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Value Added Tax System in Nigeria and Equitable Distribution of Revenue Proceeds

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ABSTRACT

Value Added Tax (VAT) in Nigeria currently serves as a huge source of revenue generation standing at a rate of 7.5% on selected goods and services. The Federal Government of Nigeria (FGN), its 36 States, and all the 774 Local Government areas (LGAs) benefit from proceeds of VAT in the stated distribution formula after the collecting agency (Federal Inland Revenue Service) has collected its 5% administration charges. The vertical allocation formula (VAF) is used to distribute VAT proceeds amongst FGN, States, and LGAs in the ratio 2:5:3. In contrast, the horizontal allocation formula (HAF) is applied amongst states and LGAs using factors such as equity (50%), population (30%), and derivation (20%). This has generated various controversies as several states have gone to court to challenge the equitability and fairness of the HAF. Using secondary data gathered from ten (10) top VAT-generating states and ten (10) low VAT-generating states for 5 years (2019-2023), regression analysis, as well as ANOVA, were used to determine the justification, equitability, and fairness of the HAF with each state's population as a controlling factor. The study found a rationale for population and derivation in the HAF and also posited that the equality factor has no statistically significant effect on the HAF. In contrast, population and derivation are statistically significant. The study concluded and recommended a review of the HAF to ensure equitable and fair allocation of VAT revenue amongst states in Nigeria.

Keywords: *Value added tax, vertical allocation formula, horizontal allocation formula, equity, population, derivation.*

1. Introduction

Value Added Tax (VAT) remains a significant consumption tax levied on all finished goods and services provided in as well as imported into Nigeria. This tax is payable by all individuals, businesses, companies, and government agencies. The 1993 VAT Act (as amended) vests the Federal Inland Revenue Service (FIRS) with the sole authority to administer VAT collection from all taxable persons in Nigeria with the exemption of certain goods and services like educational materials, medical and pharmaceutical products, basic food items, medical services, as well as books. At 7.5%, VAT rate is still one of the lowest globally. Highest rate in some countries of the world goes as high as 50% (Bhutan), 33% (Djibouti), and 30% (Burma/Myanmar) (Statista, 2021). VAT presently accounts for about 20% of global tax revenue generated by over 160 countries worldwide (Gerard & Naritomi, 2020; James, 2011; Jenkins & Kuo, 1995). According to Obadan (2015), over 80%

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of countries in the sub–Saharan Africa have gone ahead to adopt VAT and it is presently accounting for the generation of about 25% of the continent's tax revenue. Most of these countries adopted VAT as a result of their dissatisfaction with their existing tax structure (Sanni, 2012). This reason and increased revenue generation were part of why VAT was adopted in Nigeria.

According to Statista (2021), over 160 countries of all the 194 countries in the world have since adopted VAT as a veritable source of revenue generation. A cursory look at all these countries' VAT rates (grouping them by continents) shows that the highest and lowest rate adopted in Africa is 33% (Djibouti) and 7.5% (Nigeria); Asia – 50% (Bhutan) and 2.5% (Timor-Leste); Australia / Oceania – 15% (Fiji Island & New Zealand) and 10% (Australia & Papua New Guinea); Europe - 27% (Hungary) and 7.7% (Switzerland); North America – 18% (Dominican Republic) and 7% (Panama); South America – 22% (Uruguay) and 10% (Paraguay); and Antartica that has no human population yet (PWC, 2022). VAT has been said to have a semblance with sales tax/federal income tax and this is one of the reasons why despite its wide acceptance by most countries, some notable countries are yet to adopt VAT, for example, countries such as Hong Kong; Libya, and The United States of America (Jayachandran, 2019).

In the country Nigeria, Value Added Tax was introduced and adopted as a replacement for Sales Tax by the VAT Act No. 102 of 1993 on the 24th day of August 1993 (Ugwa & Embuka, 2012, Soyode & Kajola, 2006, Ogungbesan, 2015). Revenue generated by the tax was to be shared amongst the three levels of government. VAT vertical distribution formula at introduction was FGN (50%); States (35%); and LGAs (15%). Starting from January 1999, the VAF was adjusted following a tax reform to FGN (15%), States (50%), and LGAs including FCT (35%). The 50% and 35% share of the States and LGAs is distributed amongst them using the horizontal distribution formula using 50% equality, 30% population, and 20% derivation as factors (Babalola, 2008). This distribution formula amongst states and local governments is predicated on equity, fairness, revenue needs, economic development, transparency, and accountability. Overall, the distribution formula for VAT revenue in Nigeria is designed to strike a balance between the fiscal needs of the different tiers of government while promoting economic growth, equity, fairness, and transparency and ensuring the principle of true federalism is protected and that no state is left behind in the country's quest for growth and development.

