TSU-International Journal of Accounting and Finance (TSUIJAF)
e-ISSN: 28811-2709, p-ISSN: 28811-2695.Volume 3, Issue 3 (Oct, 2024).

EFFECT OF VALUE ADDED TAX ON CONSUMPTION IN NIGERIA

(EMPHASIS ON INDIVIDUAL AND HOUSEHOLD SPENDINGS)

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Abstract

This paper empirically estimates the impact of Value Added Tax (VAT) on consumer consumption in Nigeria using annual data from 1990 to 2023. In addition to consumption, the variables captured in the model include VAT, interest rate, inflation rate, Consumer Price Index (CPI), Real Gross Domestic Product (RGDP), Private Consumption Expenditure (PCE), Per Capital Income (PCI) and Infrastructure (INFER). We obtained the secondary statistics from the World Bank, the Central Bank of Nigeria, the Federal Inland Revenue Service, National Bureau of Statistics, and the Organization for Economic Co-operation and Development (OECD). This paper further employed Auto Regressive Distributed Lag (ARDL) with the assistance of E-View software approach in estimating the relationship among the variables. The paper reveals that VAT has a positive and statistically significant impact on consumer consumption expenditure in Nigeria. Therefore, this study recommends the needs for government to be reviewing the VAT rate from time to time in order to serve as a technique for controlling and checkmating the level of consumption in Nigeria.

Introduction

The execution of significant value added tax in general has serious impacts on the consumptions, example of individuals and families, particularly in arising economies. Most households do an unexpected switch in their consumption patterns with the cognizance of what they consume try not to out-live their income.

Furthermore, economies that are helpless in this present circumstance become consequently weakened in couple of months or even a long time prior to acclimating to the monetary truth of the time. While business and families are giving their all to adjust to the changes, the government is similarly increasing revenue for a more powerful execution of social commitments. Carroll (2010) noticed that VAT as significant as it is, the requirement ought to be joined by extra drives to repay customers all together not to unfavorably influence their purchasing behaviour, especially in situations where income tax collection is additionally an issue for most salary workers. Lower expenses via legitimate by governments as advancing the buying of explicit products, like things for expressions and culture and independent of their monetary circumstance or occupy position while spending charges relate to all purchasing choices (Bunn et al., 2021). Guarded players fight that tying rates to profit is an unreasonable standard, and that the value added tax is a duty that is lopsided in that, the people who have lower salaries pay more since they use a greater amount of their income in the family than the wealthy individuals (Terfa et al., 2017). Clients pay burdens

are independent of their financial circumstance or occupation position while spending rates relate to all purchasing choices (Bunn et al., 2021).

Whenever unmistakable kinds of products face taxes at different expenses, the genuine moderate nature or harshness of a framework that charges VAT can be compromised.

Taxes on goods and services are significant generator of pay for authorities around the world. In the event that you purchase a thing from a general store or an alternate merchant, you will more than likely need to pay tax on it. Taxes on consumption, in the same way as other tax collection methodologies, are not normalized all over the planet. Even though they account for at least a third of earnings in a majority of the thirty-seven nations that comprise the Organization for Economic Co-operation and Development (OECD), this is not universal (Bunn et al., 2021). . Nevertheless, the VAT continues to be the primary consumption taxation strategy in the OECD nations (Acosta-Ormaechea and Morozumi, 2021).

VAT is previously known as the GST, which also signifies Goods and Services Tax, in a number of nations. Australia, Canada, and New Zealand are among the countries included (OECD, 2020). VAT has consistently been a significant tax in the framework of taxation, and over the years there has been considerable research curiosity in the broader economic and monetary implications of VAT (Qin et al., 2023). In Nigeria, most people believe that the government fails in its social obligations; as a result, companies frequently have to pay VAT for absolutely nothing (Abumere, 2023). Nonetheless, Otemu (2020) affirmed that while VAT helps government income for social obligations, simultaneously, individual consumer and family experience significant downfall. Bank-Ola (2021) accepts that VAT is unfavorable to business movement yet Omodero and Eriabie (2022) demonstrated that VAT is a fast growth driver to business environment in Nigeria.

Past studies have shown that VAT depresses or discourages wellbeing of consumers in Nigeria. Also, Kadenge (2021) confirmed that, there is decrease in savings due to VAT imposition. In taking into account different economies, Hammour and Mckeown (2022) upheld the discoveries of Omodero and Eriabie (2022) by affirming that VAT assists with further developing business activities. Anyway, Schechtl (2022) confirmed that VAT impoverished large number of individual, households and families with the poor experience a lot of hardship due to introduction of VAT on goods and services. Permadi and Wijaya (2022) likewise saw that VAT expanded government income, in the contrary; it makes foreign purchases to decline.

