VALUE-ADDED TAX GAP, COMPLEXITY AND VAT REVENUE GENERATION IN NIGERIA

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Abstract

Taxation, particularly value-added tax (VAT), has risen to the forefront of public discourse and interest in Nigeria as a result of the search for a sustainable source of public finance. This study evaluated the present VAT system in Nigeria to determine its ability to generate sustainable VAT revenue. Primary data were collected from 384 respondents, who included VATable entities or persons (VEPs), tax officials, and tax experts. For the Partial Least Square Structural Equation Modelling (PLS-SEM) analysis, SmartPLS 4.0.9.2 was utilized. The findings of the study showed that the VAT gap is positively and significantly related to sustainable VAT revenue generation ($\beta = 0.532$, $t = 14.056$, $p < 0.001$). In addition, the empirical evidence from this study revealed that technical complexity, compliance complexity, and structural complexity were all inherent in the Nigerian VAT system. It was also found that VAT system complexity has a positive and significant relationship with sustainable VAT revenue generation significant ($\beta = 0.354$, $t = 8.781$, $p < 0.001$). The recommendations drawn from this study suggest that the government should switch to a completely automated and cutting-edge method, such as digital invoices to streamline the VAT system and regulations. This will facilitate the efficient collection and reporting of tax information and ensure the continued generation of high VAT revenue in the country.

Keywords: Complexity, VAT Gap, Sustainable, Revenue

1. Introduction

Sustainably generating tax revenue, particularly through the value-added tax (VAT), has risen to the forefront of the public discourse and dialogue in Nigeria as a means of funding infrastructural development in response to the country's expanding population and the need to create new employment opportunities. As a result, the three pillars of sustainable development—economic,

environmental, and social—encapsulate the concept of sustainable VAT revenue generation: achieving current revenue obligations without compromising future generations' ability to meet their own (Batista de Oliveira, 2020). Undoubtedly, the fluctuations in oil prices and the inability of the Nigerian National Petroleum Corporation Limited (NNPCL) to transfer funds into Federal Account have decreased the amount of money available for distribution among Nigeria's three levels of government. This requires a paradigm shift toward tax revenue as an alternative revenue source of preference. Therefore, it has become imperative and essential for the Nigerian government to generate sufficient tax revenue in a sustainable manner. To this end, in 2020, the VAT rate in Nigeria was increased from 5% to 7.5%, but it remains the lowest on the African continent (Mariam, 2021). International Monetary Fund (IMF) forecasts that Nigeria's debt-to-GDP ratio will reach 42.05% by 2026 if the current trend continues unabated (O'Neill, 2021; Sami, 2022). This is mostly due to the country's increased reliance on debt to finance its annual budget as oil revenue has declined. Since future generations will have to allocate a sizeable amount of their income to paying off the debt acquired by their predecessors, this could have a negative impact on their ability to create adequate income to meet their needs. This shows how critical it is for the government to increase its revenue and other forms of domestic resource mobilization (Adeyemi & Adeduro, 2020).

Nonetheless, the tax authorities and taxpayers, especially VATable entities and persons (VEPs), have argued and counter-argued about the tax system's fairness, simplicity, and sustainability. In contrast to sales tax, which is levied at each and every point of consumption without an input credit mechanism, so the tax burden, VAT is an indirect tax payable on the supply of VATable items at various points of the product supply and service delivery value chain (PwC-Nigeria, 2021). Because it is derived from corporate and community activities, this type of tax contributes significantly to government revenues. The efficacy of a country's VAT system affects its overall tax performance and it has advanced substantially in the digital age, with more complex laws. It has, however, become increasingly susceptible to fraud (Warscotte, 2018). The VAT ratio is one indicator for assessing VAT performance, as stated by Kristiaji (2016). VAT is currently Nigeria's fastest-growing source of tax revenue, surpassing petroleum profit tax (N1.52 trillion) and corporate income tax (N1.41 trillion) in 2020 to grab the top spot with N1.53 trillion. However, in terms of value-added tax as a proportion of GDP, Nigeria stands towards the bottom in the world (Mariam, 2021).

According to PwC-Nigeria (2021), Nigeria's tax system, particularly the VAT system, is antiquated and in poor condition, which is expected to worsen if the proper strategy is not implemented, as the current system is unable to cover the entire VATable transaction base and may be insufficient to ensure the sustainability of VAT revenue collection. The VAT gap, the intricacy of the system, and VAT compliance are additional issues that the existing VAT system in Nigeria must deal with. These issues may have contributed to the low VAT-to-GDP ratio and raise concerns about the viability of VAT revenue collection as a veritable source of public revenue. There was a tax gap of N4.3 trillion in 2020 in Nigeria, as reported by the 2020-2022 Medium Term Expenditure Framework/Fiscal Strategy Paper (MTEF/FSP) (Ogunyale, 2021). Of this amount, N900 billion was due to exemptions mentioned in VAT legislation, while the remaining N3.4 trillion was due to a compliance gap. Arowolo and Olugbenro (2016) submitted that Nigeria's situation is worse than the majority of developing nations because its ratio of non-oil tax revenue to GDP is substantially less than 10%. It is necessary to evaluate the current VAT system to determine if it is enough for guaranteeing continuous VAT revenue generation by reducing or doing away with the VAT gap and VAT complexity. Thus, the authors examined how the VAT gap and complexity of the VAT

system affect Nigeria's ability to collect sustainable VAT revenue.

