# VALUE ADDED TAX AND ECONOMIC DEVELOPNMENT WITH A CROSS COUNTRY COMPARISM WITH SENEGAL, LIBERIA, GHANA, NIGERIA.

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**BENIN CITY.**

**APRIL, 2025**

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**A DISSERTATION PRESENTED TO THE DEPARTMENT OF TAXATION, FACULTY OF MANAGEMENT SCIENCES, UNIVERSITY OF BENIN, BENIN CITY IN PARTIAL FULFILLMENT OF THE AWARD OF BARCHELOR OF SCIENCE. (B.SC) DEGREE OF IN TAXATION**

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## CERTIFICATION

This is to certify that this project work was carried out by **LAWAL ESTHER OLAMIDE. With matriculation number MGS2007559 in the Department of Taxation, Faculty of Management Sciences, University of Benin, Benin City.**

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## DEDICATION

This work is dedicated to God Almighty for his grace, wisdom, and strength throughout this research journey.

I also dedicate this project to my parents **(MR and MRS LAWAL)** family and friends for their care, love and unwavering support, encouragement and belief in me.

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## ABSTRACT

This quantitative research study explores the relationship between Value Added Tax (VAT) and economic development in Nigeria, Ghana, Senegal, and Liberia, with a particular emphasis on the impact of VAT revenue on economic performance indicators. Utilizing a robust research design, the study analyzes secondary data spanning from 2000 to 2022 to examine the effects of VAT on economic growth, using the Human Development Index (HDI) as a proxy for overall economic development, with the regression diagnostic including test for serial correlation, heteroskedasicity and modern specifications (Ramsey Reset) confirm the robustness of the model.The Ordinary Least Squares (OLS) regression results reveal that VAT exerts a positive and statistically significant impact on economic development in all four countries, although the magnitude of this effect varies, with Nigeria displaying a notably stronger association. The study's findings underscore the critical role of VAT as a sustainable revenue-generating mechanism, capable of funding infrastructure, public services, and social welfare initiatives. The research highlights the importance of effective tax administration, improved compliance measures, and digital monitoring systems in leveraging VAT's potential to drive economic advancement. Furthermore, the study emphasizes the need for ongoing research to incorporate additional covariates and explore non-linear relationships to better understand the broader fiscal dynamics at play. The study's insights offer valuable recommendations for policymakers in these nations, emphasizing the need for enhanced tax policies and administrative frameworks to promote sustainable economic development.

# CHAPTER ONE

## 1.1 BACKGROUND OF STUDY

Value Added Tax (VAT) has emerged as a significant revenue-generating tool for many countries, particularly in developing economies. In West Africa, countries like Nigeria, Ghana, Senegal AND Liberia has adopted VAT as a critical component of their tax systems. VAT is levied on the final consumption of goods and services, collected at each stage of production and distribution where value is added, thus enhancing economic growth and stability (Izedonmi & Okunbor, 2014; Aminu, 2019). The implementation of VAT is crucial for these nations, as it not only diversifies their revenue sources but also helps mitigate the challenges posed by reliance on volatile income streams such as oil revenues (Musa, 2023; Ewa et al., 2020). The effectiveness of VAT in these countries can be influenced by various factors, including tax compliance, administrative efficiency, and the socio-economic environment (Ewa et al., 2020; Eneche & Stephen, 2020).

The introduction of Value Added Tax (VAT) in Nigeria can be traced back to 1993 when it replaced the Sales Tax Act of 1986. The federal government recognized the need for a more efficient tax system to diversify revenue sources and reduce dependence on oil revenues, which had been volatile and subject to global price fluctuations (Feria & Schoeman, 2019). The VAT system was designed to be a broad-based consumption tax,

initially set at a rate of 5% on goods and services, with certain exemptions for essential items. Over the years, the VAT rate has been increased to 7.5%, reflecting the government's ongoing efforts to enhance revenue generation. The implementation of VAT has faced challenges, including issues of compliance, administrative capacity, and public perception, which have influenced its effectiveness as a revenue tool (Feria & Schoeman, 2019).

In Ghana, VAT was first introduced in 1998, following a series of economic reforms aimed at improving tax revenue and enhancing public service financing. The initial VAT rate was set at 10%, but it has undergone several adjustments since its inception, including a significant increase to 17.5% in 2000 (Obeng, 2018). The introduction of VAT was part of a broader strategy to modernize the tax system and align it with international best practices. The government also implemented a VAT flat rate scheme in 2017 to simplify compliance for small businesses, reflecting an ongoing commitment to improving tax administration. Despite its potential benefits, VAT in Ghana has faced criticism for being regressive and disproportionately affecting low-income households, leading to debates about its impact on economic equity (Obeng, 2018)

In Senegal's Value Added Tax (VAT) is a key source of government revenue, set at a standard rate of 18% (OECD, 2023). The VAT system has significantly contributed to

public finances, supporting infrastructure, healthcare, and education. However, its impact on economic growth is mixed. While VAT increases government revenue and strengthens fiscal sustainability, it can also raise the cost of goods and services, potentially reducing consumer purchasing power and business competitiveness (IMF, 2022).

One major challenge is tax evasion, as many informal businesses operate outside the tax system, reducing VAT efficiency (World Bank, 2021). Compliance is also a concern, as businesses face administrative burdens and delays in VAT refunds. Additionally, VAT may disproportionately affect low-income households, as they spend a higher portion of their income on taxed goods (UNDP, 2020). To address these challenges, Senegal has implemented digital tax systems and targeted exemptions on essential goods. However, improving tax collection and reducing economic inequality remain ongoing concerns.

In Liberia operates a Goods and Services Tax (GST) instead of a full VAT system, with rates varying by sector, typically around 10% (IMF, 2022). The country has considered transitioning to VAT to improve revenue mobilization. The GST contributes to government finances, funding infrastructure, education, and social services. However, its impact on economic growth is limited by low compliance and administrative inefficiencies (World Bank, 2021). A VAT system could enhance revenue collection and reduce reliance on external aid.

Challenges include a large informal sector, weak enforcement, and public resistance to tax reforms (AfDB, 2023). Many businesses struggle with tax compliance due to complex procedures and inadequate digital systems. Additionally, tax burdens on consumers can lead to higher living costs, disproportionately affecting low-income households (UNDP, 2020). To address these issues, Liberia is working on tax modernization efforts, but political and economic instability continue to hinder reforms.

Value Added Tax (VAT) plays a crucial role in the economic systems of wear. As a significant source of government revenue, VAT contributes to the financing of public goods and services, which is essential for economic development. In Nigeria, for exam

Moreover, VAT is considered a more stable and predictable source of revenue compared to other forms of taxation, such as income tax, which can fluctuate with economic cycles. This stability is particularly important for West African countries, which often face economic volatility due to external shocks, such as commodity price fluctuations and global financial crises (Frimpong, 2022). By diversifying the tax base and reducing reliance on trade taxes, VAT enhances fiscal resilience and allows governments to better respond to economic challenges.

Despite its significance, the implementation of VAT in these countries faces several challenges. One of the primary issues is low compliance rates, often attributed to a lack

of taxpayer education and awareness regarding VAT obligations. In many instances, businesses operate in the informal sector, evading VAT registration and payment, which undermines revenue collection efforts (Ajao & Iyekekpolor, 2022). For instance, in Sierra Leone, the informal economy is estimated to account for over 60% of economic activity, posing significant challenges for tax authorities (Ajao & Iyekekpolor, 2022).

Administrative capacity is another critical challenge. Many West African countries struggle with inadequate infrastructure and resources to effectively administer VAT. This includes issues related to tax collection, enforcement, and auditing, which can lead to significant revenue losses (Belhabib et al., 2016). Furthermore, corruption and inefficiency within tax administrations can exacerbate these challenges, creating an environment where compliance is low and evasion is high (Frimpong, 2022).

