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Full Length Research Paper

Impact of VAT on economic development of emerging nations

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This paper on the impact of value added tax (VAT) on economic and human developments of emerging Nations from 2001 to 2009 as VAT is becoming important source of revenue. Our scope of study centers on Adamawa State of Nigeria. Data were collected from both primary and secondary sources. Regression, discriminant analysis and ANOVA were used in testing the hypotheses. We found out that VAT allocations alone accounts for 91.2% of the variations in expenditure pattern of Adamawa State from and that VAT allocations to the State within the said periods were very significant. The facts obtained via secondary data attest to a very significant VAT impact on economic and human development of the State from 2001 to 2009 but data obtained from primary sources suggest minimum VAT impacts. We recommend for further research to be carried out on the spread of VAT impact on various aspects of economic and human developments among the administrative areas and that the governance of Adamawa State and other States of developing countries to ensure that revenue allocations especially VAT should not only have impact but should be perceived to impact positively on the economic and human developments by the citizens of that state.

Key words: Value added tax (VAT), economic and human development, emerging nations.

INTRODUCTION

Nigeria is a developing country and emerging economy whose exports are mainly crude oil. Her other natural resources asserted by Economy Watch (2011) include: Natural gas, tin, iron ore, coal, limestone, lead, zinc and arable land. Her land mass covers about 923, 768 sq km and she have a population of about 149,229,090. According to Tran (2008), emerging economies are nations that have large territories and populations, and they are undertaking extraordinary development projects that call for new infrastructure, such as power-generating plants and telecommunications systems. These countries have pursued economic policies leading to faster growth and expanding trade and investment with the rest of the world. These infrastructural developments demand a lot of resources and funding. By the assertion of Access Bank (2011), a budget of N4.97 trillion was approved for Nigeria for the year 2011, representing 12% increase of 2010 budget. Value added tax (VAT) is one of the ways of funding infrastructural developments.

The tax base of VAT in Nigeria since 2001 had been on the increase. Valued added tax (VAT) allocations to Adamawa State shows huge increasing trend from 2001 to date, yet much research studies are yet to be carried out on the impact of VAT on human and economic developments of the State. VAT is levied on consumption of goods and services and the tax burden is made good by the final consumer. Huge increases in Federal revenue resulting from expanding VAT base is an indication that the consumption pattern of the generality of Nigerians are on the increase. Increasing consumption pattern creates markets and induces positive spill-over effects on other economic activities of a nation. The Federal Government of Nigeria is saddened with the responsibility of VAT collections and allocations to the various states of the federation. The percentage of VAT allocations to total revenue of Adamawa State had risen from 6 to 11% from 2001 and 2009, thus positioning VAT as a material source of revenue needing a research work particularly on how it affects human and economic

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developments of the state. This research therefore seeks to establish the impact of VAT on the human and economic developments of Adamawa State from 2001 to 2009.

Statement of the problem

VAT has become important source of revenue to the States in Nigeria. The Federal Government of Nigeria is intending to increase percentage of VAT imposed on goods and services because of its relevance to income base of the states but citizenries' perception is different. It is therefore appropriate to carry out a research to determine the impact of VAT on the state's economic and human development. The citizenries' perceptions of the impact of VAT on the human and economic developments of the state seems not to be at par with claims of the state government thus there is the need to understand with empirical facts the impact of VAT on the human and economic development of the state from 2001 to 2009 and the perception of these impacts by the citizenries of the state.

Research objectives

The study will be guided by the following specific objectives;

1. To appraise whether VAT allocations to the state have material impact on the expenditure pattern of the state from 2001 to 2009 or not; finding out the level of significance VAT allocations to Adamawa State bears to the total revenues of the state from 2001 to 2009, and
2. To assess the citizenries' perceptional level of VAT impact on economic and human developments of the state from 2001 to 2009.

Research questions

1. Does VAT make significant contributions to Adamawa State budgets from 2001 to 2009?
2. Do VAT allocations to Adamawa State impact significantly to the economic and human development of the state?

Research hypotheses

Ho_1: VAT does not make any significant contributions to expenditure pattern of Adamawa State from 2001 to 2009.
Ho_2: The proportion of VAT allocations to total revenue of the State from 2001 to 2009 is insignificant.
Ho_3: VAT allocations to Adamawa State are not perceived to impact significantly to the economic and human development of the State.
Ho_4: Levels of VAT impact on economic and human developments as perceived by citizenries of the state from the administrative areas is not significantly different.

Significance of the study

The study will highlight the effect of VAT on the economic and human developments of Adamawa State and whether VAT impacts negatively or positively on the expenditure pattern of the State based on both primary data and the perception of the citizens of the State. Inferences can be drawn from the study on the corporate governance of the state and her discretional power of expenditure from 2001 to 2009. The research will also seek to study the levels of VAT impact on economic and human developments as perceived by citizenry of the state from the administrative areas.