Rarely is taxation mentioned as a tool for shaping the financial needs of present and future generations in the sustainability literature. There is a lack of empirical studies that examine the effects of the VAT gap and VAT system complexity on the long-term viability of VAT revenue generation in Nigeria. Given its potential for a wider base in contrast to other taxes and the evaluation of the current VAT strategy for the purpose of generating sustainable VAT revenue, a new VAT framework that is directed towards sustainability is required. This is crucial because the success of a country's VAT system affects the success of the tax system as a whole. This study contributes to the literature by examining the utility of equity theory in elucidating the VAT gap and VAT system complexity, both of which have the potential to affect the viability of VAT revenue generation in Nigeria over the long run. The insights and recommendations provided can be utilized by government agencies, policymakers, tax experts, and financial institutions to enhance their examination and scrutiny of the VAT system. The results of this study have the potential to aid these organizations in making informed assessments and choices. Given the foregoing, the drive of this study is to assess the existing VAT system and determine whether it can effectively collect VAT in Nigeria over the long run. The study examined the relationship between the VAT gap and long-term VAT revenue in Nigeria, as well as the extent of the relationship between VAT complexity and VAT revenue. Consequently, it is anticipated that fiscal policymakers, tax authorities, tax professionals, and financial institutions will gain from the findings and recommendations of this study. The following hypotheses were developed and tested:

H_{01}: There is no statistically significant association between the VAT gap and long-term VAT income in Nigeria,

H_{02}: There is no statistically significant association between the complexity of the VAT system and long-term VAT income in Nigeria.

2. Literature Review

2.1 Concept of Tax and Value Added Tax

Taxation refers to the practice of levying a tax on taxpayers' taxable income within a certain jurisdiction (Asaolu, Olabisi, Akinbode & Alebiosu, 2018). According to Enahoro and Olabisi (2012), taxes collected, including personal income tax, corporate income tax, capital gains tax, and consumption tax, are used for the common welfare of all people within the state to provide services deemed crucial to citizens' well-being. These explanations highlight the primary objective of taxation, which is to generate income to pay for the expenses associated with government services. A significant tax that has received attention on a worldwide scale is indirect tax, often known as VAT or goods and services tax (GST) in some nations. This is a tax payable on the supply of goods and services at various points of the product supply and service delivery value chains, and hence the weight of the tax eventually rests on the final consumer (PwC-Nigeria, 2021). Similarly to personal income taxes, VAT is a major tax that has an impact on economic development (Shakkour, Almohtaseba, Matahenb & Sahkkour, 2021). With characteristics such as self-regulation, high efficiency, and transparency, VAT is one of the fundamental pillars of fiscal growth and development (Erfani, Rahbari, Heydari & Shahhosseini, 2013). In Nigeria, VAT is charged at a flat rate of 7.5% of the cost of products and services, but as of February 1, 2020, it is exempt on exports. According to PwC-Nigeria (2021), Nigeria's tax system, particularly its VAT system, is obsolete and in poor shape, and it is expected to worsen if the proper strategy is not implemented because the current system could not efficiently cover the whole VATable transaction base and was inadequate in keeping up with the pace of digital technology.

2.1.1 Sustainable VAT Revenue, Gap and Complexity

According to the OECD (2014), tax revenues are essential for sustainable development because they provide governments with independent revenue to invest in development, reduce poverty, and provide public services. The concept of sustainability, which unifies the three pillars of economic, environmental, and social sustainability and concentrates on meeting the demands of today's society without inhibiting the ability of subsequent generations to satisfy their own requirements, has been established, improved upon, and updated over the course of decades (Batista de Oliveira, 2020). According to Batista's research, the economic dimension comprises growth, efficiency, and stability. In this context, and taking into account the current theoretical concepts and priorities of socioeconomic sustainable development, the function of a sustainable tax system as an element of economic sustainable development is evident. Therefore, it can be inferred that sustainable value-added tax (VAT) revenue generation ought to be perceived as a mechanism that facilitates the fulfilment of the present generation's requirements while not impeding the necessities of forthcoming generations. This should be achieved through the implementation of user-friendly compliance procedures, effective tax policies, and a reduction in collection expenses in proportion to the revenue generated. VAT is a complex and challenging system to manage, however, it possesses the capacity to enhance adherence to tax regulations. This is primarily due to its inherent self-regulating mechanism, whereby purchasers are required to divulge their input purchases to offset the VAT they have paid against their own VAT obligation on their sales (Slemrod & Velayudhan, 2022). African tax administration relies more on manual processes and face-to-face interactions between taxpayers and tax collectors than technology, making this issue even wo rse (Okunogbe & Santoro, 2022).

Tax revenue projections often fall short, leading to a significant disparity amid anticipated and realized tax revenue for a particular fiscal period. This disparity is referred to as the tax gap, or the VAT gap in the case of VAT revenue. According to Hutton (2017), the VAT gap may be broken down into two distinct but interconnected parts: the compliance gap (the effect of noncompliance) and the policy gap (the effect of policy choices). The gap is most obviously seen as the shortfall between actual tax revenues and the maximum that could be collected (Arowolo & Olugbenro, 2016). Oladejo (2021) suggests that the discrepancy could be related to taxpayers underreporting income or overstating deductions in order to pay less tax, as well as their failure to pay their tax liabilities on time, which could be the outcome of assessment risk. Kurotamunobaraomi and Gbomor (2020) note that developing country tax authorities often employ estimates and real tax receipts to fill in the tax gap because of a lack of credible data and a structurally substantial share of the shadow economy, which make the provision of the essential data to calculate the actual tax burden problematic. The value-added-tax (VAT) gap in Nigeria is considered as a deviation from anticipated VAT income. Without a doubt, there is a vast discrepancy in Nigeria due to the high degree of noncompliance by individuals and organizations (Arowolo & Olugbenro, 2016).

