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VALUE ADDED TAX AND ECONOMIC DEVELOPMENT: FOCUS ON HUMAN CAPITAL DEVELOPMENT

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Abstract: This study investigates the impact of Value Added Tax on Economic Development and Human Capital Development from 1994 to 2022. Employing a longitudinal research design, the study utilizes data specific to Nigeria and obtained from the office of the Federal Inland Revenue Service (FIRS), the Statistical Bulletin of the Central Bank of Nigeria (CBN), and the World Bank. The collected data is then analyzed using the Johansen Co-integration, Vector Error Correction Model, and Vector Autoregressive analysis technique. The research establishes a connection between Value Added Tax (VAT) and the Exchange rate, demonstrating their impact on Economic Development and Human capital development in Nigeria. The verdicts show that both VAT and Exchange Rate significantly impact both Economic Development and Human Capital Development, though negatively. However, these findings are not meant to discourage but rather to serve as a catalyst for change. The recommendations outlined in the study emphasize the importance of training, oversight, exchange rate stabilization, investment in education, and financial security in promoting Economic Development and Human Capital Development in Nigeria. Tax regulatory authorities should improve management of VAT funds to ensure they are utilized for developmental objectives. Finally, organizations such as the EFCC must remain steadfast in their commitment to preventing the misuse or diversion of VAT funds meant for Capital Expenditure and the development of the nation's human resources, thereby safeguarding the financial security of the government and the nation as a whole.

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1. Introduction

Consumption tax which is Value Added Tax (VAT) has gained acceptance throughout the world since it is manageable and difficult to avoid or evade (Federal Inland Revenue Service, 1993, p. 560). Every time a trader purchases a product that is subject to VAT, they are required to pay the supplier a price that includes the chargeable price plus the fixed flat rate of VAT. The merchant then adds the fee to the taxable sales price when selling these items to his clients (Ofurum & Ferry, 2009). Value Added Tax was introduced to increase domestically sourced revenue for the government and lessen its reliance on oil exploration, production, and revenue. Notwithstanding, governments in the country have made efforts, to various extents, in order to broaden an array of revenue streams and stimulate economic growth and advancement. In the framework of trade liberalization, the VAT is chosen over customs duties due to its neutrality towards international commerce (and decline in revenues due to the dismantling of trade barriers).

History confirms Wilhelm Von Siemens, a German businessman who visualized Value Added Tax as a means of imposing sales taxes and gross turnover tax thereby prompting cascading difficulties that the VAT aimed to address, conceptualized tax. While in France, Maurice Laure created VAT for their economy. France was the first country to practice VAT on 10th April 1954 (Okoye & Gbegi, 2013), and the existence of VAT invariably led many other Countries in different worlds to practice and inculcate different stages of VAT in economic development in the same to date. Consumption levies are paid as VAT when goods and services are purchased or rendered. (FIRS, 2020).

More than 170 nations, including other European nations, have implemented VAT. Many nations, including those in Europe, Japan, Asia, South America, Africa, and many more, have implemented VAT. These nations with high VAT rates include Germany (19%), Hungary (27%), and Denmark (25%). Luxembourg (16%) and numerous other nations with their average rate. The Value Added Tax has become a substantial proceeds generator for unindustrialized nations in sub-Saharan Africa. (FIRS, 2022). Nigeria has the lowest VAT rate among other African nations, with Morocco and Madagascar having the highest VAT rates in Africa with 20 percent. Benin Republic, Guinea, Madagascar, Kenya, Cote D'Ivoire, Niger Republic, Togo, Nigeria, and Senegal are a few examples of these nations. Several countries have also used VAT implementation to reduce other unproductive implicit taxes, such as stamp fees, excise taxes, and tariffs. Alternatively, VAT has been utilized to lower

direct taxes like the charges of business income tax and personal income tax. However, the progress was somewhat juxtaposed by the replacement of sales taxes with VAT (Adhikari, 2020). The presence of several VAT rates reduces the effectiveness of a VAT system and increases complexity, potentially increasing administrative and compliance expenses.

Nigeria developed the Value Added Tax (VAT) Act in 1993 to levy taxes on consumers with a standard rate on all products and services provided by imported goods to Nigeria. In January 1994, a significant milestone was reached with the implementation and introduction of the Value Added Tax (VAT) law. This new legislation marked a transformative shift in the taxation system, as it replaced a considerable portion of the existing Sales Tax Act. Out of the 42 sections that constituted the previous law, a substantial 15 sections were the VAT provisions either amended or completely replaced the aforementioned words. As stated in the said Decree: VATable organisations are existing manufacturers, importers, suppliers of goods & services, and distributors (FIRS, 1993). VAT adopted a more comprehensive approach. It aimed to capture value during each period of the supply chain, from production to consumption, by levying a tax on the incremental value added by each participant in the invention process.

The Finance Act of 2020's provisions served as the foundation for the 2021 VAT amendment. Recently, there has been an adjustment in the current VAT rate in Nigeria with an increase from 5% to 7.5% as of February 2020 to fund the budget deficit in Nigeria according to the Finance Act 2020. The reason for this increase was hinged on the fact that Nigeria possesses the lowest rate of Value Added Tax (VAT) among various other Countries in comparison. There are two strategies to increase cash flow from tax revenue sources such as VAT, according to Schoeman et al., (2022). One strategy is to enroll additional taxpayers in order to broaden the economic base and boost coverage. Another alternative is to upsurge the proportion of tax on goods and services.

As reported by Simon and Francis (1998) Human development rests on the assumption that individuals' well-being is influenced by a variety of factors, many of which cannot be fully represented by standard measures of economic income (Griffin, Knight, & UNDP, 1990). Aside from GDP per capita, there has been a focus on using health and education measures to assess welfare. Traditional economic metrics of health and education are primarily focused on the costs paid in obtaining desired outcomes, such as investments in schools and healthcare facilities. Because health and education services are frequently publicly sponsored, with compulsory education in some countries, they play a central role in shaping welfare.

The Nigerian government understands the value of developing human capital, and numerous initiatives have been taken to enhance the country's educational, medical, and skill-training systems. The aim at which this study is to present a comprehensive

investigation of the existing state of human capital development in Nigeria and to highlight important issues and areas for improvement. The lack of funding for education and skill development is one of Nigeria's biggest problems when it comes to developing its human capital. With almost 10 million children not attending school, in terms of out-of-school children, Nigeria ranks among the countries with the highest rates globally. Furthermore, there is a significant deficiency in essential skills within the labor force, principally in science, technology, engineering, and mathematics (STEM) fields. Compounding these challenges is the prevalent issue of substandard education.

The public sector provides many, if not the majority, of health and education services. Governments have an active role in delivering services that are directly related to human welfare. In Nigeria, social development is intertwined with human capital development, which is correlated with socioeconomic indicators including educational levels, healthcare facility accessibility, security, the safety of people and property, employment status, and improvements to the general standard of living.

1.1 Statement of the Research Problem

Every time a new policy is introduced, it will inevitably run into issues with implementation and public approval. Value Added Tax (VAT) has as its general goal the simplification of tax structures, the development of a consistent framework within which taxes can be managed to facilitate the collection, and the use of VAT as a source of income with a lower cost of collection than other kinds of taxation. As a result of the simplicity of payment, it is thought that taxpayers will be less inclined to cheat taxes, changing their unwholesome attitudes toward some taxpayers who are prominent tax evaders—attitudes that many nations view as illegal due to their negative economic effects. The general public, corporate organizations, and end users have a problem comprehending VAT. Since the establishment and full implementation of VAT in Nigeria in 1994, VAT has been seen as one of the most potential income streams for the government. It has undergone constitutional revision and re-enactments on many occasions and in various ways to serve as a stand-in for the nation's deficient revenue profile (Adebisi, Ibrahim, and Abdullahi, 2020) Value Added Tax has been recognized as a vital means of generating proceeds that contributes to the economic development within the Nigerian government system (Federal, State, and Local Govt. level).