REVIEW OF RELATED LITERATURE

Definitions and explanations of VAT

Value added tax (VAT) according to Okezie (2003) is a tax introduced in Nigeria in 1993. It is imposed on goods and services at the rate of 5%. The main aim of this tax is to raise revenue to government and its incidence is borne by the final consumer. VAT is collectible from both imported and locally manufactured goods and services. Soyode and Kajola (2006) defined VAT as a consumption tax, charged at 5% on all vatable goods and services. They went further to state the attributes of VAT as:

1. VAT is a consumption tax;
2. VAT is a multi-stage tax, and
3. The incidence of VAT is on the final consumer.

Ojo (2003) and Offiong (2004) are in agreement when both cited the enabling law and listed the following as 'Goods and Services exempted from VAT' in Nigeria';

1. Medical and pharmaceutical product;
2. Basic food items;
3. Books and educational materials;
4. Baby products;
5. Commercial vehicles and their spare parts;
6. Agricultural equipment and products and veterinary medicine;
7. Fertilizers, farming machinery and farming transportation equipment;
8. All exports of goods and services;
9. Plant and machinery used in export processing zone;
10. Plant, machinery and equipment purchased for utilization of gas in downstream petroleum operations;
11. Tractors, ploughs, agricultural equipment and implements purchased for agricultural purposes.
13. Services of community banks and primary mortgage

institutions;
14. Plays and performances conducted by educational Institutions as part of learning;
15. Services related to education and medical services.

In Nigeria, sales tax came into being in 1986. VAT introduction in 1993 heralded the abolition of sales tax. According to Soyode and Kajola (2006), the rationale behind replacing sales tax with VAT is informed by the following reasons;

1. The base of the sales tax in Nigeria is narrow. It covers only nine categories of goods plus sales and services in registered hotels, motels and similar establishments,
2. The sales tax act targeted only locally manufactured goods,

VAT is a consumption tax and is based on the general consumption behavior of the people, thus the base is large.

Soyode and Kajola (2006) citing the Act (then decree) section 7 (2) which states that VAT shall be administered and managed by the Federal Board of Inland Revenue Service (FIRS) but shared by the three tiers of government in Nigeria from 1999 to date as follows;

Federal Government: 15%
State Government: 50%
Local Government: 35%

According to Wikipedia (09/03/2010), value added tax (VAT), or goods and services tax (GST) is a consumption tax (CT) levied on any value that is added to a product. In contrast to sales tax, VAT is seen as neutral with respect to the number of passages that there are between the producer and the final consumer whereas sales tax is levied on total value at each stage (though in the U.S. and many other countries, sales tax is charged only at the point of final sale to the final consumer, and a use tax only to the final user; there are no sales taxes paid at wholesale or production level). It is easy to evade sales tax than VAT.

Aims and indicators of economic and human development

In the words of Ayaga (2009), one key area that has posed a challenge in our country's history is the determination to fight poverty and improve living condition of the citizenry. Nigeria like any other sub-Saharan Africa countries is noted for the prevalence of extreme poverty in all its characteristic features. It is no more news that poverty in majority of these countries is massive, pervasive and chronic, engulfing a large proportion of the society, which invariably leads to deteriorating human conditions with real disposable income dwindling, while malnutrition rate is on the increase. Poverty, illiteracy, lack of drinking water and non- access to quality education are more prevalent in Adamawa State than her peers. As poverty remains a mark of human deprivation, different programs from successive administrations have come up in form of initiatives to battle this human enemy. One of the measures earmarked to overcome poverty is to accelerate the rate of economic development in Nigeria and Adamawa State in particular.

According to Wikipedia (09/03/2010), economic development is the increase in the amount of people in a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy. Its scope includes the process and policies by which a nation improves the economic, political, and social well-being of its people.

Contrasting economic growth from economic development, Wikipedia (10/03/2010) stipulated that economic development refers to social and technological progress. It implies a change in the way goods and services are produced, not merely an increase in production achieved using the old methods of production on a wider scale. Economic growth implies only an increase in quantitative output; it may or may not involve development. Economic growth is often measured by rate of change of gross domestic product (e. g., percent GDP increase per year). Gross domestic product is the aggregate value-added by the economic activity within a country's borders.

Economic development typically involves improvements in a variety of indicators such as literacy rates, life expectancy, and poverty rates. GDP does not take into account important aspects such as leisure time, environmental quality, freedom, or social justice; alternative measures of economic wellbeing have been proposed.

A country's economic development is related to its human development, which encompasses, among other things, health, road network, security, level of agricultural mechanization, freedom index, standard of living and education. UNDP (2009) ranked Nigeria in terms of human development level standing to number 158 in the world.

A closely related idea is the difference between extensive and intensive economic growth. Extensive growth is growth achieved by using more resources (land, labor and capital). Intensive growth is growth achieved by using a given amount of resources more efficiently (productively). Intensive growth requires development in the areas of personal safety and freedom from fear of physical harm, and the extent of participation in civil society (Zhang, 1996).

Kumar (1996) citing India’s five year plan of 1951 to 1956, opined that it is no longer possible to think of ‘Development’ as a process merely of increasing the available supplies of material goods; it is necessary to ensure that simultaneously a steady advance is made towards the realization of wider objectives such as full employment and the removal of economic inequalities. Kumar (1996) went further to state that the aim of human development is to create jobs, contain population, eradicate illiteracy, universalize elementary education, and provide safe drinking water and primary health care facilities to all.

