QUANTITATIVE EVALUATION OF REVENUE ALLOCATION TO STATES AND LOCAL GOVERNMENTS IN NIGERIA (1999-2008)

Olubusoye Olusanya Elisa, PhD

Department of Statistics, University of Ibadan, Nigeria

Oyedotun Temitope D. Timothy, PhD Candidate

Department of Geography and Planning Sciences, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria

Abstract:

As a follow-up to our last paper on Spatio-temporal information system analysis of revenue allocation in Nigeria, this article presents a quantitative evaluation of the statutory, value added tax and excess crude oil revenue allocation to states and the local governments in Nigeria between May 1999 – December 2008. A comparative and cluster analyses were conducted among the 36 states and 774 local government areas of the country to examine the state and local governments with similar (dissimilar) features in terms of revenue allocation, and we found that overall, a good number of states and local governments in Nigeria have similar trends in revenue allocation.

Keywords: Revenue allocations, Cluster analysis, Derivation, VAT, Federal Republic of Nigeria

Introduction

In our last paper on *Spatio-Temporal Information System Analysis of Revenue Allocation in Nigeria (1999-2008),* European Scientific Journal, Vol 7(no 28), we focused on the comparative analysis of revenue allocation in Nigeria from 1999-2008 to the Six Geo-political Zones of the country(Olubusoye and Oyedotun, 2011). This paper is a continuation

of the study with focus on the quantitative evaluation of revenue allocation to the 36 States of the Federation and the Federal Capital Territory and the 774 Local Government Areas.

1.Comparative Analysis of Allocation of Revenue To States

Figures 1and 2 below brings clearly into focus the distribution of total allocation on three items, which include statutory, 13% derivation fund and VAT to states in the federation and FCT. It is interesting however to observe that Kano and Lagos states stand out prominently as states having the largest statutory allocation in the federation. This may not be unconnected with their population advantages over other states in Nigeria. Federal capital territory also benefitted immensely from the allocation as can be seen on the bar chart diagram. The position of FCT as a seat of power and being a capital city may have accorded her the advantage in the statutory allocation distribution. An interesting picture emerges in terms of distribution based on 13% derivation fund. This is exactly the picture painted in the preceding section. Rivers state has the highest allocation while Akwa Ibom, Bayelsa and Delta states had almost equal allocation. Ondo state also partook in the allocation but not as much as the states earlier mentioned. Edo state appears to be the least partaker in the allocation. In addition, Abia, Cross river and Imo also partook from the 13% derivation as depicted on the diagram. It can therefore be inferred that, it is only oil-producing states that benefitted in the 13% derivation allocation while non-oil producing states do not enjoy anything from such allocation. The implication of this is that resources in the non-oil producing states have not been tapped in a manner to make significant contribution to the federation account. One could as well conclude that only the states benefitting from 13% derivation fund are viable and sustainable being the gooses that lay the golden eggs.

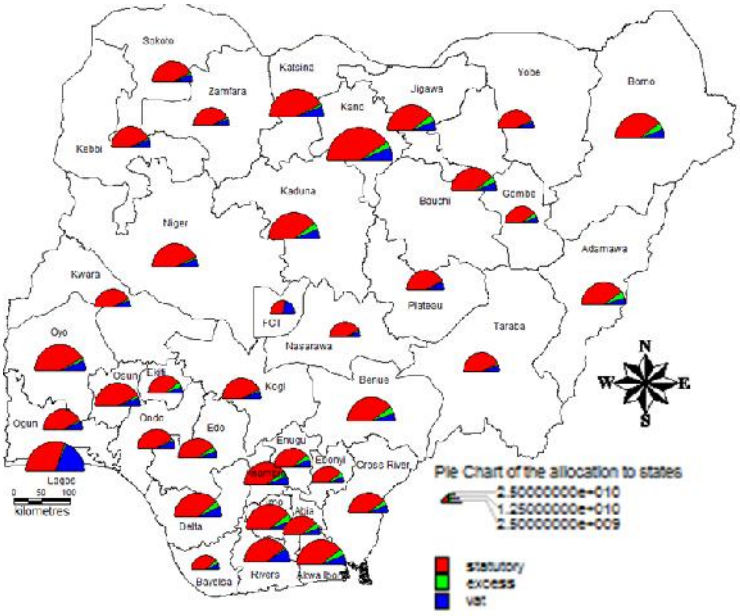


Fig. 1: The Pie Chart representation of total allocation to states (Statutory, Excess and Value Added Tax –VAT)