The significant of this study is to re-design the pattern and behaviour of the individual and household towards consumption of goods and services in order to align with the emerging economy reality of today for the purpose of survival.

This study's components are as follows: (1) Introduction (2) Literature review (3) Methodology (4) Data analysis, results and interpretation (5) Conclusion and Recommendation.

Literature review

Conceptual review

Tax collection is one of the primary wellsprings of revenues for the governments' normal activities and furthermore contributes a significant part for distributing wealth in a given society. To execute

these plans, a powerful tax scheme must be in place in order to meet up with the following: Cost-viability, prosperity, sufficient income, earning equilibrium, brevity, and inexpensive managerial abilities and regulations expenses are all desirable (Jekins et al., 2000).

Giving attention to the OECD, tax collection from income is more unfavourable to the world economy than use tax assessment; thusly, a development centered monetary redesign should move the heap from income tax to consumption tax. Charge updates tend to incline toward taxes on consumer products, especially VAT, which is considered to have more prominent income potential, become less distortive, economically productive, and have a broader base (Muriithi and Moyi, 2003; Bird, 2005; Keen & Lockwood, 2010).

VAT income increments could be accomplished by developing the extent of tax collection with a lesser sum waiver and perhaps accomplishing a normalized rate game plan with more modest declines in rates could demonstrate more effective development than profit increments accomplished by raising the typical rate, which is the rate used for the greater part of the utilization, considering that the later kind of lift is more likely to forego efficiency headways. As indicated by Matthews (2010), VAT rate increases, the powerful working of the VAT system diminishes. Notwithstanding, as Kaisa et al. (2019) fight, VAT is a basic level retrogressive tax in terms of collection. VAT implementation raises inequalities in income while leaving uneven consumption unchanged (Kaisa et al. 2019).
At the end of the day, it unfavorably affects poor consumers and has expanded family wage difference to the horrendous level, to such an extent that families spend a greater amount of their small income on consumable goods and services, with next to zero reserve funds to be planned.
In Nigeria, the VAT rate was raised from 5% to 7.5%, viable 1 February 2020, as expressed in the Financial Act, 2020. Hence, the refreshed rundown of VAT absolved items include: petrol based items, the device for green power, child diapers and toiletries are produced using central parts. Fixings that are utilized in the manufacture of medicinal goods, food for animals made in the United States, armed forces gadgets, weaponry, firearms, and outfits made in the United States, natural gas provided to electricity-generating business enterprises by gas-producing business entities, seeds from the and plantings for agriculture (KPMG, 2020). The Nigerian Finance Act, 2021, gives the Federal Inland Revenue Service (FIRS) a new command to designate people as VAT drivers for the point of collecting and remitting VAT to the FIRS. On the side of this, the FIRS has quite recently delivered an overall warning delegating MTN and Airtel as VAT drivers and ordering the two organizations to gather/keep VAT on the service and inflow rendered or received respectively by them.

The recently named VAT drivers have been committed to start removing VAT with effect from 1 January 2023. Inability to accumulate or eliminate VAT from appropriate merchants or vendors would bring about an administrative charge of 150% of the aggregate not collected in addition of five percent over the CBN financial policy rate

Theoretical review

The theories supporting this study contain: Absolute income Hypothesis (AIH by Keynes (1936), Ricardian equivalence hypothesis (REH) by Barro (1974) and neoclassical theory by Friedman (1978).

The effect of tax collection on consumer and family spending is questionable in both exact and hypothetical funds. There are various schools of reflection on this point from a hypothetical stance. The all out monetary status speculations, proposed by Keynes (1936), keeps up with that individual or household present spending is an undeviating job of their current income accessible for spending. Subsequently, a rise in financial spending raises wages, occupations, and general interest, bringing about a rise in consumption in individual or family (the boosting in result). According to Keynes (1936), consumption is dependable and foreseeable factor in overall demand. According to Keynes (1936), in order for a society to emerge from a downturn and experience sustained growth in the future, the federal government must increase the overall demand by boosting spending or cutting taxation. As stated by Schechtl (2022), consumptive taxes are economic policy instruments that may contour the distribution of wealth and possibly undermine societal policy's equitable desired outcomes and given the disparities in financial resources and consumption levels of society, various individual consumer and family types may be harmed in different ways. Barro (1974) additionally asserts that an upsurge in spending by governments has no effect on the consumption of consumers and families despite the method of funding because household members are deemed to be foresighted and do not consider the authorities spending as their own wealth. On the contrary, Friedman (1978) upholds that the conventional actual industry process structure under the theory of neoclassicism was based on the premise that a rise in governmental expenses reduces private or household spending, and that the State may pay for its expenses from multiple avenues. In the ordinary business process framework, the negative financial impact offsets the useful switch effects, causing individual and family spending to fall. According to Christiano and Eichenbaum (1992), this sort of occurrence is known as the impact of crowding out or the substitutability theory between individual, public and households spending. Furthermore, they contended that, higher taxes cause harming financial effects, which diminishes individual and family spending.

