

Does Value Added Tax Burden Reduce Human Capital Development? Evidence from Nigeria?

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Abstract: *This study examined the effect of Value Added Tax (VAT) burden on human capital development in Nigeria, with a specific focus on life expectancy. The study adopted an ex-post facto research design. Secondary data spanning from 1990 to 2024 were obtained from the Central Bank of Nigeria Statistical Bulletin and other relevant official sources. Autoregressive Distributed Lag Model (ARDL) was employed to assess the effect of VAT on life expectancy ratio in Nigeria. The analysis revealed that VAT has a significant negative effect on life expectancy, with a p-value of 0.0533 and a t-statistics of -2.011462. This suggests that the rising burden of consumption taxes like VAT may lower the average lifespan of citizens, likely due to reduced disposable income, increased cost of essential goods and services, and limited access to healthcare and nutrition. The study recommends that the government review the structure and rate of VAT, while strengthening social safety nets and public health investments, to mitigate the regressive effects of VAT on vulnerable populations. These measures are critical to improving the standard of living and advancing human capital development in Nigeria.*

Keywords: value added tax, life expectancy, human capital development, tax burden, economic wellbeing, Nigeria, OLS regression, ex-post facto design.

INTRODUCTION

Background of the Study

Human capital development involves improving health, education, and skills. It is essential for Nigeria's economic growth and social progress, especially with a population of over 227 million people and a median age of around 18 years (World Bank, 2020). One key indicator of human capital is life expectancy, which reflects how healthy and productive a population can be. In Nigeria, life expectancy has increased from 47 years in 1994 to 56.05 years in 2024. However, this is still far below

the global average of 73 years (MacroTrends, 2024; WHO, 2024). Several problems contribute to this low figure. Nigeria has weak healthcare infrastructure, with only 0.9 physicians per 1,000 people in 2020. Malaria affects 27% of the population every year, and 40% of Nigerians were living below the poverty line in 2022 (National Bureau of Statistics, 2023; WHO, 2020). These challenges limit people's access to quality healthcare and reduce life expectancy. To address this, it is necessary to examine how government policies, including taxation, affect human capital development. According to the World Bank (2020), strategic investment in health and education is crucial for improving Nigeria's human capital. In this context, it is important to understand how tax policies, especially Value Added Tax (VAT), influence life expectancy. VAT was introduced in Nigeria in 1994 through Decree 102. It is a consumption tax that replaced the former sales tax. Initially set at 5%, the rate increased to 7.5% in 2020 to boost government revenue. VAT is now a major source of income, with Q4 2023 collections reaching N948.07 billion (National Bureau of Statistics, 2024).

Although VAT helps fund services like healthcare and education, it is regressive. This means it affects poor households more than rich ones because they spend a larger part of their income on taxed goods (Adebayo & Yusuf, 2018). In Nigeria, where 40% of the population lives in poverty, VAT can reduce disposable income and limit access to basic needs. This can hurt health outcomes and slow down human capital development (National Bureau of Statistics, 2023). Some experts argue that while VAT helps raise revenue for development, it also creates financial pressure on poor households. In Nigeria, out-of-pocket spending accounts for 70% of total health costs, and there are few social safety nets to protect vulnerable people (WHO, 2020). This raises concern about whether the revenue from VAT is enough to cover the damage it may cause to people's health and wellbeing.

The link between VAT and life expectancy is based on economic and health theories. Consumption taxes raise the cost of goods and reduce disposable income. This limits access to healthcare, food, and other essentials, especially for low-income families (Kim & Kim, 2019). In Nigeria, healthcare services are limited and malnutrition affects 35% of children under five years old, making the financial burden of VAT even more harmful (UNICEF, 2023). International studies, such as the IMF (2020), show that VAT in developing countries often increases inflation and reduces purchasing power, mainly affecting the poor. A Nigerian study also found that VAT affects consumer behavior, reducing purchases of essential items and possibly harming health outcomes (The Consequences of Indirect Taxation on Consumption in Nigeria, 2022). Despite this evidence, there is little research directly linking VAT to life expectancy in Nigeria.