Measurement of economic and human development

Britannica (11/03/2010) opined that one of the most common methods of measuring economic development of an area is by calculating Gross domestic product (GDP) of that area, which is the value of goods and services produced in an economy in a given period of time (e.g., the value of goods and services produced in Adamawa in a given year). These measures can be adjusted for inflation. In its broadest sense, policies of economic development encompass measurements of changes in three major areas:

1. Governments undertaking to meet broad economic objectives such as price stability, high employment, and sustainable growth. Such efforts include monetary and fiscal policies, regulation of financial institutions, trade, and tax policies.
2. Programs that provide infrastructure and services such as highways, parks, affordable housing, crime prevention, and education.
3. Job creation and retention through specific efforts in business finance, marketing, neighborhood development, small business development, business retention and expansion, technology transfer, and real estate development.

According to Answers.Com (12/03/2010), human development is measured by human development index (HDI). The HDI combines normalized measures of life expectancy, literacy, educational attainment, and GDP per capita for countries worldwide. It is claimed as a standard means of measuring human development, a concept that, according to the United Nations Development Program (UNDP), refers to the process of widening the options of persons, giving them greater opportunities for education, health care, income, employment.

The HDI combines three basic dimensions:

1. Life expectancy at birth, as an index of population health and longevity
2. Knowledge and education, as measured by the adult literacy rate (with two-thirds weighting) and the combined primary, secondary, and tertiary gross enrollment ratio (with one-third weighting).
3. Standard of living, as measured by the natural logarithm of gross domestic product per capita at purchasing power parity.

Adamawa State expenditure and vat allocations pattern (2001-2009)

Nnamaocha (2000) stipulates that public expenditure impacts positively on Citizenry's economic and human development. Agreeing to the aforementioned stipulation, Britannica (2009) explains economic development as a process whereby simple, low-income national economies are transformed into modern industrial economies. Economic development projects have typically involved large capital investments in infrastructure (roads, irrigation networks, etc.), industry, education, and financial institutions. Odewale (2004) opined that prior to taxes becoming a major contributor to the Governments' revenue; it has been and is still an issue in politics, revolutions and wars. VAT is an aspect of tax. To this extent, it is expedite to ascertain the effect of VAT on the expenditure pattern of Adamawa State from 2001 to 2009.

RESEARCH METHODS

Adamawa is a state in Northern Nigeria, with her capital located in Yola. It was created in 1991. She is one of the largest states in Nigeria and occupies about 36,917 km^2 according to Wikipedia (2010)

The works of Azeez (2009-unpublished) shows the map of Adamawa State (Figure 1)

It is bordered by the states of Borno to the northwest, Gombe to the west and Taraba to the southwest. Its eastern border also forms the national eastern border with Cameroon. Topographically, it is a mountainous land crossed by the large river valleys, Benue, Gongola and Yedsarem. The valleys of Cameroon, Mandara and Adamawa mountains form part of the landscape (Wikipedia; 03/08/2010)

According Ngex.Com (2010), the major occupation of the people is farming as reflected in their two notable vegetational zones, tile Sub-Sudan and Northern Guinea Savannah Zone. Their cash crops are cotton and groundnuts while food crops include maize, yam, cassava, guinea corn, millet and rice. The village communities living on the banks of the rivers engage in fishing while the Fulanis are cattle-rearers. The state has network of roads linking all parts of the country

Adamawa State was created on 27th August 1991 along with other states of Abia, Anambra, Delta, Edo, Ekiti, Enugu, Jigawa, Kebbi, Kogi, Osun and Yobe. Adamawa State yearly, budgets (Tables 1 and 2) shows that VAT allocations to the state are huge and had been on the increase since 2001. However, despite increasing VAT allocations to Adamawa State from the federal government, which had increased from 37.97% in 2002 to 393.67% in 2009 (using 2001 as the base year), much research studies are yet to be carried out on the impact of VAT on human and economic development of the State. Table 3.The major occupation of the people is farming mainly cash crops such as cotton, groundnuts, while food crops include; maize, yam, cassava, guinea corn, millet and rice. Another segment of the population is cattle rearers. There exist many medium and small scale industries and businesses in the state. Adamawa State has a lot of tourist attractions and historical places of interest. The establishment of American University of Nigeria in the state has added to the influx of foreigners and other Nigerians to the state. The GDP of the state is ranked 24th out of the thirty-six states of Nigeria.