The complexity of the VAT system is believed to be one of the reasons why taxpayers do not comply (Saad, 2012). Taxpayer conduct toward tax payment is expected to improve as VAT rules become simpler, as consistent and reliable tax laws will make the tax system less cumbersome and could promote tax compliance (Ahangar, Bandpey, & Rokny, 2011). Complication in taxation creates opportunities for corruption (Liu & Feng, 2015). Thus, increased complexity of tax laws may result in an increase in tax noncompliance (Alshira'h, Al-Shatnawi, Alsqour, and Alshira'h, 2020), as such complexity may reduce tax payment compliance (Muche, 2014). In connection with tax compliance behaviour, this study highlighted the following complexity dimensions: intricate calculations used to

determine the amount of tax owed; complicated tax legislation; technical complexity; structural complexity; and compliance complexity (Chau & Leung, 2009). The complexity of the tax system necessitates the use of qualified tax specialists, as suggested by Faridy, Copp, Freudenberg, and Sarker (2014), so that businesses can implement strategic tax planning to minimize their tax liabilities. According to Mascagni, Dom, Santoro, and Mukama (2022), while the legislation is clear on how VAT works, conflicting messages and unclear practices regularly emerge in encounters between taxpayers (VEPs) and tax officials due to the complexity and unpredictability of administrative processes. The policy and legislative structure of the VAT system, as reflected in its collection mechanism, is what drives the complexity of the system (Shwetha, 2020). So, the aforementioned difficulties make deliberate or accidental non-compliance more challenging and are probably going to have an effect on the generation of VAT revenue.

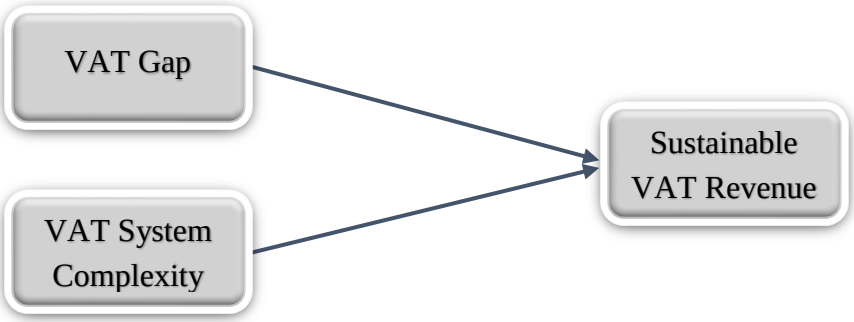


Figure 1: Conceptual Model
Source: Authors' Conceptualisation (2022).

Figure 1 represents the conceptual model of this study. It showed the interrelationships among the study's constructs including Sustainable VAT Revenue (SVR), VAT Gap (VGP) and VAT System Complexity (VSC). It seeks to establish the extent to which VAT and VSC would influence VRG in the light of the current VAT administration. The indicators of these constructs were shown in Table 1 and Appendix 1.

2.2 Theoretical Framework

The study's theoretical framework was based on Equity Theory (ET). The theory's premise was reinforced by the probability that individuals and entities would comply with the law if it was applied equitably to them in the context of fairness perceptions in workplaces (Adams, 1965). By incorporating taxation, Gilligan and Richardson (2005) widened the use of this theory. The theory asserts that if people and businesses are treated fairly in the tax system, the likelihood that they will obey tax regulations will rise (Tusubira, 2018). However, if they feel they are being treated unfairly, they may choose to disobey. Complex tax regulations contribute to a sense of discrimination in the system (Ahangar et al., 2011); hence, having uniform and stable tax laws will simplify the tax system and improve tax compliance (Hassan, Naeem, & Gulzar, 2021). Therefore, in a tax setting, the government and taxpayers (VEPs) are the exchange contracting parties, and this theory suggests that they have an exchange contract based on fair remuneration proportional to contribution. Thus, ET offers the subsequent elucidation for this occurrence: The complexity of the tax system leads to inquiries regarding its equity by taxpayers. It was expected that if the procedures used in the exchange contract were seen as fair and less confusing, then taxpayers (VEPs) would be

more inclined to comply with tax regulations, hence decreasing non-compliance, which is related with the VAT gap, and increasing VAT revenue production. Sikayu, Rahmat, Ai Nyet, and Juliati (2022) employed this theory to explain the connection between fairness and tax evasion. In a comparative study of Asian, European English-Speaking, and Romance countries, Conrad (2022) applied the theory of equity to assess citizens' opinions on the fairness of corporation taxation. Despite its widespread application, equity theory remains flawed due to its insufficient consideration of contextual issues beyond the scope of the underlying value exchange contract. Using these theoretical insights as a foundation, this study hypothesized that the perceived equity and complexity of VAT administration are related to compliance or lack thereof, which is related to the VAT gap and can have a significant impact on VAT revenue.

2.3 Empirical Review

The relationship between VAT gap, complexity and sustainable revenue generation has been open ended without specific conclusions as evidenced in the following studies.

Holzner (2006) found that more complex taxes increase the likelihood that people will pay them, contrary to Cuccia and Carnes' (2001) finding that people are less inclined to do so. Frequent tax law changes and increased tax complexity, according to Abdul-Jabbar and Pope (2008), have a negative impact on small and medium-sized firms (SMEs). This indicates that tax noncompliance will increase in tandem with tax complexity because of the rising cost of compliance. Bangladeshi small and medium-sized enterprises (SMEs) face high compliance and noncompliance costs due to the country's complex value-added tax (VAT) laws (Faridy et al., 2014). The study found that SME VAT noncompliance is mostly due to the VAT law's intricacy and compliance expenses. The impact of income and consumption taxes on the economic growth of Romania between 2009 and 2017 was investigated by Bazgan (2018). The results of the study indicate that enhancing the indirect tax system had a significant favorable influence on the economic growth in the subsequent fiscal year. Conversely, enhancing the direct tax system had an unfavourable effect on the economic growth. Raczkowski and Mroz (2018) analysed relevant data from 35 countries to investigate the tax discrepancy in the global economy. The study adopted indirect methodology and multiple indicators to evaluate data pertaining to the extent of the shadow economy, the total tax rate, and GDP. The findings indicate a significant correlation between the tax disparity and GDP.