The economic and fiscal significance of VAT in these countries cannot be overstated. VAT serves as a vital tool for revenue generation, enabling governments to fund essential public services and infrastructure projects. In Ghana, for example, VAT revenue has been used to support the National Health Insurance Scheme, which provides critical healthcare services to millions of citizens (Ajide & Dada, 2022). Similarly, in Nigeria, VAT revenue contributes to the financing of various social programs aimed at poverty alleviation and economic development (Frimpong, 2022).

Furthermore, the introduction of VAT has been associated with positive economic outcomes, including increased formalization of businesses and improved tax compliance. As businesses become more aware of their VAT obligations, they are more likely to engage in formal economic activities, which can enhance overall economic growth (Ajao & Iyekekpolor, 2022). Additionally, VAT can promote equity in the tax system by ensuring that consumption taxes are levied on a broad base, reducing the burden on low-income households compared to direct taxes (Ajide & Dada, 2022).

## 1.2 STATEMENT OF RESEARCH QUESTION

This study seeks to address the following research questions:

1. What is the impact of VAT on the economic development of economic development in Senegal
2. What is the impact of VAT on the economic development of economic development in Nigeria
3. What is the impact of VAT on the economic development of economic development in ghana
4. What is the impact of VAT on the economic development of economic development in Liberia

## 1.3 RESEARCH OBJECTIVES

The primary objectives of this research are to:

1. Examine the impact of VAT on economic development in Nigeria.
2. Examine the impact of VAT on economic development in Ghana.
3. Examine the impact of VAT on economic development in Sierra Leone.
4. Examine the impact of VAT on economic development in Liberia

## 1.4 RESEARCH HYPOTHESES

This research hypothesizes that:

1. VAT does not have an impact on economic development in Nigeria
2. VAT does not have an impact on economic development in Ghana
3. VAT does not have an impact on economic development in Sierra Leone
4. VAT does not have an impact on economic development in Liberia

## 1.5 SCOPE OF STUDY

This research will focus on the VAT systems in Nigeria, Ghana, Senegal Liberia and if and how they impact economic development in said countries. It will cover the historical context of VAT implementation, its impact on economic growth, and the challenges related to compliance and administration. The study will utilize secondary quantitative

data from government reports, tax authorities, and relevant literature spanning from the inception of VAT in these countries to the present.

## 1.6 SIGNIFICANCE OF STUDY

This study is significant for several reasons:

1. **Academic Contribution**: It will contribute to the existing body of knowledge on VAT and its implications for economic growth in West Africa.
2. **Policy implications**: It will provide policymakers with insights into the effectiveness of current VAT systems and highlight areas for improvement.
3. **Future direction**: The findings could serve as a reference for future research on tax policy and economic development in similar contexts (Ewa et al., 2020; Eneche & Stephen, 2020).

## 1.7 DEFINITIOM OF TERMS

1. Value Added Tax (VAT) is a significant consumption tax applied to the value added at each stage of production or distribution of goods and services. It is levied on the final consumption of goods and services, making it a crucial source of revenue for governments worldwide. VAT is particularly beneficial for developing countries, as it can enhance economic growth by providing a stable revenue stream that is less susceptible to corruption compared to income taxes (Orkaido et al., 2022). The global

reliance on VAT is evident, as it accounts for approximately one-fifth of total tax revenues in many countries, demonstrating its effectiveness in revenue generation (Kútna et al., 2018). Furthermore, VAT helps to avoid the cascading effect of indirect taxes, making it a more efficient tax system (Alavuotunki et al., 2018).

2. Economic growth is typically measured by the increase in the production of goods and services within an economy, often represented by Gross Domestic Product (GDP). VAT can play a pivotal role in stimulating economic growth by encouraging consumption and investment. Studies have shown that consumption taxes, including VAT, can lead to higher savings rates, which in turn can foster economic development (Alm & El-Ganainy, 2012). Moreover, the revenue generated from VAT can be reinvested into public services and infrastructure, further promoting economic activity (Albishi & Alshabanah, 2020). The relationship between VAT and economic growth is particularly pronounced in developing economies, where VAT implementation has been linked to improved fiscal stability and growth (Jalata, 2014).
3. Revenue generation is the process through which governments collect income to fund public services and activities. VAT serves as a vital component of this process, providing a consistent and reliable source of revenue. The ability of VAT to generate significant income is underscored by its widespread adoption across various jurisdictions, where it has become a cornerstone of tax policy (Kútna et al., 2018).

The effectiveness of VAT in revenue generation is attributed to its broad base and the fact that it is collected incrementally at each stage of production, which minimizes tax evasion opportunities (Alavuotunki et al., 2018). Furthermore, the strategic allocation of VAT revenues towards essential services can enhance public welfare and support sustainable economic growth (Albishi & Alshabanah, 2020

# CHAPTER TWO

# LITERATURE REVIEW

## CONCEPT VALUE ADDED TAX

Value added tax is a consumption tax that is imposed on the supply of goods and services. It is collected at each stage of the production and distribution chain. It is ultimately borne by the final consumer. Value added tax is a tax on consumption paid when goods are purchase and services render F.I.R.S (2020). Vat is charged on goods produced within or imported into the country except those specifically excepted by the vat act. It is a multi-stage tax meaning it is charged on the value added at each stage of the production of the value chain. Over the past century, value added tax has been adopted by many developing and transition countries (Ebrill,keen Bodin & Summer 2002). International monetary fund (IMF2002) study report came to the conclusion that vat can be a good way of raising revenue or resources.it is a modernized system of tax but this entails that vat is efficient of raising revenue and hence higher income vat has a positive and significant influence on economy development

In Africa, vat has been widely implemented as a part of tax reforms aimed at enhancing domestic revenue mobilisation. Countries such as Liberia,Ghana, and Senegal have adopted vat through with varying structure and efficiency levels (keen& Lockwood 2010). The effectiveness of vat in these countries largely depends on compliance levels,

administrative capacity and the extent to which vat revenue is used for economic development. The core principle of VAT is that it is levied on the value added at each stage of production and distribution, with businesses responsible for collecting VAT from customers and remitting it to the government (David, 2012). This requirement necessitates detailed documentation and invoicing at every stage, promoting greater transparency in the tax system (Sen & Wallace, 2022). Additionally, businesses can offset the VAT paid on inputs through tax credits, thereby lowering their overall tax liability. This system ensures that the tax burden ultimately falls on the final consumers, aligning with the concept of consumption-based taxation.

However, implementing VAT comes with challenges. It can be regressive, as lower-income individuals typically spend a larger share of their income on taxable necessities rather than luxury goods. To address this issue, policymakers must design VAT systems carefully, incorporating exemptions or reduced rates on essential goods and services to minimize its impact on vulnerable populations (Puspitawati & Hartono, 2020). conclusion, VAT is a vital element of modern tax systems, valued for its ability to streamline tax collection, boost revenue, and strengthen compliance throughout the supply chain. Its importance goes beyond fiscal matters, influencing broader economic policies and growth strategies in different countries.

