short-run relationship between VAT and GDP.

Owolabi and Okwu (2011) examined the contribution of Value Added Tax on the development of Lagos State Economy, using simple regression models as abstractions of the respective sectors considered in the study. The study considered a vector of development indicators as dependent variables and regressed each on VAT revenue proceeds to Lagos state for the study period. Development aspects considered included infrastructural development, environmental management, educational sector development, youth and social development, agricultural sector development, health sector development and transportation sector development. The result showed that VAT revenue contributed positively to the development of the respective sectors. However, the positive contribution was statistically significant only in the agricultural sector development. Similarly, Unegbu and Irefin (2011) in their paper, the impact of Value Added Tax on Economic and Human Development of Emerging Nations from 2001 to 2009, using regression and discriminate analyses and ANOVA, found out that VAT allocations have a very significant impact on expenditure pattern of the state during the research period.

Adegbe and Fakile (2011) concentrated on the relationship between company income tax and Nigerian economic development. They used chi-square and multiple linear regression analysis to analyse the primary and secondary data respectively. The result showed that there is a significant relationship between company income tax and the Nigerian economic development but that tax evasion and avoidance are major hindrances to revenue generation. In their study on the impact of tax reforms and economic growth of Nigeria using relevant descriptive statistics and econometric analysis, Ogbonna and Ebimobowie (2012) found out that tax reforms are positively and significantly related to economic growth. Also, that tax reforms improve the revenue generating machinery of government to undertake socially desirable expenditure that will translate the economic growth in real output and per capita basis.

Olatunji (2009) reviewed the administration of VAT in Nigeria from inception (1994) using simple percentage and chi-square. He found out that VAT is properly and effectively administered; has high impact on government revenue; achieving the purpose for its introduction; has economic implication on consumption pattern but that VAT administration faces inadequate and untrained personnel problems. Abiola and Asiwah (2012) investigated the impact of tax administration on government revenue in a developing economy, using descriptive statistics. The study found among other things that increasing tax revenue is a function of effective enforcement strategy which is the pure responsibility of tax administrators. Cummings et al. (2009) opined that tax compliance increases with individual perception of good governance. Compliance with enforcement efforts increases in a country with good governance structure than a country where governance is less good. Fasoranti (2013) examined tax productivity and economic growth from 1970 to 2009 using multiple regression analysis. Results showed that tax productivity was generally low as reflected in the elasticity indexes of the tax revenue. Total tax revenue and petroleum profit tax were negatively related to GDP. On the other hand, customs and excise duties and company income were elastic in an upward direction and positively related to GDP. The long run analysis showed that only customs and excise duties and company income tax are sustainable sources of tax revenue. Basila (2010) investigated the relationship between VAT and GDP in Nigerian economy from 1994 to 2008, using Person's Product Moment Correlation (PPMC). He found out that VAT is not

an effective revenue earner because significant parts of GDP which represented aggregate national income as well as aggregate national expenditure were not collected as tax.

Emmanuel (2013) worked on the effects of VAT on the economic growth of Nigeria from 1994 to 2010, using regression analysis. The results of this analysis showed that VAT has significant effect on both GDP and total tax revenue. Similarly, Olatunji (2013) investigated the relationship between VAT and inflation in Nigeria from 1990 to 2003. He found out that inflation rate was even lower in 1994 when VAT was introduced than in any of the years since 1990 implying that VAT does not cause inflation. Adereti et al. (2011) worked on VAT and economic growth of Nigeria from 1994 to 2008, using both simple regression analysis and descriptive statistical method. Findings showed that the ratio of VAT revenue to GDP averaged 1.3% compared to 4.5% in Indonesia, though VAT revenue accounted for as much as 95% significant variations in GDP in Nigeria. A positive and significant correlation exists between VAT revenue and GDP.

Ajakaiye (2000) worked on the impact of VAT on key sectorial and macroeconomic aggregates, using a Computable General Equilibrium (CGE) model considered suitable for Nigeria. The study developed three scenarios. In order to approximate the presumed Nigerian situation, the study assumed that government pursued an active fiscal policy involving the re-injection of the VAT revenue via increases in government expenditure in combination with a presumed non-cascading treatment of the VAT. Two other simulations considered an active fiscal policy combined with a cascading treatment of VAT and a passive fiscal policy combined with a non-cascading treatment. As it turned out, the scenario of a cascading treatment of VAT with an active fiscal policy not only had the most deleterious effects on the economy, it was also the one that most closely approximated the situation in Nigeria. VAT under this scenario was more than 3% lower than the first scenario, the price index increased by 12%, wage and profit incomes fell by 8.54% and 12.27% respectively. Overall, GDP declined by 11.34%. Such a situation, as observed by the researcher, poses a great threat to the sustainability of VAT.