Empirical review

Studying Nigeria, Aminu (2019) explored how the federal government could carry out a VAT rate rise to ensure that a guarantee rate of 15% can be achieved in a plan that matches nuclear families and the pioneering society while likewise producing the best measure of income for the government. To achieve this exploration's objective, a recursively developing reproduction was applied and the plan was developed and replicated for a 10-year period. It was resolved that the most valuable strategy was to raise the VAT rate by 2.5% each year for a time of four years. The elective delivers most great outcomes concerning development, capital, and middle buying by the public authority, and utilization among individual and households. Otemu (2020) researched whether the VAT increased government revenues and facilitated purchasing habits in Nigeria.

The results showed that, while value added tax contributed significantly to fiscal revenue, it is likewise limited the consumption propensities in Nigeria. Bank-Ola (2021) examined the results of value added tax on Nigerian economic financial increase from 1999 to 2019.

The assessment found that VAT had major and negative impact on business activity in momentary periods, however a valuable, yet immaterial effect on financial growth throughout the period. The rise in inflation greatly affected economic in long-term, while borrowing cost had a great negative impact.

Odu (2022) found that, VAT had a fundamental effect on incomes from taxes following a two-year slide and that it explained varieties in all duty profit increasingly more over the natural course of time. The study additionally found that, allowed the one-year inertness, VAT unfavorably affected GDP, or VAT had a hopeful element, highlighting the way that VAT grew throughout the years. Omodero and Eriabie (2022) found that local VAT income and aggregate revenue from VAT had benefit and strong causation results for item quality applying pairwise granger causal association assessments.

While checking for connections among the research's elements, discoveries likewise uncovered the presence of critical associations among the variables explored in the research. The review arrived at the resolution that value added tax was an acceleration driver in Nigeria's business environment.

Idris and Sebastine (2023) involved customary least squares and co-integration strategies for assessment to decide the causal association between indirect taxation such as VAT and consumption among the consumers. The study found a helpful, yet irrelevant relationship between value added tax and consumer spending.

The study search light is beamed into other nations' economies; therefore, Mgammal et al. (2023) researched the effect of the contemporary VAT on Saudi non-monetary related public entities. The discoveries uncovered that a significant ascent in VAT (alongside other unseen elements in the investigation) had a huge positive/negative consequence on the inter-industry vacillation in business financial indicators, and this was significantly more articulated or explained with the Coronavirus disturbance.

The researchers utilized a non-probability sampling approach related to convenient sampling as the technique to get the information assortment test. The findings uncovered that carrying out e-invoice 3.0 and taxable individual's similarity simultaneously significantly affected VAT earnings.

The Sums of 240 individuals from the UAE were decided indiscriminately with the end aim of the investigation. Rates of individuals in the UAE had taken in the additional cost of VAT with no modification to how they purchase, yet they will undoubtedly change sooner rather than later in the event that the VAT rate increases, while families with lower livelihoods and those with a worth above or equivalent to 5 were especially impacted by VAT.

Furthermore, the amount of research and development expenditure is found in between the two limits of the relationship between corporate tax change to VAT rate information from Chinese recorded organizations shows that changing corporate tax assessment to VAT had spurred relationship to build their imagination underway and attainable forward leaps.

According to the study discoveries, installed taxes, the help business group, and the proficiency of governments all affected VAT returns, while unfamiliar or foreign buys made a huge impeding difference. Simultaneously, VAT income are unaffected by normal rates, monetary setbacks, c-effectiveness, illegal movement organization, or the applying of rule. Schechtl (2022) examined the alteration in devastated conditions across different sorts of households when consumption taxes were taken into consideration.

The study utilized statistics from eleven OECD part countries to decide indirect tax rate in light of government accounts and persistence of poverty before and after taxes on consumption were deducted. The findings uncovered significant differentiations between the individual consumer and household type. Large relatives and families with only one parent experienced the best ascent of difficulty in the majority of these nations highlighted above. However, big family members and households with just one parent encountered the highest rise of hardship in the majority of the countries under review.