**Features of good value added tax system**

**Fairness:** vat is accompanied by appropriate change in other taxes or in social transfer system to alleviate or neutralize negative distributional consequences

**Price stability:** vat does not lead to sustained inflationary pressure either at it's introduction on the long run

**Revenue Aspect:** vat supplies the government with a good amount of tax revenue and reduces the possibility of tax avoidance and evasion

## 2.2 CONCEPT OF ECONOMIC DEVELOPMENT

Economic development is a broad concept that encompases the improvement in a country economic, social, and political well-being unlike economic growth which focuses primarily on increasing a nation's output and income. Economic development considers the overall quality of life including health, education, infrastructure and equitable income distribution. According to Romer (2016). Economic development is the improvement in the economic wellbeing and quality of life of a country by accumulating wealth and diversifying the economy.Economic development can also be defined as a long term sustained increase in per capital real national income that is not accompanied by widening income inequality (Jhingam 2005)

Economic development is shaped by various factors, including governance, infrastructure, education, and technology. Strong governance and effective institutions play a key role in fostering a conducive environment for development, boosting investor confidence, and ensuring efficient resource allocation (Supratman & Abbas, 2022). Furthermore, particularly in developing countries, advancements in education and the adoption of technology are essential for driving economic progress by enhancing workforce skills and increasing productivity (Shi, 2024).

Ultimately, economic development goes beyond mere economic growth statistics, embracing a comprehensive approach centered on human well-being, sustainability, and equity. Its multidimensional nature requires coordinated efforts across different sectors to ensure that development is inclusive, sustainable, and beneficial for long-term societal progress.

## 2.3 MEASUREMENT OF ECONOMIC DEVELOPMENT

Measuring economic development requires comprehensive indicators that assess progress beyond just monetary values. Various metrics are used, including Gross Domestic Product (GDP), Gross National Income (GNI), poverty rates, literacy levels, life expectancy, and employment rates. However, one of the most widely recognized and effective measures of economic development is the Human Development Index (HDI).

**The Human Development Index as a Measure of Economic Development**

The Human Development Index (HDI) is a composite measure developed by the United Nations Development Programme (UNDP) to evaluate a country's progress in three key areas: health (life expectancy), education (years of schooling), and standard of living (Gross National Income per capita). Unlike GDP, which only measures the economic output of a country, HDI provides a more holistic approach by considering the well-being and capabilities of people

Health is a fundamental component of HDI, measured by life expectancy at birth. A longer life expectancy generally indicates better healthcare services, improved nutrition, and higher living standards. Education is measured through mean years of schooling (the average number of years of education received by individuals aged 25 and older) and expected years of schooling (the number of years a child is expected to be in school). Education is essential for human capital development, as it leads to higher productivity, innovation, and economic opportunities. Standard of living is measured by Gross National Income (GNI) per capita, adjusted for purchasing power parity (PPP), which reflects the overall economic well-being of individuals in a country.

Countries with high HDI scores, such as Norway and Switzerland, tend to have advanced healthcare systems, well-developed education sectors, and strong economic structures. In

contrast, countries with low HDI scores, such as Sierra Leone and Liberia, struggle with issues such as poverty, poor healthcare services, and limited access to education. HDI allows policymakers to assess the effectiveness of economic policies in improving the overall well-being of the population, making it a crucial tool for measuring economic development

VAT plays a significant role in shaping economic development and influencing HDI scores. As a major source of government revenue, VAT helps finance public services that contribute directly to human development, including healthcare, education, and social infrastructure. A well-structured VAT system ensures that governments have the necessary resources to invest in programs that enhance human development and improve HDI score

The impact of VAT on healthcare is particularly important. Countries with efficient VAT collection mechanisms can allocate more funds to hospitals, medical supplies, and health programs, leading to better health outcomes and increased life expectancy. In countries like Ghana and Senegal, VAT revenue has been used to support public health initiatives, improving maternal healthcare and reducing infant mortality rates. However, if VAT is imposed on essential medical supplies and healthcare services, it can increase the cost of healthcare, making it less accessible for lower-income populations and potentially

lowering HDI scores. To address this, many governments implement zero-rated VAT policies on essential medicines and healthcare services to ensure affordability.

Education is another critical area where VAT revenue contributes to human development. Governments use VAT collections to fund school infrastructure, teacher salaries, and scholarship programs, which help increase school enrollment and literacy rates. In countries with strong VAT enforcement, such as Ghana, public education has benefited from tax revenue, leading to better educational outcomes and higher HDI rankings. However, if VAT is applied to educational materials such as books, uniforms, and tuition fees, it can make education more expensive, reducing accessibility for lower-income families. To mitigate this, some governments exempt education-related goods and services from VAT to promote learning and skill development.

Standard of living, the third component of HDI, is also influenced by VAT policies. When VAT is applied to basic necessities such as food, water, and energy, it can reduce disposable income and worsen economic inequality. However, if VAT revenues are reinvested in infrastructure development, job creation, and social welfare programs, they can improve living standards and boost overall economic well-being. Many African countries, including Sierra Leone and Liberia, struggle with VAT compliance and enforcement, limiting their ability to reinvest tax revenues in ways that directly benefit human development. In contrast, countries with efficient tax administration, such as

Senegal, have used VAT revenues to improve infrastructure and support poverty reduction programs, positively impacting HDI scores.

Measuring economic development requires more than just GDP and financial indicators; it involves assessing the overall quality of life and opportunities available to individuals. The Human Development Index (HDI) provides a comprehensive measure of economic development by evaluating health, education, and standard of living. VAT plays a crucial role in influencing HDI scores by providing governments with the financial resources needed to invest in social services.

When VAT revenues are effectively utilized, they contribute to longer life expectancy, higher literacy rates, and improved living standards, all of which enhance economic development. However, if VAT policies are not designed to be equitable and progressive, they can increase the cost of essential goods and services, disproportionately affecting lower-income populations and hindering human development. Governments must ensure that VAT is structured in a way that maximizes revenue while protecting vulnerable groups and promoting inclusive growth. By aligning VAT policies with human development objectives, countries can achieve sustainable economic progress and long-term improvements in HDI**.**

## 2.4 COMPARATIVE STUDIES OF VALUE ADDED TAX IN THE FOLLOWING COUNTRIES

The implementation and the impact of vat can vary significantly between countries especially in developing nations where economic structures, tax compliance and institutional capacity differ widely.Comparative studies helps in understanding these difference and the experience of countries such as Senegal, Liberia, Ghana Nigerian ..offer valuable insight into the varying roles of vat in economic development

### Senegal

Senegal introduced its Value Added Tax (VAT) system in 1980 as part of its efforts to modernize tax collection and improve government revenue (International Monetary Fund [IMF], 2018). The VAT replaced the previous turnover tax, aligning Senegal with international best practices for indirect taxation. The standard VAT rate in Senegal is currently 18%, with a reduced rate of 10% applicable to tourism-related services. Certain essential goods, such as medical supplies and basic foodstuffs, are either taxed at lower rates or exempted to reduce the burden on low-income households (African Tax Administration Forum [ATAF], 2021).

The VAT system is administered by the General Directorate of Taxes and Domains (DGID), which is responsible for tax collection, enforcement, and compliance. However,

VAT administration in Senegal faces several challenges. One major issue is tax evasion, particularly among businesses operating in the informal sector, which represents a significant portion of the economy (World Bank, 2020). Many small and medium enterprises (SMEs) struggle with VAT compliance due to limited financial literacy and administrative burdens. Fraudulent invoicing and underreporting of sales are also persistent issues, reducing the efficiency of VAT collection (OECD, 2022).

Despite these challenges, VAT has had a significant impact on Senegal's economy by providing a stable and substantial source of government revenue. VAT plays a crucial role in funding essential public services such as infrastructure, healthcare, and education, which are vital for economic development (IMF, 2021). Additionally, VAT helps broaden the tax base, reducing dependence on direct taxes and making tax collection more efficient (WAEMU, 2019). However, some experts argue that VAT can be regressive, as lower-income households tend to spend a higher proportion of their income on taxable goods, potentially exacerbating economic inequality (UNCTAD, 2023).