Agbo & Nwadialor (2020) raised the question of whether VAT is preferably used as a sub-national tax or a national tax. This question arose from different agitations by some states, leading to several emerging issues in VAT administration. In 2009, Lagos State Government enacted hotel occupancy, and restaurant consumption law of Lagos State. This law imposes a 5% consumption tax on value of goods and or services consumed at all event centers, hotels, as well as restaurants within the Lagos Metropolis. Ango and Filani (2019) remarked that Rivers, Edo, Delta, Ogun, Enugu, and Kano States also enacted similar laws. The enactment and enforcement of these other forms of consumption taxes by different states has been the subject of several litigations challenging its validity and arguing that it results in double taxation. Also, in the year 2021, Lagos State and Rivers State instituted different court cases against the Nigerian Federal Government, challenging the exclusive power abdicated to FIRS to collect VAT as it falls within the purview of consumption tax which should be collected by the states and LGAs (Audu & Ajibade, 2021).

Distribution and allocation of VAT proceeds have been a thorny issue in recent times. Control of resources, allocation of revenue, and fiscal federalism have all dominated discussions at various levels of political debate in Nigeria (Ordu & Omesi, 2022). Ojo (2010) as reported by Audu & Ajibade (2021) posits that the distribution of revenue that will be seen as fair and acceptable to the Federal, State, and LGAs in Nigeria seems like an impossible mission. Olofin et.al. (2021) on their part remarked that the revenue allocation issue has become seriously pronounced in Nigeria due to the country's diverse ethnic nationalities clamoring for control of resources generated from their regions. VAT revenue accrues from three (3) different heads – Intra-State (generated within the state territory and sometimes seen as internally generated revenue for the state), Inter-State (generated between two or more states when goods and services move across states and the VAT is collected at the point of consumption or sale), and International (import VAT and VAT on all international transactions). The Federal Government presently collects all these components of VAT for all tiers of government and distributes them according to the enacted distribution formula which has over time proved not to be acceptable by some states. Sanni, 2012 posited that the VAT proceeds distribution formula has so far been altered six (6) times since its inception (1994, 1995, 1996, 1997, 1998, & 1999). Despite all reviews that have been done on the allocation formula, Lagos State and Rivers State continued to raise concerns about the equitability factor as regards the horizontal allocation formula (HAF). Value Added Tax (Amendment) Act, 2007 provides that 20% of the 50% of the State and Local Government Council's VAT allocation shall reflect the derivation principle to address the demand by some states for a more equitable sharing formula. This amendment

has been found by Sanni, 2012 to have significantly increased the VAT allocation to Lagos State but it has not sufficiently addressed the state's concern about equity in the horizontal allocation formula which stands at 50% (equality), 30% (population), and 20% (derivation). Lagos and Rivers states had sought court rulings to start collecting VAT on behalf of themselves and LGAs within their domains, Delta, Ogun, Enugu, and Kano states have also gone ahead to enact other forms of consumption taxes while still receiving their share of the allocation of the VAT revenue from the Federal Government. It is on this premise that this study intends to look at a possible review of the horizontal allocation formula (HAF) of the Value Added Tax System in Nigeria with the following objectives:

i. Examine the justification for the existing distribution formula for VAT revenue amongst states in Nigeria.
ii. Evaluate the equitability of the current VAT horizontal allocation formula amongst states in Nigeria.
iii. Determine the fairness of the current VAT horizontal allocation formula amongst states in Nigeria.

2. Literature review

2.1 Conceptual review

2.1.1 Nigerian Value Added Tax System

Till this present day, the exact origin of Value Added Tax (VAT) is still generating arguments. Jayachandran (2019) posits that the global adoption and administration of VAT was said to have occurred in two (2) major phases. Countries in Western Europe and Latin America were part of the first phase which occurred in the 1960's and 1970s. The second phase which occurred in the later part of the 1980s had industrialized countries outside the European Union like Australia, Switzerland, Japan, and Canada adopting VAT. Due to the influence of The World Bank and International Monetary Fund, there was also a swift rate of VAT adoption in economies that are transitioning and developing, especially in Africa and Asia (James, 2011). In Nigeria, VAT is a consumption tax created by statute under the Federal Military Government of General Ibrahim Badamosi Babangida in the year 1993 and it was called the Value Added Tax Decree of 1993 to replace sales tax being collected in the states (Sanni, 2012).