Due to the increase in population in Nigeria, there is no proper accountability of revenue generation from VAT to cater to the social benefit and infrastructural project of the country. The accountability of VAT practice in Nigeria is very poor sometimes double taxes occur, corruption is still an issue in Nigeria as some Tax Authorities embezzle VAT Revenue funds or cheat the VAT system, which is initially allocated to the various (Federal and State Agencies level) for the improvement of the

people/society, which (Ajala, Aworemi and Onaolapo, 2013) would have contributed to the furtherance of the level of the value of life in Nigerians. The implementation of additional consumption taxes by various States on people not forgetting the Local Government Authorities' levies and transactions within their territories is a new emergent VAT issue exclusive to Nigeria. The occupancy of hotels and consumption of food and beverages in Lagos, for instance, was passed by the Lagos State Government in 2009. A 5% consumption tax is mandated by the law for all goods or products and services utilized in hotels, eateries, and event venues. A comparable law was also passed in Kano State (Ango & Filani, 2019). A low productivity level in economic activity(which involves the development, production, and consumption of goods or capital) results in low income and low income leads to poor performance in tax returns contributing to the government to carry proposed policies, goal, and objective for the nation.

The majority of Nigerians have the mindset that VAT is a means by which the government is defrauding its people, making it important to conduct research to determine how the VAT has affected Nigeria's economic development. This study is going to measure how the Gross Domestic Product and Human Capital Development have been affected the VAT system between 1994 and 2022 using empirical data.

1.2 Research Questions

To address these preceding research problems, the research question evolves as discussed below:

i. How much does the Value Added Tax affect Nigeria's Human Capital Development?
ii. What impact does the Exchange Rate have on Nigeria's Human Capital Development?
iii. How much does Nigeria's Value Added Tax affect the country's Gross Domestic Product?
iv. How does the Exchange Rate affect Nigeria's Gross Domestic Product?

1.3 Objective of the Study

The initial goal of this research aims to evaluate the influence of Value Added Tax on Economic Development in Nigeria but with a focus on Human Development and Gross Domestic Product. The Explicit aims to investigate the below:

i. The impact of Value Added Tax (VAT) on Nigeria's Human Capital Development.
ii. The impact of the Exchange Rate on Nigeria's Human Capital Development.
iii. The impact of Value Added Tax (VAT) on Nigeria's Gross Domestic Product (GDP).

iv. The impact of Nigeria's Exchange Rate on the country's Gross Domestic Product (GDP).

2. Literature review

2.1 Conceptual Framework

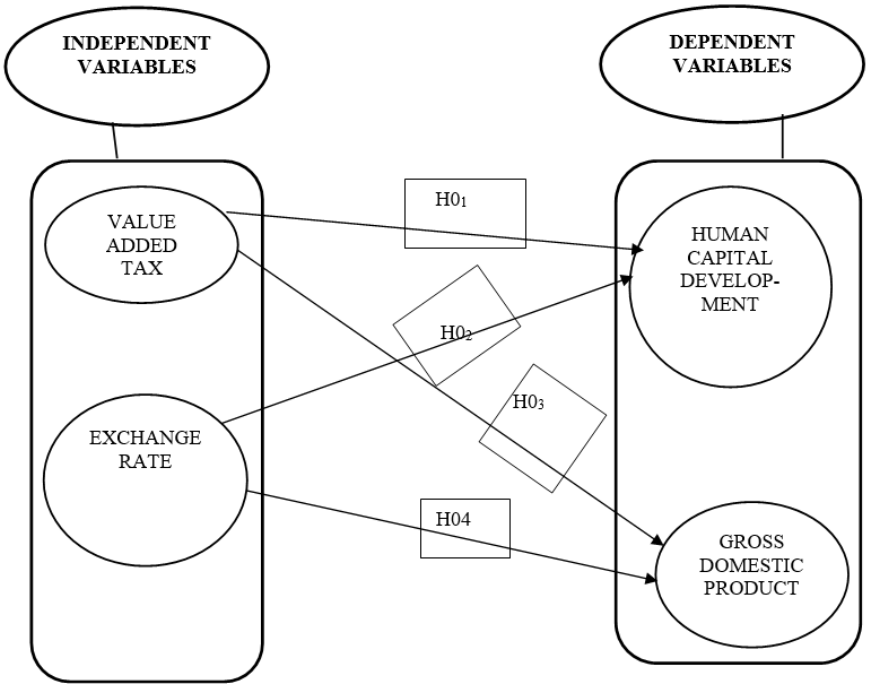

Figure 1 Conceptual Model
Source: Authors' study design.

2.1.1 Taxation

Taxation can be defined as the major fiscal policy of a government used in maintaining Law and Order, while managing the balance between high and low-income earners, in meeting the needs of the public through generated revenue (Ogbonna, 2022). Taxation is also recognized as one of the oldest means of paying for critical services offered to residents of a certain area or locality. After the establishment of the British Colony of Lagos, later in 1914, the Northern and Southern protectorates amalgamated can all be traced to the present, form of the Nigerian Taxation (Ibadin and Oladipupo, 2015).

The major contribution of taxation in a country is to make use of generated revenue to run the administration of the government system, provide basic services or social benefits to the residents in the country, and fund public sector expenditures. So taxation can serve as a means to assist a country to build self-reliance and promote the contribution of basic needs and infrastructural facilities.

2.1.2 Tax System

The pre-independence administration modeled the Nigerian tax system's design on the 1948 British tax regulations to generate income. The primary way that tax systems work is by generating enough capital income to cover the necessary costs of the government's provision of goods and services(Okoye and Ezejiofor, 2014). Taxation is a well-known technique for improving public sector performance and paying down public debts. A nation's internal resources may be mobilized through a tax system, which also helps to foster an atmosphere that is favorable to the encouragement of economic growth (Ayuba, 2014).

The Nigerian tax system constitutes integral parts, which are the Tax policy, Administration, and Legislature. These three elements collaborate harmoniously to foster economic progress and advancement.(Abiola & Asiweh, 2012). Tax policy is recognized as a general statement to guide the following activities such as pursuing the tax law to reduce individual's tax burdens, encouraging savings and investment, encouraging taxpayer's participation, enlightenment in the tax assessment process, and broadening the net income of taxes. Tax law on the other hand was created to form notable tax legislation in Nigeria. i.e. the Capital Gains Tax limit specified in the Companies Income Tax Act, 2004, and the Value Added Tax limit specified in the Value Added Tax Act, 2004 (as amended), and numerous others. In Nigeria, government revenue services are organized into three levels: the Federal Inland Revenue Service (FIRS), the State Inland Revenue Service (SIRS), and the Local Government Internal Revenue Service (LGIRS). Tax administration is the application and interpretation of tax laws. The tax system is put in place to minimize damage or disruption in the economy while generating more revenue.

2.1.3 Value Added Tax

VAT is seen as multiple stages of tax, which are the person liable to tax pays at various stages recognized in the production and distribution. Consumption tax is tax liable to the consumption of a purchased commodity. VAT when introduced was recognized as one of the most innovative tax policies, in Nigeria, it was given great emphasis in the National Tax Policy. The reason why VAT was introduced is to avoid taking loans from international agencies and being overly dependent on foreign aid as a means of development (Adereti, Sanni, & Adesina, 2011). The use of VAT has improved various countries' economic activities. For Example, many European countries that adopted VAT in the 1960s and 1970s were able to reduce other sales taxes. Overall VAT is yet to be adopted by some countries e.g. USA etc.