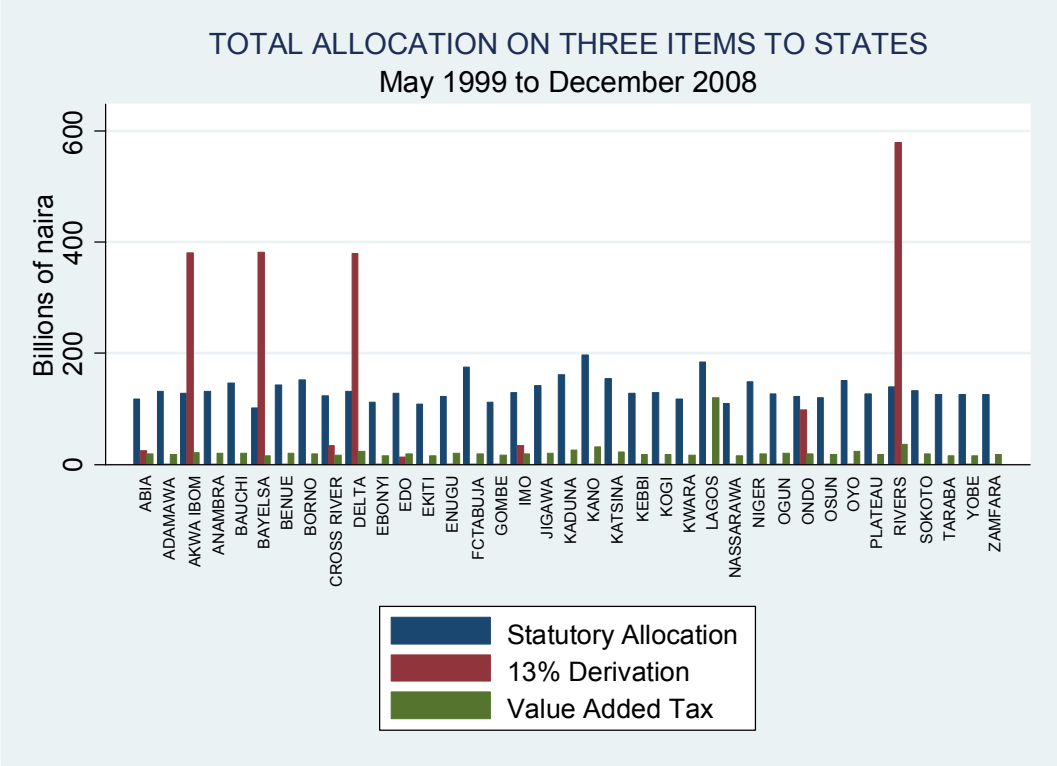


Fig. 2: The bar chat comparison of total allocation to states (Statutory, Excess and Value Added Tax –VAT)

In terms of VAT, Lagos appears to be the only state that contributed substantially to its collection in the federation. Thus, it is not surprising to note that the highest allocation still goes to it. This is because of its population and level of industrialization. It is the commercial hub of the nation and the most populous state in the country. Next to Lagos, is River state as can be seen from the diagram, it is interesting also to observe that virtually all the states in the federation benefitted from VAT proceed allocation unlike 13% derivation that only go to oil-producing and petroleum resource endowed states.

Apart from allocation to states, there are also deductions from allocation to states. During the period under review, it is observed that Lagos has the highest external debt deductions as compared to other states. This is possible because both past and current administration of the state had collected substantial external loans to execute many capital projects, most especially in the area of road construction, building construction, provision of social amenities etc. The availability of all these capital projects contributed to the megacity status accorded to Lagos state. Similar external debt deductions are noticeable in some states like Oyo and Cross river states. The external debt deductions were at the lowest levels at Federal capital territory and Zamfara state. This simply suggests that they hardly made recourse to external loans to financing their projects. Higher bars are also observed in terms of contractual obligations for Plateau, River, Lagos, Cross river, Bayelsa and Akwa Ibom respectively. The deductions are not notice in some states like Federal capital territory, Kano, Katsina, Kwara, Ondo, Osun, Oyo, Sokoto and Zamfara. Other deductions are noticed in all states of the federation except the federal capital territory.