Using time series data from 1973-2010, Owino (2019) examined the effect of VAT income on GDP growth in Kenya. Model estimation was carried out using Ordinary Least Squares (OLS). According to the findings, Kenya's VAT revenue and economic growth were shown to have a positive but statistically insignificant relationship. Nerudova and Dobransch (2019) evaluated the VAT gap in the European Union using data from case study reports in 2013, 2014, 2015, and 2017. The study estimated the optimal frontier of the VAT and predicted technological inefficiency by using a stochastic tax frontier model (STFM) with the VAT total liability (VTTL) as an input. It was determined how much external factors (such as corruption and the political climate) contributed to the technical deficiencies of the VAT. While the CASE data shows a shortfall of 3.52% of VTTL, the shortfall in Sweden is only 1.17%, making it the most efficient country in terms of VAT collecting. However, Romania has the largest VAT deficit, estimated by STFM to be 36.68 percent although lower than the CASE average of 40.28 percent of VTTL. In the other, less efficient EU member states, the VAT gap is relatively substantial, ranging from 29.47% to 2.34%. Compared to the average VAT gap determined by CASE reports, the STFM's estimate for the 26 EU countries is around 5% greater. Similarly, Usman, Usman, and Abubakar (2019) used time series data from 2010 to 2018 to investigate the impact of VAT gaps on VAT revenue collection in Nigeria.

The study employed descriptive statistics to determine the VAT policy gap, VAT compliance gap, and C-Efficiency ratio for all relevant years. The auto-regressive distributed lag model and vector error model were used to examine the relationship between VAT revenue and the independent variables (final aggregate consumption, VAT compliance gap, and VAT policy gap). Previous VAT income, aggregate consumption, and VAT revenue were positively correlated in the short run. The dependent variable is inversely correlated with VAT policy and compliance gaps. The VAT policy gap and VAT compliance gap are inversely connected, although the dependent variable is favourably correlated with total consumption. The statistical insignificance of the impact of overall consumption on Value Added Tax (VAT) revenues was observed in the short term as well as the long term. Hoppe, Schanz, Sturm, and Sureth (2019) investigated the tax complexity of several countries. Using the indices generated for 100 countries in 2016, they surveyed the most experienced tax consultants from the leading multinational tax service networks. According to the results, there are significant disparities between nations in the complexity of their tax systems. While the complexity of a country's tax structure correlates poorly with its governance, the complexity of its tax code correlates positively with its statutory tax rate. All of the associations, however, lack any real strength.

Bank Ola (2021) also used time series data from 1999-2019 and the ARDL model to analyse the impact of VAT on economic growth in Nigeria. According to the results of the study, the value-added tax has a substantial negative impact on the rate of economic growth in the short run, but it has a considerable beneficial influence on the rate of economic growth in the long run. Furthermore, the research indicates that Value Added Tax (VAT) exhibits a favourable enduring correlation with the economic progress of Nigeria. Additionally, the study highlights that inflation exerts a noteworthy constructive long-term impact on economic growth, while interest rates have a substantial detrimental long-term effect. The elements that contribute to VAT compliance in Jordanian SMEs were studied by Shakkour et al. (2021) using one-way analysis of variance (ANOVA). According to the study, personal characteristics, VAT education, tax compliance, and the audit system all contribute positively to VAT compliance. Kowal and Przekota (2021) examined aggregated data on the extent of the tax gap in Member States and how the standard VAT rate and number of brackets affect VAT effectiveness. There was a positive correlation between tax burden, number of special rates, and value of standard VAT rate. According to the study, the tax structure that is least vulnerable to tax fraud is characterized by a solitary standard rate that is comparatively low, along with a limited number of lower rates. Odu (2022) used time-series data to assess the influence of value-added tax (VAT) on Nigeria's GDP and total revenue from 1994 to 2018. VAT has a large negative one-year lag for GDP, but its trend has a positive coefficient, indicating that VAT rises over time. With a two-year lag, it has a large beneficial influence on total tax collection and increasingly explains variances in total tax revenue. In addition, Eneh, Onwuchekwa, and Okoye (2022) examined the tax compliance and complexity of small and medium-sized firms in Bayelsa State, Nigeria, focusing on tax simplicity, tax service quality, and tax penalties. The study collected primary data from 228 Bayelsa State Board of Internal Revenue-registered small and medium firms and analysed it using structural equation modelling. In comparison to tax simplification and service quality, tax fines were found to have a less impact on compliance.