The State has four administrative divisions namely: Adamawa,

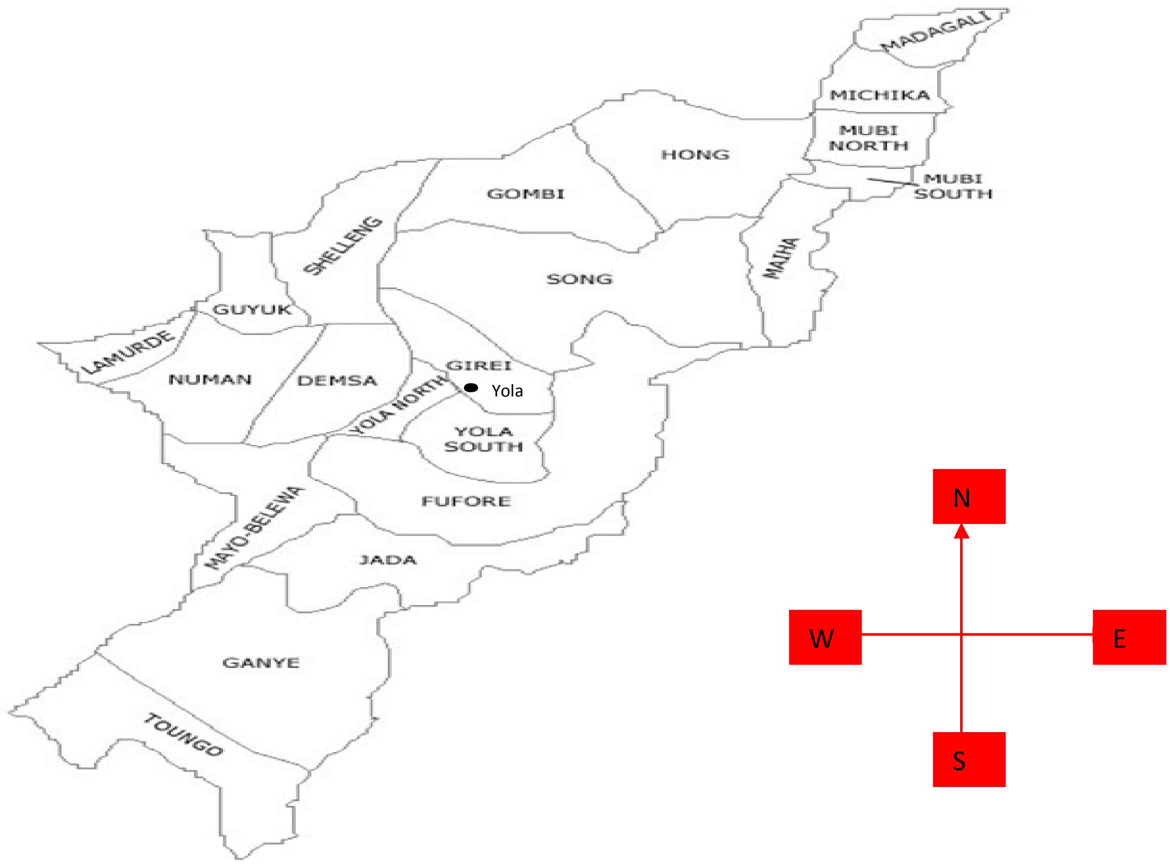

Figure 1. Map of Adamawa State.

Table 1. Adamawa State expenditure, revenue and VAT allocations.

Year	Actual expenditure (Naira)	Total revenue (Naira)	VAT allocations (Naira)
2001	6,871,437,000.65	6,560,450,220-75	619,832,355.00
2002	7,673,506,063.97	7,327,699,172-15	855,174,330.91
2003	13,960,250,185.00	14,544,341,675.14	1,254,255,685.38
2004	14,559,902,432.90	15,683,506,598.60	1,439,001,187.45
2005	19,012,451,869.70	31,152,505,600.00	2,162,833,210.00
2006	36,396,059,495.00	36,146,059,495.00	2,325,980,215.00
2007	30,433,474,194.80	27,501,902,404.20	2,186,003,977.28
2008	39,903,601,329.87	39,905,900,405.00	2,774,478,470.00
2009	42,468,502,780.90	43,549,501,860.00	3,059,926,320.00

Source: Adamawa State Budgets.

Ganye, Mubi and Numan. It has a population of about 3,737,233. They speak 58 languages, though majority of the people speaks Hausa (Bleambo, 1998).

VAT allocations to Adamawa State, her total revenue and expenditure pattern of the State from 2001 to 2009 were ascertained from secondary sources (Adamawa State Budget Office). Questionnaires were administered to segments of the citizenry (Civil Servants, Professionals and Political Office Holders) who can read and write in the four administrative areas of Adamawa, Ganye, Mubi and Numan to ascertain their perceptions of the impact of VAT on human and economic developments of the State. 301 questionnaires were duly administered, out of which 273 were validly returned.

Regression statistical tool, analysis of variance (ANOVA) and discriminant analysis were employed in the data analyses in order to address the research questions and hypotheses at 95% significance level criterion for decisions. The statistical model used is SPSS.

Table 2. Adamawa State's major sources of revenue.