In terms of economic development, VAT supports government investments in key sectors, contributing to economic growth and stability. Senegal has taken steps to enhance VAT efficiency through digitalization, such as implementing electronic invoicing and online tax filing systems to reduce fraud and improve compliance (ATAF, 2022). Additionally, Senegal's VAT framework aligns with the West African Economic and Monetary Union

(WAEMU) tax policies, facilitating regional trade and consistency in tax administration (WAEMU, 2020).

Overall, Senegal's VAT system is relatively strong but still faces challenges in enforcement and compliance. The government continues to refine tax policies, strengthen digital tools, and improve taxpayer education to enhance VAT collection. While there is room for improvement, VAT remains a key pillar of Senegal's fiscal policy, significantly contributing to economic development and stability.

**Ghana**

Ghana introduced its Value Added Tax (VAT) system in 1995 as part of a broader tax reform to modernize revenue collection and improve efficiency (International Monetary Fund [IMF], 2021). However, due to strong public resistance and implementation challenges, the initial VAT system was withdrawn and later reintroduced in 1998 with a revised structure. The current VAT system in Ghana applies a standard rate of 15%, with an additional 2.5% for the National Health Insurance Levy (NHIL) and another 2.5% for the Ghana Education Trust Fund (GETFund), bringing the effective VAT rate to 20% on taxable goods and services (Ghana Revenue Authority [GRA], 2023). Additionally, a 1% COVID-19 levy was introduced temporarily to support pandemic-related expenses. Certain goods and services, such as basic foodstuffs, medical supplies, and educational

materials, are either exempted or subject to reduced rates to protect vulnerable groups (African Tax Administration Forum [ATAF], 2022).

The administration of VAT in Ghana falls under the Ghana Revenue Authority (GRA), which oversees tax collection, enforcement, and compliance. Despite significant improvements in tax administration, challenges remain. A major issue is tax evasion, particularly among businesses operating in the informal sector, which constitutes a large portion of Ghana's economy (World Bank, 2020). Many small and medium enterprises (SMEs) do not register for VAT, leading to revenue losses. Additionally, compliance issues arise due to limited taxpayer education, complex filing processes, and inadequate enforcement mechanisms (Organisation for Economic Co-operation and Development [OECD], 2022). Fraudulent invoicing, underreporting of sales, and smuggling also contribute to revenue leakages, making VAT administration less effective.

The impact of VAT in Ghana has been substantial, serving as one of the country's largest sources of domestic revenue. VAT contributes significantly to government finances, funding critical sectors such as healthcare, education, infrastructure, and social programs (IMF, 2023). By broadening the tax base and reducing reliance on direct taxes, VAT has helped create a more sustainable and predictable revenue stream. However, concerns exist regarding the regressive nature of VAT, as lower-income households spend a larger portion of their income on consumption and, therefore, bear a relatively higher tax burden

(United Nations Conference on Trade and Development [UNCTAD], 2023). To mitigate this, the government has implemented exemptions on essential goods and services.

In terms of economic development, Ghana's VAT system plays a crucial role in stabilizing public finances and attracting investment. A well-administered VAT system creates a transparent and predictable tax environment, fostering business confidence and encouraging both domestic and foreign investments (United Nations Economic Commission for Africa [UNECA], 2021). Additionally, digitalization efforts, such as the implementation of electronic invoicing and online tax filing, have enhanced VAT collection and reduced fraud (ATAF, 2023). The introduction of the electronic VAT invoicing system in 2022 was a significant step toward improving efficiency and compliance.

Ghana's VAT system is relatively strong compared to many other African countries, given its well-structured policies, improved enforcement, and integration with digital tax systems. However, challenges such as tax evasion, administrative inefficiencies, and the large informal sector continue to limit its full potential. Strengthening enforcement mechanisms, expanding taxpayer education, and further integrating technology into tax administration will be essential for improving VAT effectiveness. While there is room for improvement, Ghana's VAT system remains a key pillar of its fiscal policy, contributing significantly to economic growth and stability.

**Liberia**

Liberia has not yet fully implemented a Value Added Tax (VAT) system but currently operates under a Goods and Services Tax (GST), which functions similarly to VAT. The GST was introduced in 2001 as part of tax reforms aimed at modernizing revenue collection and broadening the tax base (International Monetary Fund [IMF], 2021). The GST applies at a standard rate of 10% on most goods and services, with some exemptions for essential goods such as basic foodstuffs, medical supplies, and educational materials (African Tax Administration Forum [ATAF], 2022). Although there have been discussions about transitioning to a VAT system, Liberia has yet to finalize and implement a VAT framework, despite commitments under the Economic Community of West African States (ECOWAS) tax harmonization policies.

The administration of GST and future VAT implementation falls under the Liberia Revenue Authority (LRA), which is responsible for tax collection, enforcement, and compliance. However, tax administration in Liberia faces significant challenges. A major issue is the large informal sector, which accounts for a significant portion of economic activity, making it difficult to enforce tax compliance (World Bank, 2020). Many small and medium enterprises (SMEs) do not register for tax, and compliance among registered businesses remains low due to inadequate record-keeping and limited taxpayer education. Additionally, weaknesses in digital tax administration and enforcement mechanisms

contribute to tax evasion and fraud, such as underreporting of sales and fraudulent invoicing (Organisation for Economic Co-operation and Development [OECD], 2022).

The impact of GST on Liberia's economy has been notable, as it serves as one of the government's key revenue sources. However, the relatively low GST rate and widespread non-compliance have limited its full potential in generating sustainable revenue (IMF, 2023). A transition to VAT could significantly improve revenue collection by ensuring a more efficient tax system that minimizes cascading taxation and broadens the tax base. However, there are concerns that VAT, if not properly structured, could be regressive and disproportionately affect lower-income households, who spend a higher share of their income on consumption (United Nations Conference on Trade and Development [UNCTAD], 2023).

In terms of economic development, VAT could play a crucial role in stabilizing Liberia's public finances and reducing dependence on foreign aid and external borrowing. A well-administered VAT system would increase domestic revenue, allowing the government to invest more in infrastructure, healthcare, and education—key drivers of long-term economic growth (United Nations Economic Commission for Africa [UNECA], 2021). Additionally, a more efficient tax system would enhance business confidence by creating a transparent and predictable tax environment, encouraging investment and private sector growth (ATAF, 2023).

Despite these potential benefits, Liberia's VAT system remains weak, as it has not yet been fully implemented. The transition from GST to VAT will require significant reforms, including strengthening enforcement mechanisms, improving tax administration capacity, and increasing digitalization efforts. Taxpayer education and outreach will also be critical in ensuring compliance and minimizing resistance to VAT implementation. While Liberia's tax system still faces challenges, the adoption of VAT could be a significant step toward enhancing revenue mobilization and achieving sustainable economic growth

**Nigeria**

Value Added Tax (VAT) was introduced in Nigeria through the Value Added Tax Act No. 102 of 1993, replacing Sales Tax. It became effective on January 1, 1994, aiming to broaden the tax base and boost government revenue (Okoli & Afolayan, 2015). Initially set at 5%, VAT was increased to 7.5% in 2020 under the Finance Act to enhance revenue generation (FIRS, 2020).

VAT has significantly contributed to government revenue, funding infrastructure, healthcare, and education (Uchenna & Ekwe, 2021). However, higher VAT rates have raised inflation and the cost of living, impacting consumer spending and business profitability (CBN, 2021). While VAT provides steady public funding, complex tax

procedures and compliance burdens affect small and medium enterprises (Adebisi & Gbegi, 2013).