2.1.2 Fiscal Federalism, Revenue Allocation, and VAT Distribution Formula

The political system where governmental power is allocated amongst the central and all other different units of government is called federalism. Federalism has been seen as a situation where powers in a multi-national country are divided between the central government and its other smaller units so that each unit exists as an authority that is independent and separate from one another, with the territorial area and will of its apparatus to carry out its affairs as well as exercise authority in matters exclusive of others (Sagey, 2008). The Federal Republic of Nigeria as indicated in its name runs a federal system of government as against unitary and confederation systems as practiced in other climes. This enables the country to achieve its macro-economic objectives effectively by carrying out functions that include: income distribution/redistribution, resource allocation, and economic stabilization within the federal government and its two (2) other component units called the state and local government (Ordu & Omesi, 2022). Fiscal Federalism is the system of grants and transfers through which the central government shares the collective revenue with the other jurisdictions or tiers of government based on tax powers, revenue retention, and adopted sharing method for all centrally collected revenue in line with the constitutional responsibilities of all jurisdictions and tiers of government (Gberevbie, 2023).

Allocation of revenue has constantly been a thorny issue in the country's fiscal federalism because of smaller units' dependence on statutory allocations from the federation account for developmental purposes, and it appears that in Nigeria, fiscal federalism brings about disharmony amongst all the federating units and this has greatly reduced the productive capacity of the federation as an entity (Raji, 2024; Bello & Mackson, 2022).

The vertical allocation formula (VAF) represents the distribution formula applied to the total revenue due to the federation and remitted to the federation account. It can be said to be the inter-tier formula for sharing revenue amongst different federating units (Gberevbie, 2023). In the case of Nigeria, this formula is used to allocate revenue amongst the FGN,

36 states & FCT, and the 774 local governments. Presently this VAF for VAT is 15% to FGN, 50% to the 36 states & FCT, and 35% to the 774 local government areas. The horizontal allocation formula (HAF) on the other hand represents the distribution formula that is applied to the en-bloc revenue allocated through the VAF to the lower tiers of government in a federating unit. It is an intra-tier sharing formula amongst units of the federation. In Nigeria, the HAF is used to share the state and local government share VAT revenue amongst the 36 states, FCT, and 774 local governments (Bashir, 2018). HAF is presently done based on equality (50%), Population (30%), and derivation (20%) amongst states and local governments in Nigeria.

2.1.3 Equity and Fairness in VAT Horizontal Allocation Formula

Yusuf (2021) remarked that the current allocation mechanism of VAT proceeds amongst states and local governments continues to raise fundamental questions of equity and fairness. The present 20% allocated to the derivation factor in the allocation of states and local government VAT revenue is seen to be low. He posited that a significantly strong correlation exists between the scale of economic activities, VAT revenue generated, and negative externalities to host states. Externalities that have been identified include pressure on physical, economic, and social infrastructures such as roads, schools, and hospitals; negative impact on the environment such as gas flaring, and oil exploration activities; social problems such as heightened criminality, waste management, and urbanization challenges such as the proliferation of slums, traffic congestion, and so on. These identified externalities put great pressure on the state's finances, which provide the bulk of the VAT revenue; hence, these states agitated for a stronger derivative principle to ensure equity and fairness.

3. Empirical and Theoretical Review

3.1 Empirical Review of the VAT system in Nigeria and Revenue Allocation

Omesi and Nzor (2015) looked at Nigeria's tax reforms concentrating on VAT. The study listed the reasons for replacing sales tax with VAT and its yearly impact on the overall revenue base of the nation. It posited that VAT was statutorily designed to favor development at the lower level of government and further recommended that the VAT Act should be amended. Audu and Ajibade (2021) on their part studied VAT allocation and Human Development amongst Nigerian states. The study was informed due to the unacceptable score of 0.534 the country scored on the last Human Development Index report. Using secondary data and ex–post facto research design, data was collected for all 36 states and the study showed that internal sources of finance and VAT allocation have a very low positive effect on the literacy level and quality of life of Nigerians while it has no significant effect on human development amongst states in Nigeria.

