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# Sectoral Value Added Tax Compliance and Government Revenue Generation in Nigeria

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**Abstract**
The dominance of Nigeria's informal sector poses a severe and ongoing challenge to value added tax compliance and government revenue generation across different sectors of Nigerian economy. The main objective was to examine the effect of sectoral value added tax compliance on government revenue generation in Nigeria (2021 to 2025). The independent variable being sectoral value added tax compliance was proxied by manufacturing sector, ICT sector, mining and quarrying sector, insurance and financial services sector and agricultural sector, while the dependent variable being government revenue generation was proxied by total government revenue generation disclosures. The research design adopted for the study was ex post facto. Secondary data was used and the population consisted of annual records of value added tax compliance statistics and government revenue generation reported by Nigeria revenue service, the National bureau of statistics, and the Central Bank of Nigeria from 2021 to 2025 (5 years). Both the population size and the sample size was 25. The data used in this study was analyzed using ordinary least squares regression analysis and the statistical package employed was STATAS version 17. The results of the analysis revealed that manufacturing sector VAT compliance (coeff. = -59.46256 [0.319]) and mining and quarrying sector (coeff. = -107.3359 [0.243]) has negative but statistically insignificant effect on total government revenue in Nigeria, ICT sector (coeff. = 18.0770 [0.013]), insurance and financial services sector (coeff. = 2.0315 [0.025]) and agricultural sector (coeff. = 374.0168 [0.002]) has positive and statistically significant effect on total government revenue in Nigeria. It was concluded that sectoral value added tax compliance has a mixed but generally significant effect on total government revenue generation in Nigeria, Based on the findings of the study, it was recommended that government should strengthen VAT compliance through better monitoring and enforcement, taxpayer education, and digital tax system support key sector, enhance their VAT contributions and improve sustainable government revenue generation in Nigeria.

**Keywords:** Sectoral Value Added Tax Compliance, Manufacturing Sector VAT Compliance, Information and Communication Technology Sector VAT Compliance, Mining and Quarrying Sector VAT Compliance, Insurance and Financial Services Sector VAT Compliance, Agricultural Sector VAT Compliance, Government Revenue Generation, Total Government Revenue Generation Disclosure

## 1. Introduction
This section presents the research background, problem statement, objectives of study and research hypotheses.

### 1.1 Background to the Study
Taxation remains one of the most fundamental instruments through which government mobilize domestic revenue to finance public expenditure, reduce fiscal deficits, and promote economic development. Among the various forms of taxation, value added tax (VAT) has emerged in recent years as a major revenue-generating mechanism adopted by over 170 countries across the world (Ebeke & Ehrhart, 2022) [20]. Nigeria introduced value added tax in January 1994 through the value added tax act No. 102 of 1993, that replaced the former sales tax regime. The Nigeria revenue service (NRS) is the primary agency responsible for the administration, collection, and enforcement of VAT in Nigeria.
On it's inception, VAT was levied at a flat rate of 5%, making Nigeria one of the countries with the lowest VAT rates globally. In 2020, The federal government of Nigeria increased the standard VAT rate from 5% to 7.5% under the finance act of 2019, a

policy aimed at broadening the revenue base and aligning Nigeria's rate with regional peers (Omodero & Okafor, 2022) [43]. Studies have shown that tax gaps difference between potential and actual VAT collection remains wide in many developing nations (Nigeria inclusive) due to structural weaknesses in tax administration, a large informal sector and limited taxpayer education (Mawejje & Sebudde, 2021) [35]. The implications of poor VAT compliance deprives government of resources needed to finance health, education, and security, thereby undermining sustainable development goal education, and security (IMF, 2023).

Sectoral value added tax (VAT) compliance measures how accurately and completely different economic industries charge, report and remit VAT to the government. The manufacturing sector constitutes a significant segment of Nigeria's VAT base, VAT is chargeable on the supply of manufactured goods except for items exempted under the first schedule of the VAT act, information communication and technology sector has witnessed rapid growth in Nigeria, VAT compliance in this sector are distinct from other sectors due to the intangible nature of the services rendered and the cross-border dimensions of digital service delivery (Okafor, 2022) [44], Nigeria's mining and quarrying sector is gradually strengthening it's place within the nation's economy, though the mining sector contributes less than five percent to Nigeria's gross domestic product (GDP). insurance and financial services provides financial advice, insurance and superannuation products, create or change ownership of financial assets. Agricultural sector remains a vital component of Nigeria's economy, it includes crop and animal production, as well as agricultural engineering and production of agricultural machinery, fertilizers, and other kinds of products to support farming.

The revenue generation between 2021 and 2025 from the five sectors recorded notable increases in VAT collections, reflecting stronger enforcement measures, digital tax administration, and expansion of the taxable base. Several studies on value added tax and government revenue in Nigeria, focused on aggregate VAT collections without considering the VAT compliance of different sectors. This study seeks to fill the gap by examining VAT compliance in the manufacturing, information and communication technology, mining and quarrying, insurance, and financial services,agricultural sector and it's effects on government revenue generation in Nigeria between 2021 and 2025.

### 1.2 Statement of the problem

Sectoral VAT compliance in Nigeria faces persistent and multifaceted challenges, one of the most significant is the low compliance rate within the informal sector, this occurs either through non-registration or through the deliberate under-reporting of taxable transactions, resulting in revenue losses to the government (Aina, 2025). weak enforcement mechanisms and corruption within the tax collection apparatus (Adegbie & Fakile, 2021) [6]. Oladipupo & Izedonmi (2008) [41] established that a significant proportion of non-compliance with VAT in Nigeria is attributable to taxpayers' inadequate understanding of applicable tax laws and obligations, laxity in VAT administration and enforcement continue to undermine revenue generation outcomes, persistent challenges such as inadequate tax audit coverage, corruption within the tax collection system, low levels of voluntary compliance, insufficient taxpayer education, weak digital monitoring mechanisms, and limited inter-agency data integration significantly diminishes the effectiveness of VAT administration in Nigeria (Adegbie & Fakile, 2021) [6].

Empirical studies on VAT and revenue generation in Nigeria concentrated on the aggregate nexus between VAT revenue and macroeconomic indicators such as gross domestic product (GDP), government expenditure, economic growth, and total federally collected revenue. Studies by Okafor (2024) [45] acknowledged the critical role of tax revenue in promoting economic development but concluded that Nigeria has not fully realized it's VAT revenue potential due to persistent structural and administrative inefficiencies. This gap is particularly important because sectors such as manufacturing, information and communication technology, mining and quarrying, financial and insurance services, and agriculture collectively contribute a substantial share of Nigeria's economic output and non-oil revenue base.

### 1.3 Objectives of the study

The main objective of this study was to examine the effect of sectoral VAT compliance on government revenue generation in Nigeria between 2021 and 2025. The specific objectives of the study included the following:

1. To find out the effect of manufacturing sector VAT compliance on total government revenue generation in Nigeria.
2. To examine the effect of ICT sector VAT compliance on total government revenue generation in Nigeria.
3. To determine the effect of mining and quarrying sector VAT compliance on total government revenue generation in Nigeria.
4. To find out the effect of insurance and financial services sector VAT compliance on total government revenue generation in Nigeria.
5. To examine the effect of agricultural sector VAT compliance on total government revenue generation in Nigeria.

### 1.4 Research hypotheses

The following hypotheses (in null form) were formulated in line with the objectives of this study.

**$H_{O1}$**: Manufacturing sector VAT compliance has no significant effect on total government revenue generation.

**$H_{O2}$**: Information and communication technology (ICT) sector VAT compliance has no significant effect on total government revenue generation.

**$H_{O3}$**: Mining and quarrying sector VAT compliance has no significant effect on total government revenue generation.

**$H_{O4}$**: Insurance and financial services sector VAT compliance has no significant effect on total government revenue generation.

**$H_{O5}$**: Agricultural sector VAT compliance has no significant effect on total government revenue generation.

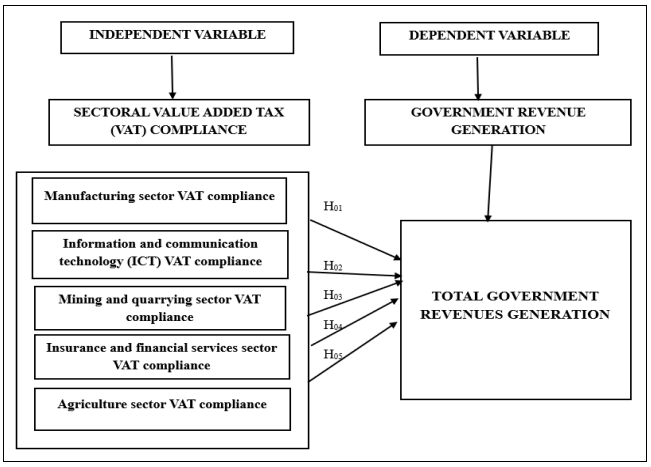
## 2. Review of Related Literature

This section discusses the related literature on sectoral value added tax compliance and government revenue generation in Nigeria. It presents the conceptual framework, theoretical review, empirical review and the gaps identified in empirical reviewed.

### 2.1 Conceptual framework:

This section presents the variables of the study and the

relationship existing among these variables, diagrammatically as shown in Fig 2.1 below:




**Source:** Researcher's conceptualization (2026)

**Fig 2.1:** Conceptual framework of variables

**2.1.1 Sectoral value added tax compliance** refers to the impact of VAT compliance across various sectors of the economy. Value added tax compliance is the full and timely adherence by taxable persons and businesses to the obligations prescribed under applicable VAT legislation and administrative regulations, these obligations broadly encompass registration with the relevant tax authority maintaining accurate and complete record-keeping of all taxable transactions, the timely filing of periodic VAT returns, and the correct computation and remittance of net VAT liabilities (Shehu, 2024). Tax compliance strategies is an organized approaches and instruments deployed by tax administrations to promote and enforce adherence to tax laws and regulations.

Nigeria introduced value added tax in January 1994 through the value added tax act No.102 of 1993, replacing the former sales tax regime. The Nigerian revenue service (NRS) is the primary agency responsible for the administration, collection, and enforcement of VAT in Nigeria. At it's inception, VAT was levied at a flat rate of 5%, making Nigeria one of the countries with the lowest VAT rates globally. VAT is tax on consumption, in 2020, the Nigerian government increased the standard VAT rate from 5% to 7.5% under the finance act of 2019, a policy aimed at broadening the revenue base and aligning Nigeria's rate with regional peers (Omodero & Okafor, 2022) [43]. Despite this upward revision, Nigeria's VAT-to-GDP ratio remains comparatively low, the compliance ratio across key sectors remains uneven, as many businesses operators in the informal economy continue to under-remit or entirely evade VAT obligations (Nwokoye & Rolle, 2021) [37].

Tax compliance is the act of accurately reporting income, expenditure, and other relevant financial information to the designated tax authority in the manner and within the time stipulated by law. (James & Alley, 2002) [33]. In Nigeria, VAT compliance is governed principally by the value added tax act cap. V1, laws of the federation of Nigeria 2004 as amended by successive finance acts (2019, 2020, 2021, 2022, and 2023). Under this framework, businesses with a turnover exceeding the prescribed threshold are mandated to register with the Nigerian revenue service (NRS), within six months of commencing business operations. The compliance process for registered VAT taxpayers involves completing the VAT registration process, meeting threshold requirements, following prescribed step-by-step filing procedures, and discharging the statutory responsibilities attached to VAT registration. Ladi (2023) observed, that proper registration and consistent adherence to these obligations does not only ensure smooth business operations but also mitigate the risk of penalties, interest charges, and the reputational consequences associated with non-compliance.

**2.1.2 Components of sectoral value added tax compliance**

The sectors used in this study to research on their value added tax compliance were manufacturing, information and communication technology, financial and insurance, mining and quarrying and agricultural sectors.

**2.1.2.1 Manufacturing sector VAT compliance**

The manufacturing sector processes raw materials into finished goods, the sector plays a vital role in the global economy by significantly contributing to GDP. The manufacturing sector has been the leading contributor to VAT in Nigeria across the study period, even though the sector faces challenges such as inadequate energy supply, low access to affordable financing, poor infrastructure quality, and multiple taxation, in 2021, manufacturing sector remitted VAT of N4,94billion (Q1'21) N4,489billion (Q2'21) N9,120billion (Q3'21) N1,028billion (Q4'21) 2022: N1,129billion (Q1'22) N1,188billion (Q2'22) N1,143billion (Q3'22) N1,312billion (Q4'22) 2023: N1,293billion (Q1'23) N1,293billion (Q2'23) N1,383billion (Q3:23) N1,589billion (Q4:23) 2024: N177billion (Q1'2024) N183billion (Q2:2024) N204billion (Q3'2024) 2025: N286billion (Q1'25), N297.68billion (Q2'25) N290billion (Q3'25) N292.12billion (Q4'25) (NBS 2026). Research by Olawale & Johnson (2022) found that the increased VAT rate led to an average 4.2% rise in operational costs for manufacturing sectors, these affects small and medium enterprises (SMEs) that lacked the financial buffer to absorb the additional tax burden. This findingsz is consistent with Adedeji *et al.* (2023) [3], who surveyed 120 manufacturing firms across Nigeria and reported that 68% of respondents experienced a direct increase in production costs attributable to the VAT increase.