Finally, the level of consumption tax was noticed to be positively related to general increase in poverty, particularly, hunger across different countries. Andoh (2021) researched two distributional facets of Ghana's value added tax: the spreading of VAT costs and benefits among various consumers and households, as well as instability in commodity and services' costs all through various expenditures on consumption items. The study was able to determine that, the VAT framework shifted from being creative to detrimental, with lower-income persons and families increasing the amount they spend on telecommunications, transportation, and other essentials regardless of rising costs.

The study likewise found that, every addition to the VAT rate brings about an ascent in the expense of all consumer goods and services. The amount of the cost rise nevertheless, differs between commodities and services. The expenses for post and telecommuting, conveniences (energy, gases and water), housing, dining, and movement were found to be generally more imperative than usual. While food and beverages that were not alcoholic represented the greatest part of the general costs for both the rich and the poor, however, the latter paid more in contrast with the earlier. Alhussain (2020) tried to pinpoint the ramifications of VAT on Saudi banks by contrasting adjustments with how much of assets, liabilities, deposits from customers, profits retained, total earnings from activities, and net earnings from operations before and after imposition of VAT. The assessment noticed a slight fall in overall assets, total liabilities, deposits from customers, and current account balances as well as a significant decrease in earnings and operating costs following the introduction of VAT. Bogari (2020) applied subjective and quantitative techniques to assess the social and financial effects of the presentation of value added tax in the kingdom of Saudi Arabia. The examination took a gander at 287 Saudi nationals utilized in both public and private sectors. According to the findings, the enforcement of the value added tax raised the country's financial strength but had a negative community effect and also experienced financial challenges.

The study considered two tax changes carried out in Mexico that raised the rate of VAT for a variety of districts while leaving different urban communities untouched to find the implications. There was an outline of the price increases of hurt and excluded towns before, and from that point the resolution was modified. The results showed that the effect on costs was insignificant and that the financial burden was really borne by the two industries and consumers.

The common phenomenon as observed in various countries mentioned above is, immediately new tax is introduced, there was nothing or very little significant change in consumers' behaviour. At the point when tax rates were changed, consumers adjusted their behaviour in order to benefit from increase.

Methodology

The study applied a descriptive research design that involves gathering of data, often via journals and reports, to describe or measure a phenomenon so as to answer the questions of who, what, where, when, and how Tanner and Raymond, (2010).
Data were gathered for this study in the scope to assess, describe, interpret and analyze effect of VAT on consumptions behaviour or pattern both for households and individuals in Nigeria. Moreover, the study used both quantitative and qualitative data.
The study used the econometrics modus operandi in examining the data. A model quantified to arrest the relevant variables for investigating value added tax and its influence on individual consumption using the Nigerian experience from 1994 – 2021. The research is quantitative in nature; the multiple regression analysis will be used to arrive at the objective result via the E-View software. Quantitative time series data will be employed in this research work. Data for this study include value added tax, inflation, interest rate, exchange rate, and consumption expenditure.
Secondary sources of data will be used in this study. The data for this research work were obtained from the various issues of Annual Reports of Central Bank of Nigeria, Federal Inland Revenue Service, and National Bureau of Statistics Publications.

The following explains the time series econometric model applied for the objective of this study:

$$InPPP\beta o + \beta 1\ InVATt + \ \beta 2InXGRt + \ £t$$

Where; "ε" is the mistake term, "t" is the time aspect, which is the information from 1994 to 2023, and "ln" is regular logarithm. The logged consumers' purchasing power is condensed as lnPPP; the logged value added tax is curtailed as lnVAT, while the exchange rate is displayed as lnXGR.

To commence with the study, unit root assessment should be used to decide the balance highlights of the series as well as the heading of the strategy for estimation. It is critical to recollect that the estimation approach used depend upon whether the time series information is fixed at the level or at the initial difference. The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests are two different unit root tests suggested by Dickey and Fuller (1979) and Phillips and Perron (1988). In contrast to the null hypothesis in the ADF and PP unit root tests, the alternative hypothesis states that there are no unit roots. The sample adopted in the research period (1994-2023) moreover envelops various shocks, for example, the worldwide economic meltdown, change in price level, Coronavirus pandemic and VAT changes in Nigeria. The significant inflationary impacts are expected to have fundamentally effect on macroeconomic circumstance which suggests that the conduct of unit root tests which is exceptionally paramount.