Ordu and Omesi (2022) looked into the relationship that exists between VAT and Nigeria Revenue Allocation using a twenty-one-year period (2000 – 2020). The study aimed to examine the connection between VAT and Federal, State, and LGA allocations. Using an ex-post facto design and secondary data sourced from annual statistical bulletin of the Central Bank of Nigeria (CBN), descriptive statistics was used for data analysis, and regression was used in testing the hypotheses. VAT was found to have a positive and significant relationship with Federal, State, and LGA allocations in Nigeria. The study further recommended that there should be an improved and agreed equitable sharing formula of the VAT revenue. Raji (2024) on his part appraised the revenue allocation formula, looking at the fundamental issues existing in Nigeria's fiscal federalism and political stability. The study concluded that to reduce the political tension on revenue allocation, the constitution should give the central and state governments the authority to manage their resources as this will ensure equity and fairness and reduce political violence. Aliyu & Audu (2024) studied the Monopoly of Value Added Tax as threat to low revenue-generating states in Nigeria. Using stratified sampling technique and linear regression with respondents drawn from three (3) states in the northern part of Nigeria, the study concluded that value-added tax revenue should be generated by all states for redistribution to the federal, state, and local government in Nigeria to augment internally generated revenue as this will enhance growth and development in all states and local governments. An empirical study of fiscal federation and revenue allocation in Nigeria was the focus of Pillah (2024). The study used secondary data and documentation analysis to recommend that there is a great need for economic diversification, equity, fairness, guaranteed justice, accountability, and devolved authority/resources by use of constitutional frameworks to ensure Nigeria's cohesion, stability and existence. Most

studies carried out has not looked into the fairness and equitability of the VAT HAF which is the gap this study intends to address with focus on the 36 states. The study thus hypothesizes that:

i. There is no significant justification for the existing distribution formula of VAT revenue amongst states in Nigeria.
ii. The current VAT horizontal allocation formula does not significantly contribute to an equitable distribution of VAT revenue amongst states in Nigeria.
iii. The current VAT horizontal allocation formula does not significantly represent a fair distribution of VAT revenue amongst states in Nigeria.

3.2 Theoretical Review

3.2.1. Theory of Relative Deprivation

Gurr (1970) theory of relative deprivation was adopted for this study. This theory states that the more people are deprived of what they consider their due against what their compatriots are getting, the more likely they will rebel. In Gurr's exact words "relative deprivation is a perceived discrepancy between means value expectations, and their value capabilities". To support this assertion, Gurr (1970) defined value capabilities as the goods and conditions people believe they are capable of achieving or maintaining given the social means at their disposal. The core idea of this theory is that people will more likely experience feelings of deprivation and frustration when they perceive that they are not receiving a fair share of resources compared to others, rather than when they are objectively worse off. The theory posits that **relative deprivation** occurs when people feel that they are deprived of resources or opportunities in comparison to others who are similarly situated. It is not just about absolute poverty or lack, but about perceived inequality. It also went further to describe the **perception of unfairness** as a situation where people believe that the distribution of resources is unfair or that they are not receiving their due share which can lead to frustration and potentially to social unrest and this can lead to **group identity and mobilization** where groups experiencing relative deprivation may mobilize to demand better conditions or changes in policy to rectify perceived injustices. VAT distribution in Nigeria has been a contentious issue due to the country's complex federal system and economic disparities among states. Gurr's (1970) theory of relative deprivation greatly relates to the situation as it has created **perceived inequality** where different states in Nigeria contribute varying amounts of VAT revenue. Still, the distribution is determined by a federal allocation formula that may not align with the proportion of VAT collected from each state.

4. Materials and Methods

The study employed a descriptive research design in gathering data on VAT revenue generated and VAT revenue allocated to all states and FCT in Nigeria. The country presently has 36 States and the FCT and also 774 local government areas using the HAF. The 36 states and FCT form the population of this study while the sample of ten (10) highest VAT-generating states and the ten (10) lowest VAT-generating states was derived using a purposive sampling technique. Secondary data from National Statistical Agencies, Central Bank of Nigeria, Federal Inland Revenue Service, and Accountant General of the Federation Office were all used for the five (5) year study (2019-2023). Eviews statistical software was then employed for comprehensive data analysis using ANOVA and Regression analysis, this enabled the examination of available data for the present distribution formula and also to capture relationship types including threshold effects and interactions amongst variables. Data quality, completeness, and accuracy were some of the limitations encountered by the study.