3. Methods and Materials

The study employed a survey design and selected 384 respondents drawn from a population of 5,613, which includes registered VATable entities or persons (VEPs), tax officials, and tax experts in Nigeria (see Appendix 2). For this purpose of this study, the VEPs include 157 listed firms, and all the 943 Federal Ministries, Departments and Agencies (MDAs) and 541 Federal government owned corporations (Nweze,

2021). The tax officials include 3,972 staff of FIRS. The tax experts include tax researchers (university lecturers) and tax professionals, who are officials of the big 4 consulting firms (PwC, KPMG, Deloitte and Ernst & Young) and other indigenous tax consultancy firms (Non-big 4) in Nigeria. However, the number of tax professionals could not be determined with certainty. Therefore, there are both known and unknown aspects to the population size in this study. In addition, the population in this analysis is broken down into three subgroups: VEPs, tax officials, and tax specialists. Cochran's (1977) sampling technique was utilized to select the respondents due to the indeterminate size of the tax expert stratum. The utilization of this methodology yielded a greater magnitude of sample size in contrast to the application of Yamane's (1967) formula for the finite components (refer to Appendix 2). Therefore, the process of selecting 384 participants was based on Cochran's technique. A seven-point Likert scale was used to generate the survey data. Cleaning the data in IBM's Statistical Package for the Social Sciences version 29.0.1.0 was followed by estimating the study's Partial Least Square Structural Equation Modelling (PLS-SEM) models with SmartPLS version 4.0.9.2. In order to evaluate multiple latent constructs or variables at once, SEM was widely adopted due to its two-stage procedure (Hair, Sarstedt, Pieper, & Ringle, 2012). A bootstrapping method (with 10,000 re-samples) was also used to calculate the statistical significance of the loadings, weights, and path coefficients. While Table 1 showed the measurement of the study's constructs, the detailed wordings of the questionnaire items were shown in Appendix 1.

Table 1: Variables Measurement

Constructs	Indicators	Indicator Type	Source
Sustainable VAT Revenue (SVR)	SVR1 SVR2 SVR3 SVR4 SVR5 SVR6	Reflective	Batista de Oliveira (2020).
VAT Gap (VGP)	VGP1 VGP2 VGP3 VGP4 VGP5	Formative	Arowolo & Olugbenro, 2016; Kurotamunobaraomi & Gbomor, 2020; Oladejo, 2021
VAT System Complexity (VSC)	VSC1 VSC2 VSC3 VSC4 VSC5	Formative	Chau & Leung (2009); Liu & Feng (2015); Miller (1993).

Source: Authors' Conceptualisation (2022).

4. Analysis, Results and Discussion of Findings

Of the total respondents, Table 2 shows that 30% came from tax authorities (FIRS = 20.1% and IRS = 9.9%), 20% came from tax specialists at tax consulting firms (the Big 4 = 12.2% and the Non-Big 4 = 7.8%), and 50% came from VEPs (listed businesses = 20.1%, MDAs/public corporations = 20.1%, and non-listed business = 9.8%). The tax authorities evaluate VEPs for VAT purposes; VEPs pay or collect VAT; and tax experts (consultants) act as the interface between the tax authorities and VEPs while also advancing tax research frontiers. Board members made up 3.4% of responses, top management made

up 22.1%, managers made up 53.1%, senior consultants made up 4.9%, corporate tax accountants made up 10.4%, and the other 6% held jobs that weren't clearly defined. In addition, 93.2% of respondents have expert or middle-level expert knowledge of the Nigerian tax system, 86.7% have more than five years of experience, and 97.4% belong to the three leading professional organizations (CITN, ICAN, and ANAN) with mandates to engage in tax practice in the country. The aforementioned observations imply that the individuals who responded possess a significant level of expertise and proficiency in the field of inquiry. Thus, the outcomes obtained from said participants may be deemed as credible and reliable.

Table 2: Sample Profile

Details	Respondents (N = 384)	Percentage (%)
Organisation Type:		
Listed businesses	77	20.1%
MDAs/public corporations	103	26.8%
Tax Authority	79	20.6%
Tax Consultancy (Big 4)	43	11.2%
Tax Consultancy (Non-Big 4)	82	21.4%
Position:		
Board Member	13	3.4
Top Management	85	22.1
Manager	204	53.1
Senior Consultant	19	4.9
Tax Accountant	40	10.4
Others	23	6
Duration of Professional Experience:		
Less than 5 years	51	13.3
Between 5 and 10 years	196	51
Between 11 and 15 years	90	23.4
More than 15 years	47	12.2
Professional Affiliation:		
CITN	116	30.2
ICAN	211	54.9
ANAN	47	12.2
Others	10	2.6
Knowledge of Nigeria Tax System:		
Expert	250	65.1
Middle Level Expert	108	28.1
Adequate	26	6.8

Source: Field Survey (2022).

The mean, standard deviation, kurtosis, and skewness of the study's constructs are displayed in Table 3. VSC has the lowest mean value, while VGP has the highest. Similarly, VGP has the maximum standard deviation (1.65), indicating that individual responses deviated 1.65 standard deviations from VGP's mean. Individual responses are more tightly concentrated around the mean of the SVR and VSC than the VGP, as indicated by the fact that the standard deviation of the SVR and VSC are identical (1.48). In addition, the kurtosis and skewness results demonstrated that they all fell within the recommended range of -1 to +1. (Hair, Hult, Ringle & Sarstedt, 2017).

Table 3: Summary of Descriptive Statistics of the Latent Constructs

Constructs	Mean	Standard Deviation	Excess Kurtosis	Skewness
SVR	4.92	1.48	-0.4	-0.48
VGP	5.02	1.65	-0.08	-0.71
VSC	3.87	1.48	-0.54	0.08

Source: Authors' Computation (2022).

4.1 Measurement Model

The measurement model depicts construct-indicator relationships. The evaluation of the measurement model was bifurcated into reflective and formative components, owing to the characteristics of the study's indicators. Indicator reliability, internal consistency, convergent validity, and discriminant validity assessed the reflective measurement model. The aforementioned outcome was attained via a series of analytical techniques, namely factor loading, cronbach's alpha, composite reliability, average variance extracted (AVE), and cross loading respectively. In comparison to the permitted limits of 0.60, 0.70, and 50%, the values of factor loading, composite reliability, and AVE were above those values (see Table 4 Figure 2). SVR's discriminant validity was demonstrated by its indicators loading higher on SVR than any other latent variable (Table 5).