3.0 Methodology

The study, being quantitative research, used both descriptive and ordinary least square regression to explore the relationship between VAT and economic growth in Nigeria. The study also adopts ex-post facto research design. The choice of this design is anchored on its strength as one of the most appropriate research designs used when it is not always possible for the researcher to select, control or manipulate the independent variables (because the situation necessitating the study already exist) or when laboratory test will not be practicable. The population of this study comprises of all Value Added Tax, Total Tax Revenue, Total (Federal Government) Revenue and Gross Domestic Product figures for twenty (20) years (2003 to 2022). The study used the population as sample for the study. The data for this study was obtained from the Federal Inland Revenue Service (FIRS) publications, statistical bulletins/annual reports and accounts of the Central Bank of Nigeria (CBN) and previous works of scholars. The model for this work states that, economic growth (GDP, TR and TE) depends on VAT revenue. The model which is in line with the works of Owolabi and Okwu (2011) and Adereti et al. (2011) is a modified form of the model specified by Golit (2008) in his study of Nigeria's tax efforts. Thus, the functional relationship and the resultant models are stated below.

$$\begin{aligned} \text{GDP} &= f(\text{VAT}) \dots\dots\dots (1) \\ \text{TR} &= f(\text{VAT}) \dots\dots\dots (2) \\ \text{TE} &= f(\text{VAT}) \dots\dots\dots (3) \end{aligned}$$

From the above functional relationship, the stochastic models are specified below:

$$\text{GDP} = \alpha_0 + \alpha_1 (\text{VAT}) + \mu_1 \dots \dots \dots (1)$$

$$\text{TR} = \alpha_2 + \alpha_3 (\text{VAT}) + \mu_2 \dots \dots \dots (2)$$

$$\text{TE} = \alpha_4 + \alpha_5 (\text{VAT}) + \mu_3 \dots \dots \dots (3)$$

Where:

α_i ($i = 0, 1, 2, 3, 4, 5$) are model parameters

μ_i ($i = 1, 2, 3$) are stochastic terms associated with the models.

A priori, each model parameter is expected to have a positive sign. That is, α_i ($i = 0, 1, 2, 3, 4, 5$) > 0 . What this means by implication is that some economic growth is expected even when no VAT revenue is collected (Basila, 2010).

4.0 Results and Discussion

This section presents data collected from the Statistical Bulletin of the Central Bank of Nigeria (CBN) and other sources for the study period. Linear regression technique was used to analyse the data with the aid of the Statistical Package for Social Sciences (SPSS version 25). The study made use of three dependable variables (Gross Domestic Product- GDP, Total Federal Government Revenue- TR and Total (Federal Government) Expenditure- TE) and one independent variable (Value Added Tax- VAT).

Data Presentation and Analysis

This section presents and analyses the data collected from the Statistical Bulletin of the CBN and from other sources for twenty years. The data were analysed using Statistical Package for Social Sciences (SPSS, version 25). Linear regression using ordinary least squares (OLS) method was applied to produce the results of the study. OLS was used to minimize errors between points on the line and the actual observed points of the regression line by giving it the best fit. The validity test was carried out to check the robustness of the regression results obtained in the study. The following tools were used to carry out the tests: **Variance Inflationary Factor (VIF)**: Table 3-5 reveal the VIF of less than 2 obtained from the regression analysis. Berenson and Levine, 1999 opined that this technique ensures that the independent variables are not so correlated to the point of distorting the results and assists in filtering out those ones that are likely to impede the robustness of the model; **Durbin Watson (DW) Statistic**: tables 4-6 present the result of this statistic which ensures that the residuals of the preceding and succeeding sets of data do not affect each other to cause the problem of autocorrelation. The result of the DW statistic which is less than 2 shows absence of autocorrelation.