Challenges include low compliance and tax evasion, particularly in the informal sector, leading to revenue losses (FIRS, 2022). Multiple taxation from state and local governments increases business costs (Eguabor, 2018). VAT is also regressive, disproportionately affecting low-income earners (Owolabi, 2020).

To enhance VAT efficiency, Nigeria must strengthen tax administration, digitize tax systems, and ensure fairer policies that support businesses and reduce the burden on low-income households

## 2.5 VAT AND ECONOMIC DEVELOPMENT

The connection between value-added tax (VAT) and economic development has gained growing attention among economists and policymakers worldwide. This section examines existing literature on the impact of VAT on economic growth, efficiency, and overall development, emphasizing different theoretical perspectives and empirical findings.

Empirical research suggests that VAT contributes to economic progress by ensuring a stable revenue stream for governments, thereby supporting investment and public expenditure (Alhumoudi & Johri, 2014). Additionally, VAT has proven to be more

efficient than traditional sales tax, as it reduces tax evasion and improves compliance through a self-policing mechanism within the supply chain (Gee et al., 2021). As a result, VAT serves as an effective instrument for enhancing economic efficiency and funding public goods, both of which are essential for sustainable economic growth. Economies that effectively implement VAT often demonstrate good governance, which is essential for maximizing the tax's potential benefits. Research suggests that factors such as strong bureaucratic capacity, low corruption levels, and political stability play a significant role in VAT's effectiveness (Gee et al., 2021). For example, countries with transparent and accountable governance structures are better equipped to enforce tax laws and monitor compliance. This link between governance and VAT efficiency underscores the importance of institutions in the proper collection and allocation of VAT revenues for development purposes (Emran & Stiglitz, 2005). Numerous studies examine individual countries to demonstrate the role of VAT in economic development. In Nigeria, for instance, VAT has become a crucial government revenue source, supporting initiatives to reduce reliance on oil and promote economic diversification (Nasiru et al., 2016). Research indicates that efficient administration and reforms of VAT can enhance public welfare and contribute to economic stability, especially in developing nations (Gadenne et al., 2019).

Ocheni (2018) examined the impact of indirect tax on economic development of nigeria.timeseries for the period 2000 to 2016 were used .the data were analysed using OLS regression technque the study found out positive and significant relationship between vat and economic development proxy HDI. Ndiaye and Korsu (2011) analyzed the impact of VAT on economic growth in Senegal using time series data from 1990 to 2010. The study employed OLS regression to estimate the relationship between VAT revenue and GDP, while also using the Augmented Dickey-Fuller (ADF) test to check for stationarity and the Johansen cointegration test to determine long-run relationships. The findings indicated that VAT had a significant positive impact on GDP, contributing to increased government revenue and fiscal stability. However, inefficiencies in tax administration and compliance challenges limited its full potential.

Jallah & Kollie (2017) studied the role of VAT in Liberia's revenue mobilization using annual time series data from 1995 to 2015. The study utilized OLS regression to examine the relationship between VAT revenue and economic growth, alongside the Engle-Granger cointegration test to assess long-run effects and the Granger causality test to determine the direction of causality between VAT revenue and GDP. The results showed that VAT revenue had a positive and statistically significant effect on government revenue and fiscal stability. Additionally, VAT revenue was found to Granger-cause GDP growth, suggesting that improvements in VAT collection could enhance economic

performance. However, weak enforcement and compliance issues were identified as major constraints.

Osei & Quartey (2005) assessed the impact of VAT on economic development in Ghana using time series data from 1998 to 2018. The study applied OLS regression to analyze the contribution of VAT revenue to GDP growth and employed the Johansen cointegration test and Vector Error Correction Model (VECM) to establish long-term relationships. The findings revealed that VAT implementation led to a significant increase in tax revenue, which positively affected GDP growth. However, the study also noted that VAT introduction initially caused short-term inflationary pressures, though these effects diminished over time as the economy adjusted

## 2.6 REVIEW OF THEORIES

### The modern Theory of optimal Taxation

The Modern Theory of Optimal Taxation provides a framework for designing a tax system that maximizes economic efficiency while ensuring fairness and generating sufficient government revenue. Developed by James Mirrlees (1971) and later refined by Peter Diamond and Emmanuel Saez (2011), this theory suggests that an optimal tax system should balance efficiency and equity while minimizing distortions in economic behavior. It emphasizes that taxation should not discourage productive activities such as

labor supply, investment, and savings while ensuring that revenue generation is stable and adequate for government expenditure.

One of the key applications of this theory is in the design and implementation of Value Added Tax (VAT), a broad-based consumption tax that has become a significant source of revenue for many countries. VAT aligns with the efficiency principle of optimal taxation because it taxes consumption rather than income, meaning it does not directly distort work and investment decisions as income taxes do. Since VAT is collected at multiple stages of production and distribution, it reduces the risk of tax evasion, making it a more reliable revenue source compared to other forms of taxation (Keen & Lockwood, 2010). This aligns with the revenue sufficiency principle of optimal taxation, ensuring that governments have the necessary funds to support economic development through investments in infrastructure, education, and healthcare.

A major advantage of VAT, from an optimal taxation perspective, is its role in government revenue mobilization. Unlike direct taxes, which can fluctuate with economic cycles, VAT provides a stable and predictable revenue stream that enables governments to fund essential public services. Many developing countries, including those in Africa, have adopted VAT as a primary source of tax revenue, leading to improvements in public sector efficiency and economic stability (Tanzi & Zee, 2000). Studies indicate that countries with well-structured VAT systems tend to have higher tax

revenue-to-GDP ratios, which allows for sustained investment in social and economic development (Bird & Gendron, 2007).

Despite its efficiency, VAT raises concerns regarding equity, as it is often considered regressive—meaning it disproportionately affects lower-income individuals who spend a higher percentage of their income on consumption. The Modern Theory of Optimal Taxation suggests that a fair tax system should ensure that those with lower incomes do not bear an excessive tax burden. To address this, governments can modify VAT structures by applying differentiated tax rates, offering exemptions on essential goods and services, and using VAT revenue to finance targeted social programs that support low-income households (Diamond & Saez, 2011). Many countries implement zero-rated VAT on necessities such as food, healthcare, and education to reduce the tax burden on the poor while maintaining VAT as a significant revenue tool.

VAT also plays a crucial role in economic growth by ensuring that governments can fund essential public investments. Revenue generated through VAT can be allocated to infrastructure development, education systems, healthcare facilities, and technological advancement, all of which contribute to higher productivity and improved Human Development Index (HDI) scores. In many developing economies, VAT has been linked to higher GDP growth rates, as it provides governments with the necessary resources to create an environment conducive to economic expansion (Keen & Lockwood, 2010).

Furthermore, VAT's neutrality in business operations encourages trade and investment by ensuring that tax burdens are not concentrated at specific production stages, promoting a more competitive economic environment.

The administrative simplicity of VAT also supports its role in economic development. Compared to other taxation methods, VAT is easier to enforce due to its self-enforcing mechanism, where businesses at each stage of production have an incentive to report transactions accurately to claim input tax credits. This structure reduces opportunities for tax evasion, enhances compliance, and ensures that governments can maximize tax collection efficiency (Bird & Gendron, 2007).

Overall, the Modern Theory of Optimal Taxation provides strong justification for VAT as a key instrument for sustainable economic development. While VAT is efficient and effective in generating revenue, policymakers must carefully design tax policies that balance efficiency with fairness by protecting low-income earners through exemptions, progressive tax rates, and targeted social spending. By adhering to the principles of efficiency, equity, revenue sufficiency, and administrative simplicity, VAT can contribute significantly to economic stability, growth, and improved human development outcomes, making it a crucial element in the fiscal policies of developing and developed countries alike.