Furthermore, Nigeria spends only 4.6% of its GDP on health, much lower than the global average of 10% (World Bank, 2021). Without enough public investment in healthcare, the burden of VAT may worsen health inequalities. This study is important because it is one of the first to look at the effect of VAT burden on life expectancy in Nigeria. It covers the period from 1990 to 2024, using secondary data and OLS regression. The results suggest that VAT's regressive nature may reduce health outcomes. The study calls for a re-evaluation of VAT rates and policies, as well as stronger health funding and social protection. In a country with high poverty, low life expectancy, and weak public health spending, this research provides useful insight for designing fair and effective tax systems that support human development.

Statement of the Problem

Despite the increasing recognition of human capital as a key driver of economic development, Nigeria continues to struggle with poor health outcomes, especially in life expectancy. Although life expectancy has improved slightly over the past three decades, rising from 47 years in 1994 to 56.05 years in 2024, the country still lags behind the global average of 73 years. This persistent gap highlights serious weaknesses in Nigeria's healthcare delivery system, including limited access, underfunding, high disease burden, and widespread poverty. Given these challenges, any public policy that affects household income and access to healthcare must be critically examined, particularly tax policies like the Value Added Tax (VAT), which affect consumption and spending behavior.

VAT was introduced in Nigeria in 1994 and has since become a major source of government revenue. Its rate was increased from 5% to 7.5% in 2020, with the aim of improving public service funding, including health and education. However, VAT is a regressive tax, meaning it places a heavier burden on the poor, who spend a larger portion of their income on taxed goods. In a country where 40% of the population lives below the poverty line and out-of-pocket health spending makes up 70% of total health expenditure (NBS, 2023; WHO, 2020), this tax policy may further limit access to healthcare, nutrition, and other essentials that influence life expectancy. Although VAT contributes to government revenue, there is limited empirical evidence on whether this revenue translates into better health outcomes or whether the financial pressure it places on poor households worsens life expectancy. The few studies that exist focus mainly on consumption patterns or poverty, without directly linking VAT to health outcomes. This lack of targeted research creates a gap in policy knowledge, especially as Nigeria continues to rely heavily on VAT to fund public services. There is an urgent need to examine whether the burden of VAT undermines the country's efforts to improve human capital, particularly through life expectancy. This study aims to fill that gap by analyzing the relationship between VAT burden and life expectancy in Nigeria from 1990 to 2024.

REVIEW OF RELATED LITERATURE

Value Added Tax

Value Added Tax (VAT) is a consumption-based tax applied at each stage of production and distribution, with the final burden falling on consumers. Introduced in Nigeria in 1994 under Decree No. 102, VAT replaced the old sales tax and is managed by the Federal Inland Revenue Service (FIRS). Initially fixed at 5%, the rate increased to 7.5% in 2020 through the Finance Act 2019, aimed at boosting non-oil revenue to fund services like health and education (Federal Ministry of Finance, 2020). VAT generated ₦948.07 billion in Q4 2023 alone (NBS, 2024), confirming its key role in Nigeria's revenue base. However, it is considered regressive since it takes a larger share of income from the poor, who spend more on VAT-taxed goods (Adebayo & Yusuf, 2018). In a country where 40% live in poverty and out-of-pocket health spending is about 70% of total health expenditure (WHO, 2020), VAT can limit access to essential goods and services.

Studies show that VAT can negatively affect household welfare and consumption patterns, especially where basic goods are not exempted (Ogundele & Olayemi, 2019; Olayemi & Awoniyi, 2022). Ogunmuyiwa and Ekone (2010) found that VAT reduces real income, while IMF (2020) cautions that poorly designed VAT systems can worsen inequality and inflation. In Nigeria, weak health systems and limited social safety nets further amplify these effects (Anyanwu, 2017). Research also indicates that VAT may reduce spending on food and healthcare, potentially worsening health outcomes and

lowering life expectancy (The Consequences of Indirect Taxation on Consumption in Nigeria, 2022). While VAT boosts public revenue, its impact on poor households raises concerns about equity and human capital development, especially if the revenue is not effectively used for social services.

Tax Burden

Tax burden refers to the share of income or economic output that individuals or entities pay in taxes. It reflects how heavily a tax system weighs on different income groups or sectors of the economy. In most developing countries, including Nigeria, the tax burden is unevenly distributed. Direct taxes like personal income tax tend to fall more on formal sector workers, while indirect taxes like VAT affect everyone, especially low-income earners. According to the OECD (2020), tax burden should be assessed not only by how much revenue is raised but also by how fairly it is distributed. In Nigeria, the heavy reliance on indirect taxes, such as VAT and import duties, shifts the burden to poor households, who spend a larger share of their income on taxed goods and services (Adebayo & Yusuf, 2018). This makes the overall tax system regressive, meaning it takes more from the poor than the rich, relative to their income.