Year	Major sources of revenue in naira							
	Statutory allocation	VAT	Stabilization fund	Ecological fund	Special reserves	Excess crude oil	Capital receipts	Internally generated
2001	2,648,041,980.10	619,832,355.00	350,000,100.25	1,250,246,100.00	480,300,280.20	260,588,360.15	390,450,286.00	560,990,759.05
2002	4,925,262,584.39	855,174,330.91	72,259,508.55	95,826,687.25	464,029,281.86	274,405,598.64	50,499,142.00	424,910,461.89
2003	9,600,000,000.00	1,254,255,685.38	600,000,000.00	400,000,000.00	500,000,000.00	400,000,000.00	999,010,050.00	791,075,940.00
2004	12,192,394,018.00	1,439,001,187.45	300,000,000.00	250,000,000.00	250,000,000.00	127,530,403.94	549,610,028.57	624,970,960.81
2005	20,482,378,390.00	2,162,833,210.00	250,000,000.00	250,000,000.00	250,000,000.00	3,500,000,000.00	3,500,000,000.00	1,507,294,000.00
2006	21,285,915,480.00	2,325,980,215.00	250,000,000.00	250,000,000.00	250,000,000.00	3,500,000,000.00	3,500,000,000.00	3,534,163,800.00
2007	15,164,658,416.00	2,186,003,977.28	250,000,000.00	250,000,000.00	250,000,000.00	2,379,949,292.30	5,488,279,684.57	1,533,011,035.15
2008	21,910,176,100.00	2,774,478,470.00	225,521,530.00	250,000,000.00	250,000,000.00	4,000,000,000.00	8,500,000,000.00	1,995,774,305.00
2009	25,493,838,710.00	3,059,926,320.00	225,521,530.00	250,000,000.00	250,000,000.00	4,400,000,000-00	6,000,000,000.00	3,870,215,300.00

Source: Adamawa State Budgets.

Table 3. Analysis of percentage of VAT to total revenue and VAT increases over the years.

Year	Actual expenditure	Total revenue	VAT allocations	Percentage of VAT to total revenue	Percentage increases of VAT
2001	6,871,437,000.65	6,560,450,220.75	619,832,355.00	9.448015519	
2002	7,673,506,063.97	7,327,699,172.15	855,174,330.91	11.67043448	37.96864975
2003	13,960,250,185.00	14,544,341,675.14	1,254,255,685.38	8.623667632	102.3540196
2004	14,559,902,432.90	15,683,506,598.60	1,439,001,187.45	9.175251583	132.1597406
2005	19,012,451,869.70	31,152,505,600.00	2,162,833,210.00	6.942726334	248.9384174
2006	36,396,059,495.00	36,146,059,495.00	2,325,980,215.00	6.434948228	275.2595676
2007	30,433,474,194.80	27,501,902,404.20	2,186,003,977.28	7.948555504	252.6766487
2008	39,903,601,329.87	39,905,900,405.00	2,774,478,470.00	6.952551983	347.617561
2009	42,468,502,780.90	43,549,501,860.00	3,059,926,320.00	7.026317614	393.6699892

Source: Data computations.

Limitations of the study area

The focus of the study is on Nigeria and the state of study is Adamawa State.

The concept of 'Development' is focused on economic and human development in Adamawa State. The study is limited to analyses of the budget events of 2001 to 2009 of Adamawa State and administration of 301 questionnaires to the populace of the State who can read and write.

PRESENTATION OF DATA COLLECTED

Analysis of data, hypothesis testing, explanations of results and decisions. Data obtained from respondents' perceived levels of VAT impact on the human and economic development of Adamawa State appears as in Table 4.

Analysis of Table 1 to test Null Hypothesis 1

Ho_1 states that VAT does not make any significant

Table 4. Perceived levels of VAT impact on the human and economic development of Adamawa State from 2001 to 2009.

Level of impact	Adamawa	Ganye	Mubi	Numan	Outsiders	Total
Strong	39	15	9	3	6	72
Minimal	33	2	8	21	24	92
No impact	36	6	3	9	9	63
Fairly	24	9	6	9	1	48
Total	132	32	36	36	40	276

Source: Responses from the administered questionnaire.

Table 5. Model summary.

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.955[a]	0.912	0.899	4.43202E9

Predictors: (Constant), VAT allocations.

contributions to expenditure pattern of Adamawa State from 2001 to 2009. Data from Table 1 is executed with SPSS simple regression statistical tool. In the model, dependent variable from the hypothesis is 'Expenditure', while the independent variable is 'VAT'. According to McClave et al. (2005), simple regression of the afore-mentioned nature should be coded on three columns. The first column should be for the "Year', the second for the 'VAT Allocations' and the third for 'Expenditure'. After entering their respective data, it is processed by selecting the command; Analyze $\Rightarrow$ Regression $\Rightarrow$ Linear.

The result appears as in Tables 5 to 7.

Interpretation of Hypothesis 1 results and decision

From Table 5, of the result, the correlation between VAT and expenditure pattern of Adamawa State from 2001 to 2009 is positively correlated. R^2 shows that VAT alone accounts for 91.2% of the variations in expenditure pattern of the state. Other variables account for 8.8% of the changes in the expenditure pattern of the state. Table 7 of the result informs us that when no money is received from VAT, N5, 602 worth of expenditure is made by the state and for every 15.691 Naira increase in VAT allocations to the state brings about a unit increase in the expenditure pattern of the state. The level of significance from the result of Table 7 indicates that VAT makes a significant contribution to the expenditure pattern of the state.