The co-integration test was performed utilizing the autoregressive distributed lag (ARDL) model proposed by Pesaran et al. (2001). The ARDL model enjoys a few upper hands over other co-integration methodologies that are often examined in the literature. To start, the ARDL approach doesn't need a stringently incorporated request of variables. For example, it is appropriate for the situation where datasets are in both order zero and one. Secondly, the model gives more precise estimation results, especially for little sample attributes. Thirdly, the ARDL model is a valuable instrument since it considers the impacts of endogenous independent variables. Subsequently, using the baseline model in Ee uation (2) as at earlier stage, the ARDL model can be expressed as follows:

$$Y_t = \alpha_0 + \alpha_{1t} + \sum_{t=i}^{p} \Phi i \ \ y_{t-i} + \sum_{i=0}^{a} \beta f \ \ tx_{t-i} + \varepsilon_t \qquad \ldots (1)$$

Where Y_{t-1} is the lagged dependent variable, X_t is a K-dimensional vector of explanatory variables,

$$\Delta yt = \alpha o + YECMt\text{-}1 + \sum_t^p = i\delta$$

where 't' is the passage of time, α0 is the intercept, and ε_t is a serially uncorrelated distance with a mean of zero and a constant variance-covariance. The coefficients Φi and βf are row vectors as opposed to scalars, to measure the short-term impact of Nigeria's production, real GDP growth rate, per capita income, private domestic credit, infrastructure, consumer price index, and consumption spending on goods and services. In the form of an error correction model (ECM), the ARDL model is calculated. Re-stating equation (1) in terms of the lagged levels and first difference of yt and xt, the ECM version of the chosen ARDL model can be derived as:

$$I\Delta yt\text{-}i + \sum^{ai=} 0\Phi t\Delta xt\text{-}I + \varepsilon t \quad \ldots (2)$$

The standard least squares (OLS) procedure is applied as an underlying step before the bound test is used for testing for a drawn out balance association between the boundaries. The different assumption that the variables have a lengthy affiliation is utilized to test the null assumption that there is no co-integration between them.

Where ECM is the error correction mechanism and Φt and δI are the model's short-run dynamics-related coefficients. The size of the error correction term coefficient (y) reveals how quickly the dependent variable was brought into equilibrium during the preceding period. The model can be seen in functional form below:

PCE= F (VAT, PCI, CPI, RGDP, PDC, INFR) … (3)

Where:
PCE= Private Consumption Expenditure on Manufactured Goods
VAT = Value Added Tax Revenue
PCI = Per capita income
CPI = Consumer Price Index
RGDP = Real GDP Growth Rate
PDC= Private Domestic Credit
INFR= Infrastructure

This model can be transformed into econometrics form for analysis.

Test of Research Hypotheses

In the time series regression analysis, a definitive objective is assessment of the connection among dependent and independent variables. This objective can be accomplished through the estimation of the coefficients of every independent variable free in the model. The relationship between Consumer consumption and Value Added Tax (VAT) can be accomplished through the following formulated hypotheses:

$H0_1$: There is no significant effect of Value Added Tax (VAT) on consumer consumption in Nigeria.

H0$_2$: Variations in Value Added Tax (VAT) rates do not impact consumer consumption patterns in Nigeria.

However, the hypotheses were tested with the model, this is given as:

Test of Hypotheses: Value Added Tax and Consumer Consumption

LEMP = L$\beta 1_0$ +$\beta 1_1$LPuPC + $\beta 1_2$LPrPCF+ $\beta 1_3$LRSA + $\beta 1_4$LAEA + $\beta 1_5$LCFC + $\beta 1_6$ LINV+ $\beta 1_7$ LINTR + ε_1 ---------- (1.1)

Where: LEMP = Log of Market Price

LVAT= Log Value Added Tax

LCC = Log of Consumer Consumption

LPV = Log of Price Variation

LCBB = Log of Consumer Buying Behaviour

LIRC= Log of Inflation Rate on Consumption

LINTR = Log of Interest Rate

$\beta 1_0$ is the intercept of the regression model of Log of Market Capitalization.

$\beta 1_1$, $\beta 1_2$, $\beta 1_3$, $\beta 1_4$, $\beta 1_5$, $\beta 1_6$, and $\beta 1_7$ are rates of change of the Consumer Consumption variables with respect to Value Added Tax variable.

ε_1= is the error term associated with the model of the Contributory Pension Scheme variables with respect to Value Added Tax (VAT).