Several studies highlight how tax policies in Nigeria contribute to inequality. Ogundele and Olayemi (2019) note that VAT reduces the real income of poor households, limiting their access to healthcare, food, and other essentials. The World Bank (2022) also reports that the poorest 40% of Nigerians spend a greater percentage of their income on consumption taxes compared to the top 10%. In contexts where public services are underfunded and social safety nets are weak, this burden becomes more harmful. Ali and Ahmad (2016) argue that for tax systems to be equitable, policymakers must reduce the pressure on low-income groups through tax relief, exemptions, or targeted spending. Without such measures, the tax burden can worsen poverty and limit progress in health, education, and other areas critical to human capital development.

Human Capital Development

Human capital development refers to the process of improving the knowledge, skills, health, and productivity of a population. It plays a major role in driving economic growth, reducing poverty, and improving overall well-being. In Nigeria, low investment in education and healthcare has slowed down human capital formation. According to the World Bank (2020), Nigeria ranks among the lowest globally on the Human Capital Index, with poor learning outcomes and high child and maternal mortality. Many citizens lack access to quality health and education services, limiting their ability to contribute productively to the economy (UNDP, 2023). This poor investment has long-term effects on the country's development goals.

Researchers argue that strong human capital improves productivity, raises income levels, and creates better employment outcomes. Olayemi and Abiodun (2021) state that government spending on education and health has a positive but weak impact due to misallocation and corruption. Similarly, Ajakaiye and Ncube (2020) note that without reforms in public service delivery, increased spending alone will not yield strong results. In Nigeria, limited access to primary healthcare and poor nutrition further weaken outcomes. Human capital development should not just be about enrollment or hospital visits; it must include quality, accessibility, and sustained policy support. Without serious attention to these areas, Nigeria will continue to face setbacks in building a skilled and healthy workforce

Life Expectancy

Life expectancy is the average number of years a newborn is expected to live if current mortality patterns remain constant. It reflects the overall health and wellbeing of a population. In Nigeria, life expectancy remains low compared to many other countries. According to the World Bank (2023), Nigeria's life expectancy was about 53 years in 2022, which is below the African average of 62 years and the global average of 73 years. This is mainly caused by poor access to healthcare, malnutrition, high infant and maternal mortality, and the burden of infectious diseases like malaria, tuberculosis, and HIV/AIDS (WHO, 2023; UNICEF, 2022). Unsafe water, poor sanitation, and weak public health systems also contribute to early deaths, especially in rural and low-income areas (Adebayo & Olayemi, 2021).

Furthermore, Olaniyan and Lawanson (2010) found that public health expenditure has a positive but weak effect on longevity in Nigeria, largely due to poor allocation and corruption. Uche and Udu (2022) argued that high out-of-pocket payments reduce access to essential health services, worsening health outcomes. Nigeria currently spends less than 5 percent of its GDP on healthcare, far below the 15 percent benchmark set by the Abuja Declaration (WHO, 2023). The low investment results in dilapidated health facilities, shortage of skilled personnel, and medical tourism among the wealthy. Until the government increases funding and ensures efficient use of resources, improvements in life expectancy will remain limited.

Theoretical Framework

This study uses relevant economic theories to explain how the burden of Value Added Tax (VAT) may influence human capital development in Nigeria. The theories provide a basis for understanding the link between tax policy and life expectancy outcomes. One relevant theory for this study is the Ability-to-Pay Theory of Taxation. This theory argues that taxes should be based on a person's or group's capacity to bear the tax burden. According to Musgrave and Musgrave (1989), individuals or households with higher incomes should pay more taxes, while lower-income groups should pay less or be exempted. The theory promotes equity and social justice in taxation. In the Nigerian context, where VAT is a flat consumption tax applied equally to all, the theory raises concern about fairness. Poor households tend to spend a larger share of their income on consumption, meaning they bear a heavier VAT burden compared to wealthier households (Adereti et al., 2011). This tax structure may reduce their disposable income and ability to invest in health, food, and other factors that support human capital development.