However, some Countries that adopted VAT include Bahrain, Angola, Bangladesh, Saudi Arabia, Suriname, Oman, and the United Arab Emirates (Mooij & Swistak, 2022). In addition, the implementation of VAT prompted considerable administrative modifications. To facilitate VAT collection, reporting, and enforcement, tax authorities had to build new methods, standards, and systems. This included educating firms and taxpayers about the new rules, developing systems for registration and filing tax reports, and performing compliance audits.

Ever since its introduction, Value Added Tax has recorded great results in terms of yearly returns. In 1994, N8 billion was realized from this tax, N21 billion in 1995, N32billion in 1996, a billion in 1997, N37billion in 1998, N47billion in 1999 while N12.59billion was collected from this tax in the first quarter of 2000 (Sanni, 2012). The indicated amounts of N325 billion, N327 billion, and N424 billion for the first three quarters of 2020. With N172 billion, N100 billion, and N49 billion collected in the first quarter (Q1) of 2021, respectively, they represent 34.5%, 20.1%, and 10% of the total VAT collected from each sector. A total of N111 billion, or an average of 22% of the total VAT received from only these three industries, was accounted for in the second and third quarters (Q2 and Q3) of 2021 (Shuaib, 2021). This analysis demonstrates an average 42.4% increase in VAT revenues between 2020 and 2021, showcasing the implication of Value added tax (VAT) as a major primary source of income for the nation (Vanguard, 2021).

Data computed by Ifeanyi (2022) are summarized: the Value Added Tax (VAT) generated a sum of N600.15 billion during the Second Quarter of 2022 collected in Nigeria. Nigeria made more money from domestic payments than from foreign VAT payments in Q2 2022, according to the statistics, which show that domestic payments totaled N359.12 billion. Manufacturing, information and communication, and mining and quarrying account for 33.08%, 18.98%, and 10.60% of the Q2 VAT, respectively. In comparison to Quarter 1 of the year 2022 with N588.59 billion collected showing an increase of 1.96%. According to the research, on a quarter-to-quarter basis, the largest growth rate was recorded by the fund of electricity, gas, steam, and air conditioning, at 116.47%, followed by the provision of lodging and food services, at 42.44%. The manufacturing sector made a significant contribution, as per the National Bureau of Statistics (NBS) being the most to Nigeria's third quarter 2022 Value Added Tax (VAT) revenue of N625.39 billion. The increase in VAT levies on total government income through the years has shown a need for the government to deviate from dependency on Oil revenue.

2.1.4 Exchange Rate

A very important instrument used to measure the economy's strength and competitiveness among various country economies is the Exchange rate (Asinya and Takon 2014 & Akonji 2013). The currency exchange rate plays a significant role in familiar macroeconomic variables in Nigeria's economy to date. The Nigeria

currency rates policy saw a change from a fixed to a pegged system between 1970 and the mid-1980s. The Ibrahim Babangida government then implemented In 1986, the Structural Adjustment Program (SAP) and currency exchange rates became a floating regime (Sanusi 2004). The responsibility lies with the Central Bank of Nigeria (CBN) to ensure accountability for the management of the Exchange rate of a domestic currency concerning major transaction partners with a principal objective of sustaining macroeconomic stability and competitiveness globally or internationally among countries.

2.1.5 Economic Development

Social and technological progress in a country is recognized as economic development and growth. This development translates to an increase in population with sustained upward growth from low-income to moderate income, and finally high-income economy (Irefin & Unegbu, 2011). There are different types of indicators that when they are improved on can help to improve Economic development such as literacy rate, poverty rate, and life expectancy. Accumulating wealth and diversifying the economy can lead to the improvement of a country's well-being and quality of life which is known as Economic development (Romer, 2016). Economic development is mainly a function of infrastructural improvements vis-a-vis, the social, political, and institutional elements that impact the evolution of such an economy (Myint & Krueger, 2016).

The national development plans of emerging countries are thought to be crucial since this can only be accomplished when the government provides the Essential requirements for survival, encompassing aspects such as safety, societal stability, learning, and effective exchange of information. The measurements of economic development can be divided into two categories: single and composite indicators. Various indices, such as Gross Domestic Product (GDP), Gross National Income (GNI), Per Capita Income (PCI), and Infrastructure spending, serve as indicators of progress. Whereas the Human Development Index and Gender Development Index are composite measures. Economic development also relates to Human development.

2.1.6 Human Capital Development

Human capital was first introduced as a concept in the 1940s by two American economists, Friedman (1962) and Kuznets (1961), to provide a normative assessment of earnings in the professions, but it truly gained root in the 1960s owing to Theodore Schultz. The actual birth occurred two years later, when the Journal of Political Economics released its October 1962 supplement issue on "Investment in Human Beings" (Blaug, 1992).

Building an appropriate balance between the quality human mass population in addition to providing a sustainable and capable environment with will and able persons ready to give greatly to their self-development and nation's growth is called

Human Capital Development. Some factors that contribute to good quality Human Capital Development are; Education, Physical Health, Cultural & Moral Values, family unit, the trust level within a country, public morale, mental well-being, awareness of national identity, unity among citizens, religious beliefs, social abilities, and a range of non-cognitive skills related to adaptability.These all immeasurably influence the human capital development of a nation. Economic benefits of Human Capital Development derive mainly from contributions to the establishment of competitive advantage with national fiscal growth (Drucker, 199, Nehru, Swanson & Dubey, 1995 & Porter, 1998).

A country's average performance in three important categories, including access to The Human Development Index gauges the extent of a person's well-being by assessing their longevity, good health, educational opportunities, and a decent standard of living UNDP (2018). In other to end extreme poverty and establish an inclusive community appropriate development of the Human Capital aid the following factors such as good health care, job opportunities, skills development and training, and quality and good educational structure in promoting a better standard of living.

Economist recognizes Human Capital Development as a key to socioeconomic and political transformation. Economic Growth and Development cannot be applicable in every country lacking sufficient investment in human capital development. A country's most valuable asset is its people. With the people's enforcement of developmental characteristics, the country can be formed in other to achieve stability, peace, progress, sociability, material innovation, unity, and human development.

Human Capital Development should be an expense to health, education, and social services. National human resource development should incorporate a variety of factors outside employment, such as culture, communities, healthcare, and many other factors that are not often thought of as human capital investments. (McLean,2001,2004 & McLean, Bartlett & Cho, 2003). These areas ought to receive financing priority from the government, and it should seek to raise the standard and applicability of educational and training initiatives. Along with this, initiatives should be taken to increase the inclusion of underrepresented groups in the workforce and to address the gender and regional inequities in access to healthcare and education. HCD contains policy suggestions for improving results in domains like healthcare, learning, and access to financial or economic possibilities.

2.1.7 Gross Domestic Product

The value of the products and services generated within an economy during a specific time period is quantified by the gross domestic product (GDP), a crucial economic indicator (Pritzker, Arnold, and Moyer, 2015). When Simon Kuznets was working on creating a system for calculating national income in the United States in

the 1930s, he first developed the idea of GDP Kuznets' work helped to hone the concept of calculating national income, creating a more thorough indicator of economic activity. The International Monetary Fund, the European Commission, the Organization for Economic Cooperation and Development, the United Nations, and the World Bank developed the global benchmark for measuring GDP through the 1993 System of National Accounts, although the concept has been around for a while. The Value Added (or Production) technique and the Income (or By Type) approach are two more ways to determine Gross Domestic Product. It includes a final product of goods and services in other to avoid double counting and misrepresentation of the value. Real Gross Domestic Product and Nominal gross domestic product are the two forms of GDP currently in use. Real GDP is the extent of a country's economic output that excludes the impact of inflation, while nominal GDP being it's a measure that includes price changes in the estimate. GDP is not an accurate representation of a country's total standard of living or economic growth.