Descriptive Statistics

The descriptive statistics of all the variables used in this study are presented below:

Table 1
Descriptive Statistics

	Mean	Std, Deviation	N
TR	7809371.534	2665398.146	20
TE	7384873.754	6860759.032	20
GDP	840433.322.5	567209.9193	20
VAT	827645.1578	625926.104	20

Source: SPSS version 25 outputs.

Table 1 reports the summary of all the variables (TR, TE, GDP and VAT) for 10 years. The result from the table above shows a high mean and standard deviation for all the variables. TR has a mean of

₦7,809,371.534 with a fluctuation of ₦2,665,398.146; TE has a mean of ₦7,384,873.754 with a fluctuation of ₦6,860,759.032; GDP has a mean of ₦840,433.322 and a standard deviation of ₦567,209.919 and VAT has a mean of ₦827,645.158 with a fluctuation of ₦625,926.104.

Correlation

This section presents the analyses of the correlation statistics.

Table 2
Correlation Statistics

	TR	VAT	TE	VAT	GDP	VAT
Pearson Correlation	1.000	.821	1.000	.958	1.000	.902
Sig. (1-tailed)	.001	.001	.000	.000	.000	.000
N	20	20	20	20	20	20

Source: SPSS version 25 outputs

The correlation coefficients presented in table 2 shows positive associations between the variables under investigation. The correlation coefficients show that the variables are strongly related and the correlation among the variables are not so high and as a result, there is no autocorrelation problem.

Regression results and test of hypotheses

This section presents the summary of results of the three models as well as the test of the 3 hypotheses earlier stated.

Table 3
Simple Regression analysis between VAT and Total (Federal Government) Revenue (TR)

Dependent Variable: TR

Number of Observations: 20

Variable	Coefficient	Std. Error	t-statistics	Probability
C	3.556	0.877	4.056	0.001
TR	0.400	0.006	6.100	0.000
R	0.821			
R-Squared	0.674			
Adjusted R-Squared	0.656			
S.E. of Regression	0.233			
F-Statistics	37.22			
Prob. (F-Statistic)	0.000			
Durbin Watson	1.961			
VIF	1.000			

Source: SPSS version 25 outputs

Table 3 shows that there is a strong relationship of 82.1% between value added tax (VAT) and Total (Federal Government) Revenue (TR). The r-squared was 0.674, this is the coefficient of determination showing that 67.4% of value added tax accounts for variations in Total (Federal Government) Revenue for the period under review. The R² and the Adjusted R² shows a difference of 1.8%. This implies that if the entire population is studied, the result will deviate from the population by only 1.8%. The probability of the slope coefficient indicates that: P (x1= 0.000<0.05), this indicates that VAT is positively related to TR. The Durbin Watson of 1.961 is close to the benchmark of 2.0 which is an indication of the absence of

autocorrelation. The relationship between the variable of interest (value-added tax) and TR is positive, with a coefficient of 0.400 and t-Statistic of 6.100, which shows that a significant relationship exists between the dependent and the explanatory variables. The results showed that value-added tax has a positive effect on the total (Federal Government) revenue in Nigeria, thus the null hypothesis was rejected while the alternate hypothesis accepted, leading to the conclusion that there is a significant relationship between Value Added Tax and Total (Federal Government) Revenue.

Table 4
Simple Regression analysis between VAT and Total (Federal Government) Expenditure (TE)
Number of Observations: 20

Variable	Coefficient	Std. Error	t-statistics	Probability
C	-130.310	0760.375	-1.719	0.103
TR	0.11	0.001	14.201	0.000
R	0.958			
R-Squared	0.918			
Adjusted R-Squared	0.914			
S.E. of Regression	201.674			
F-Statistics	201.68			
Prob (F-Statistic)	0.000			
Durbin Watson	1.753			
VIF	1.000			

Source: SPSS version 25 outputs.

Table 4 shows that there is a very strong relationship of 95.8% between value added tax (VAT) and Total (Federal Government) Expenditure (TE). The r-square shows that value added tax accounts for 91.8% variations in Total (Federal Government) Expenditure for the period under review. The R^2 and the Adjusted R^2 shows a difference of 0.4%. This implies that if the entire population is studied, the result will deviate from the population by only 0.4%. The probability of the slope coefficient indicates that $P(x1= 0.000 < 0.05)$, this shows that value added tax have impacted positively on total (Federal Government) expenditure. The Durbin Watson of 1.753 is close to the target of 2.0 which is an indication of the absence of auto correlation. The relationship between value added tax and total (Federal Government) expenditure is positive with a coefficient of 0.11 and t-statistics of 14.201 which showed a significant relationship between VAT and TE. The result showed that VAT has a positive effect on TE in Nigeria, thus, the null hypothesis was rejected while the alternate hypothesis was accepted, leading to the conclusion that there is a significant relationship between VAT and TE.