Another theory applicable to this study is the Human Capital Theory, introduced by Schultz (1961) and expanded by Becker (1993). This theory sees health and education as investments that improve productivity and income over time. It argues that government policies and spending that promote education and health will raise the stock of human capital, leading to long-term economic growth. In Nigeria, the rising VAT burden may limit household investment in health and reduce the government's capacity to improve public health systems, especially when VAT revenues are not efficiently used to fund healthcare (Olayemi & Abiodun, 2021). Thus, the Human Capital Theory helps explain how taxes and public spending patterns affect the health and productivity of citizens.

This study is anchored on the Ability-to-Pay Theory of Taxation, because it directly addresses the fairness of tax systems and their impact on vulnerable populations. While the Human Capital Theory explains the value of investing in health, the Ability-to-Pay Theory better explains how VAT, as a

consumption tax, can disproportionately affect low-income households. This unequal burden can lower their access to health-improving goods and services, which in turn weakens life expectancy outcomes. Anchoring the study on this theory allows for a more focused evaluation of how Nigeria's VAT system may be deepening health inequality and undermining human capital development.

Empirical Review

Several studies have examined the link between tax revenue and human capital development in Nigeria and other developing economies. For instance, Okeke et al. (2018) investigated the effect of tax revenue on human capital development using time series data and found that petroleum profit tax and company income tax positively influenced life expectancy in Nigeria. However, the study did not explicitly consider VAT, which is a major component of indirect taxation and affects household consumption directly. Similarly, Ogbodo and Nweze (2021) explored the relationship between tax revenue and economic development and found significant positive effects of various taxes, but their study also omitted VAT and did not use life expectancy as a direct proxy for human capital development. This suggests a gap in the literature concerning the indirect effects of consumption taxes on long-term well-being indicators like life expectancy.

Ibadiin and Oluwatiyi (2021) contributed to the literature by analyzing the impact of different taxes (such as company income tax, education tax, and petroleum profit tax) on both GDP and the Human Development Index (HDI). Their findings revealed that while tax revenue has a strong influence on economic growth, its effect on HDI was weaker and statistically insignificant in the short run. Although their study offered a broader view of tax and development, it excluded VAT and did not focus on life expectancy specifically. In contrast, Singoro (2021), using Kenyan data, reported a statistically significant relationship between tax revenue and HDI, highlighting the importance of tax policy in shaping long-term development outcomes. These findings reinforce the need to understand how specific taxes (especially consumption-based ones like VAT) impact human capital in settings with high poverty and weak health systems.

Several studies have focused more directly on VAT. Edori et al. (2022) examined the effects of VAT on life expectancy in Nigeria and found a positive but statistically insignificant relationship. This suggests that VAT alone may not improve human capital outcomes unless revenues are efficiently managed and channeled into social sectors like health and education. Ogonda et al. (2023) offered a subnational perspective by analyzing the effect of VAT on HDI in Rivers State. Their study found that VAT significantly influenced HDI and recommended better allocation mechanisms for VAT revenue to promote inclusive development. While both studies acknowledged VAT's potential to support human capital formation, they also emphasized the importance of government spending efficiency, which directly affects whether the benefits of VAT are felt by ordinary citizens.

Recent works by Adegbite et al. (2023), Aiyedogbon et al. (2024), and Kuyebi and Omodero (2025) used updated data and more sophisticated econometric models to evaluate how tax revenues affect development indicators. Aiyedogbon et al. (2024), for example, identified VAT and petroleum profit tax as significant predictors of both short- and long-term development outcomes. However, Kuyebi and Omodero (2025) reported a negative effect of VAT on both economic and human capital development in Nigeria. They argued that excessive reliance on VAT can reduce household disposable income, limit access to food and healthcare, and consequently reduce life expectancy. These more recent studies point to a nuanced and sometimes contradictory relationship between VAT and

development, highlighting the importance of context, tax design, and expenditure patterns. Overall, while VAT can contribute to human capital development, its actual impact depends heavily on how revenues are managed and whether they are invested in improving people's quality of life.