**2.1.2.2 Information and communication technology sector VAT compliance**

Information and communications technology refers to any product that stores, retrieve, manipulate, process, transmit, or receive information electronically in a digital form. Nigeria's ICT sector is the second-highest VAT contributor and a fast-growing major segment of the economy and has emerged as one of the defining pillars of national economic transformation. The ICT sector contributed N5,924billion (Q3'21) N6.239billion (Q4'21) 2022: N5,884billion (Q1'22) N6,817billion (Q2'22) N6,815billion (Q3'22) N7,365billion (Q4'22) 2023: N8,412billion (Q1'23) N1,084billion (Q2'23) N9,942billion (Q3'23) N9,942billion (Q4'23) 2024: N115,546billion (Q1:24) N140billion(Q2'24) N192billion (Q3:24) (NBS, 2025). The steady growth of this sector reflects the proliferation of digital services, telecommunications, cloud computing, online platforms, and e-commerce, all of which are increasingly brought within the VAT net through the NRS simplified compliance regime for non-resident suppliers and the digital services guidelines issued in 2021 (FIRS information circular No. 2021/19).

**2.1.2.3 Mining and quarrying sector VAT compliance**

Mining is the extraction of natural resources like coal, oil,

gas, and minerals from the earth. Chikezie-Aga *et al*. (2022) posits that Nigeria possesses more than 450 mineral-rich sites in which various varieties of commercial-grade minerals are located. Akonji and Wakili (2019) contend that Nigeria has abundant reserves of immobile natural resources spread across it's geospatial zone, the mining and quarrying sector has consistently ranked third in VAT contributions, VAT generation from mining and quarrying sector from 2021-2025 was N48,355billion (Q1'21) N8,112billion (Q2'21) N2,843billion (Q3'21) N3,303 billion (Q4'21) N4,078billion (Q1'22) N3,808billion (Q2'22) N4,028billion (Q3:22) N3,93billion (Q4:22) N53,399 (Q1'23) billion N53billion (Q2'23)billion N57,958billion(Q3:23) (Q4:23) 94,903billion. 2024: N102billion (Q1'24) 137,181 billion (Q2'24) N174, 419 billion (Q3'24) between 2021 and 2022 there was a low performance from the sector, 2023 had a VAT rapid growth especially in the fourth sector of 2024 mining sectoral VAT contribution recorded strong quarter by quarter growth (NBS, 2024). Factors like improved VAT compliance among businesses monitoring and enforcement by the Nigerian revenue service and digital tax administration contributed to the rising VAT revenue in the mining sector.

**2.1.2.4 Insurance and financial services sector VAT compliance**

Financial services refer to economic services provided by various financial institutions that deal with the management of money. Financial services are products of institutions such as banking firms, insurance companies, investment funds and brokerage firms. Based on reports from the National bureau of statistics (2025) the finance and insurance sector has seen significant growth in VAT contributions between 2021 and 2025, driven by the rise in digital financial services, increased adoption of electronic transactions, and inflationary pressures. VAT collection from insurance and financial sector from 2021-2025 are 2021: Q1: N3,282 billion Q2:N7,712billion Q3: N2,395billion Q4: N2,695billion. 2022: Q1: N2,927billion Q2: N2,234billion Q3: N2,716billion Q4: 3,047billion 2023: Q1: N3,540billion Q2: N5,726billion Q3: N6,427billion Q4: N5,883billion 2024: the sector saw continued growth, with insurance and financial activities contributing approximately indicating a strong, albeit slightly fluctuating, growth trajectory. This distribution reflects the continued strength of banking, fintech, and capital market activities in Nigeria (NBS, 2025).

**2.1.2.5 Agricultural sector VAT compliance**

Agricultural sector is the segment of the economy involved in the cultivation of agricultural products aiming to provide food, raw materials, and economic profit while playing a crucial role in the economic development of both developed and developing countries. Agriculture has a strong hold in an economy, for without it a country will always depend on foreign countries to feed it's population, agriculture is broadly divided into four sectors in Nigeria which are crop production, fishing, livestock and forestry. Crop production remains the largest segment and accounts for about 87.6% of the sector's total output, followed by livestock, fishing and forestry at 8.1%, 3.2% and 1.1% respectively. The agro-allied sector remitted N18.3bn in value added tax for 2021 to 2024, remittance from value added tax on agriculture, Forestry and fishing has surged to N18.3bn from 2022 to 2024, recording a growth of 119.29 per cent in three years. (Taiwo, 2022). This consistent upward trajectory signals both the increasing formalization of the agricultural value chain and the strong potential of the sector to drive Nigeria's economic diversification, challenges in the agricultural sector includes revenue shortage, violent conflict, outdated system of agriculture, lack of access to finance (Taiwo, 2022).

**2.1.3 Government revenue generation**

Revenue generation is a channel through which finance is used for the development of the physical and material well-being of the citizens of a country, revenue generation is an important government policy for generating finance for the implementation of the budget in Nigeria. (Kelvin & Alolote, 2023). Government revenue encompasses all forms of income generated within a country, including taxes, fees, and other financial contributions from citizens and businesses, government revenue generated from VAT is usually disbursed to the three tier of government through the federation accounts allocation committee (FAAC). According to central bank of Nigeria, government revenues are part of government budget balance calculation. Government revenues refer to all receipts the government collects, including taxes, custom duties, revenue from state-owned enterprises, capital revenues and foreign aid. Financial resources of government constitute the bulk of it's revenue and this relate to monies mobilized or generated in the economy (Obiechina, 2010).

**2.1.3.1 Total government revenue generation disclosure**

Total government revenue is a public finance detailing all funds collected by a government such as taxes, duties, grants, and oil revenues to ensure financial transparency and accountability (Ologbenla, 2022) [49]. Bernasek (2021) states that public disclosure of taxpayer information may have several policy purposes, which is to promote tax compliance and deter taxpayers from underreporting their income leading to tax evasion, because taxpayers may be reluctant to underreport income if the public observe their income and expenditure details and report discrepancies to the authorities, a poor tax payment record may cause reputational risks and loss of their clients and disclosure of taxpayer information may undermine privacy, in the case of companies, proprietary secrets, despite these benefits of disclosure, confidentiality of taxpayer information is a key principle to be observed in tax policy and tax administration.

**2.1.4 Sectoral VAT compliance and government revenue generation**

Sectoral VAT compliance refers to businesses charging the right amount of VAT to their customers, and subsequently reporting and remitting VAT to the relevant government. Tax compliance has emerged as a critical area of concern for governments, businesses, and individuals worldwide (Dagunduro *et al*. 2025), tax compliance is influenced by various factors, such as taxpayer attitudes, enforcement measures, and the complexity of tax systems (Falana *et al*. 2024). The willingness of taxpayers to comply with tax laws is shaped by their trust in government institutions, perceptions of the effectiveness of tax administration, and beliefs about the fairness of the tax system (Adelekan *et al*. 2024; Akinadewo *et al*. 2023). The compliance of businesses with VAT laws maintains a positive relationship with the Nigerian revenue service and shields organizations from financial and legal troubles.

Government revenue is one of the sources of income generation. Hassan (2001) defined revenue as tolls, taxes, rates, fees, penalties, rents, forfeitures, dues and other

receipts of government from whatever source arising over which legislature has power of appropriation including proceeds of loans raised. The purpose of taxation is to raise money for activities which cannot be pursued without government action, these includes the public contribution to economic investment, as well as enabling people to meet their basic needs and enjoy wider opportunities, without taxation government cannot create a better society. (Efuntade, 2020) [21].

**2.1.4.1 Manufacturing sector VAT compliance and total government revenue generation**

Manufacturing sector is any industry that makes products from raw materials by the use of manual labour or machinery that is usually carried out with a division of labour. The manufacturing sector is a vital part of the Nigerian economy, based on the sectoral distribution of value added tax (VAT) released by the national bureau of statistics (NBS 2024), the manufacturing sector is a crucial engine of Nigeria's revenue generation creating jobs, increasing export revenues, and contributing to industrialization. According to recent statistics, the manufacturing sector is one of the top VAT contributors (national bureau of statistics [NBS], 2023). These contributions supply the government with revenue that may be used to invest in infrastructure, education, and healthcare, all of which are vital for long-term growth. According to Adebayo & Salisu (2021), the sector faces challenges such as high manufacturing costs, inadequate infrastructure, and intermittent power supply, these challenges limits it's potential and VAT income generation. Tax reforms aiming at improving business environment could boost VAT revenue, accelerate economic growth and policies to enhance VAT collection methods and introducing targeted incentives to encourage growth in sub-sectors with high VAT potential (Okoro & Bello, 2022). For an economy to thrive, it's production capacity must upsurge, economists agree that manufacturing is crucial to economic development and progress. Economists have long held the view that a nation's GDP can only grow when industrial activity upsurges and manufacturing capacity utilization rates rise as well (Celina *et al*. 2017).

**2.1.4.2 Information and communication technology sector VAT compliance and total government revenue generation**

Marvis *et al*, (2025) defines the digital economy as the sector encompassing businesses that provide goods and services online and digital platforms that connect excess capacity with demand. The issue of digital economy has become a subject of renewed global interest, with several countries embarking on value-added tax through digital services as a means of raising revenues, taxing the digital economy in Nigeria means increasing tax revenue for the government, broadening the tax base, and reducing the likelihood that the government will take out loan. The Nigeria communication commission, opined that digital economy is any aspect of the economy that is driven by digital technologies. The emergence of various new technologies such as artificial intelligence, big data, block chain, cloud computing, mobile applications, and social media has significantly transformed numerous facets of daily life and has led to heightened expectations of revenue generation from the usage information communication and technology ICT sector forms a significant and growing share of Nigeria's GDP and formal employment, information communication and technology is becoming the engine of the Nigerian economy.

**2.1.4.3 Mining and quarrying sector VAT compliance and total government revenue generation**

Mining and quarrying are the processes of extracting naturally occurring stone or minerals such as coal, ores, crude petroleum and natural gas from the earth. Mining is one of the oldest economic activities and can be traced back to when early mankind extracted clay, and other metals, for the production of cosmetics, crude implements and utensils. The mining sector plays a crucial role in Nigeria's economy contributing significantly to the country's gross domestic product, and a great potential economic diversification, recent data from the national bureau of statistics (NBS, 2022) and other industry reports indicate that mining and quarrying have become one of the top contributors to VAT revenue in Nigeria, alongside manufacturing and ICT. Despite these gains, the sector's overall contribution to GDP remains low, at less than 1% in recent years, highlighting the need for further sectorial development and policy attention. Empirical studies consistently found that while VAT revenue from mining has increased, it's direct impact on Nigeria's GDP growth is limited. The sector's small share of GDP in recent years and persistent under performance are attributed to factors such as inadequate exploration fundings, regulatory challenges, and the prevalence of tax exemptions for export-oriented activities (David *et al*., 2016). Fiscal policies including targeted loans and interventions, have been shown to boost mining sector output, but VAT generation remains relatively low due to the sector's limited size and the structure of Nigeria's economy. Scholars recommend strengthening tax administration, reducing exemptions, and investing in sectorial infrastructure to enhance the mining sector's role in economic growth.

**2.1.4.4 Insurance and financial services sector VAT compliance and total government revenue generation**

The financial services sector is an essential engine of economic activity in Nigeria, providing banking, insurance, and investment services that support individuals and businesses, it's contributions to Nigeria's tax revenue through value-added tax (VAT) has increased, underscoring it's critical role in the economy. The VAT derived from financial services transactions constitutes a significant revenue source for the government, which in turn supports infrastructure development and social programs vital for sustainable growth (Olawale & Amadi, 2022). Recent statistics from the National Bureau of Statistics (2023) indicate that the financial services sector remains one of the leading contributors to VAT in Nigeria, The revenue generated from VAT allows the government to allocate funds to essential sectors such as infrastructure, healthcare, and education, thereby fostering economic development. Adegoke & Omotayo (2021) assert that a 1% increase in VAT contributions from the financial services sector is associated with a 0.7% growth in Nigeria's GDP, highlighting the sector's critical role in economic advancement. As digital banking and fintech services continue to expand, there is an opportunity for increased VAT contributions as more Nigerians are able to access financial services, especially in regions that have previously lacked such access (Eze & Musa, 2022). Nonetheless, challenges continue to exist, such as compliance expenses, regulatory constraints, and the presence of multiple tax

systems have been recognized as barriers to effective VAT optimization in the financial sector, the sector's digital advancement is restricted by poor internet access and insufficient digital literacy in rural areas, thereby limiting the potential for VAT revenue generation (Okon & Salami, 2021).