Table 4: Indicators, Factor Loadings, Cronbach's Alpha, Composite Reliability and AVE

Construct	Indicators	Loadings	Cronbach's Alpha	Composite Reliability	AVE
Sustainable VAT Revenue	SVR1	0.850	0.885	0.901	0.632
	SVR2	0.780			
	SVR3	0.781			
	SVR4	0.705			
	SVR5	0.788			
	SVR6	0.856			

Source: Authors' Computation (2022).

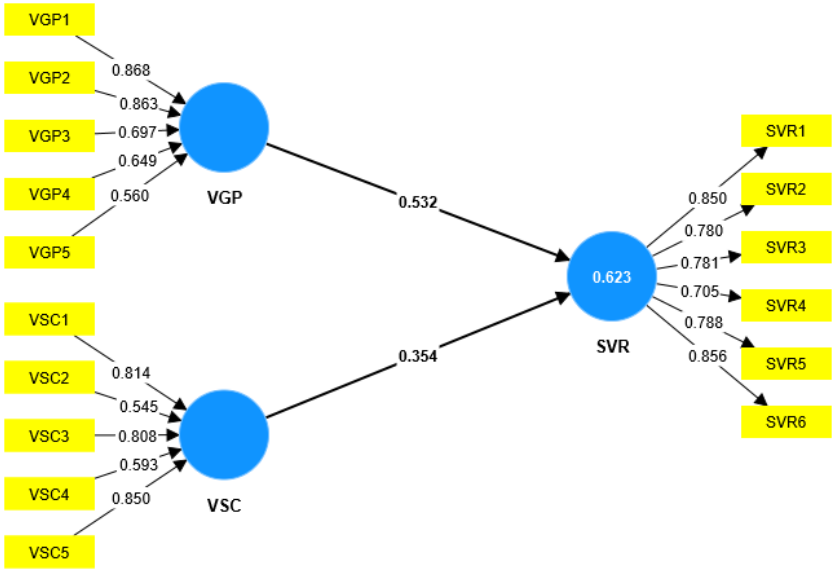


Figure 4.2: PLS-SEM Measurement Model
Source: SmartPLS 4.0.9.2 Output (2022).

Table 5: Cross Loading

Indicators/Latent Constructs	SVR	VGP	VSC
SVR1	**0.850**	0.715	0.567
SVR2	**0.780**	0.458	0.437
SVR3	**0.781**	0.585	0.615
SVR4	**0.705**	0.426	0.442
SVR5	**0.788**	0.475	0.446
SVR6	**0.856**	0.736	0.581

Source: Authors' Computation (2022).

The formative measurement models, however, do not always correlate well since they cannot simply apply the statistical evaluation criteria for reflective measurement scales because the indicators in these models are more likely to reflect the independent causes of the construct. Henseler, Ringle, and Sinkovics (2009) recommended evaluating the formative measurement model for collinearity issues, convergent validity, and significance and relevance using the variance inflation factor (VIF), redundancy analysis, and outer weights and outer loadings. All VIF values, path coefficients, outer weights, and outer loadings for formative latent constructs were within the permissible range (Table 6, Table 7 and Appendix 3).

Table 6: Path Coefficient of Redundancy Analysis

Reflective Constructs	VGP_Global	VSC_Global
VGP	0.713	
VSC		0.863

Source: Authors' Computation (2022).

Table 7: Significance of the Outer Weights and Outer Loadings, and VIF

Formative indicators	Outer Weights			Outer Loadings			VIF
	Original Sample	T Statistics	P Values	Original Sample	T Statistics	P Values	
VGP1 -> VGP	0.411	5.892	0.000	0.852	26.889	0.000	1.780
VGP2 -> VGP	0.477	7.663	0.000	0.867	29.778	0.000	1.710
VGP3 -> VGP	0.323	4.278	0.000	0.722	16.757	0.000	1.990
VGP4 -> VGP	-0.053	0.539	0.590	0.662	13.273	0.000	2.920
VGP5 -> VGP	0.071	0.843	0.399	0.542	9.231	0.000	1.940
VSC1 -> VSC	0.372	4.790	0.000	0.797	18.860	0.000	1.570
VSC2 -> VSC	-0.050	0.719	0.472	0.518	8.571	0.000	1.520
VSC3 -> VSC	0.357	4.081	0.000	0.806	16.918	0.000	1.770
VSC4 -> VSC	0.051	0.708	0.479	0.580	9.985	0.000	1.560
VSC5 -> VSC	0.477	5.760	0.000	0.865	24.225	0.000	1.710

Source: Authors' computation (2022).

4.2 Structural Model

Smart PLS 4.0.9.2 was employed for structural model analysis (Ringle, Wende & Becker, 2022). The structural model uses the multicollinearity test, the coefficient of determination (R^2), the effect size (f^2), and the path coefficients (β) to assess the strength and direction of relationships between latent constructs. Path coefficients and p-values were used to confirm or reject hypotheses. VIF results of multicollinearity among independent variables were less than 5 (Table 8). The R^2 value is 62.3% (Table 8, Figure 3), which indicates that all independent latent constructs explain 62.3% of the variance in the dependent latent variable. The effect size (f^2) also fell within the threshold of medium and large. The hypotheses were rejected because the path coefficients, t-values, and significance level were all within the allowable range of +1 and -1, above 1.96 and less than 0.05 respectively (Table 9). Consequently, the results indicate that the VAT gap has a positive and statistically significant effect on SVR ($\beta = 0.532$, $t = 14.056$, $p < 0.001$). Similarly, the hypothesized relationship between VSC and SVR was also positive and statistically significant ($\beta = 0.354$, $t = 8.781$, $p < 0.001$). These empirical results demonstrate that the VAT gap and the complexity of the VAT system are significant predictors of Nigeria's ability to generate sustainable VAT revenues.