Re-writing equation (1.1) in general Error Correction Model (ECM) form to capture the dynamic relationship among the variables in the short and long-run, the model becomes:

$$\Delta \text{LEMP} = \alpha_0 + \sum_{g=1}^{l} \alpha_{1i}\, \Delta \text{LEMP}_{t-i} + \sum_{h=1}^{m} \alpha_{2i}\, \Delta LVAT_{t-i} + \sum_{i=1}^{n} \alpha_{3i}\, \Delta LCC_{t-i} + \sum_{g=1}^{l} \alpha_{4i}\, \Delta \text{LPV}_{t-i} + \sum_{h=1}^{m} \alpha_{5i}\, \Delta LCBB_{t-i} + \sum_{i=1}^{n} \alpha_{6i}\, \Delta \text{LLPFIA}_i + + \sum_{j=0}^{o} \alpha_{7i}\, \Delta \text{LIRC}_{t-i} + \sum_{k=0}^{p} \alpha_{8i}\, \Delta \text{LINTR}_{t-i} + ECM_{t-1} + \varepsilon_t --- \quad (1.2)$$

Therefore, this equation was used to estimate and analyze the short-run and long-run impact of Value Added Tax on Consumer Consumption in Nigeria. However, from the equation, ΔLEMP_{t-i} is the lag 1 of the Log of Market Price in Nigeria which is the dependent variable. The following are the independent variables: $\Delta LPUPCF_{t-i}$ is the lag 1 of the Log of Value Added Tax; ΔLCC_{t-i} is the lag 1 of the Log of Consumer Consumption ΔLPV_{t-i}; is the lag 1 of the Price Variation;

$\Delta LCBB_{t-i}$; is the lag 1 of the Log of Consumer Buying Behavior; $\Delta INFR_{t-i}$; is the lag 1 of the Log of Inflation Rate; and $\Delta INV_{t-i}$is the lag 1 of the Log of the Interest Rate in Nigeria. The model, whose equation above, was used to adjust the estimation until the ECM turned negative. The negative sign of the coefficient of the error correction term ECM (-1) shows the statistical significance of the equation in terms of its associated t-value and probability value.

A Prior Expectation

The a priori expectation is that $\beta 1_1$, $\beta 1_2$, $\beta 1_3$, $\beta 1_4$, $\beta 1_5$, $\beta 1_6$, and $\beta 1_7 >< 0$ indicating a positive or negative relationship between the Value Added Tax and Consumer Consumption, Inflation Rate, and Interest Rate in Nigeria, Consumer Buying Behavior, Price Variation on consumption and the Annual Consumption Rate in Nigeria, that is increase/decrease.

Decision Rule

With the ARDL Model (OLS and ECM Approach), the hypotheses are tested. By measuring the probability value to the degree of significance (0.05), the importance of the variables evaluated in the model is measured. If the probability value is less than the significance level, the Ho is dismissed and we thus infer that the variable under consideration is significant. Otherwise, the null hypothesis is accepted and we assume that the independent variable under consideration has no important influence on the dependent variable.

Discussion of Results

This subsection gives descriptive data for every one of the parameters used in this research investigation.

To forestall wrong outcomes, this review started with a unit root test using Expanded Dickey-Fuller (ADF), and different residual tests, including sequential relationship, heteroskedasticity, and normality test were carried out.

The average, median, mode, deviation from the mean, variance, and lowest and highest numbers are among the characteristics presented in Table 1.

Table 1

Descriptive Analysis

	NIG PPP	NIG VAT	NIG XGR
Mean	3.88	9.42	4.76
Median	4.04	10.1	4.89
Maximum	5.03	13.2	5.99
Minimum	2.02	6.17	3.08
Std Dev.	0.83	2.46	0.88
Skewness	-0.45	0.02	-9.2
Kurtosis	2.13	1.38	2.92
Jarque Bera	1.82	3.07	3.96
Probability	0.40	0.21	0.14
Sum	108	263	133

Sum Sq. Dev.	18.8	16.3	21.0
Observations	28	28	28
Correlation Matrix			
PPP	1.00	-	-
VAT	-0.52	1.00	-
XGR	0.91	-0.38	1.OO

Source: Author's computation 2024

The significant point of this study is to investigate the effect of VAT on consumption expenditure pattern in Nigeria. In Table 1, the study describes the nature and reasonableness of data employed for this research and from thereon, the kind of relationship that exists among them.

The most significant of the results in Table 1 is the Jarque-Bera which really considers any remaining parameters to affirm the normality of the datasets engaged for a study. The standard is that the probability value of all the datasets used as proxies for the variable chose for the study should be above 5% degree of significance. Taking a gander at Table 1, the Jarque-Bera p-values of all variables are above 0.05 degree of materiality. Subsequently, it is laid out that all the datasets used in this study are ordinarily apportioned and are appropriate. Taking into account the correlation matrix, it is shown that VAT in Nigeria has a fair negation relationship with purchasing power parity, PPP while the exchange is positively and strongly correlated with PPP.

That implies regardless of the exchange rate unstable, consumers still consume essential products and services while the imposition of VAT affects consumption decision and behaviour of consumers adversely. On account of Nigeria, every one of the variables shows strength and positive relationship with one another.