Although differences in the evaluation of an individual's well-being in a country often rely on the measure of products and services produced per individual, known as GDP per capita., it does not account for factors that can be considered crucial to overall well-being (Tim Callen). Technology developments, gains in productivity, population expansion, and changes in economic policies are just a few of the variables that have contributed to GDP growth. Over time, GDP growth rates have typically been greater in countries that have effectively enacted policies to foster economic growth, such as spending money on infrastructure, education, and innovation.

When calculating GDP using the expenditure method, the following components are included: consumption, investment, government spending, gross exports, and gross imports. This might be written mathematically as GDP = C + I + G + (X - M). Modifications in the gross domestic product of a country can be caused by a number of things, such as:

2.2 Theoretical Review

2.2.1 Ibu Khaldun's Theory of Taxation

This philosophy demonstrates two categories of impacts, namely Arithmetic and Economic effects pertaining to taxation. The arithmetic effects illustrate the correlation between the rate of Value Added Tax (VAT) and the resulting VAT returns. It means if the VAT rate is lowered it effectively decreases VAT revenue and reversely if the VAT rate is higher the VAT revenue would effectively increase (Ishlahi, 2006). This economic effect explains that the beneficial influence of the Value Added Tax rate on work, productivity, and employment rate can result in the provision of incentives leading to increased activities. Whereas the negative influence of the VAT rate on work, productivity, and employment can result in

penalization of participation in tax activity (Ishlahi, 2006). The theory recognizes that the adverse economic impact of an excessively high VAT rate outweighs the beneficial arithmetic effect, leading to a reduction in VAT revenue.

2.2.2 Human Capital Theory

Allocations toward education and healthcare boost human capital and productivity, which leads to Economic development. This theory recognized in the book "Human Capital," by Gary Becker created the human capital idea (Gary, 1964).

2.3 Empirical Study

Many studies on VAT and Economic Development have been conducted. As a result, this section will look at previous contributions made by scholars to the variables represented in this study. This section provides an overview of relevant empirical studies on VAT, exchange rates, and economic development.

Obaretin and Uwaifo (2020) examined for the years 1994 through 2018, Value Added Tax and Economic Development in Nigeria. Auto-Regressive Distribution regression estimation approach was used in the data analysis and utilized a longitudinal research approach. The United Nations Data Bank and the Federal Inland Revenue Service provided secondary data. The research provides evidence that VAT has a favorable effect on economic development. According to the research, it is recommended that initiatives that will have an impact on the citizens of the country be funded with VAT income. This will help to safeguard that the tax revenue is paid to the proper authority after being scrutinized by a tax audit.

Using the information from 1994 to 2012 covering a period of 18 years, Madugba and Azubike (2016) viewed the connection between VAT and Economic Development: in Nigeria. Secondary data was provided by the Central Bank of Nigeria (CBN), which was subsequently analyzed using multiple regression analysis. The research recommends that the federal government should undertake efforts to educate the general public regarding the advantages of VAT payment with the necessary materials or machinery used by doing so it would foster economic development, as the outcome model demonstrates a negative association to investigate the connection between VAT and GDP. It was also advised to consider the recommendation that the VAT rate be raised.

Michael and Ben's (2007) research on VAT: Its Causes and Consequences. This research aimed to determine whether VAT was, as its supporters assert, a particularly effective form of taxation. The result reviewed shows that its impact on tax revenue is ambiguous and has reduced marginal cost for the public fund when VAT is introduced.

Adegbie, Jayeoba, and Kwabai (2016) conducted an analysis of the effects of Value Added Tax (VAT) on the economic growth and development of Nigeria: Implications for Reform. The following data were adopted for the study which is:

Ex-post-factor, descriptive and analytical. The VAT and GDP study spanned the years 1994 to 2015. VAT and GDP have a positive connection, according to the model. According to the study, Integrated Tax Offices should improve their efficiency and effectiveness, the VAT rate should be raised to 10%, the responsibility of addressing tax evasion lies with the Federal Inland Revenue Service, government officials ought to utilize the revenue from VAT wisely, and exempted goods and services charged on vatable goods should be clearly defined.

Okonkwo (2019) conducted research on the Ex post facto research approach was employed to analyze the productivity of Value Added Tax (VAT) revenue in Nigeria from 1994 to 2016, using secondary data sources such as the World Development Indicators (WDI) of the World Bank, the Central Bank of Nigeria (CBN), and the Federal Inland Revenue Services (FIRS) and regression techniques. The study recommended that the VAT collecting equipment be organized, that the VAT Administration not encourage dishonest practices, and that there be no over-reliance on oil revenue.

Omodero and Eriebie (2022) investigated the research employed a Granger causality approach to examine the relationship between Value Added Taxation and productivity in the industrial sector. The study utilized Pairwise Granger Causality Tests and was carried out between the years 2010 and 2021. According to the study's findings, VAT undoubtedly influences a country's industry performance. The recommendation for this study shows that the government needs to improve supply chain technology, enhance infrastructural facilities and supplies, and be fundamental for the government to minimize and control unofficial industries.

John and Suleiman (2014) looked into how the value added tax affected the advancement of the Nigerian economy. The investigation made use of the Ordinary Least Squares method. The investigation was complicated by the fact that VAT administration is rather simple, unselective, and challenging to evade. The study's findings show that VAT significantly contributes to the government's overall tax revenue and, as a result, to Nigeria's economic growth.

Olaoye (2013) used VAT and inflation to research the influence of VAT on the generation of income in Nigeria. The research utilized descriptive methodologies, utilizing both primary and secondary sources. The research looked at data from 1990 to 2003. According to the findings, VAT has no impact on inflation's rate of rise or fall. The study suggested that the VAT rate be increased and that the implementation of the VAT system be of sufficient quality and adequately communicated.

Omodero (2020) conducted research on the Effects of Indirect Taxation on Nigerian consumption patterns. Various techniques were employed, such as trend analysis, paired Granger causality tests, unconstrained co-integration rank test, least squares approach, and statistics studied from 2005 to 2019. The verdicts indicate a progressive but negligible relationship between VAT and CED, demonstrating how

the imposition of VAT on products and services discourages the consumption of particular foodstuffs and the growth of informal enterprises. According to the report, prices for food and services should be reduced, harmful CED should be outlawed, and suitable consequences should be instituted.

Denis (2010), this is an examining the correlation between Nigeria's GDP and Value Added Tax (VAT) by conducting an empirical analysis. The study's information were based on the years 1994 to 2008 and the information was extracted from the statistical bulletin of the Central Bank of Nigeria. The data was examined using Pearson's product-moment correlation to conduct the analysis. The status quo should be maintained because it might serve the taxation's convenience and economic guiding principles.

Angus and David (2011) used to explore the impact of Value added tax (VAT) on the economic and social progress of developing nations, they employed regression analysis, discriminant analysis, and ANOVA testing. The study's time frame was from 2001 to 2009, and the examination utilized both primary and secondary data. The investigation proposes the following suggestions: further investigation should be conducted to survey the influence of VAT on different dimensions of economic and human progress within administrative regions; citizens must perceive the effects of VAT; and VAT money must be distributed fairly.

Egiyi and Godfrey (2017) look at the Nigerian economy's response to VAT considered using the Ordinary Least Squares (OLS) regression method. The research outcomes suggest that although VAT positively influences the development index, its effect on economic growth in Nigeria is limited. According to the research, VAT can be a useful strategy for creating an employable economy.

Gbalam and Dumani (2020) a research investigation was undertaken to scrutinize the relationship between the overall price level and the foreign exchange rate in Nigeria during the time frame starting from 1990 to 2018. The examination employed an ex-post facto research methodology and incorporated error correction techniques. As indicated by this research, foreign exchange rates have a marginally favorable influence on the rate of inflation in Nigeria. This research suggests maintaining the naira's stability and strength in the domestic and foreign markets to support the stability strategy.