5. Data

TABLE 1 VAT GENERATED (2019 - 2023)							
S/NO	STATE	2019	2020	2021	2022	2023	TOTAL
1	ABIA	2,677,266,565.21	3,444,705,565.09	4,663,524,297.03	5,650,513,190.10	8,125,866,259.29	**24,561,875,876.71**
2	BAYELSA	14,655,988,498.47	18,857,130,551.93	25,529,231,697.61	30,932,241,638.04	44,482,908,046.47	**134,457,500,432.52**
3	BENUE	1,482,434,063.18	1,907,374,085.82	2,582,248,388.05	3,128,755,775.13	4,499,387,954.92	**13,600,200,267.11**
4	CROSS RIVER	2,743,905,951.33	3,530,447,144.65	4,779,603,286.08	5,791,159,151.60	8,328,125,812.46	**25,173,241,346.13**
5	DELTA	16,325,480,487.61	21,005,182,755.84	28,437,315,844.40	34,455,793,094.57	49,550,042,115.58	**149,773,814,298.00**
6	FCT	275,669,603,702.06	354,690,351,097.87	480,188,230,608.37	581,815,330,631.72	836,694,545,302.20	**2,529,058,061,342.22**
7	IMO	2,269,246,464.23	2,919,726,420.01	3,952,795,048.27	4,789,365,110.04	6,887,470,047.72	**20,818,603,090.26**
8	KADUNA	21,350,324,023.54	27,470,398,702.89	37,190,078,913.67	45,060,992,086.30	64,801,122,107.89	**195,872,915,834.29**
9	KANO	28,633,892,015.36	36,841,802,925.81	49,877,308,769.77	60,433,348,930.98	86,907,736,429.01	**262,694,089,070.94**
10	KEBBI	1,501,139,855.78	1,931,441,897.63	2,614,831,963.92	3,168,235,343.27	4,556,162,566.34	**13,771,811,626.94**
11	KOGI	3,841,702,154.27	4,942,926,850.16	6,691,851,895.21	8,108,116,306.84	11,660,085,820.09	**35,244,683,026.58**
12	LAGOS	501,786,393,706.94	645,623,564,476.87	874,060,532,251.90	1,059,046,817,786.40	1,522,989,596,543.34	**4,603,506,904,765.45**
13	NASSARAWA	2,916,934,532.84	3,753,074,403.88	5,081,001,362.92	6,156,345,156.90	8,853,290,968.09	**26,760,646,424.63**
14	OGUN	13,822,411,615.94	17,784,608,688.22	24,077,226,097.71	29,172,933,382.78	41,952,889,425.13	**126,810,069,209.77**
15	OSUN	2,332,378,514.24	3,000,955,284.87	4,062,764,616.84	4,922,608,652.51	7,079,084,361.26	**21,397,791,429.71**
16	OYO	75,578,416,757.52	97,242,985,135.64	131,649,865,373.63	159,512,260,125.44	229,390,720,610.39	**693,374,248,002.62**
17	RIVERS	105,562,633,175.87	135,822,183,226.38	183,879,301,026.84	222,795,540,381.56	320,396,874,301.18	**968,456,532,111.81**
18	TARABA	2,052,960,737.34	2,641,442,345.98	3,576,047,452.22	4,332,882,603.41	6,231,013,603.19	**18,834,346,742.14**
19	YOBE	11,042,263,191.46	14,207,530,158.19	19,234,492,133.37	23,305,282,567.91	33,514,762,803.04	**101,304,330,853.95**
20	ZAMFARA	699,284,490.15	899,734,530.03	1,218,081,999.28	1,475,877,033.16	2,122,423,040.73	**6,415,401,093.35**
		1,086,944,660,503.36	**1,398,517,566,247.78**	**1,893,346,333,027.08**	**2,294,054,398,948.66**	**3,299,024,108,118.30**	**9,971,887,066,845.16**
SOURCE: THE STUDY (2024)							