4.2 Unit Root Test

Table 2

Unit Root Test Results

Variables	ADF statistics	Critical value at 5%	Order of integration.
PCE	-4.547402	-2.998064	1(1)
VAT	-5.357663	-2.998064	1(1)
CPI	-5. 124600	-2.998064	1(0)
RGDP	-4.169291	-3.004861	1(0)
PCI	-5.133164	-2.998064	1(1)
INFR	-5.192811	-2.998064	1(1)
PDC	-3.017380	-2.998064	1(0)

[Source: Researchers' computation using e-view 10]

Table 2 shows the results of the unit root test performed on the variables being investigated. The results of the ADF are shown in Table I, which demonstrates that while the Consumer Price Index (CPI), Real Gross domestic product Growth Rate (RGDP), and Private Domestic Credit are stationary levels, the Private Consumption Expenditure (PCE), Value Added Tax Income (VAT),

Per Capita Income (PCI), and Infrastructure (INFR) are stationary at first difference. To put it another in manner, most of variables, like PCE, VAT, PCI, and INFR, are integrated of order one, or I (1), while CPI, RGDP, and PDC are integrated of order zero, or I (0).

The co-integration between the variables is explored utilizing the Autoregressive Distributed Lag (ARDL) technique for analyzing long-run relationship.

Table 3:

Ordinary Least Square Test and Error Correction Model

Dependent Variable: D(LEMP)

Method: Least Squares

Date: 03/27/24 Time: 13:45

Sample (adjusted): 2008 2022

Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.080246	0.062208	1.289964	0.2535
D(LEMP(-1))	-0.066199	0.320059	-0.206835	0.8443
D(LVAT(-1))	0.683790	0.187860	3.639902	0.0149
D(LCC (-1))	-0.133625	0.273419	-0.488720	0.6457
D(LPV (-1))	0.635794	0.181435	3.504252	0.0234
D(LCBB (-1))	0.657687	0.424852	1.548039	0.0423
D(LIR (-1))	0.770518	0.202704	3.801191	0.0126
D(LINFR (-1))	0.401064	0.168748	2.376703	0.0353
D(LINTR(-1))	0.130398	0.408432	0.319264	0.7624
EC(-1)	-0.194076	0.488570	-0.397233	0.0076

R-squared	0.934187	Mean dependent var	0.058590
Adjusted R-squared	0.915723	S.D. dependent var	0.243044
S.E. of regression	0.104333	Akaike info criterion	-1.447747

Sum squared resid	0.054426	Schwarz criterion	-0.975713
Log likelihood	20.85810	Hannan-Quinn criter.	-1.452775
F-statistic	7.885845	Durbin-Watson stat	1.880814
Prob(F-statistic)	0.017503		

Source: Output from E-views 13 (2023)

From the short-run and long-run regression results shown in table 3, the ARDL test automatically choose 1 lag length for all the variables for sufficient degree of freedom. Besides, the following interpretation can be inferred; a unit Increase in Market Price, Value Added Tax, Consumer Consumption, Price variation, Consumers buying behaviour, Inflation Rate, and Interest Rate on the average, holding other independent variables constant will lead to a 0.683790, 0.635794, 0.657687, 0.770518, 0.401064, and 0.130398-units increase in tax rate in Nigeria respectively. While a unit increase in Consumer Consumption Rate in Nigeria on the average, holding other independent variables constant will lead to a 0.133625-unit decrease in Annual Increase in Value Added Tax Rate in Nigeria respectively. Based on the probability value, Increase in Market Price, Value Added Tax, Consumer Consumption, Price variation, Consumers buying behaviour, Interest Rate, and Inflation Rate in Nigeria were statistically significant in explaining the variation in the Value Added Tax (VAT) rate, while Consumer consumption Level and Interest Rate in Nigeria were statistically insignificant.

Table 3 above shows the estimates of the Error Correction Model (ECM) with the residual of the OLS estimates of the variables at level being the Error Correction Term (ECT) which measures the speed of adjustment from short-run disequilibrium to long-run equilibrium. Consequently, the ECT lag 1estimate is correctly signed negatively and statistically significant at 5%, that is, the ECM parameter is negative (-) and significant which is -0.194076 and the p-value is 0.0076, which is the expected outcome of the result. This indicates that the speed of adjustment from short-run disequilibrium towards long-run equilibriumis19%.In other words, the system, i.e. Log of Market Price (LEMP), Log Value Added Tax (LVAT), Log of Consumer Consumption (LCC), Log of Price Variation (LPV), Log of Consumer Buying Behaviour (LCBB), Log of Inflation Rate (LIR) and Log of Interest Rate (LINTR) are adjusted towards long-run equilibrium at the speed of 19%. Thus, the p-value of 0.0076 shows that Value Added Tax (VAT) has a long run significant effect on the Nigerian Consumer Consumption.