**2.1.4.5 Agricultural sector VAT compliance and total government revenue generation**

Agricultural value added tax is a tax imposed on the value added at each stage of agricultural production and this includes activities such as planting, harvesting, and processing of agricultural goods (Onokala & Olajide, 2020). Agricultural VAT contributions is comparatively low due to tax exemptions on basic agricultural products (Ohiomah, *et al*., 2025). While these exemptions support food security and inflation control, they limit VAT revenue potential from agriculture. According to Agida and Ofoegbu (2022) agriculture is essential to the growth of every developing nation, including Nigeria. Orji *et al*. (2020) opine that Agriculture value-added tax aims to formalize the agricultural sector, ensuring that it contributes fairly to government revenue. By taxing the value added in agriculture, the government can generate income supporting rural development and agricultural modernization.

In Nigeria, agriculture export has played an important role in economic development by providing the needed foreign exchange earnings for other capital development project. Despite limited VAT contributions, the agricultural sector indirectly influences Nigeria's gross domestic product (GDP) growth, For instance, increased productivity in agriculture can reduce food import reliance, thus stabilizing the economy and conserving foreign exchange. According to the National Bureau of Statistics (2023), agriculture contributed approximately 25% of Nigeria's GDP, with indirect VAT contributions stemming from ancillary industries like agro-processing and logistics. Although agricultural VAT contributions are minimal, legislative changes in VAT exclusions and incentives could boost tax revenues while maintaining food security.

## 2.2 Theoretical framework

The theories that supported this study were tax compliance theory by Allingham and Sandmo (1972) [13] and fiscal exchange theory by James M. Buchanan (1976), the anchored theory was tax compliance theory.

**2.2.1 Tax compliance model theory by Allingham and Sandmo (1972)** [13]**,**

The Allingham and Sandmo Theory of tax compliance model (1972), states that government can takes various measures, such as imposing additional fines and performing tax audits, to discourage tax evasion. If a taxpayer perceives that the consequences of evading taxes are not sufficiently severe, they are more likely to engage in such behavior. (Allingham and Sandmo, 1972) [13].

**Tax Compliance Theory was the anchor theory** for this study because it gives framework for understanding the role of sectoral value added tax (VAT) and government revenue generation in Nigeria. VAT revenue depends largely on the compliance by those responsible for paying, collecting and remitting the tax to the government. When the compliance is high, VAT revenue increases, thereby improving government revenue generation, low compliance due to tax evasion, weak enforcement, or lack of trust in government reduces and affects VAT revenue. The theory helps to explain VAT revenue and it's impact on government revenue generation in Nigeria over the study period. Tax compliance refers to the willingness of taxpayers to comply with tax laws to achieve an economic balance in a country. It is the process and procedure of convincing taxpayers to comply with the relevant tax laws (Oladipo *et al*, 2022). On the other hand, tax non-compliance poses a major challenge for many tax authorities, and convincing taxpayers to comply is difficult (James & Alley, 2002) [33].

**2.2.2 Fiscal exchange theory by James M. Buchanan (1976)**

The fiscal exchange theory propounded by James M. Buchanan states that the delivery of public goods and services by the government can influence taxpayer compliance behavior. Meaning, when the traditional functions and obligation of the government is discharged to the citizens, it therefore have influences on their behaviour toward the compliance of tax payment as the taxpayer primary concern is what they receive in exchange of the taxes they paid, taxes are paid by individuals when they perceive that it actually serves to finance public goods. When public goods are financed by the government, the tax payers will on their own comply by making payment of taxes because of the benefits that would be derived from it. The benefits of paying taxes can be seen in the government's provision of public goods and services, such as basic healthcare, meeting citizens' needs for education, building infrastructure such as water systems,supplying a steady supply of electricity, maintaining roads and bridges, and managing crime,corruption, conflict, and terrorism. This theory is based on psychological, social or relational contract between the citizens and government. This builds a cordial relationship of transparency, accountability, efficiency and mutual trust between the government and the citizens.

## 2.3 Empirical Review

**2.3.1 Manufacturing sector VAT compliance and total government revenue generation n Nigeria**

Okoli *et al*. (2026) explored the impact of taxation on manufacturing sector output in Nigeria from 1994 to 2023, using secondary data from the Central Bank of Nigeria, National Bureau of Statistics, and the Federal Inland Revenue Service, the analysis focuses on direct and indirect impact of taxation on manufacturing sector output using four key tax types. Anchored in the Laffer curve theorem. The findings reveal that PPT significantly boosts manufacturing output in both the short and long run. The study recommends a rebalancing of tax policy on optimizing petroleum profit tax utilization, reform corporate tax structure to reduce burdens, reassess the design and administration of value added tax.

Yunana (2026) analysed the effect of Value-Added Tax (VAT) on Nigerian manufacturing sector productivity spanning the period 1986–2024. Utilizing annual time series data sourced from the Central Bank of Nigeria Statistical Bulletin and the World Development Indicators (2024 edition), the analysis employs the Autoregressive Distributed Lag (ARDL) model Utilizing time-series data, the study identifies both short-term and long-term effects of VAT on manufacturing sector productivity. The findings reveal significant correlations between VAT rates and manufacturing sector productivity, highlighting the potential implications for policy-making and economic growth in

Nigeria. The study rRecommended VAT revenues be strategically invested in industrial infrastructure and productivity-enhancing interventions to strengthen the resilience and output of Nigeria's manufacturing sector.

Obentey *et al*. (2025) examined the effect of Value Added Tax (VAT) on the financial performance of consumer goods firms, from 2012 to 2023. The study adopts an ex-post facto research design and relies on secondary data extracted from Cadbury Nigeria Plc's audited financial statements, Findings suggest that other external and internal factors beyond VAT play a more substantial role in determining shareholder returns in Cadbury Nigeria Plc. The study concludes that although VAT contributes to government revenue, its impact on firm-level financial performance is minimal. It recommends that policymakers adopt balanced tax reforms to support revenue mobilization without stifling firm profitability.

Onavwie *et al*. (2025) [51] investigated the impact of tax compliance on the growth of Nigeria's manufacturing sector, using key tax compliance proxies The study adopted a quantitative, explanatory research design using secondary data from 1999 to 2024, collected from the Nigerian Revenue Service (NRS), the Central Bank of Nigeria (CBN), and the National Bureau of Statistics (NBS). Findings show that TCR and TTTC have no statistically significant impact on MSOGR, while TEI, TG, and TAY have a significant positive effect on MSOGR.The study concludes that tax compliance is critical to fostering growth in Nigeria's manufacturing sector and recommends that the Nigerian government should focus on increasing tax efforts, particularly by improving tax collection efficiency and enforcement measures. Strengthening the tax administration system can enhance manufacturing sector output.

Ibeiinmo (2025) evaluated the impact of the manufacturing sector on Nigeria's economic growth from 1990 to 2022. Annual time series data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin, and the study utilized the ordinary least squares (OLS) regression method for analysis. The findings revealed that oil refining and cement production have a positive and significant relationship with Nigeria's GDP. In contrast, food and beverage production, as well as textile production, also exhibit positive relationships with GDP, though these were not statistically significant. The study concluded that the manufacturing sector significantly contributes to Nigeria's economy, with all assessed sub sectors collectively influencing economic growth. It recommended that the government support the manufacturing sector through targeted policies such as tax holidays and other incentives to boost manufacturing output in the country.

Ismaila (2024) examined trend pattern of Value Added Tax revenue and manufacturing output in Nigeria. The variables are manufacturing output, Value Added Tax (VAT), Company Income Tax (CIT) and Petroleum Profit Tax (PPT). Data used were sourced from Central Bank of Nigeria Bulletin and Federal Inland Revenue Service. Data collected were analyzed using tables, graphs, Autoregressive Distributed Lag (ARDL) method. The results showed that VAT and manufacturing output moved in the same direction. Findings revealed VAT had a positive and statistically significant effect on manufacturing output in the in the country. The study therefore concluded that Value Added Tax had positive effect on Manufacturing output in Nigeria.

Oru (2024) [53] used secondary data from the Central Bank of Nigeria Statistical Bulletin (2020) that spans 41 years, from 1981 to 2020, to examine the effect of government spending on the manufacture of Nigeria's manufacturing sector. Employing secondary methodology and Vector Autoregressive (VAR) model. Findings shows that capital spending and the manufacturing sector in Nigeria have a positive association. The report emphasizes how important targeted government spending on the manufacturing sector is for the growth of a country's economy, especially in Nigeria. It recommends that concerted efforts be made to improve and encourage manufacturing sector output, emphasizing the role of government in providing support and incentives for investment in the sector.

Benjamin *et al*. (2023) focused on the value added tax, inflation, and manufacturing sector output in ECOWAS countries. The objective of this paper is to investigate the relationship between value added tax (VAT) and inflation on manufacturing sector productivity in ECOWAS countries from 2000 to 2022. Panel ARDL model, and panel GMM estimator method was used to analyze the data. Finding shows Value added tax and inflation coefficient had a negative relationship with manufacturing Productivity. It was m recommended that as far as the banks are concerned, the authorities should ensure that it regularizes the implementation of Value Added Tax in order that it may not be accused of discriminating practices against banks.

Joshua-Gyang *et al*. (2023) analyzed the effects of tax components on industrial output in Nigeria using historical data sourced from 1999-2022, using you method of analysis. Findings suggests that policymakers should focus on optimizing VAT policies. by improving tax collection mechanisms, streamlining procedures, and ensuring compliance, policymakers should review and evaluate the existing tax policies, review duty rates and trade policies.

Taofeek *et al*. (2023) examined the threat facing the Nigerian manufacturing industries using generating sets as their alternate source of power. Some industries were considered in this research and in which some of the challenges facing the industry were itemized. This research established the amount of fuel used by each of these industries visited to power their generators daily, weekly, monthly and also yearly, compared with the amount paid to Distribution Company (public utility). But these industries couldn't depend solely on the public utility power for their operations due to the epileptic power supply in the country. Hence, the necessity for a steady power supply using public utility is very important thereby reducing the cost of fueling of generating set and cost of production of goods and services.

Cordelia *et al* (2022) examined the extent to which value added tax (VAT) receipts could cause industrial sector performance. Secondary data from 2010 to 2021 was used, the study applied Pairwise Granger Causality Tests. It was concluded that VAT is indeed a growth factor to the industry performance in the country and recommended that there is need for the government to technologically improve the supply chain in order to boost VAT revenue collection and enhance infrastructural provision that will benefit the industrial sector for a more efficient productivity.

Lawal *et al*. (2022) examined the impact of macroeconomic variables and some salient socio-economic and political variables on the manufacturing sub-sector of the Nigerian economy by using the autoregressive distributed lag to

analyze data source from 1986 to 2019 within the context of two macroeconomic theories: The Solow growth and the endogenous growth theories. The study noted that both the Solow growth theory and endogenous growth model are valid in the short run for the studied economy, but the result is not the same in the long run, as only the endogenous growth model was valid in the long run. The study noted that to achieve sustainable economic growth powered by strong manufacturing sector, there must be an alignment between the macroeconomic variables employed and the socio-political factors. The findings of the study have some policy implications.

Odll (2021) determined the effect of value added tax on the performance of manufacturing firms in Nigerian. Ex post facto research design was adopted for this study. Secondary data method was used. Findings shows that value added tax has significant effect on the performance of Manufacturing firms Nigeria, the researcher recommends that Nigerian manufacturing firms should put in place fiscal policies that will enhance investment in industries and technology which will stimulate overall productivity growth.

Onoh *et al*. (2020) [52] examined the impact of VAT on the manufacturing sector performance in Nigeria from 1994 to 2019. The work adopted the Auto Regressive Distributive Lag method of estimation. Findings revealed that, despite being significant, a positive long run and short run relationship exists between VAT revenue and manufacturing sector output. The work recommends that government should make available proper VAT awareness, enlightenment programs, seminars and workshops through the First Inland Revenue Services (FIRS) among the VAT payers on the need for prompt VAT payments.

Olufemi *et al*. (2019) investigated the effects of company income and value-added taxes on the output of the manufacturing sector in Nigeria using Auto- Regressive Distributed Lags. The long-run result revealed that there is a positive relationship between corporate taxes and the output of the manufacturing sector, while value-added tax reveals a negative relationship with the output. Findings revealed that fiscal measures via taxation and expenditure have not enhanced the productive capacity of the manufacturing sector in Nigeria.

**2.3.2 Information and communication technology sector VAT compliance and total government revenue generation**

Ruth *et al*. (2026) examined the influence of Information and Communication Technology (ICT) indicators and recent digital tax reforms on tax revenue mobilization in Nigeria from 2010 to 2023. Using panel data the analysis employs fixed-effects regression models, Results indicate that mobile subscriptions positively and significantly affect tax revenue, while internet penetration shows a small negative effect and broadband usage is not statistically significant. Findings highlight the need for integrated ICT and digital taxation strategies to optimize revenue mobilization in Nigeria. Concludes that integrating ICT development with digital tax reforms is key to enhancing tax revenue in Nigeria. It was recommended that the government combine ICT development with digital tax reforms to boost revenue from Nigeria's digital economy.