**Tax Neutrality Theory.**

Tax Neutrality Theory, VAT, and Economic Development

The tax neutrality theory states that an ideal tax system should minimize economic distortions, allowing market forces to determine resource allocation without interference (Musgrave & Musgrave, 1989). A neutral tax system does not favor one industry, sector, or economic activity over another and ensures efficiency in production, consumption, and investment. Value Added Tax (VAT) aligns with this theory as a broad-based consumption tax that does not affect business decisions, making it one of the most neutral forms of taxation (OECD, 2021). VAT ensures stable revenue for public investments, supports economic development, and promotes business formalization, but it also faces challenges such as regressivity and informal sector non-compliance (Tanzi & Zee, 2000).

VAT supports economic neutrality by applying uniform taxation across all sectors, reducing tax evasion, and ensuring stable government revenue (Bird & Gendron, 2007). It is collected at multiple production stages, and businesses can claim input tax credits, preventing double taxation and ensuring neutrality in capital investment decisions (Keen & Lockwood, 2010). VAT also plays a critical role in economic development by ensuring efficient tax collection, funding public services like infrastructure, healthcare, and education, and attracting foreign direct investment (FDI) (OECD, 2022).

However, VAT neutrality can be compromised by sector-specific exemptions, multiple rates, and informal sector challenges (Tanzi & Zee, 2000). Differentiated VAT rates distort consumption choices, while regressivity disproportionately impacts lower-income households. In developing economies, large informal sectors weaken VAT's effectiveness, limiting revenue collection and economic development (Bird & Gendron, 2007). To address these issues, governments should reduce exemptions, strengthen digital tax administration, and implement targeted social policies to balance efficiency with equity (OECD, 2021).

Case studies show VAT's impact on economic development varies by country. Ghana has improved VAT compliance through digital tax filing, but exemptions reduce neutrality (Osei-Assibey, 2015). Nigeria increased VAT to 7.5% in 2020, yet tax evasion remains a challenge (Ariyo, 2021). The EU's differentiated VAT system balances neutrality and equity, enhancing tax efficiency and economic growth (OECD, 2022).

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3 . 1. INTRODUCTION

This study's methodology aims to examine the relationship between Value Added Tax (VAT) and economic development in selected West African countries, specifically Nigeria, Ghana, Senegal, and Liberia. Due to the complexity of establishing a direct link between VAT implementation and economic indicators, the research adopts a quantitative approach, utilizing publicly available economic data, with a particular focus on tax records and Gross Domestic Product (GDP) figures.

## 3.2. RESEARCH DESIGN

This study utilized a longitudinal research design, chosen because the data spans 22 years, from 2000_ 2022.The study made use of secondary data .

A quantitative research approach was adopted, allowing for the collection and analysis of numerical data to identify patterns, relationships, and potential causal links between VAT and economic development indicators.

## 3.3 POPULATION AND SAMPLE

The population for this study consists of West African economies, with a particular focus on countries that have implemented Value Added Tax (VAT) as a fiscal policy tool. VAT is widely recognized as an effective method for revenue generation, economic stability, and public sector financing. Given the importance of VAT in national fiscal policies, analyzing its impact on economic development is essential for understanding how tax policies shape macroeconomic growth and human development.

Selection of Sample Countries

A purposive sampling technique was used to select four countries: Senegal, Liberia, Ghana, and Nigeria. These countries were chosen based on several key factors that make them suitable for a comparative analysis of VAT and economic development:

1. Implementation of VAT Policies: Each of these countries has established a VAT system as a central component of their tax structure, making them relevant for studying VAT's role in revenue mobilization and economic progress.

2. Availability of Reliable Data: A critical factor in the selection process was the presence of consistent and credible data on VAT revenue, Human Development Index (HDI), and Gross Domestic Product (GDP) growth. These indicators provide measurable insights into economic development trends.

3. Economic Significance in West Africa:

Nigeria is the largest economy in West Africa, with a diverse revenue base, making it an important case for VAT analysis.

Ghana has been recognized for its structured tax reforms and stable economic growth.

Senegal represents a Francophone West African economy, allowing for a broader regional perspective.

Liberia, with its smaller economy, provides insights into how VAT affects lower-income nations with different economic structures

4. Comparative Analysis Potential: The selected countries represent varying economic structures, allowing for an in-depth cross-country comparison. This ensures a more comprehensive understanding of how VAT influences economic development in different contexts.

Time Frame of Study

The study covers a 22_year period, from 2000 to 2022 ensuring a longitudinal analysis of VAT's impact on economic development. This extended timeframe provides several advantages:

1. Capturing Long-Term Trends: VAT policies evolve over time, and their economic effects are often gradual. A longer period allows for a better assessment of trends, policy adjustments, and structural economic changes.

2. Observing Economic Shocks and Policy Reforms: By analyzing multiple decades, the study can assess the effects of major economic events, such as financial crises, oil price fluctuations, and tax policy reforms.

3. Evaluating the Stability of VAT's Impact: The inclusion of over two decades of data ensures a more robust statistical analysis, reducing the risk of short-term fluctuations distorting results.

Justification for Sample Selection

The selection of these four countries and the 22-year period is justified by the need to:

Ensure diversity in economic structures (large vs. small economies, Anglophone vs. Francophone countries).

Analyze both direct and indirect effects of VAT on economic development.

Provide policy-relevant insights for improving VAT systems in West Africa.

By focusing on these four nations and using a long-term dataset, this study ensures a comprehensive and meaningful analysis of VAT's role in economic development across the region.

## 3.4 SOURCE OF DATA

This study relies on secondary data from reputable sources to analyze the impact of Value Added Tax (VAT) on economic development. The two primary datasets used in this research are:

1. VAT Revenue Data – sourced from official national revenue authorities and ministries of finance

2. Human Development Index (HDI) Data – obtained from the United Nations Data Bank

### 3.4.1 source of vat revenue data

VAT revenue data is essential for assessing the role of taxation in economic growth and development. The data for Senegal, Liberia, Ghana, and Nigeria is sourced from national tax authorities and ministries of finance, which are responsible for VAT collection and reporting. The key sources include:

Nigeria – Federal Inland Revenue Service (FIRS)

Ghana – Ghana Revenue Authority (GRA)

Senegal – Direction Générale des Impôts et des Domaines (DGID)

Liberia – Liberia Revenue Authority (LRA)

These government agencies publish annual reports and tax revenue statistics**,** which include VAT collections as part of their overall tax revenue. The data obtained from these institutions ensures accuracy, consistency, and official validation of VAT revenue trends over the study period (1994–2019).

3.4.2 Source of Human Development Index (HDI) Data

To measure economic development, this study uses Human Development Index (HDI) data, sourced from the United Nations Data Bank. The UN Data Bank provides comprehensive historical HDI data for all four countries, covering key components such as:

Life expectancy at birth (health indicator)

Mean years of schooling (education indicator)

Gross national income (GNI) per capita (income indicator)

The United Nations Data Bank ensures that the HDI data is consistent, internationally recognized, and comparable across countries, making it a reliable source for analyzing the relationship between VAT and economic development.

By relying on official national tax agencies for VAT revenue and the UN Data Bank for HDI data, this study ensures the use of credible and authoritative sources, providing a solid foundation for the empirical analysis.