Ogwuru and Agbaraevoh 2017, Economic Growth and Development in Nigeria were influenced by Value Added Tax, Company Income Tax, and Customs and Excise Duties. The study utilized regression techniques and ordinary least squares (OLS) analysis, focusing on the data from 2000 to 2015. The researchers obtained secondary data from various sources, including the statistical bulletins and annual reports of the Central Bank of Nigeria, as well as the World Bank, the United Nations Development Programme (UNDP), and the Human Development Index Report.

According to the study, a country's revenues from taxes should be aggressively pursued, and tax revenue proceeds should be used wisely.

Tochukwu, Jerry, and Andy (2015) researched Value Added Tax and Consumption Expenditure Behaviour of Nigerian Households: An Empirical Investigation. The study sought to ascertain the effect of the value added tax on household consumption expenditure as well as the consumer price index. The study, which spanned 1994 to 2014, drew on data from the National Bureau of Statistics' National Abstract of Statistics and the Central Bank of Nigeria's Statistical Bulletin. Data on household consumption expenditures for durable and non-durable goods, as well as the consumer price index with lagged value versions, were analyzed using multiple regression models. The study's findings revealed that keeping the existing 5% VAT rate was critical since any rise would surely affect households and lead to unfavorable levels in the consumer price index.

A research investigation aimed at assessing the impact of taxation on the economic growth of Nigeria was done by Udochukwu, Uniamikogbo, and Okojere-Izehi (2022). The research used an ex-post-facto research design on businesses that submitted FIRS tax payments in the Federal Capital Territory of Abuja from 1995 to 2021. The Federation encompassed a total of 36 states. The Federal Inland Revenue Services (FIRS) Annual Report and the Central Bank of Nigeria (CBN) Annual Statistical Bulletin were the two secondary sources of data that were used to collect data, respectively. The study demonstrates the revenue generated from withholding taxes and value added taxes obtained through digital economy operations have a major impact on Nigeria's economic growth. The study advised that the Nigerian government focus more on tax leakages in the digital economy while enacting effective tax reforms in Nigeria. When developing future tax policies, tax authorities are advised to eliminate different complex components of taxation.

2.4 Gaps in Literature

Over the years, numerous studies have been conducted within the context of taxation and its contribution or impact on the Nigerian economy. These studies have been able to provide various contributions and findings that have in turn benefited the Nigerian economy at large. However, VAT and Exchange rate influence on human capital development in Economic activities has not been discussed. In light of this, this research study's goal is to look into any possible links between the VAT and Nigeria's economic development, with a particular emphasis on human capital development.

2.5 Research Hypotheses

The hypothesis that follows would be appropriate for this study and would be subjected to a test for acceptance or rejection.

H_{01}: Value Added Tax has no substantial impact on Human Capital Development in Nigeria.
H_{02}: Exchange rate has no tangible impact on Human Capital Development in Nigeria.
H_{03}: Value Added Tax does not exert any influence on the Gross Domestic Product in Nigeria.
H_{04}: Exchange rate has no significant effect on the Gross Domestic Product in Nigeria.

3. Methodology

The research methodology, data sources, study population, data collection tool, data presentation method and analysis, model specification, statistical tools used for data display, and variable measurement are all disclosed in this section. The research design is a methodical strategy employed in research studies to collect, analyze, interpret, and present data (Creswell & Clark, 2007). A research design gives a research work an acceptable and formal structure (Sileyew, 2019). The basic plan for the objective of a research design is to link pertinent and empirical research to the conceptual research challenge. To put it another way, the study design determines how to collect the essential data, outlines the methods for obtaining and evaluating this data, and specifies how each piece of information will be utilized to address the research inquiry (Grey, 2014). The research employs an ex post facto design, which implies that the data are already accessible and cannot be changed. In essence, post hoc analysis is the application of statistical tests to a dataset once the study has been completed. With no researcher's manipulation, the study under this research design starts after the facts have arisen.

3.1 Sources of Data

Nigeria is the geographical location for this study and the data include VAT, Exchange rate, HCD, and GDP. So all data collection spans from 1994 – 2022. This research is built on secondary sources of data. Data that was obtained by a source other than the user is referred to as secondary data (Sileyew, 2019). Secondary sources have been gathered and collected from journals, books, different articles, and many more resources. Primary sources are not relevant to the research study. Data collection for the period spanning from 1994 to 2022 will be carried out utilizing information from multiple sources, including the Statistical Bulletin of the Central Bank of Nigeria (CBN), the Federal Inland Revenue Service (FIRS), and the World Bank Database specific to Nigeria.

3.2 Description and Measurement of Variables

The variable is values that can change or fluctuate over time or in different circumstances. This study will be about Independent, Control, and Dependent variables.

Independent variable:

Value added tax serves as the independent variable for this research and is defined below:

Value Added Tax: VAT is computed on the price contributed to a product or service at every step of its production and delivery or distribution process.

Control variable:

The exchange rate serves as the control variable for this study is defined below:

Exchange rate: An exchange rate is the worth of one country's currency with respect to the currency of another one. The number of units of the second currency that can be exchanged for one unit of the first currency is shown when exchange rates are quoted in pairs, such as USD/EUR or USD/JPY.

Dependent variables:

In this research, the dependent variable is Economic Development. This variable is however broken into two sub-variables. They are defined as follows:

GDP stands for "Gross Domestic Product". It defines the standard of living of people in an economy. GDP measures the flow cost of the final product or flow of goods and services in an economy.

HCD stands for Human Capital Development. It is the deliberate effort to obtain and expand the number of individuals equipped with the necessary knowledge, training, and expertise to contribute to a nation's economic advancement (Okojie, 2005).

3.3 Method of Data Presentation and Analysis

A group of observations taken progressively across time are referred to as a "time series". Time series have a stochastic aspect because the observations they include are subject to change and unpredictability. This research would be undertaken time series with two models VECM and VAR to address the analysis. In addition to being able to predict several variables, VAR and VECM models can also show how those variables are related to one another.

Model 1 employs the vector autoregressive (VAR) model, a multivariate time series approach that provides a link between current observations of a variable and its prior observations, as well as historical data of other variables within the system. The unit root test is below:

$$\text{loghcd}_t = a_{10} + \sum_{j=1}^{p} a_{11}^{j} \text{logvat}_{t-j} + \sum_{j=1}^{p} a_{12}^{j} \text{logexg}_{t-j} + \varepsilon_t^{\text{loghcd}}$$

Model 2 will make use of VECM, short for Vector Error Correction Modeling, which is a sophisticated statistical technique used to analyze multivariate time series data. In this model, there is an indication of a co-integration relationship amongst the variables, because it can calculate both the long-term effects of time series data and the short-term impact of variables on one another, VECM is particularly helpful. The unit root test is below:

$$\text{loggdp}_t = a_{10} + \sum_{j=1}^{p} a_{11}^{j} \text{logvat}_{t-j} + \sum_{j=1}^{p} a_{12}^{j} \text{logexg}_{t-j} + \varepsilon_t^{\text{loggdp}}$$

The above is the following way this study would be presented and analyzed with the following models.

3.4 Model Specification

This study's dependent variables are GDP and HCD.
Linear specification:
HCD = f (VAT, EXG) ---------- (1)
GDP = f (VAT, EXG) ---------- (2)
The statistical models will be derived based on the linear specification provided above.
$HCD_t = \beta_1 VAT_t + \beta_2 EXG_t$ ---------- (3)
$GDPt = \beta_1 VAT_t + \beta_2 EXG_t$ ---------- (4)
The linear function was converted to logarithmic form to allow for a more comprehensible interpretation of the data.
$\log HCD_t = \alpha + \beta_1 \log VAT_t + \beta_2 \log EXG_t + \mu_t$ ----------(5)
$\log GDP_t = \alpha + \beta_1 \log VAT_t + \beta_2 \log EXG_t + \mu_t$ ----------(6)
Y= f (bx1, bx2, bx3…xn)
Therefore:
Y= f(x)
Y= f(x1, x2, x3)
x_1= VAT, x_2= EXG
Y= Dependent variables.