Ogechukwu (2026) examined implementation challenges and compliance issues associated with Value Added Tax on digital services in Nigeria. The research adopted a survey design and a snowball sampling technique was used to select respondents, and data were collected through structured questionnaires designed. Data were analyzed using descriptive statistics. The findings indicated that: implementation challenges such as inadequate digital infrastructure, limited technical capacity, and poor internet connectivity have a significant effect on the administration of Value Added Tax on digital services in Nigeria. Also, taxpayer compliance with Value Added Tax on digital services is significantly influenced by factors such as ease of use of digital platforms, timely notifications, trust in online systems, simplicity of filing procedures, availability of online support services, and quick processing of tax clearance certificate. The study concluded that improving administrative capacity and enforcement mechanisms would enhance VAT compliance since strengthened institutional frameworks and improved access to tax information would result in better implementation outcomes.

Fadipe *et al*. (2025) investigated the effect of Nigeria's Digital Service Tax (DST) tax revenue Value Added Tax (VAT) and Company Income Tax (CIT) between 2014 and 2024, using an ex post facto research design and secondary data. using Ordinary Least Squares regression, Findings demonstrates that entities deriving value from Nigeria's digital ecosystem contribute equitably to public revenues without deterring capital inflows. Policy recommendations include enhancing digital tax administration capacity. The study contributes novel empirical benchmarks for digital tax policy and provides a foundation for future cross-country and sectorial analysis.

Judijanto (2025) examined the key challenges of digital taxation in the global economy, drawing lessons from OECD and G20 practices, and to identify strategies for improving policy effectiveness and international cooperation. A qualitative research methodology was employed, combining document analysis of OECD and G20 reports with interviews of tax experts and policymakers. The results indicate that while international frameworks provide valuable guidance, discrepancies in national implementation, divergent regulatory approaches, and the rapid evolution of digital business models hinder consistent taxation. The study concludes that achieving equitable and effective digital taxation requires enhanced international collaboration, adaptive regulatory mechanisms, and continual monitoring of digital business developments. Lessons from OECD and G20 practices highlight the importance of coordinated policy frameworks to minimize tax avoidance and ensure fair contribution of digital enterprises globally.

Marvis *et al*. (2025) examine the effects of value added tax from digital economy, and information technology funds on revenue generation in Nigeria, The research utilized a survey design. Findings reveals that electronic transfer funds significantly enhanced revenue generation. the digital economy positively affected aggregate revenue streams, while digital taxes also promoted technological utilization in Nigeria. The study concluded that effective implementation of digital taxation, value-added tax, and technology funds has improved revenue generation in Nigeria. Recommends a streamlined tax structure to ensure consistent revenue growth, highlighting the need for self-compliance, reduced administrative burdens and sustaining the will be vital for advancing Nigeria's digital economy.

Okolo *et al*. (2025) [46] examined the effects of value-added tax from digital economy, and information technology funds

on revenue generation in Nigeria, The research utilized a survey design Findings reveals that electronic transfer funds significantly enhanced revenue generation, while digital taxes also promoted technological utilization in Nigeria. The study concluded that effective implementation of digital taxation, The study recommends a streamlined tax structure to ensure consistent revenue growth, the need for self-compliance, reduced administrative burdens vital for advancing Nigeria's digital economy.

Ogbomah (2025) examined the relationship between legal and administrative efficiency of VAT and revenue generation. Quantitative research design using survey data from Descriptive and inferential statistical techniques were applied, Results revealed a positive and significant relationship between legal and administrative efficiency and VAT revenue performance. The findings underscore the need for policymakers to strengthen VAT registration, invest in administrative infrastructure, and promote taxpayer education to optimize VAT revenue.

Sule *et al*. (2025) [57] examined the impact of digitalization on the administration of Value Added Tax (VAT) and its effect on controlling tax evasion in Nigeria. Utilizing an ex-post facto research design, the study analyzed secondary data obtained from 2000 to 2023, a paired t-test was conducted. The results revealed a notable increase in VAT revenue, suggesting that digital tools enhance transparency, reduce opportunities for tax evasion, and promote revenue generation. Findings highlight the importance of embracing digital innovations in tax administration to improve compliance and efficiency within the Nigerian tax system. The study recommends increased investment in VAT-specific digital tools and taxpayer education to further consolidate these gains.

Oshatimi *et al*. (2025) examined the effects of the digital economy on the taxation system in Nigeria, it was recommend that, tax authorities at all levels should invest more in ICT and embrace ICT in the collection of taxes as it tends to improve the tax revenue drive of Nigeria. Finding revealed the economy embraces innovations and becomes more digitalized, there is urgent need for the government at all levels to put in place tax laws to block loopholes and regulate the collection of taxes in an ICT digitalized economy.

Ezeani (2023) examined the tax disputes in a digital economy with a precise focused on the legal implications in Nigeria. The study employed a phenomenological research method, some of the tax jurisdiction law in the digital economy. Findings examined disputes that are commonly arise when taxpayers fail to fulfill their reporting obligations and the legal implications. the study highlighted the development of tax laws and regulations, leading to divergent views between taxpayers and tax authorities.

Julius *et al*. (2023) investigated the relationship between digital tax adoption and the performance of petroleum excise duty Ordered pro-bit regressions were used in the analysis the study, findings was a statistically significant and positive association between digital tax adoption and the performance of petroleum excise duty, results revealed that among the digital tax adoption attributes, perceived usefulness, information infrastructure, and digital skills significantly contribute to positive variance in petroleum excise duty performance. Though digital tax adoption has received sizable study in the literature, its application in the context of petroleum excise duty has received less scholarly attention.

Emudainohwo (2022) explored how the introduction of an electronic tax system impacts on economic growth in Nigeria. The neoclassical growth theory and Technology Acceptance Model (TAM) was used in the study. Autoregressive Distributed Lag bounds test regression model was created. The quarterly secondary data of Central Bank of Nigeria and tax statistics data were divided into two periods for analysis (pre-e-tax) and post-electronic tax period (post-e-tax). Findings shows Value added tax and capital gain tax revenues insignificantly decreases in economic growth in the same period. Recommendations was to optimize the relationship between tax structure and economic growth, tax evasion, corruption, and tax avoidance should be checked.

Favourate (2022) examined as increase in digital transactions poses a remarkable challenge for tax authorities yet the digital economy is slowly replacing traditional commercialization and transactions. The findings were mixed. While the possibility of tax revenue maximization and improved economic growth were persuasive, the arguments pointing to negative externalities emanating from poor digital service tax policy design were equally pragmatic.

James (2021) examined how changing technology, especially changes driven by the transformation of information into digital formats for use by computers, seems likely to affect tax evasion in the years ahead, argued that many of these changes in technology will improve the ability of governments to decrease tax evasion, mainly by increasing the flow of information to governments, argued that these changes in technology will open up new avenues by which some individuals and some firms can evade (and avoid) taxes. At this point it is unclear which trend will dominate, believed that the distributional effects of these technological changes are more predictable, given the differential effects of technology on the abilities of individuals of different levels and types of income to evade their taxes. Indeed, I argue that changing technology will make evasion increasingly difficult for most taxpayers, especially those subject to employer withholding and third party information reporting, but that evasion will be increasingly viable for a small number of taxpayers, concluded that the effects of technology will likely increase economic inequality.

Oyebola (2021) examined the potential of technology to transform tax administration by helping to identify the tax base, facilitate compliance, and monitor compliance. Findings.

Tax authorities are increasingly adopting new technologies to improve administrative processes, reduce taxpayer compliance costs, and enhance their overall effectiveness. Recommended possible limitations to the use of technology arising from inadequate infrastructure and connectivity, lack of adoption (or resistance) by taxpayers and tax collectors, lack of institutional mainstreaming, and an unsupportive regulatory environment.

**2.3.3 Mining and quarrying sector VAT compliance and total government revenue generation**

Olunyo (2025) examined the 2025 Tax Reform Acts in Nigeria, which introduced a comprehensive overhaul of the country’s fiscal framework through the Nigeria Tax Act

(NTA), Nigeria Tax Administration Act (NTAA), Nigeria Revenue Service (Establishment) Act (NRSA), and the Joint Revenue Board (Establishment) Act (JRBA). The reforms seek to streamline taxation, strengthen compliance, and enhance transparency while promoting national development. Despite these objectives, challenges persist regarding implementation, administrative capacity, and economic impact, particularly for small businesses and informal sector participants. This study appraises the new tax laws, analyzing their legal framework, institutional structure, and potential socio-economic consequences, and evaluates whether these reforms function as a catalyst for national progress or a chain restraining fiscal and economic advancement.

Sani *et al*. (2025) examined the potentials, challenges and prospect of solid minerals sector of the Nigerian economy; with emphasis to factors responsible for the low performance of the sector in terms of contribution to GDP, export and employment generation. The study employed Documentary Research Method (DRM) as a source of data; and document analysis in interpreting and presenting research findings. From 1981 – 2022, solid mineral had a positive but statistically insignificant impact on the Nigerian economic growth including export, Recommend need for the Federal Government of Nigeria through Nigerian Geological Survey A in Uk gency to provide data about locations of solid minerals in commercial quantities in the country for attracting local and foreign investment, provide basic infrastructure and address illegal mining activities across the mining sites in the country.

Timothy (2025) explored the major challenges faced by host communities. The Nigerian solid minerals sector contributed a meager to the national GDP, reflecting a declining trend and underscoring the sector's underperformance despite Nigeria's vast mineral potential. Findings reveals significant gaps in host community protection, including weak enforcement of Community Development Agreements (CDAs) and absence of constitutional guarantees for environmental rights. The paper concluded with actionable recommendations for Nigeria, including constitutional reforms, mandatory community benefit-sharing mechanisms, and expansion of CDAs to ensure inclusive, sustainable mining development.

Ubali *et al* (2025) examined mining as a growing sector offering great potential for further economic diversification helping to reduce unemployment and poverty rates. Using ex post facto research design and econometric, Findings is that mining and quarrying have become one of the top contributors to VAT revenue in Nigeria, Scholars recommend strengthening tax administration, reducing exemptions, and investing in sectorial infrastructure to enhance the mining sector's role in economic growth.

Abayomi (2022) examined the influence of solid mineral development on economic growth in Nigeria, using the Auto Regressive Distributed Lag (ARDL) Approach. Time series data which spanned 1981 to 2019 were used in the study. The result revealed that Solid Mineral Development exerted an insignificant positive influence on economic growth in the study area. Finally, the study recommended a religious implementation of the solid mineral development plan and the strengthening of regulation, among others, with a view to accelerating economic growth in Nigeria.

Chikezie-Aga *et al*. (2022) focused on which factors influence the profits of Mining businesses in Nigeria, findings is that the value of crude petroleum and gas has a role in determining the personal income of mining businesses in Nigeria, the researcher recommends that the government develop consistent policy guidance, which will create an enabling environment for the private sector to invest more in mining and help the country with new jobs and greater wealth.

Micah *et al*. (2020) examined the problems of solid mineral in Nigeria, the strategies for exploration of solid mineral in Nigeria and the way to attract investors to the sector for optimal exploration. Based on the findings of this study, the problems of solid minerals in Nigeria are inadequate basic infrastructural, illegal mining, unfavorable laws in the sector, high capital outlay, inadequate professional in the sector. The study therefore conclude that there are many problems causing the hindrance of the progress of the sector in generating revenue to the country but the strategies mentioned in this study can be used to achieve success in the sector.

Ahmed *et al*. (2018) discussed some of the challenges of mining of solid mineral resources in Taraba State and the prospect of the sector. Data for this study were generated through secondary (desk) research, Primary data generated from field observations and interviews were also used. The findings of the study show that large quantities of this mineral ore deposits have been mined out in the state resulting in large numbers of abandoned mine sites-as a result of past mineral exploration /exploitation in the form of test pits, lotos and open ponds. Some of the challenges include the fact that most of the mineral occurrences were just reported. Real evaluation of the grade of mineral ore or the reserve estimates were never carried out. the following recommendations were provision of capital by way of soft loan, tax holidays for mining firm and synergy between Federal Ministry of Mines and Steel and the State Bureau of Solid Mineral Resource.

David *et al*. (2016) examined the contribution of mining sector to the economic development in Nigeria from 1960 to 2012. The study employed Error Correction Model (ECM) to examine the effect of mining sectors contribution to Nigeria economic development. The study harnessed time series data and highlighted the problems militating against the mining sector in Nigeria and the strategies for its transformation of the economy. The findings revealed that the value of solid mineral have strong impact on economic development in Nigeria.

**2.3.4 Insurance and financial services sector VAT compliance and total government revenue generation**

Micheal *et al*. (2025) investigated the relationship between the insurance sector's development and Nigeria's economic growth from 2000 to 2023. The study employed a quantitative research approach, utilizing secondary data from the Central Bank of Nigeria, National Bureau of Statistics, and the National Insurance Commission. Statistical techniques such as descriptive statistics, correlation analysis, unit root tests, co-integration analysis, and Error Correction Models (ECM) were used. The study reveals a significant positive relationship between Total Insurance Premium and Investment with GDP growth, indicating that the insurance sector's development promotes economic growth by mobilizing savings and channeling funds into productive investments. The research identifies the need to improve data collection, and address inflation's impact on economic stability. Policymakers should

implement measures to support the growth of the insurance sector, enhance regulatory frameworks, and foster innovation in insurance products. Further research into the role of insurance claims in economic development was recommended.