Table 3 also shows the short-run relationship between Value Added Tax (VAT) and Consumer Consumption in Nigeria. The R^2 value is 0.934187; it indicates the prediction capability of the independent variables. This indicates that 93% changes in the Consumption Level in Nigeria are explained by the changes in the rate of Value Added Tax (VAT) paid. Also, that only about 7% other factors that could bring about changes in the model were not included. Besides, the value of 92% of the Adjusted R^2 shows a strong relationship between Value Added Tax and Consumer Consumption Level in Nigeria.

Furthermore, it has been established that the **Ho_1** which stated that, there is no significant effect of Value Added Tax (VAT) on consumer consumption in Nigeria is **rejected;** this is because the p-

value of 0.0149 is less than 0.05. Thus, this implies that there is significant effect of Value Added Tax (VAT) on consumer consumption in Nigeria. Also, the **Ho_2** which stated that Variations in Value Added Tax (VAT) rates do not impact consumer consumption patterns in Nigeria is not **rejected**; this is because the p-value of 0.6457 is greater than 0.05. Hence, this can be inferred that Variations in Value Added Tax (VAT) rates do not impact consumer consumption patterns in Nigeria.

Finally, consumer consumption, Inflation rate, Rate of Price, consumers buying behaviour, they can influence the Value Added Tax (VAT) rate in Nigeria. This is because; the Prob. (F-statistic) is 0.017503, less than 0.05. Therefore, it can be concluded that Value Added Tax has a significant impact on consumer consumption in Nigeria. The Durbin Watson Statistic of 1.880814 shows that there is no problem of serial correlation in the model.

In finance, this correlation is used by technical analysts to decide how well the previous price of a security predicts the future price. Below is the serial correlation hypothesis:

H_O: There is no serial correlation

H_1: There is a serial correlation hypothesis:

Decision Rule:

Accept H_0 if the Obs*R-squared Prob. Chi-Square value is greater than 0.05 (5% level of significant). Otherwise, do not accept H_0.

Heteroskedasticity Test

If heteroskedasticity exists, the population used in the regression contains unequal variance; the analysis results may be invalid. The following is the Serial correlation hypothesis:

Ho: The Regression Model has no Heteroskedasticity

Hi: The Regression Model has Heteroskedasticity

Decision Rule:

Accept H_0 if the Prob. Chi-Square value is greater than 0.05 (5% level of significant). Otherwise, do not accept H_0.

CONCLUSION AND RECOMMENDATION

Conclusion

The outcomes show that VAT has positive impact on consumption, while interest rate has negative effect on consumption in both short run and long run, and though inflation rate has negative relationship with consumption from the results, it has been experimentally uncovered that VAT has critical good effect on consumption in Nigeria.

This is in no way in similarity with what is recorded in theory which expresses that an increase in VAT will prompt decrease in consumption behaviour of the consumer. Considering the previous, this study prescribes the need for government to be reviewing the VAT rate every once in a while

to act as a strategy for controlling and checkmating the degree of consumption in Nigeria. The results likewise discovered that the interest rate has adverse impact on consumption in both the short run and long run.

VAT distributions essentially affected the State's spending patterns during the same period, the realities discovered through secondary data option verify VAT influence on the consumer's development.

5.2 Recommendation

However, based on the above conclusion, the following recommendations were made:

i. This study additionally recommends that all Sub-Saharan African nations ought to carry out policies quickly in order to subdue the burden of VAT on consumers and households in general and to totally exempt household items and services from VAT completely.
ii. The study subsequently suggests that more anti-inflationary policies ought to be formulated and regulated to really look at the impact of inflation on consumption. Additionally, proficient regulation policies should be formed to check the effect of personal income tax on consumption.
iii. This study recommends that, government ought to carefully adopt appropriate rate of interest that will sooth the consumers, savers and investors. This will encourage savings, investments and stabilize the level of consumption in the economy.
iv. The government, through the responsible agencies, ought to guarantee a careful supervision of how revenues are applied and the way expenditures are managed. This could afford the government the needed opportunity to effectively settle expenditures with the revenue generated.

The governments in African countries including Nigeria should make business amicable to financial investors. This will induce the establishment of additional companies through which tax income will be expanded.

Given the aforementioned, it is basic that governments create more avenues for the construction of industries and craft centers. Economic diversification will also be encouraged in order to increase government revenue, while subsidies to essential items that individual and household consume on a regular basis might be provided.

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