Table 6 result shows that F-ratio is 72.485, which is significant because p = 0.0001, which is less than 0.05 (the study confidence level). The result tells us that there is less than a 0.1% chance that an F-ratio this large would happen by chance. We therefore conclude that VAT allocations to Adamawa State make significant contributions to expenditure pattern of the State. The Null hypothesis which states that VAT does not make any significant contributions to expenditure pattern of Adamawa State from 2001 to 2009 is hereby rejected.

Analysis of Table 2 to test Null Hypothesis 2

Ho_2 states that the proportion of VAT allocations to total revenue of the state from 2001 to 2009 is insignificant. To test this hypothesis, we used multiple regression and ANOVA. The source data are as stated in Table 2 and total revenue from Table 1.

The dependent variable is 'Total Revenue' while the independent variables are statutory allocation, VAT, stabilization fund, ecological fund, special reserves, excess crude oil, capital receipts and internally generated revenue. Field (2005) multiple regression data is coded in the SPSS by entering the response event (total revenue) as the dependent variable and predictors (Sources of Revenue) as independent variables.

The data is executed by the following command: Analyze $\Rightarrow$ Regression $\Rightarrow$ Linear, entering total revenue into dependent variable and sources of revenue, including VAT into independent variables.

The statistical details method selected is 'Forced Entry'; regression statistics chosen are; estimates, confidence intervals, model fit, R squared change, descriptive, part and partial correlations and collinearity diagnostics. The outcome of the command appears as shown in Table 8 to 11.

Interpretation of Hypothesis 2 results and decision

As seen from Table 8 of the result, the mean and standard deviations of each of the contributing sources of

Table 6. ANOVA[b].

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	1.424E21	1	1.424E21	72.485	.000[a]
	Residual	1.375E20	7	1.964E19		
	Total	1.561E21	8			

Predictors: (Constant), VAT allocations; Dependent variable: expenditure of the state.

Table 7. Coefficients[a].

Model		Unstandardized coefficient		Standardized coefficient	t	Sig.
		B	Std. error	Beta		
1	(Constant)	-5.602E9	3.721E9		-1.505	.176
	VAT allocations	15.691	1.843	.955	8.514	.000

Dependent variable: Expenditure of the state.

Table 8. Descriptive statistics.

	Mean	Std. deviation	N
Total revenue	2.4708E10	1.40637E10	9
VAT allocations	1.8531E9	8.50194E8	9
Statutory allocations	1.4856E10	8.04980E9	9
Stabilization fund	2.8037E8	1.41196E8	9
Ecological fund	3.6067E8	3.42148E8	9
Special reserves	3.2715E8	1.16072E8	9
Excess crude oil	2.0936E9	1.81641E9	9
Capital receipts	3.2198E9	2.97961E9	9
Internally generated revenue	1.6492E9	1.28005E9	9

total revenue variable are displayed over a period covering 2001 to 2009. Table 9 depicts the correlations of the variables with each other and to the total revenue. VAT, excess crude oil shares and statutory allocations showed the highest positive correlations to total revenue although VAT took the upper arm. VAT correlation to total revenue is very significant as $p<0.0001$. Table 10 output tells us whether the model is successful in predicting Adamawa State total revenue. Model 1 of Table 10 refers to the first stage in hierarchy when only VAT is used as a predictor. Model 2 refers to when all the variables including VAT are used as predictors. The column labeled R is the values of the multiple correlation coefficients between the predictors and the outcome. When VAT alone was inputted as predictor, the co-efficient amounted to 0.989. At R2 which measures how much of the variability in the outcome is accounted for by the predictors, here it shows that VAT accounts for 97.6% of the variation in total revenues of the state. However, when all the predictors were used in Model 2, it increased to 100%. Looking at results shown by Table 11, F-ratio amounted to 319.848 which is unlikely to occur by chance events and is highly significant ($p< 0.0001$). In conclusion using Table 10 which summarizes the outcome of the model that tells us whether the proportion of VAT to total revenue over the period is significant or not. The table shows that it is significant. We therefore reject the null hypothesis which states that the proportion of VAT allocations to total revenue of Adamawa State from 2001 to 2009 is insignificant.

Analysis of Table 4 to test Null Hypothesis 4

Ho_4 states that the levels of VAT impact on economic and human developments as perceived by Citizenry of the state from the administrative areas are not significantly different. The data type containing two levels of information (Administrative areas and levels of development) in addition to the score ranks are to be given a group code. According to Lind et al. (2006), group codes are necessary so that SPSS can successfully

Table 9. Correlations.