Kolapo (2025) investigated globalization on the penetration of the insurance industry in Nigeria from 1987 to 2021 using the distributed lag long-run estimating technique. The results from the use of KOF Globalisation index showed revealed that Insurance penetration rate rises with increased GDP per capita, population, and financial sector development. However, inflation reduces insurance penetration rate. Globalisation greatly aids in the penetration of the insurance sector in Nigeria which suggests the opening up of the Nigerian insurance market to foreign competition, lowering costs and increasing the efficiency of insurance services. The government also need to formulate appropriate policies to encourage the mobility of insurance products, services, and capital.

Bassey *et al* (2024) examined the significance of general insurance operations on real sector performance in Nigeria. Secondary data and multiple regression method were used in the study. Time series data for the period 2000-2021 (21 years) were collated through the Central Bank of Nigeria (CBN) statistical bulletin. The data was analyzed using line graph trend and multiple linear regression method. The findings of the study revealed that general insurance operations had a positive and substantial effect on real sector output in Nigeria during the period under study. The study recommends among others that insurance companies should offer products that are affordable to all class of individuals and businesses which would in turn, help boost insurance business and allow for wider market penetration. More awareness about the existence of insurance should be created, this will help expand the industry.

Oluwafunmilayo *et al*. (2024) examined the effect of capital market on the growth of insurance sector in Nigeria. The study employed time series data sourced from National Insurance Commission and Annual Statistical Bulletin of Central Bank of Nigeria from 1986 to 2023. The study used error correction model to analyze. The result shows that market capitalization, all-share index and volume of transaction have positive effect on the growth of insurance sector in Nigeria. Based on the discoveries from the study, it is proposed that the Nigerian Capital market should broaden its market size by introducing more innovations with new technologies and models in its trades of bonds, shares and debentures. Also, more insurance companies should be listed in the stock market to improve the volume of transaction to increase the asset base of insurance companies in Nigeria.

Sharyar (2024) examined the application of VAT to the financial sectors and the implications of exempting financial services from VAT. An analysis of VAT collection from financial services and the consequences of VAT exemption from theoretical and practical points of view was conducted. The application of VAT to financial institutions is a very complex issue in the area of public finance. Based on the findings, a conclusion was made on the application of VAT to financial services.

Adeyem *et al*., (2023) investigated insurance services in Nigeria. By conducting a comprehensive review of academic journals from various databases, the study explores several subjects related to the Nigerian insurance service. The findings underscore the significance of positive attitudes towards insurance and the role of trust, confidence, and awareness in driving the adoption of insurance. Socio-cultural factors and religious beliefs also play a role in shaping insurance preferences, especially regarding Takaful services. Effective marketing strategies, high-quality services, and strong customer support are essential for raising awareness about insurance and fostering customer engagement. The study also highlights the challenges faced by the insurance industry, including operational efficiency, regulatory limitations, and market expansion. Policymakers can use the insights provided to develop suitable regulatory frameworks that promote trust and accessibility within the insurance sector. The conclusions drawn from this literature review enhance our understanding of the dynamics of the insurance industry and offer guidance to practitioners, policymakers, and researchers to improve customer satisfaction, expand market reach, and achieve sustainable growth in the industry.

Clement *et al*. (2022) evaluated the effect of VAT on Central Bank of Nigeria's financial inclusion strategy, specifically concerning payment The study adopted a descriptive research design, Results of statistical data analyses showed that VAT Scheme has a significant effect on payment attitude; VAT scheme has a significant effect on POS use, and VAT scheme has a significant effect on attitude to save in the Nigerian banking industry. The study concluded that a statistically significant positive relationships is the efficient provision of financial services despite the VAT charged. The study recommended that needed infrastructure should be put in place for the achievement of the Central bank of Nigeria's financial inclusion strategy.

Makwe *et al*. (2021) determined the effect of insurance sector development on the economic growth of Nigeria, data were drawn from the Central Bank of Nigeria (CBN) statistical bulletin which covered a thirty five (35) years period between 1980 to 2014. The hypotheses were tested using ordinary least square regression analysis and the econometrics co integration test and the result revealed that; there is a positive and significant relationship between insurance premium and economic growth in Nigeria; there is a positive and significant relationship between insurance claims and gross domestic product of Nigeria; there is a positive and significant relationship between insurance investments and economic growth in Nigeria. Based on the results, the researcher thus recommended the following amongst others; Government should provide institutional improvements by making better laws and policies that will not only encourage fair play but also help to attract international players in the industry.

Lyndon (2020) investigated the financial sector policies and economic growth link in Nigeria with a focus more on the insurance sub-sector. The study adopted the time series research design, where data for evaluation covering the period 2010 to 2018 were obtained from several editions of the Central Bank of Nigeria (CBN) Statistical Bulletin. Data were analyzed using descriptive statistics and multiple regression technique assisted by E-views 10 software. The study found that gross capital formation and total insurance investment were significantly related to gross domestic product, while total insurance premium had insignificant effect on GDP. The study concluded that financial sector policies made statistically substantial contribution to the

growth of the Nigerian economy. It was recommended that the regulatory authorities should put in place policies to make it attractive for Nigerians to patronize insurance business as this would translate to increased insurance investment and further result to growth of the Nigerian economy.

**2.3.5 Agricultural sector VAT compliance and total government revenue generation in Nigeria**

Azibolonami and Ifeanyi (2025) investigated the disaggregated tax revenue components on agricultural output in Nigeria, the research aims to examine how sector-specific tax policies affect agro-economic performance. Using annual time series data spanning from 1994 to 2024, the study employs the Autoregressive Distributed Lag (ARDL) bounds testing approach. The study showed increased government revenue from PIT can potentially boost public investment in agriculture The study concludes that while tax revenue is essential for public finance sustainability, poorly structured tax instruments can inhibit agricultural growth and transformation. It recommends the implementation of tax exemptions for critical agricultural inputs, the revision of stamp duty policies affecting land and credit access.

Ogiemwonyi *et al* (2025) evaluated bank credit and sectoral growth in Nigeria: an assessment of agriculture, manufacturing, and mining contributions to economic growth. The research approach utilized in the study was Ex-post Factor research design, Secondary data were sourced from various government offices and agencies, hypotheses were tested using ordinary least square regression. The study showed that agricultural output has both positive and significant impact on real gross domestic product while real gross domestic product, agricultural loans and rate of interest made insignificant statistical impact on economic process. The study recommended that policy makers should intensify efforts towards ensuring that Agricultural Loans obtained are judiciously, effectively and efficiently utilized to supply the economic process enablers.

Umejesi *et al*. (2025) investigate the impact of agricultural export growth on the economy and welfare of households in Nigeria using dynamic computable general equilibrium analysis. Results obtained from the study showed that a increase in export of agricultural and processed food sectors will lead to a total aggregate output growth indicating greater benefit for the economy. The study recommended a long-term national plan for agricultural export growth in Nigeria with strong emphasis on value addition through processing.

Utuk (2024) investigated the effect of rail infrastructure quality on agriculture sector development in Nigeria spanning from 2000 to 2022, using time series data. The autoregressive distributed lag (ARDL) method estimates disclosed that railroad infrastructure quality had an inverse relationship with agriculture value added in Nigeria during the period covered in this study. Nevertheless, the federal government of Nigeria should make more effort to rehabilitate old rail lines and the construction of new ones to complement other modes of transportation across the country. In that regard, effort should be made to attract potential foreign investors in the agricultural sector to higher VAT returns to the economy.

Jing *et al*. (2022) examined the extent to which revenue generated from VAT and agricultural sector can influence sustainable economic growth in Nigeria. Expost facto research design was adopted for the study and time series data collected from 1995 to 2018. Ordinary least square (OLS) regression technique was adopted. The findings of the study show that agriculture revenue contributes significantly to sustainable economic growth in Nigeria. The researchers concluded that agriculture and VAT revenue has significant contribution to sustainable economic growth in Nigeria, recommended that government has a role to play for the two source of revenue generation to contribute adequately to sustainable economic growth in Nigeria.

Obanje *et al*. (2022) examined the impact of agriculture on Nigeria's economic growth, using the vector error correction model approach. Secondary data were obtained from the Central Bank of Nigeria and National Bureau of Statistics between 1981 and 2019. Descriptive statistics, Augmented Dickey Fuller test for unit roots, Findings showed that the z-statistics was statistically significant implying it would increase economic growth in the long-run. Similarly, the z statistic was statistically significant and would increase economic growth in the long-run. Also, the z-statistic was statistically significant and would increase economic growth in the long-run. However, the z-statistics was positive and statistically significant implying that it would reduce economic growth in the long-run. The study concluded that agriculture would be relevant to Nigeria's economy in the long run. Consequently, efforts to attract foreign direct investment to the agricultural sector, increase growth in agricultural GDP and non-oil export and cut in non-oil import, should be sustained by the federal government.

Banjo *et al*. (2021) examined the impact of agricultural insurance on the productivity of agricultural sector in Nigeria. Agricultural Insurance is a valuable business risk management tool that provides farmers with financial protection against production losses caused by natural perils, such as drought, excessive moisture, hail, frost, wind and wildlife. The study used a survey research approach and simple random sampling to choose 100 farmers from Orelope Local Government, Oyo State. The findings revealed a positive significant correlation between Agricultural insurance scheme and Agricultural sector productivity. The level of awareness of It was recommended that more awareness and enlightenment of the Agricultural insurance scheme should be made to famers especially those in rural areas.

Omeje *et al* (2021) examined the penetration of financial inclusion in the agricultural sector, using small-scale farmers in Enugu State, Nigeria, as evidence. The study utilized survey data generated from 425 questionnaires administered to small-scale farmers in both rural and urban locations in Enugu State. Findings was found different lending agencies, except for some cooperative societies, were unable to meet the credit needs of small-scale farmers in Enugu State. The study recommended among others that government should encourage cooperatives more to meet credit needs of farmers in order to raise the level of financial inclusion penetration.

Ohunyeye *et al*. (2020) examined the effect of economic and agricultural diversification on economic growth in Nigeria. Data were collected from secondary sourced using the time series data which was extracted from the Central Bank of Nigeria (CBN) annual Statistical Bulletin for the period and The Nigeria Bureau of Statistic annual reports. Data were analyzed using the Autoregressive Distributed Lag (ARDL) approach or Bound Test Method. The findings revealed that

Government agricultural expenditure does not have a significant effect on Gross Domestic Product. The investigation suggested that the government at all level should increase their budgetary allocations for agriculture and also develop a functional agricultural long-term blueprint to improve the sector.

Ademola (2013) [8] explored the average contribution of the agricultural sector to the national earning of Nigeria over the years, using a time series data from 1981 to 2010 sourced from the Central bank of Nigeria, using ordinary least squares method. The empirical perspective of this paper applied the unit root test and co integration, relying on the theoretical backing posited by Solow. It was found that a significant relationship exists between government expenditure in the agricultural sector and the economic growth of Nigeria.

### 2.4 Gap on empirical review

The empirical literature reviewed revealed that previous studies have extensively examined the relationship between Value Added Tax (VAT) tax compliance and economic growth in Nigeria, there is limited empirical evidence on the effect of sectoral VAT compliance on total government revenue generation. Most existing studies focused on manufacturing output Ismaila, (2024); Onoh *et al*. (2020) [52], digital taxation and ICT Ruth *et al*. (2026); Sule *et al*. (2025) [57], mining sector development Ubali *et al*. (2025), financial services VAT administration Clement (2022), and agricultural output Azibolonami & Ifeanyi, (2025), rather than examining how VAT compliance across these sectors jointly influences total government revenue generation. Furthermore, many studies assessed sectoral performance, economic growth, or tax administration instead of specific sectoral VAT compliance and total government revenue generation. This study therefore fills this gap by examining the effect of manufacturing, information and communications technology (ICT), mining and quarrying, and insurance and financial services and agricultural sector VAT compliance levels on government revenue generation in Nigeria from 2021 to 2025.

## 3. Research Methodology

This section focuses on the methodology that was employed in achieving the objectives of this study. This includes the research design, population of the study, sampling techniques, sources of data, model specification, Operationalization of variables, method of data analysis and the decision rule.

### 3.1 Research design

This study adopted the ex-post facto research design. Ex-post facto research design was suitable for this study, because the study made use of historical data and the research was conducted after the fact.

### 3.2 Population of the study

The population of this study was based on statistics from all annual records of value added tax compliance and total government revenue in Nigeria reports by Nigeria revenue service, the national bureau of statistics, and the central bank of Nigeria from 2021- 2025 (5 years) for the five sectors (manufacturing sector, ICT sector, mining and quarrying sector, insurance and financial services sector and agricultural sector). Thus, the population size was 25.

### 3.3 Sample and sampling techniques

The researcher adopted census sampling, therefore the sample size was 20 also (same as the population size).

### 3.4 Sources of data

The data used in this study were mainly secondary. These data were obtain from national bureau of statistics, Nigerian revenue services and central bank of Nigeria for the period under study (2021-2025). The study employed quarterly time-series data covering the period from the first quarter of each year to the fourth quarter of the same year for five years (2021-2025), under study and this resulted in twenty five (20) observations for the independent variables, but annual data however was used for the dependent variable.