Where:
EXG: Exchange Rate;
HCD: Human Capital Development;

GDP: Gross Domestic Product;
VAT: Value Added Tax;
α is a constant;
β_1, β_2, are the coefficients of the parameter estimate;
μ is the error term.

Table 1 Variables Measurement

Variable Name	Variable Meaning	Variable Measurement
INDEPENDENT VARIABLE		
VAT	Value Added Tax	Currently, the Federal Inland Revenue Service (FIRS) receives a Value Added Tax (VAT) at a rate of 7.5% per annum.
EXG	Exchange Rate	There are multiple techniques available to compute an exchange rate. The prevailing approach frequently employed is the bilateral exchange rate, which represents the worth of one currency relative to another. Since the United States dollar (USD) is the most extensively traded currency globally, bilateral exchange rates are frequently expressed in relation to it.
DEPENDENT VARIABLE		
HCD	Human Capital Development	It is a metric used to measure set criteria and manage the productivity and level of income in a particular area.
GDP	Gross Domestic Product	It is recognized as a key economic indicator employed to assess the performance of a country's economy, it holds significant importance.

Source: Own processing.

4. Data analysis and presentation

The segment displayed the estimation of secondary data used for the research. It also revealed the estimation interpretation while achieving the listed study objectives. The techniques used to determine the subject matter were the Johansen Cointegration, Vector Error Correction Model, plus Vector Autoregressive analysis.

4.1 Descriptive Analysis of Data

It revealed the characteristics of the study variables that included Economic Development (GDP) and Human Capital Development (HCD) (dependent variables), Value Added Tax (VAT) (independent variable), and Exchange Rate (EXG) (control variable). The mean and median estimated the central tendency measurements. GDP had the highest figures of 10.82193 and 10.93387 respectively. EXG had the maximum value of 13.24439 while HCD had a minimum value of 3.975936 respectively. Standard deviation revealed the deviation from the mean and EXG had the maximum figure of 2.736048. Skewness reveals the deviation of the data from its mean by indicating its movement. A normal distribution skewness is usually between 0 and 1. Therefore, all the variables (GDP, HCD, VAT, and EXG) were normally skewed as their values of -0.623309, -0.618258, -0.893227, and 0.233309 were between 0 and 1. However, while GDP, HCD, and VAT were negatively skewed since their values carry negative signs, only EXG was positively skewed.

Kurtosis revealed the peakness of the spreads of the data series. When the value is 3 and above, it showed that the variable is evenly distributed. However, when it is less than 3, the dataset is flat to the normal distribution. Kurtosis values for all the variables revealed that the data were normally distributed as the value of their kurtosis were approximately 3 and above with figures of 2.458793, 2.989934, 2.944023, and 3.202724 respectively. Jarque-Bera examined whether the series were distributed normally and its probability is used to examine this. The value of probability values must be significant at a 5 percent significant level to show that all variables were distributed normally. From Table 2, all the variables were distributed normally as the probability figures were significant at a 5 percent significant level with figures of 0.026835, 0.010868, 0.031270, and 0.005913 respectively.

Table 2 Descriptive Analysis

	GDP	HCD	VAT	EXG
Mean	10.82	6.141	7.138	9.219
Median	10.93	6.486	7.254	7.485
Maximum	11.18	7.466	8.071	13.24
Minimum	10.13	3.975	5.413	6.176
Std. Dev.	2.345	1.112	1.734	2.736
Skewness	-0.623	-0.618	-0.893	0.233
Kurtosis	2.458	2.989	2.944	3.202
Jarque-Bera	2.236	2.336	2.928	3.161
Probability	0.026	0.011	0.031	0.005
Sum	327.9	246.7	114.8	197.6
Sum Sq. Dev.	7.773	19.64	20.72	203.7
Observations	33	33	33	33

Source: Authors' estimation.

4.2 Unit Root Test

It was utilized to check for data stationarity and examine their integration order using the Augmented Dickey Fuller (ADF) test. The ADF figures must be higher than the standard critical value at a 5 percent significant level. Findings revealed that all the variables were stationary at first difference as the ADF figures were higher than the 5% critical figures. It implied that all variables had a long-run relationship which was then tested by the Johansen cointegration test.

Table 3 ADF unit root test results

Variable	ADF @ 1st Difference	5% Critical value	Integration Order	Comment
GDP	-5.482	-3.658	I(1)	Stationary
HCD	-5.440	-3.658	I(1)	Stationary
VAT	-4.586	-3.658	I(1)	Stationary
EXG	-5.053	-3.674	I(1)	Stationary

Source: Authors' computation.

4.3 Johansen Cointegration

The model was employed to verify the existence of a long-run relationship. Table 4 displays trace statistics, indicating the presence of four (4) cointegrating equations with probability values below 0.05: 0.0000, 0.0346, 0.0289, and 0.0097. Additionally, table 5 demonstrates the maximum Eigen figures, confirming the existence of four (4) cointegrating equations with values of 0.0000, 0.0363, 0.0185, and 0.0097. These results suggest that both trace statistics and maximum Eigen values support the presence of a long-run relationship, corroborating the findings of the unit root test. Hence, the vector error correction model (VECM) was utilized to check the corresponding adjustment speed.

Table 4 Unrestricted Co-integration Rank Test (Trace) (LGDP)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.913	80.09	47.86	0.000
At most 1 *	0.506	31.16	29.79	0.035
At most 2 *	0.404	17.05	15.49	0.029
At most 3 *	0.284	6.697	3.841	0.009
Trace test indicates 4 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.913	48.93	27.58	0.000
At most 1 *	0.506	14.11	21.13	0.036
At most 2 *	0.404	10.36	14.26	0.018
At most 3 *	0.284	6.697	3.841	0.009
Max-eigenvalue test indicates 4 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Researchers' estimation.

Also, from Table 5, there were two (2) cointegrating equations significant at a 5% significant level with values of 0.0074 and 0.0105 respectively. The maximum Eigen figure in Table 6 revealed two (2) cointegrating equations with values of 0.0307 and 0.0217. Hence, the findings implied that by utilizing both the trace statistics and maximum Eigen figures, there was a long-run relationship in the model. Hence, the vector autoregression (VAR) was done was utilized to check the corresponding speed of adjustment.

Table 5 Unrestricted Co-integration Rank Test (Trace) (LHCD)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.661	55.85	43.85	0.007
At most 1 *	0.425	26.65	21.79	0.011
At most 2	0.307	11.69	14.49	0.172
At most 3	0.064	1.779	2.841	0.182
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' compilation.

Table 6 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.661	29.21	27.58	0.031
At most 1 *	0.425	14.96	21.13	0.022
At most 2	0.307	9.909	14.26	0.218
At most 3	0.064	1.779	3.841	0.182
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' compilation.

4.5 Optimal Lag Length Test

It determined the maximal lag length as this would aid the minimization of autocorrelation in the residuals plus lower the potential equation mis-specifications. In Table 7, the Akaike Information Criteria (AIC) selected two lags.

Table 7 Lag length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-23.88	NA	0.369	1.843	1.891	1.857
1	20.57	82.33*	0.015	-1.375*	-1.279*	-1.347
2	22.22	2.924	0.014*	-1.424	-1.279	-1.381*

Source: Authors' computation.

4.6 Vector Error Correction Model (VECM) (GDP)

It aided the calculation of the speed whereby short-run disequilibrium meets long-run equilibrium. It was utilized only when variables were cointegrated or had long-run relationships. Under Table 8, the coefficient values of cointeq1 would first be examined to confirm the long-run relationship among the variables. Then, the coefficient values of all the independent variables would be examined to know if each independent variable would be fast in getting back to a long-run relationship in impacting LGDP in the next period. Further, under each coefficient, the first values were coefficient; the round bracket figures were standard error, while the square bracket figures were t-statistics. Examining the Cointeq1 figure under LOGGDP, its 5% significant figure of -0.070638 revealed a long-run relationship between VAT and EXG with GDP. Next was to check how fast each variable could meet LOGGDP in the next period.