		Total revenue	VAT allocations	Statutory allocation	Stabilizationn fund	Ecological fund	Special reserves	Excess crude oil	Capital receipts	Internally gen. revenue
Pearson correlation	Total revenue	1.000	0.986	0.977	-0.177	-0.443	-0.805	.961	0.877	0.839
	VAT allocations	0.986	1.000	0.969	-0.191	-0.521	-0.838	.925	0.903	0.767
	Statutory allocations	0.977	0.969	1.000	-0.154	-0.534	-0.847	.918	0.784	0.799
	Stabilization fund	-0.177	-0.191	-0.154	1.000	0.376	0.371	-.287	-0.210	-0.155
	Ecological fund	-0.443	-0.521	-0.534	0.376	1.000	0.486	-.350	-0.307	-0.285
	Special reserves	-0.805	-0.838	-0.847	.371	0.486	1.000	-0.720	-.655	-0.611
	Excess crude oil	0.961	0.925	0.918	-.287	-0.350	-0.720	1.000	.860	0.815
	Capital receipts	0.877	0.903	0.784	-.210	-0.307	-0.655	.860	1.000	0.594
	Internally generated revenue	0.839	0.767	0.799	-.155	-0.285	-0.611	.815	.594	1.000
Sig. (1-tailed)	Total revenue	0.0	0.000	0.000	.338	0.136	0.008	0.000	0.002	0.005
	VAT allocations	0.000	0.0	0.000	.325	0.093	0.005	0.000	0.001	0.013
	Statutory allocations	0.000	0.000	0.0	.358	0.086	0.004	0.001	0.011	0.009
	Stabilization fund	0.338	0.325	0.358	0.0	0.179	0.183	0.246	0.309	0.357
	Ecological fund	0.136	0.093	0.086	0.179	0.0	0.111	0.198	0.230	0.247
	Special reserves	0.008	0.005	0.004	0.183	0.111	0.0	0.022	0.039	0.054
	Excess crude oil	0.000	0.000	0.001	0.246	0.198	0.022	0.0	0.003	0.007
	Capital receipts	0.002	0.001	0.011	0.309	0.230	0.039	0.003	0.0	0.060
	Internally generated revenue	0.005	0.013	0.009	0.357	.247	0.054	0.007	0.060	0.0
N	Total revenue	8	8	8	8	8	8	8	8	8
	VAT allocations	8	8	8	8	8	8	8	8	8
	Statutory allocations	8	8	8	8	8	8	8	8	8
	Stabilization fund	8	8	8	8	8	8	8	8	8
	Ecological fund	8	8	8	8	8	8	8	8	8
	Special reserves	8	8	8	8	8	8	8	8	8
	Excess crude oil	8	8	8	8	8	8	8	8	8
	Capital receipts	8	8	8	8	8	8	8	8	8
	Internally generated revenue	8	8	8	8	8	8	8	8	8

execute the command of models containing two or more levels of information pertaining to a given field. The Administrative areas are coded 1 = Yola, 2 = Ganye, 3 = Mubi, 4 = Numan and 5 = others, while the 'Perceived Levels of Development' are coded 0 = no Impact, 1 = minimum impact, 2 = fair impact and 3 = strong impact. Each code group is entered into same column in the SPSS data editor. The outcome of the coding and entering of the relevant perception ranks appears as given in Table 12.

On execution of the command; Analyze ⇒

Table 10. Model summary [c].

Model	R	R^2	Adjusted R^2	Std. error of the estimate	Change statistics					Durbin-Watson
					R^2 change	F Change	df1	df2	Sig. F Change	
1	0.989[a]	0.979	0.976	2.20024E9	0.979	319.848	1	7	0.000	
2	1.000[b]	1.000	0.0	0.0	0.021	0.0	7	0	0.0	2.294

[a], Predictors: (Constant), VAT allocations; [b], Predictors: (Constant), VAT allocations, stabilization fund, ecological fund, special reserves, internally generated revenue, excess crude oil, capital receipts, statutory allocations; c, Dependent variable: Total revenue.

Table 11. ANOVA[c].

	Model	Sum of squares	df	Mean square	F	Sig.
1	Regression	1.548E21	1	1.548E21	319.848	0.000[a]
	Residual	3.389E19	7	4.841E18		
	Total	1.582E21	8			
2	Regression	1.582E21	8	1.978E20	.	.[b]
	Residual	175670.031	0	.		
	Total	1.582E21	8			

[a], Predictors: (Constant), VAT allocations b. Predictors: (Constant), VAT allocations, stabilization fund, ecological fund, special reserves, internally generated revenue, excess crude oil, capital receipts, statutory allocations. [c], Dependent variable: Total revenue.

Table 12. Impact levels from each administrative area.

Level of impact codes	Administrative area codes	Perception ranks
0	1	36.0
0	2	6.0
0	3	3.0
0	4	9.0
0	5	9.0
1	1	33.0
1	2	1.0
1	3	8.0
1	4	21.0
1	5	24.0
2	1	24.0
2	2	9.0
2	3	6.0
2	4	9.0
2	5	1.0
3	1	39.0
3	2	15.0
3	3	9.0
3	4	3.0
3	5	6.0

Compare means $\Rightarrow$ One-way ANOVA, inputting Perception ranks as dependent variable, with Levels of development and Administrative areas as independent variables. The result will appear as in Tables 13 to 15.