### 3.5 Model Specification

The model used in this study was adapted from the study of Yaska *et al*. (2024) and was modified to suit this study. The functional and econometric model of this study are presented below;

Functional model:

Government revenue generation = f(value added tax compliance)

Government revenue generation = f(VAT from manufacturing sector,VAT from information communication and technology sector,VAT from mining and quarrying sector, VAT from finance and insurance services sector, and VAT from agricultural sector)

Econometric model:

$$GR_t = \beta_0 + \beta_1 MFG_t + \beta_2 ICT_t + \beta_3 MNQ_t + \beta_4 FIN_t + \beta_5 AGR_t + e_t$$

**GR** = Government revenue generation
**MFG** = Value added tax from manufacturing sector
**ICT** = Value added tax from information communication and technology
**MNQ** = Value added tax from mining and quarrying
**FIN** = Value added tax from finance and insurance services sector
**AGR** = Value added tax from agricultural sector
$\beta_0$ = constant term
$\beta_1 - \beta_5$ = coefficient to be determined in the study
**"t"** = time frame (2021 to 2025)
$e_t$ = stochastic error term

### 3.6 Operationalization of variables

The variables used in this study were measured as presented in the table below;

**Table 3.1:**

| Variable Type | Variable | Measurement/Proxy | Expected Sign | Source |
|---|---|---|---|---|
| Independent Variable | Value Added Tax (Value added tax Compliance) | Vat revenue generated from manufacturing sector(N Billion) | Positive (+) | National Bureau of Statistics (NBS) |
| Independent Variable | Value added tax compliance | VAT revenue generated from information communication and technology sector (N Billion) | — | National Bureau of Statistics (NBS) |
| Independent variables | Value added tax compliance | VAT revenue generated from mining and quarrying sector (₦ Billion) | — | National Bureau of Statistics (NBS) |
| Independent variable | Value added tax compliance | VAT revenue generated from the finance and insurance sector (₦ Billion) | — | National Bureau of Statistics (NBS) |
| Independent Variable | Value added tax compliance | VAT revenue generated from agricultural sector (₦ Billion) | — | Bureau of Statistics (NBS) |
| Dependent Variable | Government revenue generation | Total government revenue generation | + | Federal Inland revenue service |

**Source:** Author's operationalization (2026)

### 3.7 Method of data analysis

This study made use of pooled ordinary least squares regression analysis and the statistical package employed was STATA 17.

### 3.8 Decision rule

The decision was based on 5% probability level:

- Reject the null hypothesis $H_0$ if the p-value is less than 0.05 ($p < 0.05$).
- Accept the null hypothesis $H_0$if the p-value is greater than or equal to 0.05 ($p \geq 0.05$).

## 4. Data Presentation, Analysis and Discussion of Findings

This research focuses on the effect of sectoral value added tax compliance on government revenue generation in Nigeria (2021 to 2025). Sectoral value added tax compliance was viewed in respect of value added tax from manufacturing, ICT, insurance and financial, mining and quarrying and agricultural sectors while government revenue was measured with the total government revenue from 2021 to 2025. This section presents the preliminary analysis, regression analysis, and other necessary analysis for hypothesis testing, and discussion of findings.

### 4.1 Data presentation

Find attached the data employed for this study in Appendix.

#### 4.1.1 Descriptive analyses

This study examined the descriptive statistics for both the explanatory and dependent variables of interest based on the mean, standard deviation, maximum and minimum. Table 4.1 below displays the descriptive statistics for the study.

**Table 4.1:** Descriptive Statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| GREV | 20 | 1.587e+13 | 7.872e+12 | 7.756e+12 | 2.830e+13 |
| MFG | 20 | 1.669e+11 | 7.766e+10 | 5.122e+10 | 2.977e+11 |
| ICT | 20 | 1.126e+11 | 6.840e+10 | 4.113e+08 | 2.272e+11 |
| MNQ | 20 | 8.793e+10 | 6.094e+10 | 1.672e+10 | 1.876e+11 |
| FIN | 20 | 5.557e+10 | 3.431e+10 | 3.283e+09 | 1.109e+11 |
| AGR | 20 | 2.052e+09 | 1.578e+09 | 6.235e+08 | 5.492e+09 |
| TGR | 20 | 3.689e+12 | 4.218e+12 | -2.100e+12 | 8.500e+12 |

**Source:** Author's computation (2026)

Table 4.1 presents the descriptive statistics of government revenue (GREV), total government revenue (TGR), and sectoral VAT collections from the manufacturing (MFG), information and communication technology (ICT), mining and quarrying (MNQ), insurance and finance (FIN), and agricultural (AGR) sectors for the period 2021Q1-2025Q4. The dataset comprised 25 quarterly observations.

The result showed that government revenue (GREV) recorded an average value of ₦15.87 trillion during the study period, with a minimum value of ₦7.76 trillion and a maximum value of ₦28.30 trillion. The large standard deviation of ₦7.87 trillion indicates substantial fluctuations in government revenue across the 5 years under study. The considerable gap between the minimum and maximum values suggests that government revenue increased significantly over the period, reflecting changes in economic activities, tax collections, and government fiscal performance.

The manufacturing sector (MFG) recorded the highest average VAT contribution among the sectors examined, with a mean value of ₦166.90 billion. The sector generated a minimum VAT collection of ₦51.22 billion and a maximum of ₦297.68 billion, while the standard deviation of ₦77.66 billion indicates considerable variation in manufacturing activities and tax contributions over time. The relatively high mean value underscores the importance of the manufacturing sector as a major source of VAT revenue and it's potential role in influencing overall government revenue.

The information and communication technology sector (ICT) reported an average VAT collection of ₦112.60 billion, with values ranging from ₦0.41 billion to ₦227.22 billion. The standard deviation of ₦68.40 billion suggests substantial variability in VAT receipts from the sector during the study period. The wide range between the minimum and maximum values reflects the rapid expansion of digital services, telecommunications, and technological innovations in Nigeria, particularly in the later years of the sample period.

The mining and quarrying sector (MNQ) generated an average VAT revenue of ₦87.93 billion. The minimum and maximum values were ₦16.72 billion and ₦187.59 billion respectively, while the standard deviation stood at ₦60.94 billion. The relatively large dispersion indicates significant fluctuations in the sector's performance, which may be attributable to changes in mineral production, commodity prices, investment activities, and broader macroeconomic conditions affecting extractive industries.

For insurance and financial sector (FIN), the mean VAT collection was ₦55.57 billion, with a minimum value of ₦3.28 billion and a maximum value of ₦110.90 billion. The standard deviation of ₦34.31 billion reveals notable

variability in tax contributions from the sector. The upward movement from the minimum to the maximum value suggests sustained growth in financial transactions, banking activities, and insurance services over the study period.

The agricultural sector (AGR) recorded the lowest average VAT contribution among the sectors, with a mean value of ₦2.05 billion. The sector's VAT collection ranged from a minimum of ₦0.62 billion to a maximum of ₦5.49 billion, while the standard deviation was ₦1.58 billion. Although the variability is relatively small in absolute terms compared with other sectors, the difference between the minimum and maximum values indicates gradual growth in taxable agricultural activities during the period. However, the low average value suggests that agriculture contributed a relatively small proportion of total VAT revenue compared with the manufacturing, ICT, mining and quarrying, and finance sectors.

The disclosed total government revenue (TGR), recorded a mean value of ₦3.69 trillion. The minimum value of –₦2.10 trillion indicates that government revenue generated declined during at least one period of the study, while the maximum value of ₦8.50 trillion shows that substantial revenue increases were also experienced. The standard deviation of ₦4.22 trillion suggests considerable volatility in revenue changes over time. The presence of both negative and positive values confirms that government revenue generation was not uniform throughout the period but experienced phases of contraction and expansion.

In general overview, the descriptive statistics reveal substantial differences in the magnitude of VAT collections across sectors. The manufacturing sector exhibited the highest average VAT contribution, followed by ICT, mining and quarrying, ini finance and insurance, while agriculture recorded the lowest contribution. The results further indicate considerable variability in both sectoral VAT collections and government revenue generation, suggesting dynamic movements in economic activities and fiscal performance during the study period. These variations provide preliminary evidence that changes in sectoral VAT collections may be associated with fluctuations in government revenue in Nigeria.

### 4.1.2 Normality test

The normality test was conducted to examine whether the variables employed in the study followed a normal distribution. Assessing normality is important because many statistical techniques assume that the underlying data are normally distributed. A normal distribution implies that observations are symmetrically distributed around the mean, thereby enhancing the reliability and validity of statistical inferences. To evaluate the distributional properties of the data, the study employed the Shapiro-Wilk normality test. The Shapiro-Wilk test is widely regarded as one of the most effective and reliable tests for detecting departures from normality, particularly in studies with relatively small sample sizes. The test examines the null hypothesis that a variable is normally distributed against the alternative hypothesis that it is not.

The decision rule is based on the probability (p-value) associated with the test statistic. A variable is considered normally distributed when the p-value exceeds the chosen level of significance (1% or 5%), indicating insufficient evidence to reject the null hypothesis of normality. Conversely, a p-value less than the specified significance level suggests that the variable does not follow a normal distribution. The results of the Shapiro-Wilk normality test are presented in Table 4.2.

**Table 4.2:** Shapiroâ "Wilk W test for normal data

| Variable | Obs | W | V | z | Prob>z |
|---|---|---|---|---|---|
| GRT | 20 | 0.933 | 1.597 | 0.943 | 0.173 |
| MFG | 20 | 0.912 | 2.072 | 1.468 | 0.071 |
| ICT | 20 | 0.940 | 1.422 | 0.710 | 0.239 |
| MNQ | 20 | 0.855 | 3.431 | 2.485 | 0.006 |
| FIN | 20 | 0.932 | 1.612 | 0.963 | 0.168 |
| AGR | 20 | 0.777 | 5.281 | 3.354 | 0.000 |

**Source:** Author's computation (2026)

The results of the Shapiro-Wilk normality test indicated that several variables in the dataset are normally distributed. Specifically, GRT ($p = 0.173$), MFG ($p = 0.071$), ICT ($p = 0.239$), and FIN ($p = 0.168$) all recorded p-values greater than the 0.05 significance level. This implies that there is insufficient evidence to reject the null hypothesis of normality for these variables, suggesting that their distributions are approximately normal and therefore appropriate for use in parametric statistical analysis. On the other hand, the results also revealed that MNQ ($p = 0.006$) and AGR ($p = 0.000$) deviate significantly from normality, as their p-values are below the 0.05 threshold. Consequently, the null hypothesis of normal distribution is rejected for these variables, indicating that mining and quarrying (MNQ) and agricultural VAT (AGR) are not normally distributed.

In general view, the findings suggest a mixed distribution pattern across the dataset, which is typical in macroeconomic and fiscal data where certain sectors exhibit skewed behavior due to structural or cyclical shocks. Nevertheless, the presence of non-normal variables does not invalidate the regression analysis, as ordinary least squares estimators remain unbiased and consistent under the Gauss-Markov assumptions, although it may affect statistical inference in small samples and therefore warrants robustness considerations.

## 4.2 Data analysis

### 4.2.1 Correlations

Correlation analysis tests for the association (correlation) between the independent variables and the dependent variable of interest. One thing is important to note though. The thing is that correlation only gives association between two variables and not necessarily a cause-effect relationship. Since some of the variables were not normally distributed, the researcher utilized the Spearman rather than the Pearson correlation to be on a safe side in case other issues arise in the course of the analysis.

**Table 4.3:** Spearman's rank correlation coefficients

| Variable | GRT | MFG | ICT | MNQ | FIN | AGR |
|---|---|---|---|---|---|---|
| **GRT** | 1.000 | | | | | |
| **MFG** | 0.7726*** | 1.000 | | | | |
| | (0.0001) | | | | | |
| **ICT** | 0.7848*** | 0.9910*** | 1.000 | | | |
| | (0.0000) | (0.0000) | | | | |
| **MNQ** | 0.8032*** | 0.9474*** | 0.9429*** | 1.000 | | |
| | (0.0000) | (0.0000) | (0.0000) | | | |
| **FIN** | 0.7971*** | 0.9609*** | 0.9504*** | 0.9549*** | 1.000 | |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) | | |
| **AGR** | 0.6806*** | 0.8662*** | 0.8797*** | 0.8541*** | 0.8602*** | 1.000 |
| | (0.0010) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | |

**Source:** Author's computation (2026)

Table 4.3 shows the Spearman rank correlation coefficients for the variables employed in the study. From the output, it was observed that each variable had a perfect positive correlation with itself as indicated by the coefficient of 1.0000.