The coefficient figure of the log of value added tax (LVAT) was -0.066151 to reveal that it had a short-run time-period in achieving a long-run impact on LGDP now plus next time-period with a short-run adjustment speed of 7% (-0.066151). It proved that it is a critical variable that impacts GDP presently and in the next period. Assessing the t-statistic figures of -0.01242 in the square bracket, it was significant at a 5% significant level (less than 0.05) while having a negative sign to conclude that VAT was negatively significant in impacting GDP presently and in the next period with short-run adjustment speed of 7%. The coefficient of the exchange rate (EXG) was -0.090619 revealing that it also had a short-run period in impacting LGDP presently and in the next period with the short-run adjustment speed being 9% (-0.090619). It is a critical variable that would impact GDP presently and the next period. Assessing t-statistic figures of -0.04054 in the square bracket, it was significant at a 5% significant level (less than 0.05) while having a negative sign to conclude that EXG also negatively and significantly impacts GDP presently and in the next period with a short-run adjustment speed of 9%.

Table 8 VECM Result

Error Correction:	D(LOGGDP)	D(LOGVAT)	D(LOGEXG)
CointEq1	-0.071	-5.222	0.037
	(0.037)	(2.032)	(0.380)
	[-1.912]	[-2.570]	[0.098]
D(LOGGDP(-1))	0.561	-0.066	-0.091
	(0.170)	(9.357)	(1.752)
	[3.294]	[-0.012]	[-0.040]
D(LOGVAT(-1))	-0.000	-0.556	0.002
	(0.002)	(0.141)	(0.026)
	[-0.069]	[-3.933]	[0.075]
D(LOGEXG(-1))	-0.005	-0.964	-0.0589
	(0.024)	(1.363)	(0.255)
	[-0.203]	[-0.707]	[-0.231]
C	0.008	0.126	0.0786
	(0.004)	(0.249)	(0.046)
	[1.943]	[0.508]	[1.686]
R-squared	0.621	0.603	0.634
Adj. R-squared	0.516	0.531	0.542
S.E. equation	0.012	0.694	0.130
F-statistic	3.997	8.356	9.192
Akaike AIC	-5.740	2.274	-1.076

Source: Authors' calculation.

4.7 Post-Estimation Tests

4.7.1 VEC Residual Heteroskedasticity Test

Heteroskedasticity can be defined as a dataset with unequal uniformity across a set of other predictor variables, thus making error terms not have constant variation. The probability figure of the Chi-Square (Chi-sq) must not be significant at a 10% significant level to prove zero heteroskedasticity in the equation. From Table 9, the probability figure of 0.4724 was not significant at a 10% level of significance to prove zero heteroskedasticity in the equation.

Table 9 Heteroskedasticity Test

Chi-sq	Df	Prob.
100.3128	100	0.4724

Source: Researchers' calculation.

4.7.2 VEC Residual Serial Correlation LM Test

It was utilized to check for autocorrelation or serial correlation in the model. Autocorrelation means that each of the independent variables is not correlated but stands on its own. The probability figures must not be significant at a 10% significant level to prove zero autocorrelation in the equation. From Table 10, the probability figure of 0.6396 was not significant at a 10% significant level to show zero autocorrelation in the model.

Table 10 Residual Serial Correlation LM Test

Lags	LM-Stat	Prob
2	13.44971	0.6396
Probs from chi-square with 16 df.		

Source: Authors' computation.

4.8 Vector Autoregression (VAR) (HCD)

VAR model as propounded by Sims (1980) has become a well-recognized secondary data econometric tool in empirical macroeconomics and finance studies that is used to explain the dynamism of structural changes in an economy. VAR is a least square method for a minimal model of time series data. Although the popular interest in VAR is traceable to its theoretic nature and the difficulty faced by economic pundits to agree on an economy's true structure, it further presents a better hallmark of analysis and illustrates its dynamic features in an empirical study. Also, the impulse response technique was employed to estimate shock impact on a variable and with further variables (Kapetanios, Tasiou, Price, & Ventouri, 2018). It investigated the influences and shocks of a sudden adaptation in an economic variable on some interdependent variables through a set of VAR models. From Table 11 and

examining the LOGHCD column and also using the middle figures in the round bracket which represents the probability values, VAT and EXG had values of (0.02740) and (0.01726). This means that they are both significant in the long run in impacting HCD. Also, based on their t-statistic values of -0.10272 and -0.18534 which have negative signs, VAT and EXG were negatively significant in impacting HCD.

Table 11 VAR Result

	LOGHCD	LOGVAT	LOGEXG
LOGHCD(-1)	0.952	-2.732	0.105
	(0.115)	(0.677)	(0.115)
	[8.225]	[-0.033]	[-0.019]
LOGVAT(-1)	-0.002	0.144	0.001
	(0.027)	(0.160)	(0.027)
	[-0.102]	[0.895]	[0.041]
LOGEXG(-1)	-0.035	3.491	0.740
	(0.017)	(1.095)	(0.186)
	[-0.185]	[3.185]	[3.973]
C	0.251	2.673	0.329
	(0.196)	(1.149)	(0.195)
	[1.275]	[2.325]	[1.685]
R-squared	0.968	0.623	0.906
Adj. R-squared	0.965	0.576	0.895
F-statistic	246.4	13.22	77.92
Log likelihood	21.81	-27.66	21.95
Akaike AIC	-1.272	2.262	-1.282

Source: Authors' computation.

4.9 Analysis of Short-Run Shocks (Impulse Response)

Here, the researcher traced the response of HCD to its own one standard deviation (SD) innovations and its response to one standard deviation (SD) innovations from exchange rate (EXR) and value-added tax (VAT). The first horizon indicated that 274 percent (27.40034) of the response of LHCD was traceable to its own standard deviation (SD) innovation while no response was accounted for other variables.

In the second horizon, LHCD's own SD innovation accounted for 197 percent (1.967799) in FPI response to the external shock. In the third horizon, it was seen that LHCD's response to its own SD innovation reduced drastically and was at 42.5 percent (0.425349).

LHCD's own SD innovation maintained a steady decline in its positive shock up to the 10th horizon with values of 0.186981, 0.104927, 0.066867, 0.045668, 0.031759,

0.021442, and 0.013202 respectively. It could be noted that both LVAT and EXG maintained a consistent negative shock on LHCD throughout the time horizon in the short-run duration. This confirmed the VAR result of a negative relationship between LHCD and EXG plus LVAT. Hence, the study accepted the alternate hypothesis that exchange rate and value-added tax exerted a significant influence on short-run Nigerian HCD.

Table 12 Impulse Response Function

Response of HCD:			
Period	LHCD	LVAT	EXG
1	27.40	0.000	0.000
2	1.968	-1.117	-0.668
3	0.425	-1.146	-0.557
4	0.187	-1.132	-0.467
5	0.105	-1.116	-0.404
6	0.067	-1.102	-0.356
7	0.045	-1.087	-0.315
8	0.032	-1.072	-0.280
9	0.021	-1.057	-0.248
10	0.013	-1.041	-0.221

Source: Authors' computation.

4.10 VAR Serial Correlation Tests

The existence of autocorrelation in the model is detected using the Vector auto-regressive correlation test. Table 13 concluded using the probability figure of 0.1000. The null hypothesis stated the model does not exhibit autocorrelation. The probability figure of 0.1000 was insignificant at a 5% significant level and hence, the absence of autocorrelation inside the model.