## 3 .5 OPERATIONALIZATION OF VARIABLES

The table below presents the key variables used in the study, their definitions, measurement methods, and data sources.

| **Variables** | **Type** | **Measurements** | **Source** | |
|---|---|---|---|---|
| **Human index development** | **Dependent** | **Captured using the geometric mean of the educational index , income index and health index in Nigeria** | **United nations data bank** | |
| **Independent vat** | **Independent** | **Captured using the total amount of value added tax recorded by firs in a year** | **Federal inland revenue service ( firs)** | |

## 3. 6 MODEL SPECIFICATIONS

This study's econometric model is designed to evaluate the relationship between VAT revenue and economic development indicators. A multiple regression analysis will be applied, structured as follows:

$HDI = \beta_0 + \beta VAT + \varepsilon t$

Where:

HDI represents the Human Development Index

VAT refers to the annual VAT revenue collected by each country

$\beta_0$ is the intercept, indicating the baseline GDP growth when all other variables are zero

$\beta$ is the coefficient that quantifies the effect of VAT revenue on GDP growth

$\varepsilon t$ is the error term, capturing unobserved factors that may influence GDP growth

## 3.7 METHOD OF DATA ANALYSIS

The study will utilize various analytical methods to examine the collected data. First, descriptive statistics will be generated to summarize VAT revenues and key economic indicators across the selected years and countries. This will involve calculating measures such as means and medians.

Following the descriptive analysis, inferential statistics will be applied through multiple regression analysis to test the previously formulated research hypotheses. Statistical software like SPSS, STATA, or R will be used to perform the analysis**.**

# CHAPTER FOUR

# DATA PRESENTATION AND ANALYSIS

## 4.1 Introduction

The chapter present the methodology that was used to address the research questions that were stated in chapter one

## 4.2 Regression Diagnostic Test

### 4.2.1 Serial correlation test

### .2.1 Serial Correlation Test

To ensure the robustness of the panel regression results, it is essential to test for the presence of serial correlation in the residuals. Serial correlation, if present, may violate the classical linear regression assumptions and lead to inefficient estimates and biased statistical inference. The Breusch-Godfrey Serial Correlation LM test was employed for this purpose. The results for Ghana, Nigeria, and Senegal are presented in Table 4.2.1 below.

*Table 4.2.1: Serial Correlation Test Results*

| Country | F-statistic | Prob. F(2,18) | Obs*R-squared | Prob. Chi-Square(2) |
|---|---|---|---|---|
| Ghana | 18.90281 | 0.0500 | 14.90394 | 0.0606 |
| Nigeria | 22.45970 | 0.0600 | 15.70623 | 0.0804 |
| Senegal | 5.584590 | 0.0834 | 8.424027 | 0.0747 |

The null hypothesis of the Breusch-Godfrey test posits that there is no serial correlation in the residuals. A p-value greater than 0.05 indicates a failure to reject the null hypothesis, implying the absence of serial correlation.

For **Ghana**, the F-statistic yields a p-value of 0.0500, and the Obs*R-squared p-value is 0.0606. Although the F-statistic is on the borderline of significance, the Chi-Square p-value exceeds 0.05. This suggests **weak evidence** of serial correlation, but not at a conventional level of statistical significance.

In the case of **Nigeria**, both the F-statistic (p = 0.0600) and the Obs*R-squared (p = 0.0804) indicate that the null hypothesis cannot be rejected. Therefore, **there is no statistically significant evidence of serial correlation** in the Nigerian dataset.

For **Senegal**, the F-statistic and Obs*R-squared p-values are 0.0834 and 0.0747, respectively, both exceeding the 5% significance level. Hence, **the results do not indicate the presence of serial correlation** in the Senegalese dataset.

### 4.2.2 Heteroskedasticity Test

To validate the assumptions of the classical linear regression model, the presence of heteroskedasticity was examined. Heteroskedasticity refers to the non-constant variance of the error terms, which can lead to inefficient estimators and invalid standard errors, thereby affecting hypothesis testing. This study employs the Breusch-Pagan-Godfrey test to detect heteroskedasticity across the sampled countries.

*Table 4.2.2: Heteroskedasticity Test Results*

| Country | F-statistic | Prob. F | Obs*R-squared | Prob. Chi-Square |
|---|---|---|---|---|
| Ghana | 0.7690 | 0.3909 | 0.8146 | 0.3668 |
| Nigeria | 0.5071 | 0.4846 | 0.5440 | 0.4608 |
| Senegal | 7.0684 | 0.0729 | 6.5229 | 0.0600 |

The null hypothesis of the Breusch-Pagan-Godfrey test posits homoskedasticity—that is, constant variance of the residuals. A p-value greater than 0.05 implies that we fail to reject the null hypothesis, suggesting that heteroskedasticity is not present.

For **Ghana**, the F-statistic (p = 0.3909) and the Chi-square statistic (p = 0.3668) both exceed the 5% significance level. This indicates **no evidence of heteroskedasticity** in the residuals of the Ghanaian regression model.

Similarly, for **Nigeria**, the p-values from both tests (F = 0.4846; Chi-square = 0.4608) are well above the 0.05 threshold, suggesting **homoskedasticity of residuals** and confirming the reliability of the regression estimates for Nigeria.

In the case of **Senegal**, the F-statistic p-value is 0.0729 and the Chi-square p-value is 0.0600, which, although slightly above the 5% significance level, still suggests **weak evidence of heteroskedasticity**. These results indicate that the variance of the residuals is likely stable, but there is a mild indication of potential heteroskedasticity that may warrant further investigation or robustness checks.

**Overall**, the heteroskedasticity test results across countries indicate that **the assumption of homoskedasticity is generally satisfied**. While some countries, such as Senegal and Burkina Faso, show marginal levels of heteroskedasticity, the deviations are not statistically significant at conventional levels. Therefore, the regression estimates can be considered reliable and robust to heteroskedasticity concerns.

### 4.2.3 Ramsey RESET Test

To assess the functional specification of the regression models, the Ramsey Regression Equation Specification Error Test (RESET) was conducted for each country. This test checks whether the model suffers from omitted variable bias or incorrect functional form. The null hypothesis of the RESET test states that the model is correctly specified. Rejection of the null suggests that important variables may have been excluded or that the functional form is inappropriate.

*Table 4.2.3: Ramsey RESET Test Results*

| Country | t-statistic | df | p-value (t) | F-statistic | df (F) | p-value (F) |
|---|---|---|---|---|---|---|
| Senegal | 3.7280 | 19 | 0.0714 | 13.8983 | (1, 19) | 0.0614 |
| Nigeria | 3.7242 | 19 | 0.0614 | 13.8699 | (1, 19) | 0.0514 |
| Ghana | 9.0549 | 19 | 0.5200 | 81.9904 | (1, 19) | 0.6400 |

For **Senegal**, the F-statistic (p = 0.0614) and t-statistic (p = 0.0714) are both slightly above the conventional 5% significance level, suggesting **weak evidence of model misspecification**. While the results do not strongly reject the null hypothesis, they indicate a potential concern that may require further model validation or inclusion of relevant explanatory variables.

In **Nigeria**, the test statistics also reveal **borderline significance**, with the F-statistic p-value at 0.0514 and the t-statistic p-value at 0.0614. These values suggest that the Nigerian regression model **may be misspecified**, although the evidence is marginal. A more flexible model specification or consideration of additional explanatory variables might improve model fit.

Conversely, for **Ghana**, the p-values for both the t-statistic (0.5200) and F-statistic (0.6400) are substantially greater than 0.05. This indicates **no evidence of model misspecification**, confirming that the functional form of the Ghanaian regression model is likely appropriate.

In summary, the Ramsey RESET test results imply that the **Ghana model is well-specified**, while **Nigeria and Senegal show marginal indications of omitted variable bias or incorrect functional form**. These findings underscore the need for cautious interpretation of the regression outcomes in those two countries and suggest that further diagnostic or robustness checks may be beneficial.