1. Comparative Analysis of Allocation to the Local Governments

The highest paid local government in terms of statutory allocation is Nasarawa (see Table 1) in Nasarawa State having collected total of N12.54 billion within the period of review. It is followed directly by two local governments in Lagos state which are Surulere and Ajeromi/Ifelodun with statutory allocation of N11.3 and N9.1billions respectively. The lowest paid is Koton karfe with N0.15 billion while Isin local government had N0.47 billion. The Ibarapa east and central also collected N0.49 and N0.51 billion respectively during the same period.

Table 1: Ten Highly and Ten Lowly Paid (Statutory Allocation) LGAs in Nigeria

HIGHEST PAID LGCs (STATUTORY ALLOCATION)		LOWEST PAID LGCs (STATUTORY ALLOCATION)	
Local Govt. Area	Total (Nbillion)	Local Govt. Area	Total (Nbillion)
NASARAWA	12.54444	IGBO ETITI	0.6562966
SURULERE	11.27713	ISIALA MBANO	0.6466945
AJEROMI/IFE LODUN	9.129927	ETHIOPE WEST	0.6250301
IFELODUN	8.973523	BARKIN LADI	0.6199894
BASSA	8.836412	IFE EAST	0.5786337
MUSHIN	8.767508	LAGELU	0.5573815
ALIMOSHO	8.469724	IFE CENTRAL	0.5388144
BAUCHI	8.448896	IBARAPA CENTRAL	0.5096942
MAIDUGURI METRO	8.165292	IBARAPA EAST	0.4814681
OBI	7.922834	ISIN	0.4707104
OSHODI/ISOLO	7.711209	KOTON KARFE	0.1455013

Table 2: Ten Highly and Ten Lowly Paid (Excess Crude Oil) LGAs in Nigeria

HIGHEST PAID LGCs (EXCESS CRUDE OIL)		LOWEST PAID LGCs (EXCESS CRUDE OIL)	
Local Govt. Area	Total (Nbillion)	Local Govt. Area	Total (Nbillion)
BAUCHI	0.9506887	IGBO ETITI	0
TORO	0.8611953	BARKIN LADI	0
MAIDUGURI METRO	0.8201741	ISIALA MBANO	0
IGABI	0.8074143	ETHIOPE SOUTH	0
NINGI	0.8013654	IFE EAST	0
ALKALERI	0.7976943	IFE CENTRAL	0
CHIKUN	0.7627946	IFELOJU	0
SOUTHERN IJAW	0.7508245	LAGEMU	0
BIRNIN GWARI	0.7357319	IBARAPA	0
AKKO	0.7287614	OSIN	0
GBOKO	0.7180824	KOTON KARFE	0

In terms of excess crude oil, Bauchi local government (see table 5.2) had the highest which is about N0.95 billion while Gboko local government in Benue state with N0.72billion is tenth in the category during 1999 through 2008. In between the two extremes were Toro, Maiduguri Metro, Igabi, NIngi, Alkaleri, Chikun, Southern Ijaw, Birnin Gwari and Akko local governments with the value ranging from N0.86 and N0.73 billions. The least paid local governments were Koton Karfe, Osin,Ibarapa, Lagemu,Ifeloju, Ife East and Central, Ethiope South, Isiala Mbano, Barkin Ladi and Egbo Etti respectively.

Table 3: Ten Highly and Ten Lowly Paid (Statutory Allocation) LGAs in Nigeria

HIGHEST PAID LGCs (VAT)		LOWEST PAID LGCs (VAT)	
Local Govt. Area	Total (Nbillion)	Local Govt. Area	Total (Nbillion)
SURULERE	11.27713	ETHIOPE WEST	0.1064804
AJEROMI/IFE LODUN	9.129927	ISIALA MBANO	0.1003978
MUSHIN	8.767508	IFE EAST	0.0979413
ALIMOSHO	8.469724	BARKIN LADI	0.0957828
OSHODI/ISOLO	7.711209	LAGELU	0.0953588
KOSOFE	7.286427	IFE CENTRAL	0.0938693
SOMOLU	6.645254	KAI AMA	0.0910699
IFAKO/IJAYE	6.367785	IBARAPA CENTRAL	0.0895476
AGEGE	5.907052	IBARAPA EAST	0.0865674
LAGOS MAINLAND	5.733315	ISIN	0.0784772
OJO	5.564057	KOTON KARFE	0.0155404