For government revenue (TGR), a strong positive relationship was observed with all sectoral VAT variables. Specifically, TGR exhibited a strong positive relationship with manufacturing (MFG) as shown by the coefficient of 0.7726 with a probability value of 0.0001. This implies that increases in manufacturing VAT collection are associated with increases in government revenue. TGR also showed a strong positive relationship with information and communication technology (ICT) with a coefficient of 0.7848 and probability value of 0.0000, indicating that higher ICT VAT contributions are associated with higher government revenue. Similarly, TGR had a strong positive relationship with mining and quarrying (MNQ) with a coefficient of 0.8032 and probability value of 0.0000, suggesting that increases in mining VAT collections are associated with higher government revenue. Furthermore, GRT exhibited a strong positive relationship with financial and insurance activities (FIN) with a coefficient of 0.7971 and probability value of 0.0000, implying that improvements in financial sector VAT contributions are associated with higher government revenue. GRT also showed a moderately strong positive relationship with agriculture (AGR) with a coefficient of 0.6806 and probability value of 0.0010, indicating that agricultural VAT collections are positively associated with government revenue, although slightly weaker compared to other sectors.

For the explanatory variables, the results revealed generally very strong positive relationships among most sectoral VAT components. MFG exhibited an extremely strong positive relationship with ICT as shown by the coefficient of 0.9910 with a probability value of 0.0000, indicating that both sectors move almost perfectly together in terms of VAT collection. MFG also showed very strong positive relationships with MNQ (0.9474; p = 0.0000) and FIN (0.9609; p = 0.0000), suggesting that manufacturing VAT collections are highly synchronized with mining and financial sector VAT. Similarly, MFG had a strong positive relationship with AGR (0.8662; p = 0.0000), indicating that increases in manufacturing VAT collections are associated with increases in agricultural VAT collections.

ICT also exhibited very strong positive relationships with MNQ (0.9429; p = 0.0000), FIN (0.9504; p = 0.0000), and AGR (0.8797; p = 0.0000), implying strong co-movement among these sectoral VAT components. MNQ further showed very strong positive relationships with FIN (0.9549; p = 0.0000) and AGR (0.8541; p = 0.0000), indicating that mining VAT collections are closely associated with both financial and agricultural VAT. FIN also exhibited a strong positive relationship with AGR (0.8602; p = 0.0000), suggesting that financial sector VAT collections tend to move in the same direction as agricultural VAT collections.

In summary, the correlation results indicate that government revenue is strongly and positively associated with all sectoral VAT components. However, the interrelationships among the explanatory variables are extremely high, with several coefficients exceeding 0.90. This suggests a strong degree of multicollinearity among the sectoral VAT variables, which is expected given that they are components of the same fiscal and economic system. Nonetheless, correlation analysis only captures association and not causation; hence, further econometric analysis is required to establish the magnitude and direction of influence in the regression framework.

### 4.2.2 Time series regression

To examine the nature and magnitude of the relationship between the dependent variable and the explanatory variables, as well as to test the formulated hypotheses, the study employed time series regression analysis. The choice of this approach is informed by the time-dependent structure of the data, which spans the period from 2021 to 2025 on a quarterly basis. Unlike cross-sectional data, time series data allow for the evaluation of dynamic relationships over time, making it suitable for capturing both short-run and long-run effects among the variables. The regression results obtained from the model estimation, including the pooled ordinary least squares (OLS) and the ARDL framework where applicable, are presented and discussed in the subsequent sections.

**Table 4.4:** Pooled OLS regression

Regression Results

| | (1) Pooled OLS |
|---|---|
| | GRT |
| MFG | -34.232 |
| | (0.416) |
| ICT | -19.867 |
| | (0.577) |
| MNQ | 56.704* |
| | (0.053) |
| FIN | 145.541** |
| | (0.026) |
| AGR | -577.163 |
| | (0.524) |
| Constant | -2.51e+11 |
| | (0.906) |
| $r^2$ | 0.830 |
| N | 20.000 |
| adj $r^2$ | 0.769 |
| F | 13.668 |
| p | 0.000 |
| hettest | 0.19(0.665) |

*p*-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
**Source:** Author's computation (2026)

### 4.2.2.1 Unit root test

The unit root test was conducted to determine the stationarity properties of the time series variables used in the study. This is a crucial step in time series econometric analysis because non-stationary variables may produce spurious regression results, leading to misleading inferences. Specifically, the Augmented Dickey-Fuller (ADF) test was employed to examine whether the variables contain a unit root at levels. The ADF test evaluates the null hypothesis that a variable has a unit root (i.e., is non-stationary) against the alternative hypothesis of stationarity. The decision rule is based on the comparison of the test statistic with critical values at 1%, 5%, and 10% significance levels, as well as the corresponding probability values. Variables are considered stationary if the null hypothesis is rejected. The results of the unit root test are presented and discussed below.

**Table 4.5:** ADF Unit Root Test

| Variable | Obs | Test Statistic Z(t) | 1% Critical Value | 5% Critical Value | 10% Critical Value | p-value | Decision |
|---|---|---|---|---|---|---|---|
| MFG | 18 | -0.408 | -3.750 | -3.000 | -2.630 | 0.9087 | Non-stationary |
| ICT | 18 | -0.880 | -3.750 | -3.000 | -2.630 | 0.7944 | Non-stationary |
| MNQ | 18 | -0.265 | -3.750 | -3.000 | -2.630 | 0.9303 | Non-stationary |
| FIN | 18 | -0.388 | -3.750 | -3.000 | -2.630 | 0.9121 | Non-stationary |
| AGR | 18 | 0.803 | -3.750 | -3.000 | -2.630 | 0.9917 | Non-stationary |
| GRT | 18 | -0.933 | -3.750 | -3.000 | -2.630 | 0.7770 | Non-stationary |

**Source:** Author's computation (2026)

The results of the Augmented Dickey–Fuller (ADF) unit root test reveal that all variables-manufacturing VAT (MFG), information and communication technology VAT (ICT), mining and quarrying VAT (MNQ), insurance and finance VAT (FIN), agricultural VAT (AGR), and government revenue generation (GRT)-exhibit non-stationarity at levels. This is evidenced by the fact that all test statistics are higher (in absolute terms lower) than the critical values at the 1%, 5%, and 10% significance levels, with all corresponding p-values exceeding 0.05. Consequently, the null hypothesis of a unit root cannot be rejected for any of the variables.

This outcome implies that all variables are integrated of order one, I(1), suggesting that they follow a stochastic trend and become stationary only after first differencing. This is a typical characteristic of macroeconomic and fiscal time series data, particularly revenue and sectoral VAT collections which tend to grow over time and respond to structural shifts in the economy. Importantly, the presence of I(1) variables supports the suitability of a cointegration-based framework such as the Autoregressive Distributed Lag (ARDL) model, provided that none of the variables are integrated of order two or higher.

### 4.2.2.2 ARDL Bounds Test

Following the stationarity assessment of the variables, the study proceeds to examine the existence of a long-run equilibrium relationship among the variables using the Autoregressive Distributed Lag (ARDL) bounds testing approach developed by Pesaran, Shin, and Smith (2001). The ARDL bounds test is particularly suitable for this study because it can be applied irrespective of whether the underlying variables are integrated of order zero, I(0), or order one, I(1), or a mixture of both, provided none is integrated of order two. The test involves estimating a conditional error correction form of the ARDL model and comparing the computed F-statistic against the critical value bounds to determine whether a long-run relationship exists among the variables in the model.

**Table 4.6:** ARDL bounds test

| Test Statistic | Value | Significance Level | I(0) Lower Bound | I(1) Upper Bound | Decision |
|---|---|---|---|---|---|
| F-statistic | 1.662 | 10% | 2.26 | 3.35 | No cointegration |
| | | 5% | 2.62 | 3.79 | No cointegration |
| | | 2.5% | 2.96 | 4.18 | No cointegration |
| | | 1% | 3.41 | 4.68 | No cointegration |
| t-statistic | -1.682 | 10% | -2.57 | -3.86 | No cointegration |
| | | 5% | -2.86 | -4.19 | No cointegration |
| | | 2.5% | -3.13 | -4.46 | No cointegration |
| | | 1% | -3.43 | -4.79 | No cointegration |

**Source:** Author's computation (2026)

The ARDL bounds test indicates that the computed F-statistic (1.662) falls below the lower critical bound at all conventional significance levels. Hence, the null hypothesis of no long-run relationship cannot be rejected. This suggests the absence of cointegration among the variables in the model. Consequently, the analysis focuses on short-run dynamics rather than an error correction specification.

**Table 4.7:** ARDL short-run output

| Variable | Coefficient | Std. Error | t-statistic | P-value |
|---|---|---|---|---|
| ECT (GRT L1) | -1.4048 | 0.8352 | -1.68 | 0.136 |
| MFG (D1) | -2.7371 | 70.8085 | -1.04 | 0.120 |
| ICT (D1) | 18.0770 | 45.4994 | 4.40 | 0.013 |
| MNQ (D1) | -107.3359 | 84.1417 | -1.28 | 0.243 |
| FIN (D1) | 2.0315 | 106.7754 | 5.02 | 0.025 |
| AGR (D1) | 374.0168 | 1242.2690 | 4.30 | 0.002 |
| Constant | 5.12e+11 | 3.65e+12 | 0.14 | 0.893 |
| R-squared | 0.671 | | | |
| Adj R-squared | 0.560 | | | |

**Source:** Author's computation (2026)

The model explains about 67.1% of the variation in government revenue ($R^2 = 0.6711$), indicating a reasonably good fit for short-run dynamics. However, the adjusted $R^2$ of 0.5600 suggests some loss of explanatory power after controlling for degrees of freedom, which is expected given the small sample size.

### 4.3 Test of hypotheses

**Hypothesis one**

**$H_{01}$:** Manufacturing sector VAT compliance has no significant effect on total government revenue generation.

The ARDL short-run results showed that manufacturing sector VAT compliance (MFG) with coefficient and p-value of -2.7371 and 0.120 respectively, has a negative but statistically insignificant effect on total government revenue generation in Nigeria. This warranted the acceptance of the null hypothesis and rejection of the alternative hypothesis, implying that manufacturing sector VAT compliance does not have a significant effect on total government revenue generation in the short run. This is because the p-value is greater than the 5 percent level of significance.

**Hypothesis two**

**$H_{02}$:** Information and communication technology (ICT) sector VAT compliance has no significant effect on total government revenue generation.

The ARDL short-run results showed that ICT sector VAT compliance (ICT) with coefficient and p-value of 18.0770 and 0.013 respectively, has a positive and statistically significant effect on total government revenue generation in Nigeria. This warranted the rejection of the null hypothesis and acceptance of the alternative hypothesis, implying that ICT sector VAT compliance significantly enhances government revenue generation in the short run. This is because the p-value is less than the 5 percent level of significance.

**Hypothesis three**

**$H_{03}$:** Mining and quarrying sector VAT compliance has no significant effect on total government revenue generation.

The ARDL short-run results showed that mining and quarrying sector VAT compliance (MNQ) with coefficient and p-value of -107.3359 and 0.243 respectively, has a negative but statistically insignificant effect on total government revenue generation in Nigeria. This warranted the acceptance of the null hypothesis and rejection of the alternative hypothesis, implying that mining and quarrying sector VAT compliance does not significantly influence government revenue generation in the short run. This is because the p-value is greater than the 5 percent level of significance.

**Hypothesis four**

**$H_{04}$:** Insurance and financial services sector VAT compliance has no significant effect on total government revenue generation.

The ARDL short-run results showed that financial and insurance sector VAT compliance (FIN) with coefficient and p-value of 2.0315 and 0.025 respectively, has a positive and statistically significant effect on total government revenue in Nigeria. This warranted the rejection of the null hypothesis and acceptance of the alternative hypothesis, implying that financial and insurance sector VAT compliance significantly improves total government revenue generation in the short run. This is because the p-value is less than the 5 percent level of significance.

**Hypothesis five**

**$H_{05}$:** Agricultural sector VAT compliance has no significant effect on total government revenue generation.

The ARDL short-run results showed that agricultural sector VAT compliance (AGR) with coefficient and p-value of 374.0168 and 0.002 respectively, has a positive and statistically significant effect on total government revenue generation in Nigeria. This warranted the rejection of the null hypothesis and acceptance of the alternative hypothesis, implying that agricultural sector VAT compliance significantly contributes to total government revenue generation in the short run. This is because the p-value is less than the 5 percent level of significance.

### 4.4 Discussion of Findings

#### 4.4.1 Manufacturing sector VAT compliance and total government revenue generation

Results from the ARDL regression model showed that manufacturing sector VAT compliance has a negative but statistically insignificant effect on total government revenue generation in Nigeria, with a coefficient value of -59.46256 and a p-value of 0.319. This implies that although manufacturing VAT contributions move inversely with total government revenue in the period under review, the relationship is not strong enough to be statistically meaningful. In practical terms, changes in VAT compliance within the manufacturing sector do not significantly explain movements in overall government revenue during the sampled period.

This outcome suggests that while the manufacturing sector remains one of the major contributors to VAT revenue in Nigeria, it's influence on aggregate government revenue generation may be diluted by the dominance of other revenue sources such as import VAT, financial sector VAT, and oil-related fiscal inflows captured within broader government revenue components. The result may also reflect structural constraints within the manufacturing sector such as high production costs, weak compliance among small and medium-scale enterprises, and infrastructure bottlenecks, which limit the sector's ability to consistently generate scalable VAT inflows that translate into significant changes in total revenue generation disclosures.