Gap in Knowledge

Most of the reviewed studies focused broadly on tax revenue and economic development or human capital development using indicators like HDI, per capita income, and school enrolment. For example, Okeke et al. (2018), Ogbodo and Nweze (2021), and Ibadiin and Oluwatiyi (2021) examined the effects of overall tax revenue but did not isolate the burden of VAT specifically on life expectancy. Some studies, such as Edori et al. (2022), directly linked VAT to life expectancy but found its influence to be statistically insignificant, while others like Aiyedogbon et al. (2024) and Kuyebi and Omodero (2025) assessed VAT in relation to broader human capital indicators or used multiple taxes together, making it hard to identify VAT's unique effect. Many of the studies used HDI as a proxy for human capital development, rather than directly analyzing life expectancy as a separate dependent variable. Moreover, most studies did not assess the regressive burden of VAT or how it affects low-income households' access to health services that influence life expectancy. Therefore, a clear gap exists in understanding whether the burden of VAT, rather than just its revenue contributions, reduces life expectancy in Nigeria. This study addresses that specific gap by focusing on VAT burden as an independent variable and life expectancy as the key outcome of human capital development.

METHODOLOGY

This study adopts an *ex-post facto* research design, meaning it analyzes past events. It concentrates on Nigeria's value-added tax and human capital development (life expectancy) and uses secondary panel data covering the period from 1990 to 2024, sourced from the CBN Statistical Bulletin and World Development Indicators. To evaluate the research hypotheses, the study applied multiple regression analysis on the time series data obtained from CBN and World Bank. The study employed the ARDL model for this purpose.

Model Specification

In line with Inyama and Ezeugwu (2016), the model was specified as follows:

$$\text{LEX} = \beta_0 + \beta_1 \text{VAT} + \beta_2 \text{CIT} + \beta_3 \text{PPT} + \beta_4 \text{INF} + \beta_5 \text{PHR} + \varepsilon_{it} \quad - \quad (\text{Equation 1})$$

Where:

LEX	=	Life Expectancy
VAT	=	Value Added Tax
CIT	=	Company Income Tax
PPT	=	Petroleum Profit Tax
INF	=	Inflation Rate
PHR	=	Poverty Headcount Ratio

β_0 is the constant term or intercept for firm i in the year t . β_1, β_2 , and β_5 , are linear regression coefficients to be estimated. ε_{it} is the disturbance or error term

DATA ANALYSIS AND DISCUSSION**Table 4.1. Descriptive Statistic**

	LER	VAT	PPT	CIT	INFRATE	PHR
Mean	49.74787	418.9301	857.8046	345.7483	18.65382	45.29429
Median	50.38100	144.3700	224.4000	89.10000	13.00697	44.10000
Std. Dev.	3.052781	774.3249	1086.255	456.9869	15.82337	8.128497
Skewness	-0.085329	3.073575	1.149241	1.148636	2.091884	0.017858
Kurtosis	1.595685	11.84597	2.973356	2.793297	6.590241	1.890104
Jarque-Bera	2.918451	169.2231	7.705437	7.758597	44.32422	1.798337
Probability	0.232416	0.000000	0.021222	0.020665	0.000000	0.406908
Sum	1741.175	14662.56	30023.16	12101.19	652.8836	1585.300
Sum Sq. Dev.	316.8620	20385685	40118320	7100460.	8512.883	2246.464
Observations	35	35	35	35	35	35

Source: E-views 10 software, 2025

Table 4.1 shows the descriptive statistics for LER (Life Expectancy), VAT (Value Added Tax), CIT (Company Income Tax), PPT (Petroleum Profit Tax) and PHR (Poverty Headcount Ratio), based on 35 observations. The mean life expectancy (LER) in Nigeria over the 35-year period is 49.75 years, with a standard deviation of 3.05, indicating low variability. The distribution is nearly symmetric (skewness = -0.085) and platykurtic (kurtosis = 1.60), suggesting a relatively normal spread but with lighter tails. Value Added Tax (VAT) has a high mean of ₦418.93 billion and an exceptionally large standard deviation of ₦774.32 billion, which, along with its high skewness (3.07) and kurtosis (11.85), shows that VAT revenue data is highly skewed to the right and contains outliers. The Jarque-Bera test confirms non-normality for VAT ($p = 0.000$).

Petroleum Profit Tax (PPT) and Company Income Tax (CIT) have large means (₦857.80 billion and ₦345.75 billion respectively) and high standard deviations, reflecting wide fluctuations in revenue. Both are positively skewed and leptokurtic, indicating extreme values or outliers in the dataset. Inflation (INFRATE) shows high variation (std. dev. = 15.82) with a positive skew (2.09) and significant departure from normality ($p = 0.000$), showing unstable inflation conditions over time. Poverty Headcount Ratio (PHR) has a mean of 45.29 percent and is relatively stable, with a moderate spread (std. dev. = 8.13) and near-symmetric distribution. Except for LER and PHR, most variables do not follow a normal distribution, as indicated by their Jarque-Bera probabilities being below 0.05.