From table 3, it is observed that the first ten highest paid VAT allocation local governments are in Lagos state. This further corroborates the earlier assertions that Lagos in the south-west received the highest allocations in VAT. The first being Surulere local government while the tenth being Ojo local government with 11.3 and 5.6 billion respectively. The least allocation goes to Koton Karfe with 0.016 billion directly followed by Isin local government.

2. A Cluster Analysis of Nigeria's Revenue Allocation (1999 – 2008)

Cluster Analysis is a statistical technique that seeks to organize information about variables so that relatively homogeneous groups, or "clusters," can be formed. The clusters formed with this family of methods should be highly internally homogenous (in terms of similarity proximity, resemblance, or association features) and highly externally heterogeneous (that is, unrelated to members of other clusters). Cluster analysis is relatively a new technique and its usefulness for classifying similar and dissimilar objects has continued to gain prominence in social sciences where the geography of data forms an integral part of scientific analysis.

The computational procedure for cluster analysis includes data collection and selection of the variables for analysis, generation of a similarity matrix, decision about number of clusters and interpretation and validation of cluster solution. Fortunately, however, there are standard statistical packages that can perform cluster analysis.

In this study, cluster analysis was carried out to examine the states and local governments with similar (dissimilar) features in terms of revenue allocation. We have used data covering revenue allocation to all the states and local governments in Nigeria. The specific variables of interest for our cluster analysis are statutory allocation, VAT and net statutory allocation.

2.1.A cluster analysis for statutory allocation in Nigeria

Our cluster analysis for statutory allocation was carried out separately for states and local governments in Nigeria. For the state governments, we specified the arrangement of statutory allocation into four clusters to see the similarity or dissimilarity in state governments' statutory allocation. For the purpose of this analysis, we have regarded FCT Abuja as a state in the North Central zone. Tables 4 and 5 below show the results of our cluster analysis involving four clusters. The states within each cluster represent those having similar characteristics with respect to statutory allocation.

Table 4: Cluster analysis of statutory allocation in Nigeria by states

Range of Allocations (N Billion)	Cluster	Rank of Clusters	States	No. of States	Remark
174.81 – 184.84	Cluster 3	1	FCT Abuja, Kano, Lagos	3	Highest Beneficiaries
139.68 – 161.79	Cluster 4	2	Bauchi, Benue, Borno, Jigawa, Kaduna, Katsina, Niger, Oyo, Rivers	9	
120.58 – 131.95	Cluster 1	3	Adamawa, Akwa Ibom, Anambra, Cross River, Delta, Edo, Enugu, Imo, Kebbi, Kogi, Ogun, Ondo, Osun, Plateau, Sokoto, Taraba, Yobe, Zamfara	18	
101.30 – 117.46	Cluster 2	4	Abia, Bayelsa, Ebonyi, Ekiti, Gombe, Kwara,	7	Least Beneficiaries

			Nassarawa		

Source: Computed by the authors

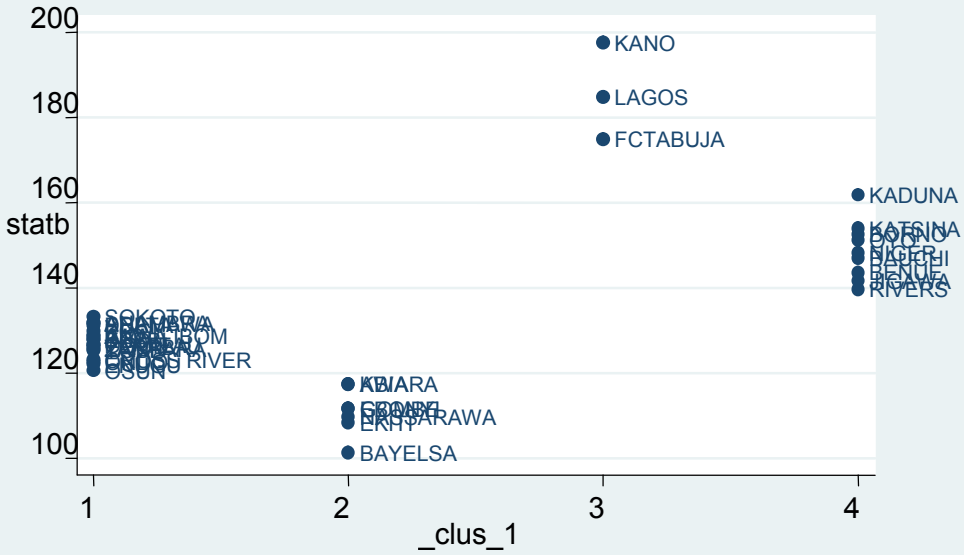
Table 5: Cluster analysis by geo-political zones