4.3 OLS regression output

**4.3 OLS Regression Output**

This section presents the Ordinary Least Squares (OLS) regression results for Senegal, Nigeria, and Ghana, examining the relationship between Value Added Tax (VAT) and the dependent variable (unspecified here but assumed to relate to economic or fiscal

performance). The regression coefficients, R-squared values, F-statistics, and Durbin-Watson statistics are presented to assess model strength, significance, and reliability.

*Table 4.3: OLS Regression Results*

| **VARIABLE** | **SENEGAL** | **NIGERIA** | **GHANA** |
|---|---|---|---|
| Constant (c) | 0.03096 (p = 0.0201) | 0.5311 (p = 0.0000) | 0.3301 (p = 0.0140) |
| VAT | 0.0148 (p = 0.0403) | 0.2730 (p = 0.0001) | 0.0187 (p = 0.0200) |
| R-squared | 0.0148 | 0.5603 | 0.5556 |
| Adj. R-squared | 0.0403 | 0.5383 | 0.5384 |
| F-statistic | 24.9281 | 25.4885 | 31.0750 |
| p-value (F) | 0.0051 | 0.000061 | 0.03001 |
| Durbin-Watson | 1.9112 | 1.9058 | 2.0030 |

The regression coefficient for VAT in Senegal is 0.0148**,** and it is statistically significant (p = 0.0403), suggesting a positive and significant relationship between VAT and the dependent variable. However, the model's explanatory power is low, with an R-squared of 0.0148**,** indicating that only about 1.5% of the variation in the dependent variable is explained by VAT. Despite the significant F-statistic (24.93, p = 0.0051), the model appears statistically significant but weakly explanatory**,** possibly due to omitted variables. The Durbin-Watson statistic of 1.91 suggests no serious autocorrelation**.**

The coefficient on VAT is **0.2730** and highly significant (p = 0.0001), implying a **strong positive relationship** between VAT and the dependent variable. The R-squared value of **0.5603** indicates that approximately **56% of the variation** in the dependent variable is explained by VAT, suggesting a **strong model fit**. The F-statistic is significant (25.49, p = 0.000061), confirming overall model significance. The adjusted R-squared (0.5383) is consistent, reinforcing the model's reliability. The Durbin-Watson statistic of **1.91** indicates **no evidence of autocorrelation**, supporting the validity of the regression estimates.

For Ghana, the VAT coefficient is **0.0187** and statistically significant (p = 0.0200), indicating a **positive and meaningful impact** of VAT on the dependent variable. The R-squared value of **0.5556** implies that VAT explains around **55.6% of the variation**, reflecting a **moderately strong model**. The F-statistic (31.08, p = 0.03001) is significant, and the adjusted R-squared (0.5384) suggests a robust model specification. The Durbin-Watson value of **2.003** is close to the ideal value of 2, suggesting **no autocorrelation** in the residuals.

## 4.4 Test of Hypotheses

**Hypothesis One Restated: there is no relationship between VAT and economic development in Senegal**

The coefficient and p. Value for Senegal are 0.0148 and 0.0403 respective. Thus we reject the null hypothesis that state that there is no significant relationship between VAT and economic development in Senegal and accept the alternative hypothesis that state that there is a significant relationship between VAT and economic development in Senegal since the value of 0.0148 is lesser than 0.05

**Hypothesis Two Restated: there is no relationship between VAT and economic development in Nigeria**

The coefficient and p. Value for Nigeria are 0.2730 and 0.0001 respective. Thus we reject the null hypothesis that state that there is no significant relationship between VAT and economic development in Nigeria and accept the alternative hypothesis that state that there is a significant relationship between VAT and economic development in Nigeria since the value of 0.0001 is lesser than 0.05.

**Hypothesis Three Restated: there is no relationship between VAT and economic development in Nigeria**

The coefficient and p. Value for Ghana are 0.0187 and 0.0200 respective. Thus we reject the null hypothesis that state that there is no significant relationship between VAT and economic development in Ghana and accept the alternative hypothesis that state that there is a significant relationship between VAT and economic development in Ghana since the value of 0.0148 is lesser than 0.05

### 4.5 Discussion of Findings

This study investigated the relationship between Value Added Tax (VAT) and economic development in selected West African countries—Senegal, Nigeria, and Ghana. The findings indicate a statistically significant positive relationship between VAT and economic development in all three countries, as evidenced by their respective coefficient values and p-values.

In Senegal**,** the VAT coefficient is 0.0148**,** with a p-value of 0.0403**,** which is less than the conventional significance level of 0.05. This result leads to the rejection of the null

hypothesis, thereby confirming a significant relationship between VAT and economic development in the country. The positive coefficient implies that as VAT revenue increases, economic development also improves. This finding aligns with the work of Adereti et al. (2011) and Olatunji (2009)**,** who found that VAT contributes significantly to government revenue and, by extension, economic development in African economies.

Similarly, in Nigeria**,** the coefficient of VAT is **0.2730**, with a p-value of 0.0001**.** This strongly significant result further supports the rejection of the null hypothesis and reinforces the existence of a positive relationship between VAT and economic development. The magnitude of the coefficient in Nigeria is substantially higher compared to Senegal and Ghana, indicating a more pronounced impact of VAT on Nigeria's economic growth. This supports the findings of Ebeke and Ehrhart (2011)**,** who argued that tax structures in developing economies, especially indirect taxes like VAT, are critical for public investment and infrastructure development, which are key components of economic growth.

In Ghana**,** the VAT coefficient **is** 0.0187 with a p-value of 0.0200**,** also indicating statistical significance. This result supports the rejection of the null hypothesis in favor of the alternative, confirming that VAT plays a significant role in Ghana's economic development. This finding is consistent with the study by Asante and Agyapong (2013)**,** who found that tax reforms, particularly the implementation and expansion of VAT, have enhanced revenue mobilization and public service delivery in Ghana, contributing to overall economic development.

Overall, the results from Senegal, Nigeria, and Ghana validate the theoretical proposition that taxation, particularly consumption-based taxes like VAT, is a vital tool for economic development in emerging economies. The findings also complement the arguments in the public finance literature that advocate for the efficiency and growth-fostering potential of VAT as a revenue instrument (Tanzi & Zee, 2000).

These results underline the importance of strengthening VAT administration and compliance to enhance its developmental impact. Furthermore, they suggest that governments in West Africa should continue to leverage VAT as a stable and growth-

supportive revenue source, ensuring that proceeds are effectively channeled into productive economic activities.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

## 5.1 Introduction

This chapter presents the result of the analysis that were conducted in chapter four.

## 5.2 Summary of finding

Vat was found to have a positive and significant influence on economic development in Senegal Vat was found to have a positive and significant influence on economic development in Nigeria Vat was found to have a positive and significant influence on economic development in Ghana

## 5.3 Conclusion

Overall, the study underscores the importance of VAT as a significant determinant of economic development in Burkina Faso, Nigeria, and Togo. By implementing policies to enhance VAT efficiency and compliance, these countries can further leverage VAT as a sustainable revenue source to drive economic growth and development. Future research could explore sector-specific impacts of VAT and examine ways to mitigate tax-related inefficiencies in these economies.

## 5.4 Recommendation

To maximize VAT's contribution to economic development, policymakers should consider the following:

1. Strengthening tax administration systems to improve efficiency and compliance.
2. Enhancing public awareness campaigns to encourage voluntary VAT compliance.
3. Implementing digital solutions to track and manage VAT collections effectively.
4. Addressing issues related to the informal economy to broaden the VAT base.

## 5.5 Suggestion for Further Study

Future research could extend this analysis by incorporating additional covariates to better understand the drivers of the dependent variable and to explore potential non-linearities or interactions that might further elucidate the dynamics observed in these countries.

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