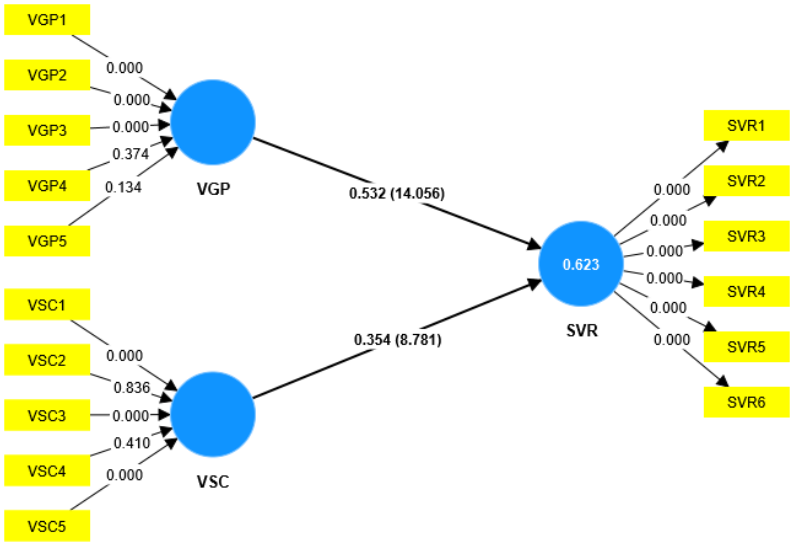


Figure 2: PLS-SEM Structural Model
Source: SmartPLS 4.0.9.2 Output (2022).

Table 8: Explanatory Power

Predictors	Outcomes	R-Square	f-Square	Effect Size	Inner Model VIF (SVR)
VGP	SVR	0.623	0.504	Large	1.487
VSC			0.223	Medium	1.487

Source: Authors' computation (2022).

Table 9: Direct Effects Results

Hypothesized Paths	β	T-Statistics	P-value	Decision
H_{01}: VGP -> SVR	0.532	14.056	0.000	Rejected
H_{02}: VSC -> SVR	0.354	8.781	0.000	Rejected

Source: Authors' computation (2022).

4.3 Discussion of Findings

The relationship between the VAT gap and sustainable VAT revenue generation (H_{01}) was found to be positive and statistically significant in this study. Consistent with prior research on the VAT gap and revenue (Kurotamunobaraomi & Gbomor, 2020; Oladejo, 2021; Raczkowski & Mroz, 2018; Nerudova & Dobransch, 2019), the empirical findings suggest that the VAT gap has contributed to Nigeria's persistently low VAT-to-GDP ratio (the lowest in Africa and one of the lowest in the world). This study's empirical findings indicate that the VAT gap is a direct result of underreporting, poor filing, and underpayment of VATable transactions, VAT returns, and VAT liability, respectively, due to the lack of credible data on the VAT base required to guarantee the achievement of the VAT revenue goal. The findings of this study, however, contradict those of Usman et al. (2019), who discovered a negative correlation between the VAT gap and VAT revenue generation. This suggests that, when investigating the effects of the VAT gap on the sustainability of the VAT system in realizing its revenue potentials, it is necessary to adequately consider the VAT gap indicators identified in this study, such as loopholes in

the current VAT system, systematic capturing of the informal sector, a lack of credible data, and the arbitrary application of VAT exemptions. In addition, the relationship between VAT system complexity and sustainable VAT revenue generation (H02) was evaluated and found to be positive and statistically significant. These results provided empirical support for the complexity of the VAT system as a reliable predictor of sustainable VAT revenue generation, as it was established that the complexity of the VAT system influences VAT revenue generation. The findings were in line with the empirical evidence from several scholars (Alshira'h et al., 2020; Mascagni et al., 2022; Hassan et al., 2021; Ahangar et al., 2011). The empirical evidence presented in this paper indicates that the technical complexity, compliance complexity, and structural complexity of the Nigerian VAT system make the specific computations involved in VAT too onerous and expensive for VEPs (PwC-Nigeria, 2021; Faridy et al., 2014). Therefore, it is necessary to evaluate the complexity indicators enumerated in this study when analysing the VAT system in the context of the sustainability of VAT revenue generation.

5. Conclusion and Recommendations

The continually low VAT-to-GDP ratio has called into doubt the sustainability of VAT revenue as a legitimate source of public revenue, and the findings from the test of two null hypotheses and a review of the existing literature indicate that the indicators of VAT gap and complexity of the VAT system affect sustainable VAT revenue generation in Nigeria. The results of this study make it clear that the complexity of the VAT system and factors related to the VAT gap limit the ability of the current VAT system to generate revenue sustainably. Therefore, the study suggests that tax authorities adopt a tax information gathering and reporting system that is both effective and efficient with opportunity to access quality data about VATable entities or persons (VEPs) and their associated VATable transaction data in order to apply VAT fairly. This will result in the detection and collection of unpaid VAT that may have previously slipped the system, closing or reducing the VAT gap. In order to streamline the VAT system and ensure that all VAT due is collected after a VEP has completed a VATable transaction, the study recommends switching to a completely automated and cutting-edge method, such as digital invoices. A fully automated VAT would ease the technical, compliance, and structural complexities associated with Nigeria's current VAT system. As diverse institutions involved in the VAT process are expected to be integrated into the automated system, the tax authority is expected to support such a system with an appropriate policy.