Cluster	Geo-political Zone						Number of States
	North West (NW)	North East (NE)	North Central (NC)	South West (SW)	South East (SE)	South-South (SS)	
Cluster 1	3	3	2	3	3	4	18
Cluster 2	0	1	2	1	2	1	7
Cluster 3	1	0	1	1	0	0	3
Cluster 4	3	2	2	1	0	1	9

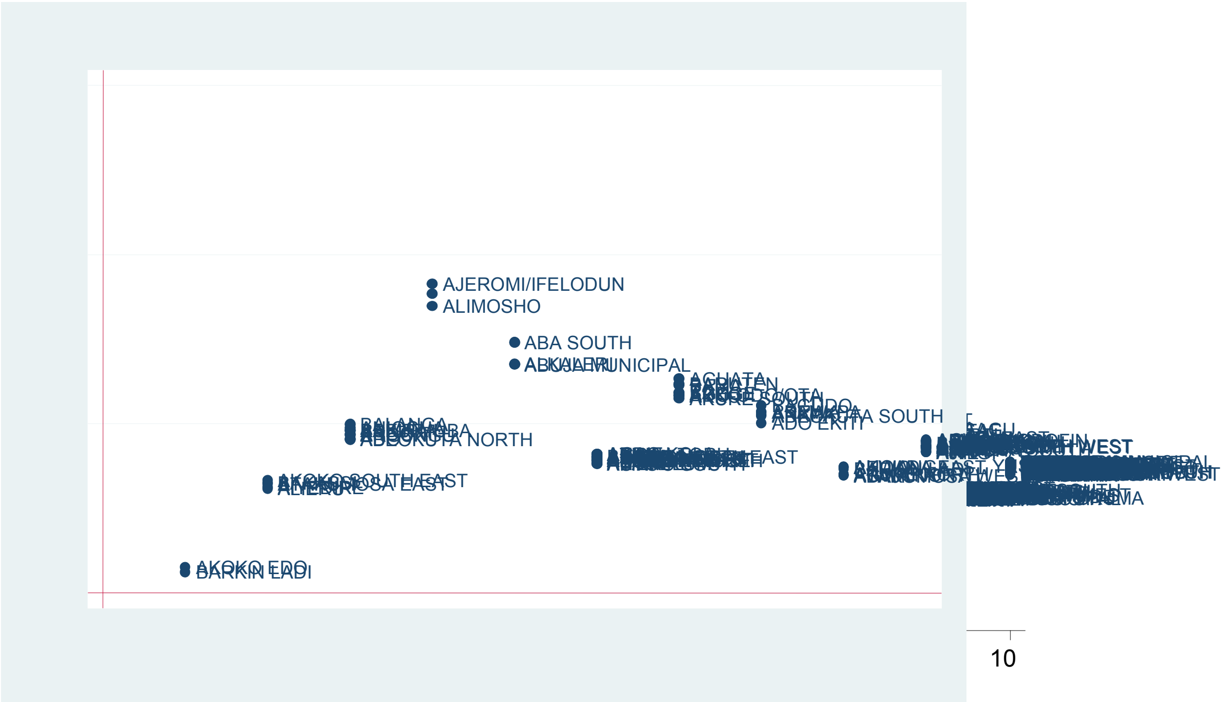
Source: Computed by the Authors

Table 4 shows the distribution of the clusters by states. The cluster formation is also graphically shown in figure 3. Both depict the extent of similarity and dissimilarity in the statutory allocation among states in Nigeria. The first and second values in the column under the range of allocations represent the allocation to the state with the minimum and maximum allocation in the cluster respectively. The clusters of highest and least beneficiaries of statutory allocation have 3 and 7 states respectively. It is interesting to know that 18 (50%) of the states fall within cluster 3. Table 5 shows the distribution of the states within each cluster according to geopolitical zones. None of the states from NE, SE and SS geopolitical zones is listed in the cluster of highest beneficiaries of statutory allocation. It is also very obvious from the table that SE geopolitical zone alone has no representation in the first and second cluster. On this basis, the zone could be regarded as the least beneficiary in respect of statutory allocation.