Table 4.2: Multiple Regression Result

Variable	Coefficient	Standard Error	t-Stat	p-Value
LER(-1)	0.961667	0.202441	4.750349	0.0005
LER(-2)	0.002886	0.263843	0.010940	0.9915
LER(-3)	0.440681	0.147339	2.990931	0.0113
VAT	0.000173	0.000161	1.074566	0.3037
VAT(-1)	0.000249	0.000166	1.499433	0.1596
VAT(-2)	-0.002564	0.001017	-2.521442	0.0268
PPT	1.02E-05	6.79E-05	0.150859	0.8826
PPT(-1)	0.000142	8.94E-05	1.585036	0.1389

PPT(-2)	-1.03E-05	8.18E-05	-0.125602	0.9021
PPT(-3)	0.000144	8.45E-05	1.709292	0.1131
CIT	-0.000788	0.000325	-2.420020	0.0323
INFRATE	0.004956	0.002051	2.416006	0.0326
INFRATE(-1)	-0.003720	0.002069	-1.798289	0.0973
INFRATE(-2)	-0.000515	0.002035	-0.253304	0.8043
INFRATE(-3)	-0.007477	0.001876	-3.986621	0.0018
PHR	0.008421	0.009896	0.850958	0.4115
PHR(-1)	0.020040	0.009706	2.064663	0.0613
PHR(-2)	0.033284	0.010747	3.096946	0.0092
C	-23.18677	4.348636	-5.331963	0.0002
R ² = 0.99, Adjusted R ² = 0.99, F-Stat = 2512.933, Prob(F-stat) = 0.0000 DW = 2.06				

Source: E-views 10 software, 2025

The ARDL regression results in Table 4.2 show the effect of value added tax, and other control variables affect human capital development (proxied by life expectancy) in Nigeria. The lagged values of life expectancy (LER) are highly significant. LER(-1) has a large positive coefficient (0.9617, $p < 0.01$), meaning life expectancy in the current year is strongly influenced by the previous year's level. LER(-3) is also positive and significant (0.4407, $p < 0.05$), suggesting that conditions from three years ago still have a lasting impact. This reflects a strong inertia or continuity in life expectancy trends. The Value Added Tax (VAT) variable in its current and first lag form is not statistically significant. However, VAT(-2) is negative and significant ($p = 0.0268$), meaning that an increase in VAT burden two years earlier may reduce life expectancy. This could be due to the effect of higher VAT reducing households' disposable income, which may limit access to food, healthcare, and education.

Company Income Tax (CIT) has a negative and significant effect ($p = 0.0323$), suggesting that higher corporate taxes may reduce private investment in healthcare or employment, which affects human development. Petroleum Profit Tax (PPT) is not significant, possibly due to poor management of oil revenues. Inflation (INFRATE) shows a mixed effect: current inflation is positive ($p = 0.0326$), but by the third lag (INFRATE(-3)) it becomes negative and highly significant ($p = 0.0018$), indicating long-term inflation harms health. Poverty Headcount Ratio (PHR) shows a lagged positive effect at the second lag ($p = 0.0092$), linking earlier poverty reduction to improved life expectancy. The model is strong with $R^2 = 0.99$ and a Durbin-Watson value of 2.06, showing good fit and no serious autocorrelation.

The diagnostic tests show that the regression model is statistically sound. The Breusch-Godfrey Serial Correlation LM Test indicates no evidence of autocorrelation, as both the F-statistic ($p = 0.3471$) and the ObsR-squared statistic ($p = 0.0573$) are not significant at the 5 percent level. This means the residuals are not serially correlated, which supports the reliability of the model's estimates. Similarly, the Breusch-Pagan-Godfrey test for heteroskedasticity shows that the error terms have constant variance. The F-statistic ($p = 0.8390$), ObsR-squared ($p = 0.6772$), and Scaled explained SS ($p = 0.9999$) are all statistically insignificant, confirming that heteroskedasticity is not a problem in the model. This suggests that the ARDL estimates are both unbiased and efficient.