TABLE 2 VAT ALLOCATED (2019 - 2023)							
S/NO	STATE	2019	2020	2021	2022	2023	TOTAL
1	ABIA	11,666,866,062.54	14,424,101,875.58	19,865,529,538.26	24,089,079,409.27	34,000,198,976.15	**104,045,775,861.80**
2	BAYELSA	10,332,911,718.61	12,986,651,247.57	19,638,435,483.63	24,423,141,519.94	34,672,139,956.39	**102,053,279,926.14**
3	BENUE	13,274,374,511.23	16,571,956,328.34	20,992,855,119.94	27,655,529,881.47	37,899,870,763.41	**116,394,586,604.39**
4	CROSSRIVER	11,671,647,848.62	14,571,076,995.46	19,868,580,825.82	24,009,466,649.38	34,331,287,488.55	**104,452,059,807.83**
5	DELTA	14,850,754,631.43	15,901,593,587.51	24,706,543,818.26	30,488,921,146.22	45,719,355,356.59	**131,667,168,540.01**
6	FCT	0.00	0.00	0.00	0.00	0.00	**0.00**
7	IMO	13,144,477,786.95	16,277,626,300.91	21,820,539,018.21	27,180,345,094.22	37,656,549,366.46	**116,079,537,566.75**
8	KADUNA	16,866,418,927.12	20,553,733,168.74	30,025,813,637.96	33,770,566,975.79	47,321,313,360.53	**148,537,846,070.14**
9	KANO	21,631,421,608.29	27,421,738,003.93	39,135,007,022.18	46,649,562,330.58	61,808,515,083.79	**196,646,244,048.77**
10	KEBBI	12,102,293,984.13	15,097,478,835.22	20,527,373,381.25	24,891,312,714.90	36,481,301,624.27	**109,099,760,539.77**
11	KOGI	12,173,316,080.76	15,203,855,694.32	21,074,522,368.68	25,681,944,244.27	36,952,141,785.68	**111,085,780,173.71**
12	LAGOS	107,990,250,235.42	115,047,740,745.27	139,650,460,528.53	164,250,237,356.25	241,757,022,312.13	**768,695,711,177.60**
13	NASARAWA	10,425,650,567.94	13,027,363,759.95	17,892,017,467.03	21,780,631,312.34	29,454,112,263.43	**92,579,775,370.69**
14	OGUN	13,700,584,447.97	16,517,951,378.02	23,613,846,409.78	27,164,567,561.23	39,219,765,290.90	**120,216,715,087.90**
15	OSUN	12,303,330,630.79	15,330,656,991.58	19,437,088,597.70	25,429,102,865.56	36,549,615,870.46	**109,049,794,956.09**
16	OYO	19,106,863,880.89	24,866,837,229.79	39,987,028,405.02	48,202,970,546.20	67,697,594,952.46	**199,861,295,014.36**
17	RIVERS	18,016,367,535.06	23,958,410,406.85	47,882,013,296.54	67,466,760,304.06	100,368,511,513.08	**257,692,063,055.59**
18	TARABA	10,936,097,279.09	13,804,380,813.44	18,743,605,786.81	22,682,112,428.77	33,388,260,722.14	**99,554,457,030.25**
19	YOBE	11,144,220,594.14	13,945,449,774.26	20,262,356,660.72	23,888,966,191.74	32,858,909,505.55	**102,099,902,726.41**
20	ZAMFARA	11,985,920,643.67	15,039,997,405.62	20,391,641,464.14	24,896,854,089.15	35,594,936,503.92	**107,909,350,106.50**
		353,323,768,974.65	**420,548,600,542.36**	**585,515,258,830.46**	**714,602,072,621.34**	**1,023,731,402,695.89**	**3,097,721,103,664.70**
SOURCE: THE STUDY (2024)							

6. Results

TABLE 3: Descriptive statistics on the variables of the study			
	ALLOCATED	GENERATED	POPULATION
Mean	31000000000	99700000000	6328210
Median	21800000000	11400000000	5996805
Maximum	242000000000	1520000000000	16253549
Minimum	0	699000000	1704515
Std. Dev.	33900000000	240000000000	3265690
Skewness	3.72	3.66	1.36
Kurtosis	19.78	17.77	4.78
Jarque-Bera	1403.93	1132.14	43.91
Probability	0	0	0
Sum	3100000000000	9970000000000	633000000
Sum Sq. Dev.	1140000000000000000000	57200000000000000000000	1060000000000000
Observations	100	100	100
Source: Eviews version 10 computation (2024)			

The mean of VAT allocated for the 20 states was N31b with a maximum VAT allocated of N242b and a minimum VAT allocated of N0.00 while the standard deviation stands at N33.9b. The mean of VAT generated for the same 20 states was N99.7b with a maximum VAT generated of N1.52 trillion and a minimum VAT generated of N699m while the standard deviation stands at N240b. Kurtosis is a measure of normality. It is classified into three types based on the basis of the shape of their peaks namely mesokurtic ($\beta 2 = 3$), leptokurtic ($\beta 2 > 3$), and platykurtic ($\beta 2 < 3$). Looking at the table above we could

depict that the variables (VAT Allocated, VAT Generated, and Population) are leptokurtic (since the values are greater than 3) which signifies that the variables will reflect a peaked curve with a higher value than the sample mean. A distribution is said to be skewed when the mean and the median fall at different points in the distribution and the balance or center of gravity is shifted to one side or the other side to the left or the right. A cursory look at the table above shows that VAT allocated, VAT generated, and Population are positively skewed under fair value measurement and historical cost convention which shows that the center of gravity is shifted to the right side.