Fig 3: Cluster Analysis of Statutory Allocation in Nigeria



In the same vein, we conducted cluster analysis for statutory allocation to local governments (LGs) in Nigeria. We specified the arrangement of statutory allocation into ten clusters (because of the large number of LGs in Nigeria) in order to see clearly the similarity or dissimilarity in local governments statutory allocation in Nigeria. The results are presented in figure 4 below. The graph shows the existence of a strong similarity in statutory allocation of some local governments (as shown in each cluster) as well as a strong dissimilarity among the clusters (when one compares one cluster to the other).



Like what was observed in figure 3, figure 4 also shows that a very small number of LGs occupy the extreme cases (that is, highest and lowest statutory allocation). Cluster 2 shows that as low as 7 LGs out of 776 LGs fall within the range of values for the highest statutory allocation. Similarly, cluster 4 depicts that just about 13 LGs fall within the range of values for the lowest statutory allocation. In terms of the number of LGs constituting the clusters, it is seen that cluster 8 has the highest number of LGs (179 LGs to be precise) followed by cluster 2 has the least with 7 LGs respectively. Overall, a good number of LGs in Nigeria have similar features in terms of statutory allocation. Evidently from this analysis, most of the states and LGCs are financially weak and indeed not viable. It puts to question the basis for state and LGC creation in Nigeria.

3.2.A cluster analysis of VAT allocation in Nigeria

Like statutory allocation, cluster analysis for value added tax (VAT) was carried out separately for states and local governments in Nigeria. For the state governments, we also specified the arrangement of VAT into four clusters to see the similarity or dissimilarity in allocation. The tables 6 and 7 and figure 5 below show the results of our cluster analysis involving four clusters.