To further reduce complexity brought on by perplexing VAT regulations and inconsistencies in tax officials' application of VAT laws, the tax authority should incorporate the legal requirements into the automated solutions. By doing so, the complex calculations required—which the VEPs view as being excessive, time-consuming, and expensive—will be made simpler. The empirical outcomes of this study may vary, even though the study model may be applicable in other situations and places. Despite the aforementioned, empirical evidence from this study based on the sampled respondents showed that the VAT gap and the complexity of the VAT system both had a positive and significant impact on long-term VAT income. The study has made a modest contribution to the field of taxation, specifically value-added tax, by identifying the significant direct influences of the VAT gap and VAT system complexity, along with their respective indicators, on the current VAT system's resilience to produce VAT proceeds sustainably.

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Appendix

Appendix 1: Sample Questionnaire

Section A: Baseline Questions (BQ)

Please tick [√] as applicable and comment where necessary.

BQ1 Location (State) …….....

BQ2 Geopolitical Zone: Southwest [ ] Southeast [ ] Southsouth [ ] Northwest [ ] Northeast [ ] Northcentral [ ]

BQ3 Select the suitable category that best describe you or your organisation: VATable Entity [ ] Tax Authority [ ] Tax Expert [ ] Others [ ]

BQ4 Organisation type: Listed Firm [ ] MDAs/Public Corporations [ ] Tax Authority [ ] The Big 4 Tax Consultancy Firm [ ] Non-Big 4 Tax Consultancy Firm [ ]

BQ5 Choose the option that best described your position (Select one): Board Member [ ] Top Management Staff [ ] Tax Accountant [ ] Manager [ ] Others (Specify) _____

BQ6 How many years of work experience do you have in the field of taxation? Less than 5 years [ ] Between 5 and 10 years [ ] Between 11 and 15 years [ ] More than 15 years [ ]

BQ7 Which of the following professional organisations do you belong? CITN [ ] ICAN [ ] ANAN [ ] Others (Specify) _____

BQ8 Kindly rate your knowledge of the Nigerian tax system on a scale from 1(Beginner) to 5 (Expert): Beginner [ ] Fairly adequate [ ] Adequate [ ] Middle level Expert [ ] Expert [ ]

SECTION B

	Kindly indicate the level at which you agree or disagree with the following statements by ticking (√): Strongly disagree = 1; Somewhat Disagree =2; Disagree = 3; Undecided = 4; Somewhat Agree = 5; Agree = 6; Strongly Agree = 7	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	**Sustainable VAT Revenue (SVR)** **To what extent do you agree or disagree with the following statement with regard to sustainable VAT revenue generation?**							
SVR1	Do you think the growth potentials of the current system have been adequately utilised for improved revenue receipts?							
SVR2	Do you think VAT administration in Nigeria is efficient in terms of revenue derived and the cost of collection?							
SVR3	Do you think there is stability in VAT administration and application of relevant regulations?							
SVR4	Sustainable VAT revenue generation would ensures ease of compliance for the VATable entities.							
SVR5	Do you think the current VAT system is characterised by good and fair tax policies?							
SVR6	Do you think the current system supports the fulfilment of the present generation's requirements while not impeding the necessities of forthcoming generations?							
2	**VAT Gap (VGP)** **To what extent do you agree or disagree with the following statement with regard to VAT Gap of the current VAT system?**							
VGP1	Do you think the VATable entities overstate deductions and understate income to reduce VAT liability?							
VGP2	Inadequate coverage of the operations of the informal sector has contributed to VAT gap in Nigeria.							
VGP3	Availability of credible data on VAT base would influence the attainment of VAT revenue target.							
VGP4	The VAT system is prone to arbitrary application of VAT waivers.							

VGP5	The size of the VAT gap in the current system is likely to continue to increase.							
VGP_Global_Measure	Please assess the extent to which you consider VAT gap to affect the realisation of VAT revenue target.							
3	**VAT System Complexity (VSC)** **To what extent do you agree or disagree with the following statement with regard to the complexity of the current VAT system?**							
VSC1	Do you think the detailed calculation of VAT owed and filing of VAT returns are excessively burdensome?							
VSC2	VAT system complexity stems from confusing and complex VAT laws.							
VSC3	Intellectually difficulty in ascertaining the meaning of the relevant VAT laws would require the services of tax experts.							
VSC4	Keeping so many books and records for VAT purposes such as preparing and filing VAT returns is complicated.							
VSC5	The VAT structure allows VATable entities to take advantage of loopholes through tax planning.							
VSC_Global_Measure	Please assess to what extent you consider the VAT system complexity to influence sustainable VAT revenue generation.							

Appendix 2: Sample Size Computation

Population Strata	Population Size	Sampling Method	Formula	Computation	Sample Size
(Option 1):					
Listed Companies (VEP1)	157	**Yamane Technique**	$n = \frac{N}{1+N(e)^2}$	$n = \frac{5613}{1+5613(0.0}$	373
MDAs/Public Corporations (VEP2)	1,484				
Tax Officials	3,972				
Total	**5,613**				
(Option2):					
Population Strata	**	**Cochran Technique**	$n = \frac{Z^2pq}{e^2}$	$n = \frac{1.96^2 x\ 0.5x(}{0.05^2}$	384
Listed Companies (VEP1)					
MDAs/Public Corporations (VEP2)					
Tax Officials (FIRS)					
Tax Experts					

**Size of the Population not required with CochranTechnique.

Appendix 3: Path Coefficient of Redundancy Analysis (Formative Constructs)