TABLE 4: Hausman Test to determine what regression analysis method to use				
Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**	
Cross-section random	6.804925	1	0.091	
Cross-section random effects test comparisons:				
Variable	**Fixed**	**Random**	**Var (Diff.)**	**Prob.**
%_POULATION	-0.281295	0.329243	0.054777	0.091
Source: Eviews version 10 computation (2024)				

Decision: Since the P value of the Hausman test is greater than 0.05, then we are to use a random effect regression analysis to test for the justification of the present HAF on VAT revenue distribution.

TABLE 5: Random Effect Regression Analysis of the Justification of present HAF				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
%_POULATION	0.329243	0.204474	1.610197	0.1106
%__OF_TOTAL_GEN	0.315066	0.060276	5.227077	0
C	0.01758	0.011442	1.536406	0.1277
Effects Specification			**S.D.**	**Rho**
Cross-section random			0.027296	0.9045
Idiosyncratic random			0.00887	0.0955
Weighted Statistics				
R-squared	0.290592		**Mean dependent var**	0.007191
Adjusted R-squared	0.275965		**S.D. dependent var**	0.010732
S.E. of regression	0.009132		**Sum squared resid**	0.008089
F-statistic	19.86682		**Durbin-Watson stat**	0.550235
Prob (F-statistic)	0			
Source: Eviews version 10 computation (2024)				

Decision: using multiple variables (VAT generated and Population) to check if there is a significant effect on VAT allocation. For Population, the P value of the regression test is 0.1106 which shows it is insignificant on the percentage of VAT allocated. For VAT generated, the P value of the regression test is 0 which shows it is significant on the percentage of VAT allocated. For the combined effect of the population and VAT generated, the P value is 0 and this shows they are both statistically significant on the percentage of VAT allocated. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted stating that there is a significant reasonable justification for the existing distribution of VAT revenue among states in Nigeria under the current horizontal allocation formula. Therefore, it can be concluded that population and derivation level by each state has a reasonable impact on the horizontal allocation formula.

TABLE 6: ANOVA Analysis of the test for Equitable Distribution of VAT revenue				
Method	**df**	**Value**	**Probability**	
t-test	198	-1.94E-15	1	
Anova F-test	(1, 198)	3.75E-30	1	
Analysis of Variance				
Source of Variation	df	Sum of Sq.	Mean Sq.	
Between	1	4.81E-33	4.81E-33	
Within	198	0.253917	0.001282	
Total	199	0.253917	0.001276	
Category Statistics			Std error of	
Variable	Count	Mean	Std. Dev.	Mean
%__OF_TOTAL_ALLOCATION	100	0.05	0.050644	0.005064
EQUITABLE_DISTRIBUTION	100	0.05	0	0.000000
All	200	0.05	0.035721	0.002526
Source: Eviews version 10 computation (2024)				

Decision: The ANOVA T Test result shows a probability of 1 which is greater than 0.05. Therefore, there is a statistically significant difference between the VAT states are meant to be allocated and what they are eventually allocated. Therefore, the null hypothesis for research question two is rejected and the alternative hypothesis is accepted which signifies that there is a statistically significant difference between HAF and equitable distribution. This shows that the present 50% equality variable in the HAF distribution formula does not promote equitability in the current HAF used in distributing VAT revenue amongst states in Nigeria.

TABLE 7: ANOVA Analysis of the test for fair distribution of VAT revenue				
Method	**df**	**Value**	**Probability**	
t-test	198	-8.582603	0	
Anova F-test	(1, 198)	73.66107	0	
*Test allows for unequal cell variances				
Analysis of Variance				
Source of Variation	df	Sum of Sq.	Mean Sq.	
Between	1	598.5251	598.5251	
Within	198	1608.828	8.125392	
Total	199	2207.353	11.09222	
Category Statistics			Std error of	
Variable	Count	Mean	Std. Dev.	Mean
__OF_TOTAL_ALLOCATION	100	0.05	0.050644	0.005064
%__OF_ALLOCATION_TO_GENERATION (FAIR DISTRIBUTION)	100	3.509841	4.030908	0.403091
All	200	1.779921	3.330499	0.235502
Source: E-views version 10 computation (2024)				

Decision: The ANOVA T Test result shows a probability of 0 which is less than 0.05. Therefore, there is no statistically significant difference between how much VAT states are meant to be allocated and what they are eventually allocated. Therefore, the null hypothesis is accepted and the alternative hypothesis is rejected. This shows that the present 30% population and 20% derivation variables in the HAF distribution formula actually promotes fairness in the current HAF amongst states in Nigeria.