Table 5
Simple Regression analysis between VAT and gross domestic product (GDP).

Number of Observations: 20

Variable	Coefficient	Std. Error	t-statistics	Probability
C	2.449	0.983	2.491	0.023
TR	0.653	0.007	8.874	0.000
R	0.902			
R-Squared	0.814			
Adjusted R-Squared	0.804			
S.E. of Regression	0.262			
F-Statistics	78.743			
Prob (F-Statistic)	0.000			
Durbin Watson	1.533			
VIF	1.000			

Source: SPSS version 25 outputs.

Table 5 shows that there is a very strong relationship of 90.2% between value added tax (VAT) and gross domestic product (GDP). It also shows that value added tax accounts for 81.4% variations in gross domestic product for the period under review. The R² and the Adjusted R² shows a difference of 1%. This implies that if the entire population is studied, the result will deviate from the population by only 1%.

The probability of the slope coefficient indicates that $P(x_1 = 0.000 < 0.05)$, this shows that value added tax have a positive effect on gross domestic product. The Durbin Watson of 1.533 is close to the target of 2.0n which is an indication of the absence of auto correlation. The relationship between value added tax and total and gross domestic product is positive with a coefficient of 0.653 and t-statistics of 8.874 which showed a significant relationship between VAT and GDP. The result showed that VAT has a positive effect on GDP in Nigeria, thus, the null hypothesis was rejected while the alternate hypothesis was accepted, leading to the conclusion that there is a significant relationship between VAT and GDP.

Discussion of Findings

From the descriptive statistics of all the variables used in the regression, TR has a mean of ₦7,809,371.534 with a fluctuation of ₦2,665,398; TE has a mean of ₦7,384,873.754 with a fluctuation of ₦6,860,759.032; GDP has a mean of ₦840,433.323 and a standard deviation of ₦567,209.919 and VAT has a mean of ₦827,645.158 with a fluctuation of ₦625,926.104. This deviation shows the variability of the variables from each other. The result also reveals that TE has the highest deviation while GDP has the lowest deviation.

The model summaries of the variables showed that total (federal Government) revenue, total (Federal Government) expenditure and gross domestic product are significantly related to value added tax all at 5% significant level. The results of this study align with the works obtained and reported by other researchers such as Adereti et al. (2011); Odu (2022); Olatunji (2009, 2013); Emmanuel (2013); Usman and Adejare (2013); Owolabi and Okwu (2011) who report that value added tax has positively and significantly contributed to the economic growth and development of Nigeria, there are a few dissenting voices (Cole et al., 2021; Okoyeuzu, 2013; Fasoranti, 2013; Basila, 2010) who report that VAT has not lived to expectation and therefore has not justified the purpose for its introduction. One finding of this study that has not been reported by any researcher in the previous works reviewed is that a very high relationship exists between value added tax and total government expenditure. The implication of this

finding is that if government can dedicate a certain percentage of VAT revenue to financing specific expenditures, the effect would easily be felt by the citizenry.

5.0 Conclusion and Recommendations

The study examined value added tax and economic growth in Nigerian from 2003 to 2022. Descriptive statistic, correlation and regression analysis were used. The result showed value added tax has contributed positively and significantly to the economic growth and development of Nigeria. This study has found a very significant relationship between Value Added Tax and Nigeria's economic growth measured by gross domestic product, total (federal government) revenue and Total (Federal Government) Expenditure. The study recommends that efforts should be made by government and its tax agency (Federal Inland Revenue Service) to block or minimize all identified leakages of VAT revenue to ensure a steady and sustained growth of VAT revenue and put in place a transparent process and be accountable for revenue generated from VAT and the judicious use of the revenue generated to visible infrastructure will encourage citizens to willing pay their VAT. The study also recommends that government should established a VAT-Fund to finance specific expenditures of government that have direct bearing on the citizenry.

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