Table 13 VAR Residual Serial Correlation LM Test Result

Lags	LM-Stat	Prob.
1	3043.935	0.1000

Source: Researchers' computation.

4.11 Hypothesis Testing

H_{01}: Value Added Tax (VAT) does not have a substantial effect on Human Capital Development (HCD) in Nigeria. From Table 11, the null hypothesis was rejected because there was a significant effect impact on VAT and HCD in Nigeria. H_{02}: Exchange rate has no tangible impact on Human Capital Development in Nigeria. From Table 11, the null hypothesis was rejected because there was a significant impact on the Exchange rate and HCD in Nigeria. H_{03}: Value Added Tax (VAT)

does not exert any influence on the Gross Domestic Product (GDP) in Nigeria. From Table 8, the null hypothesis was rejected because there was a significant impact on VAT and GDP in Nigeria. H_{04}: Exchange rate has no significant effect on the Gross Domestic Product in Nigeria. From Table 8, the null hypothesis was rejected because there was a significant impact on the Exchange rate and GDP in Nigeria.

4.9 Discussion of Findings

Descriptive statistics were first conducted in other to determine the association among the variables. The application of the unit root test indicated that all variables were stationary at first difference. As a result, Johansen cointegration estimation was performed and the probability figures were significant to the presence of a long-run relationship among the variables in both models. The vector error correction model was conducted and it confirmed the long-run negative and significant relationship between GDP and all independent variables using the cointeq1 value of -0.070638. The VECM analysis proved the long-run relationship and showed that all independent variables had short-run adjustment speed to move into the next period. Furthermore, both VAT and EXG were negative and significant in having an impact on GDP in the long run. VAT was seen to be significant because when adequate funds are made available to the government through tax, public expenditures can easily be funded. Capital projects also would be invested into by the government and all these are needed for the growth and expansion of the economy. Also, there would be adequate liquidity for the government to fund the budget deficit and reduce borrowing with its attendant debt servicing challenges. The negative impact between VAT and GDP showed the negative influence of corruption, stealing, and diverting VAT funds into personal pockets. Hence, the funds cannot be utilized for its purpose as it has been diverted elsewhere and this is a challenging situation for any government to tackle. The exchange rate was also significant due to the fact that it is one of the key macroeconomic variables that impact economic growth. It determines the net worth of the naira while also influencing international trade. However, its negative relationship with GDP revealed that the Nigerian exchange rate has been fluctuating and on a downward spiral against the United States dollar and the United Kingdom's pound sterling. The Nigerian regulatory authority must ensure the stability of the Naira while also ensuring that it gains value against foreign currencies. Furthermore, the VAR analysis proved that exchange rate and VAT negatively and significantly impact HCD long run. The negative impact was also confirmed by EXR and VAT's Impulse Response Function which maintained a consistent negative shock on HCD from periods one to ten-time horizon in the short-run duration. VAT was significant as the funds were used by the government to establish vocational schools for the populace and establish cheap government schools for the populace to afford. This would then boost school enrolment and

educational training of Nigerians. However, the negative relationship showed that corruption has made the government diversify the funds for other personal purposes. The exchange rate also significantly impacts human capital development (HCD) in the long run. This was because it ensures that labor factors are exchanged with their foreign counterparts for training purposes. The negative relationship between both variables showed that as the exchange rate increases against the dollar, foreign training and empowerment of factors remain decrease, hence, hampering the growth and performance of labor factors overtime.

5. Conclusions and recommendations

5.1 Theoretical Findings

The research findings affirmed the validity of the benefit received theory. The benefit received theory, in essence, demonstrated that citizens who benefit more from social amenities should pay more taxes while the government also must provide infrastructures for the benefit of its tax-paying citizens. The study found that VAT was significant in influencing the growth of the economy and the development of human capital. Hence, the government must utilize the VAT funds for developmental and infrastructural growth purposes that would boost economic growth. Also, the VAT funds must be channeled to establishing vocational and educational institutions at cheaper or zero cost for the populace. This would boost human capital development. Additionally, the study's results provided further validation for the human capital theory, which posits that investments in education and health boost human capital and productivity. Hence, VAT funds could be utilized to finance training centers and public educational institutions to boost human capital development. A stable exchange rate would ensure training facilitators are brought to the nation to give thorough training to human capital for development purposes. This aligned with the conclusions drawn from this research.

5.2 Empirical Findings

Findings from the study supported the work of Obaretin and Uwaifo (2020) who found that VAT had a favorable influence on growth. They further opined that initiatives that would have an impact on the citizens of the country be funded with VAT income. This supported the study's findings. The findings are also in sync with the findings of the study of Omodero and Eriebie (2022) who found that VAT granger causes economic and industrial growth. They further believed that the government needed to improve supply chain technology, infrastructural facilities, and human capital development to improve VAT inflows. This was in line with this study's findings. Moreover, Gbalam and Dumani (2020) found exchange rate boosts inflation stability. Nigeria believed in maintaining the growth of the economy, naira's stability and strength in the domestic and foreign markets were needed to

support the stability strategy of inflation and boost growth. This was in line with this study's findings.

5.3 Conclusions

The research established a connection between Value Added Tax (VAT) and the Exchange rate, demonstrating their impact on Economic Development and Human capital development in Nigeria. The verdicts revealed that both VAT and Exchange Rate significantly impact both Economic Development and Human Capital Development, though negatively. This research concluded that the significance of VAT and Exchange Rate in enhancing the Nigerian Economy cannot be overstated, as indicated by these findings. VAT in a way increases government revenue, which in turn is expended on sectoral growth, also capital and recurrent expenditures. Companies benefit from the expenditures and use them to boost output, which ultimately boosts economic growth. Human capital development is also influenced as companies engage labor factors with training and seminars.

5.4 Recommendations

The following are this study's recommendations:

i. Training: The government and regulatory agencies ought to arrange seminars and workshops targeted at company owners and board members. These events should aim to educate participants about the significance and advantages of VAT payment, emphasizing its influence on the Nigerian economy and the development of human capital.
ii. Tax regulatory authorities should enhance their oversight of VAT funds to enhance outcomes in relation to the overall funding and ensure that the funds are utilized for developmental objectives.
iii. The monetary authority should work towards stabilizing the exchange rate to enhance economic development and human capital development. Policies, for example, export promotion could be used to stabilize the naira.
iv. The Nigerian government should ensure that more training centers and educational institutions are built and empowered with adequate facilitators so as to boost labor factor development.
v. Government financial security: It is advisable for organizations such as the Economic and Financial Crimes Commission (EFCC), as part of their duty, to ensure that VAT funds meant for capital expenditure are used for their purpose and not diverted to personal pockets.

5.5 Contributions to Knowledge

The subsequent contributions are derived from the discoveries and outcomes of this study:

i. The study contributed to VAT literature by proving its importance to the growth and advancement of the Nigerian economy.
ii. The research contributed to existing human capital development literature by introducing exchange rate as well as VAT as vital variables that influence its growth.
iii. The study contributed to economic growth literature by stating that both VAT and exchange rates could be utilized together to boost the GDP growth rate.

5.6 Limitations of the study and suggestions for further studies

This research had certain limitations concerning the impact of value added tax and economic development on human capital development in Nigeria. The researcher faced time constraints and other related limitations, resulting in the analysis being limited to a 28-year period from 1994 to 2022. Additionally, the unavailability of data posed a minor challenge to this research work. Thus, upcoming researchers have the opportunity to explore the topic of VAT and exchange rates on sectoral growth like the agricultural sector. Additional scholars can investigate the same topic using different econometric methodologies, such as regression.

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Author Contributions

KFO and COO conceived the study and were responsible for the design and development of the data analysis. KFO and COO were responsible for data collection and analysis and also for data interpretation. KFO was responsible for the literature review section. COO supervised the entire project and the published article.

Disclosure Statement

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