Interpretation of hypothesis 4 results and decision

Table 13 shows the mean, standard deviations, standard errors and confidence intervals of our data input. Table 14

Table 13. Descriptives.

Assigned rank					95% Confidence interval for mean			
Impact	No.	Mean	Std. deviation	Std. error	Lower bound	Upper bound	Minimum	Maximum
No impact	5	12.6000	13.3154	5.95483	-3.9333	29.1333	3.00	36.00
Minimum impact	5	17.4000	12.8180	5.73236	1.4844	33.3156	1.00	33.00
Fairly impact	5	9.8000	8.5849	3.83927	-.8595	20.4595	1.00	24.00
Strong impact	5	14.4000	14.4499	6.46220	-3.5419	32.3419	3.00	39.00
Total	20	13.5500	11.8076	2.64025	8.0239	19.0761	1.00	39.00

Table 14. Test of homogeneity of variances.

Assigned ranks			
Levene statistic	df1	df2	Sig.
0.435	3	16	.731

Table 15. ANOVA.

Assigned ranks			Sum of squares	df	Mean square	F	Sig.
Between groups	(Combined)		152.550	3	50.850	0.326	0.807
	Linear term	Contrast	1.210	1	1.210	0.008	0.931
		Deviation	151.340	2	75.670	0.485	0.624
Within groups			2496.400	16	156.025		
Total			2648.950	19			

Table 16. Wilks' Lambda.

Test of function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	0.920	1.339	6	0.969
2	1.000	0.000	2	1.000

tests whether the variances of the four levels of impact are significantly different. The outcome showed that Levene’s test is insignificant therefore validating that the assumptions of ANOVA were not violated in our data collections. Table 15 shows the summary of ANOVA outcome. The overall effect is broken down because we asked SPSS to carry out a trend analyses, if not the two rows would not have been shown. The result shows that, both between groups and within groups significance levels are greater than 0.05; hence the observed perception of levels of VAT impact across the administrative areas is insignificant. We therefore accept the Null hypothesis which states that levels of VAT impact on economic and human developments as perceived by citizenry of the state from the administrative areas is not significantly different. The trend analysis explains that both linear and quadratic relationships in the data have both insignificant relationships. Having accepted the Null hypothesis that stated that levels of VAT impact on economic and human developments as perceived by citizenry of the state from the administrative areas is not significantly different, we refocus our attention to the relative level of perception of VAT impact on the economic development of the state.

Analysis of Table 6 to test Null Hypothesis 3

Ho_3 VAT allocations to Adamawa State are not perceived to impact significantly on the economic and human development of the state. To test this hypothesis, we made use of Table 6, using discriminant analysis. The command line is; Analyze $\Rightarrow$ Classify $\Rightarrow$ Discriminant, inputting the values assigned to the various levels of development. The result appeared as Tables 16 and 17.

Interpretation of Hypothesis 3 results and decision

As seen from Table 16 of the results, Wilk’s Lambda test showed that the use of one perceived level of VAT impact

Table 17. Classification function coefficients.

Variable	Levels of impact			
	No. of impact	Minimum impact	Fairly impact	Strong impact
Assigned ranks	.234	.278	0.208	0.251
Administrative area	2.212	2.402	2.102	2.284
(Constant)	-6.179	-7.408	-5.560	-6.616

Fisher's linear discriminant functions.

on development of the state is insignificant. However, the coefficient that is, perceived relative contribution levels of development by VAT is highest; among administrative areas is 'Minimum Impact'.

This outcome leads us to accept the Null hypothesis that VAT allocations to Adamawa State are not perceived to impact significantly to the economic and human development of the state.

CONCLUSIONS AND RECOMMENDATIONS

VAT allocations alone accounts for 91.2% of the variations in expenditure pattern of Adamawa state from 2001 to 2009. We also found out that VAT allocations to the state within the said periods were very significant when compared with the total revenues of Adamawa State within the same period. The perceptions of VAT impact on economic and human development across the administrative areas of Adamawa State are not significantly different. The facts obtained via secondary data attest to a very significant VAT impact on economic and human development of the state; however data obtained from primary sources suggest that VAT impacts on economic and human development of Adamawa State from 2001 to 2009 are perceived to have minimum impact.

In conclusion, although VAT allocations to Adamawa State from 2001 to 2009 have a very significant impact on expenditure pattern of the state during the same period, however, the perceptions by the citizenry across the administrative areas of the state suggest that VAT has minimum impact level on the economic and human developments of Adamawa State from 2001 to 2009.

We recommend for further research to be carried out on the spread of VAT impact on various aspects of economic and human developments among the administrative areas in Adamawa State from 2001 to 2009 and its demographic effects. The developmental indices should include all the variables stated in this work and where necessary include others. Finally, we recommend to the governance of Adamawa State in particular and other States of developing countries in general to ensure that revenue allocations especially VAT should not only have impact but should be perceived to impact positively on the economic and human developments by the citizens of that state as positive perceptions by the citizenry of VAT impact on economic and human developments will increase the Income generations of the federating states and unions. Such positive perceptions will also spread to the citizenries identification and allegiance to the government that ensured such good corporate governance.

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