7. Discussion of findings and contribution to knowledge

7.1 Discussion of Findings

The outcomes of various analyses computed in previous sections are properly discussed and evaluated in line with the study's objectives.

7.1.1 Objective 1

Examine the reasonable justification for the existing distribution formula for VAT revenue amongst states in Nigeria.

The data collection and extraction from the official websites of FIRS and Accountant General of the Federation shows that the HAF distribution formula is consistently being applied in the distribution of the VAT revenue amongst states in Nigeria in the ratio 5:3:2 (equality, population and derivation respectively). The combined effect of the regression analysis carried out on the extracted data also agrees that there is a reasonable justification for this present HAF as the P value is 0 and this shows that both population and derivation are statistically significant on the percentage of VAT allocated to each state while equality is not statistically significant.

7.1.2 Objective 2

Evaluate the equitability of the current VAT horizontal allocation formula amongst states in Nigeria.

The observations and findings of the ANOVA test carried out to evaluate the equitability of the current HAF shows a statistically significant difference between what states are supposed to be allocated and what they are being allocated. This shows that the present 50% equality variable in the HAF distribution formula does not promote equitability in the distribution of VAT revenue amongst states in Nigeria.

7.1.3 Objective 3

Determine the fairness of the current VAT horizontal allocation formula amongst states in Nigeria.

The observations and findings of the ANOVA test carried out to evaluate the fairness of the current HAF reveal that no statistically significant difference exists between what states are supposed to be allocated and what they are being allocated. This shows that the present 30% population and 20% derivation variables in the HAF distribution formula promote fairness in the distribution of VAT revenue amongst states in Nigeria.

7.2 Conclusion

The massive revenue being generated by the country through Value Added Tax (VAT), especially after the most recent increase in its rate from 5% to 7.5% generated several agitations by some states as to the suitability of the sharing formula. The vertical allocation formula (VAF) has been severally reviewed to suit the three (3) levels of government; however, the horizontal allocation formula has remained at 50% equality, 30% population, and 20% derivation. This has led to some states stating that huge funds are expended to generate high levels of VAT and that they should be rewarded appropriately. This study and the result from the regression analysis and ANOVA has revealed that the equality variable in the HAF has no statistical significance in VAT allocated to each state and FCT while the population and derivation variables are statistically significant in VAT allocation to states and FCT and this shows that there is a need to adjust the percentage distribution to enhance the VAT HAF amongst states in Nigeria especially on the equitability level.

7.3 Recommendations

In line with the observation, findings, as well as results of the study, recommended courses of action include: The Horizontal Distribution Formula (HAF) which is based on 50% equality, 30% population, and 20% derivation should be reviewed to accommodate the agitation of some states. The percentage of the equality variable in the HAF should be reviewed downwards as the findings of this study have shown that the present HAF does not promote equitability amongst states in Nigeria. The population and derivation variables in the HAF should be enhanced as findings from this study have shown that there is a positive and significant statistical correlation in using them as variables in the HAF.

7.4 Contribution to knowledge

The findings of this research have made additional contributions to knowledge in several ways which include: This study's findings have provided empirical evidence to the relevant question on **Value-Added Tax System in Nigeria: A Review of Distribution Formula**. The study has filled a research gap and broadened the area of knowledge on reviewing the distribution formula of VAT in Nigeria for both the VAF and HAF. It has also provided a comprehensive assessment of the HAF (50% equality, 30% population, and 20% derivation) and its impact on VAT revenue distribution in Nigeria. This research study has also added to the existing literature and information on the VAT system in Nigeria and how the HAF can be reviewed from what it is presently to what can be considered equitable and fair.

7.5 Suggestion for further studies

This study has identified other exploratory areas of research that need to be investigated to increase the understanding of the revenue-distributing formula of VAT in Nigeria. This study used 5 years of data which can be improved upon. Also, the study limited its scope to 20 States out of the 36 States and FCT in Nigeria, further studies can look into the entire states in the Federal Republic of Nigeria. The Vertical Distribution Formula (VAF) can also be looked into to enhance equitability and fairness amongst the FGN, States, and LGAs.

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