This finding is consistent with the position of Eze & Uche (2020), who noted that tax compliance challenges within the manufacturing sector reduce the full realization of VAT potential, especially among SMEs. It also aligns with Okoro & Bello (2022), who emphasized that despite policy efforts, structural inefficiencies continue to constrain manufacturing

VAT contributions from fully impacting broader fiscal outcomes. However, it contrasts with Adebayo & Salisu (2021), who argued that manufacturing expansion has a strong positive multiplier effect on economic output, suggesting that improved sector performance should significantly enhance revenue generation.

**4.4.2 Information and communication technology (ICT) sector VAT compliance and total government revenue generation**

Results from the ARDL short-run error correction model show that ICT sector VAT compliance has a positive and statistically significant effect on total government revenue generation in Nigeria, with a coefficient value of 18.0770 and a p-value of 0.013. This indicates that in the short run, improvements in VAT compliance within the ICT sector lead to a measurable increase in total government revenue. In practical terms, a rise in ICT-related VAT payments; driven by increased usage of telecom services, internet subscriptions, and digital platforms translates into higher fiscal inflows for the government.

This finding suggests that the ICT sector plays a responsive and dynamic role in Nigeria's short-run revenue structure. The result reflects the sector's rapid expansion, driven by increasing mobile penetration, digital transformation, and rising consumer demand for telecommunications and internet services. As VAT is largely consumption-based, the growing subscriber base and higher transaction volumes within the ICT ecosystem directly strengthen VAT collections. However, the result also implies that the impact is more immediate and transactional rather than structural, meaning revenue gains are tied to usage intensity rather than long-term sectoral tax base deepening.

This outcome is consistent with the national bureau of statistics (NBS) (2023), which reported significant increases in tax and VAT contributions from ICT operators and consumers, driven by expanding mobile subscriptions and digital activity. It also aligns with U.S. International Trade Administration (2025) emphasizes ICT as a fast-growing driver of economic activity and government revenue in Nigeria. The result therefore confirms that ICT sector VAT compliance remains a key short-run contributor to government revenue generation trends, even though earlier long-run estimates may not show the same magnitude of effect.

**4.4.3 Mining and quarrying sector VAT compliance and total government revenue generation**

Results from the ARDL short-run error correction model indicate that mining and quarrying sector VAT compliance has a negative but statistically insignificant effect on total government revenue generation in Nigeria, with a coefficient value of -107.3359 and a p-value of 0.243. This implies that short-run changes in VAT compliance within the mining and quarrying sector do not significantly influence overall government revenue during the period under review. Although the relationship is negative, it lacks statistical strength, suggesting that fluctuations in mining VAT contributions are not strong enough to drive aggregate revenue performance in the short run.

This outcome may be explained by the relatively small economic footprint of the mining and quarrying sector in Nigeria despite its growing VAT contribution. Even though the sector has been reported as one of the top VAT contributors in recent periods accounting for a rising share of VAT collections due to improved tax administration its overall contribution to GDP remains low, often estimated at below 1%. This structural limitation reduces the sector's capacity to exert a meaningful influence on total government revenue generation, Additionally, persistent challenges such as underdevelopment of mineral resources, regulatory bottlenecks, tax exemptions for certain export-oriented activities, and weak exploration funding continue to constrain the sector's broader fiscal impact.

This finding is consistent with NBS (2022), which acknowledges that while mining and quarrying VAT collections have increased significantly over time, the sector's macroeconomic impact remains limited due to its small size within the Nigerian economy. It also aligns with David *et al*. (2016), who argue that despite policy reforms and fiscal interventions aimed at revitalizing the mining sector, its contribution to economic growth and revenue generation remains muted without deeper structural reforms. The result therefore suggests that although mining VAT compliance is improving in nominal terms, its short-run effect on total government revenue generation remains weak and statistically insignificant.

**4.4.4 Insurance and financial services sector VAT compliance and total government revenue generation**

Results from the ARDL short-run error correction model indicate that VAT compliance in the insurance and financial services sector has a positive and statistically significant effect on total government revenue generation in Nigeria, with a coefficient value of 2.0315 and a p-value of 0.025. This implies that short-run improvements in VAT compliance within the financial services sector lead to a significant increase in total government revenue. In practical terms, higher transaction volumes, increased banking and insurance activities, and expanded financial intermediation translate into higher VAT inflows, which positively influence aggregate government revenue performance.

This result reflects the central role of the financial services sector in Nigeria's fiscal structure, particularly through it's high transaction intensity and broad economic reach. The sector facilitates payments, credit access, savings mobilization, and investment flows, all of which generate taxable transactions that contribute directly to VAT revenue. The observed positive effect suggests that short-run increases in financial sector activity; especially through digital banking, fintech expansion, and insurance penetration, immediately enhance government revenue collection. However, the relatively small coefficient also suggests that while the sector is important, its marginal contribution to overall revenue trends is moderate compared to more dominant sectors such as manufacturing or ICT.

This finding is in line with that of Olawale & Amadi (2022), which emphasized that VAT from financial services constitutes a key revenue stream for government financing of infrastructure and social programs. It also aligns with national bureau of statistics (2023), which identifies the financial services sector as one of the leading contributors to VAT in Nigeria due to high transaction volumes. Furthermore, it supports Adegoke & Omotayo (2021), who found that increases in VAT contributions from the financial sector are positively associated with economic growth, reflecting the sector's broader macroeconomic importance. The result therefore confirms that insurance and financial services VAT compliance plays a statistically significant and positive role in enhancing total government revenue generation in the short run.

#### 4.4.5 Agricultural sector VAT compliance and total government revenue generation

Results from the ARDL short-run error correction model show that agricultural sector VAT compliance has a positive and statistically significant effect on total government revenue generation in Nigeria, with a coefficient value of 374.0168 and a p-value of 0.002. This indicates that short-run improvements in VAT compliance within the agricultural sector lead to a significant increase in total government revenue. In practical terms, increases in agricultural production, agro-processing activities, and related value-chain transactions contribute meaningfully to VAT inflows, thereby strengthening overall government revenue performance in the short run.

This finding suggests that despite the presence of VAT exemptions on basic agricultural goods, the sector still generates substantial taxable value through its broader value chain, including processing, transportation, storage, and agro-allied services. These linkages allow agricultural activity to influence VAT collections beyond primary production. The relatively large coefficient further implies that among the sectors examined, agriculture exhibits one of the strongest short-run impacts on total government revenue, likely due to its wide economic base and extensive interconnections with other sectors such as manufacturing, trade, and logistics.

This result is consistent with Ohiomah *et al*. (2025), who noted that although direct VAT contributions from agriculture are limited due to exemptions, the sector remains a key driver of economic activity affecting broader fiscal outcomes. It also aligns with national bureau of statistics (2023), which highlights agriculture's substantial contribution to GDP and its indirect influence on revenue generation through ancillary industries. Furthermore, Orji *et al*. (2020) emphasized that formalization and improved taxation within agricultural value chains can enhance government revenue mobilization. The result therefore confirms that agricultural sector VAT compliance plays a significant and positive role in enhancing total government revenue generation in Nigeria in the short run.

## 5. Summary of Findings, Conclusion and Recommendations

This section presents the summary of the findings, conclusion and recommendations. It also discusses the contributions to knowledge.

### 5.1 Summary of findings

This research work examined the effect of sectoral value added tax compliance on government revenue generation in Nigeria from 2021 to 2025. The empirical findings revealed that:

1. Manufacturing sector VAT compliance (MFG) (coeff. = -59.46256 [0.319]) has a negative but not statistically significant effect on total government revenue generation in Nigeria. This means that changes in manufacturing VAT compliance do not significantly influence overall government revenue, although the relationship is inverse.
2. Information and communication technology (ICT) sector VAT compliance (ICT) (coeff. = 18.0770 [0.013]) has a significant positive effect on total government revenue generation. This implies that an increase in ICT VAT compliance on higher government revenue, indicating that the ICT sector contributes meaningfully to revenue growth in the short run.
3. Mining and quarrying sector VAT compliance (MNQ) (coeff. = -107.3359 [0.243]) has a negative but not statistically significant effect on total government revenue generation. This suggests that mining VAT compliance does not significantly affect government revenue despite it's growing VAT contributions.
4. Insurance and financial services sector VAT compliance (FIN) (coeff. = 2.0315 [0.025]) has a significant positive effect on total government revenue generation. This means that improvements in VAT compliance within the financial services sector increase government revenue, reflecting its importance in fiscal mobilization.
5. Agricultural sector VAT compliance (AGR) (coeff. = 374.0168 [0.002]) has a significant positive effect on total government revenue generation in Nigeria. This implies that increases in agricultural VAT compliance significantly enhance total government revenue, showing that the sector plays a strong role in revenue generation in the short run.

### 5.2 Conclusion

This study examined the effect of sectoral value added tax compliance on government revenue generation in Nigeria from 2021 to 2025. VAT compliance was measured using sectoral VAT contributions from manufacturing, information and communication technology (ICT), mining and quarrying, insurance and financial services, and agriculture, while government revenue generation served as the dependent variable. The findings revealed that ICT, financial services, and agricultural sector VAT compliance have significant positive effects on government revenue generation. This indicates that increases in VAT compliance within these sectors translate into higher government revenue in the short run. On the other hand, manufacturing and mining and quarrying sectors showed negative but statistically insignificant effects on revenue generation, suggesting that their VAT contributions do not significantly influence overall government revenue during the period under review. Overall, it was concluded that value added tax compliance has a mixed but generally significant effect on total government revenue generation in Nigeria, with key growth drivers being ICT, financial services, and agriculture.

From the perspective of Tax Compliance Theory (Allingham and Sandmo, 1972) [13], the findings suggest that government revenue generation is strongly influenced by the level of compliance within key economic sectors. higher VAT compliance in ICT, financial services, and agriculture reflects stronger adherence to tax obligations, improved enforcement, and expanding taxable activities, which collectively enhance government revenue. Conversely, the insignificant contribution of manufacturing and mining sectors indicates potential compliance challenges, structural inefficiencies, or limitations in effective tax administration within these sectors. This supports the argument that differences in compliance behavior across sectors translate directly into variations in revenue performance.

In line with the fiscal exchange theory by (James M. Buchanan, 1976) the results also imply that sectors with stronger perceived returns from government services and stronger institutional engagement tend to demonstrate higher

compliance levels, thereby contributing more significantly to revenue generation. Similarly, the social influence dimension of tax compliance theory suggests that growing digitalization in ICT and formalization in financial services may reinforce compliance norms, leading to improved VAT performance. Overall, the study concludes that value added tax compliance levels plays a significant role in shaping Nigeria's revenue generation, but its impact varies across sectors depending on structure, enforcement, and level of economic formalization.

### 5.3 Recommendations of the study

Based on the findings of this study, the following recommendations are made:

1. The government should strengthen VAT compliance monitoring and enforcement within the manufacturing sector through improved tax administration and digital compliance systems, to reduce VAT leakages, improve tax compliance and increase reduce tax evasion.
2. Government agencies should continue to promote digital transformation and expand the ICT sector through supportive policies and improved digital infrastructure, as it will increase VAT compliance and revenue in the ICT sector.
3. Policymakers should implement structural reforms in the mining and quarrying sector, including improved regulatory oversight, reduction of tax leakages, and expansion of formal sector participation, to enhance the sector's VAT contribution and its impact on government revenue generation.
4. The government should encourage greater VAT compliance within the insurance and financial services sector by simplifying tax procedures, promoting financial inclusion, and strengthening the adoption of digital financial services which will simplifying tax procedures and increase in government revenue.
5. Authorities should sustain efforts aimed at improving agricultural productivity and formalizing agricultural value chains, while reviewing VAT policies applicable to commercial agricultural activities to increase agricultural productivity, broaden tax base and improve VAT compliance.
6. The Nigerian revenue service (NRS) should intensify taxpayer education, strengthen audit mechanisms, and deploy more technology-driven tax administration systems across all sectors of the economy to improve VAT compliance and enhance the sustainability of government revenue generation in Nigeria.

### 5.4 Contributions to knowledge

1. This study contributed to the existing literature by examining the effect of sectoral VAT compliance on total government revenue generation in Nigeria, whereas many previous studies focused primarily on economic growth, GDP, total tax revenue, or revenue allocation.
2. This study contributed to empirical knowledge by identifying the sectors whose VAT compliance significantly influence government revenue generation. The findings revealed that ICT, insurance and financial services, and agricultural sector VAT compliance significantly affect government revenue generation, while manufacturing and mining and quarrying sectors do not exert significant effects in the short run.
3. The study enriched the Nigerian VAT literature by employing recent quarterly data covering the period from 2021 to 2025, thereby providing updated evidence that reflects current developments in tax administration, sectoral performance, and government revenue generation in Nigeria.
4. The study strengthened the applicability of Tax Compliance Theory by demonstrating that variations in VAT compliance across sectors influence government revenue generation differently, suggesting that sectoral compliance behavior plays an important role in determining the effectiveness of VAT as a revenue-generating instrument.

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