Test of Hypotheses

Statement of Decision Rule: Reject the null hypotheses (H_0) if the P-value is < 0.05 and the t-statistic is > 2 , otherwise accept the null hypotheses.

Presentation of Test Results: Table 4.2.2 ARDL Regression analysis result was used to test the stated hypotheses.

Hypothesis One

H_0 Value Added Tax does not have a statistically significant effect on life expectancy in Nigeria

H_1 Value Added Tax has a statistically significant effect on life expectancy in Nigeria

Decision: The coefficient for VAT(-2) is -0.002564 with a t-statistic of -2.521442 and a p-value of 0.0268. Since the p-value is less than the 0.05 significance level, we reject the null hypothesis (H_0), which states that Value Added Tax does not have a statistically significant effect on life expectancy in Nigeria. This result indicates that Value Added Tax from two years prior has a significant negative effect on life expectancy. The negative coefficient suggests that an increase in VAT over time may reduce life expectancy, likely due to its burden on household spending for healthcare, nutrition, and basic services.

DISCUSSION OF RESULTS

Based on the regression results, VAT does not have an immediate significant effect on life expectancy in Nigeria. The coefficients for current VAT and VAT lagged by one year are statistically insignificant, with p-values of 0.3037 and 0.1596 respectively. However, the coefficient for VAT lagged by two years is negative and significant ($p = 0.0268$), indicating a delayed but harmful effect. This suggests that a rise in VAT reduces life expectancy after about two years, possibly because higher VAT makes essential goods and healthcare more expensive, which limits access for low-income populations. These findings contrast with the positive and significant long-run effects found by Aiyedogbon et al. (2024), who argued that VAT, along with other taxes, contributes to human capital development in both the short and long run. Similarly, Adegbite et al. (2023) found VAT to have a positive and significant impact on human capital in North Central Nigeria.

In contrast, the present study aligns more closely with Kuyebi and Omodero (2025), who also found that VAT significantly affects human capital development but in a negative way. Edori et al. (2022) also reported an insignificant and positive relationship between VAT and life expectancy, which partly supports our finding that current VAT has little direct effect, but over time it turns negative. Okeke et al. (2018) found a positive and significant effect of tax revenue (including VAT) on life expectancy, which differs from our result. However, that study may not have captured lag effects specifically. The evidence from Ibadiin and Oluwatiyi (2021) supports a general link between tax revenue and human development, but they observed that the impact of tax revenue is stronger on economic growth than on HDI. This adds depth to our result, showing that while taxes like VAT may support fiscal growth, their social costs—such as reduced access to health and basic needs—can undermine human development outcomes in the long run.

CONCLUSION AND RECOMMENDATIONS

This study evaluates the effect of Value Added Tax (VAT) on human capital development in Nigeria, using life expectancy ratio as a proxy. The ARDL regression results show that VAT, though not immediately impactful, exerts a statistically significant negative effect on life expectancy after a two-year lag. This delayed effect suggests that VAT, like a slow leak in a water pipe, gradually reduces the household's financial capacity to afford essential services such as healthcare, nutritious food, and education, all of which are fundamental to a longer and healthier life. The findings also reveal that Company Income Tax (CIT) has a negative and significant impact, likely due to its influence on employment levels and private sector investment in social services. On the other hand, Petroleum Profit Tax (PPT) is statistically insignificant, implying that oil tax revenue may not trickle down effectively into investments that enhance human health. The results also show that inflation and poverty levels play important roles, with prolonged inflation being detrimental to health outcomes, while past poverty reduction efforts show a delayed but positive impact on life expectancy.

Based on the findings, the government should revisit its VAT structure with a view to reducing the burden on low-income households. Much like a bridge should not weigh more than the vehicles it carries, a tax system should not weigh down the most vulnerable. VAT exemptions or relief on essential items, such as food, medicine, and basic education materials, would help cushion the long-term harm to life expectancy. Also, while raising revenue is important, tax policies should not choke the productive sectors of the economy. Policymakers should consider reforms in company taxation that encourage private investment in health, housing, and human development sectors. Since inflation and poverty have proven impacts on life expectancy, macroeconomic stability and inclusive growth policies should be prioritized. Investment in poverty alleviation programs, health systems, and social protection measures will ensure that the human capital base of Nigeria not only survives but thrives. In essence, taxes should be tools to build, not barriers to, the nation's health and development.

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