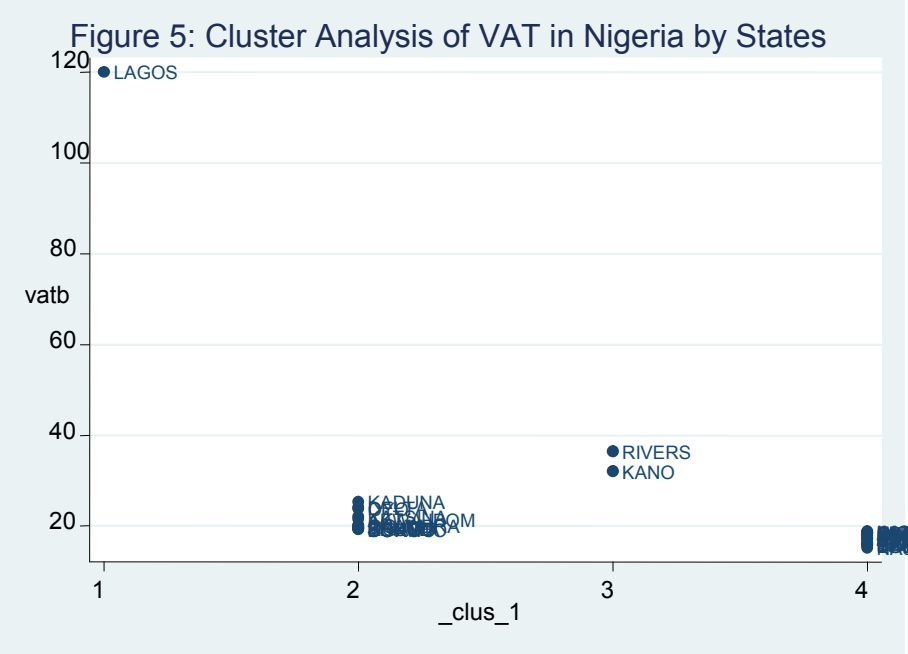


Table 6 shows the distribution of the clusters by states. The table depicts the extent of similarity and dissimilarity in VAT among states in Nigeria. It is very striking to see that Lagos alone is in the cluster of top beneficiary of VAT allocation. The extent of the gap between its cluster and the next cluster can be seen in figure 5. Lagos is clearly a leading beneficiary of VAT allocation for obvious reasons which include large population and level of industrialization. The second cluster has two states – Kano and Rivers while majority (21) is in cluster 4. This is a clear indication of the low level of industrialization and even capacity to generate fund internally in all the 21 states. By looking at the distribution of the clusters by geo-political zones (table 6), it can be seen that NW states benefited more than other zones while North Central dominates the cluster of least beneficiaries.

Table 6: Cluster analysis of VAT allocation in Nigeria by states

Range of Allocations (N Billion)	Cluster	Rank of Clusters	States	No. of States	Remark
119.94	Cluster 1	1	Lagos	1	Highest Beneficiary
32.16 – 36.47	Cluster 3	2	Kano, Rivers	2	
19.20 – 25.41	Cluster 2	3	Akwa Ibom, Anambra, Bauchi, Benue, Borno, Delta, Enugu, Jigawa, Katsina, Ogun, Oyo, Kaduna, Sokoto	13	
15.23 – 18.63	Cluster 4	4	Abia, Adamawa, Bayelsa, Cross River, Ebonyi, Edo, Ekiti, FCT Abuja, Gombe, Imo, Kebbi, Kogi, Kwara, Nasarawa, Niger, Ondo, Osun, Plateau, Taraba, Yobe, Zamfara	21	Least Beneficiaries

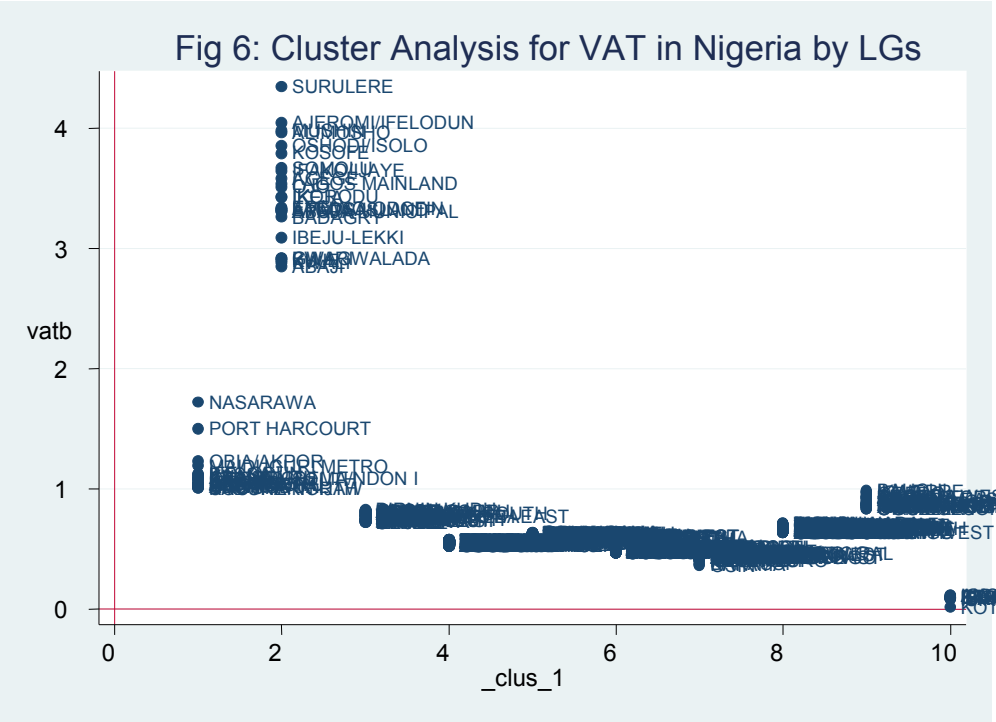
Source: Computed by the authors

Table 7:Cluster analysis of VAT allocation by geo-political zones

Cluster	Geo-political Zone						Number of States
	North West (NW)	North East (NE)	North Central (NC)	South West (SW)	South East (SE)	South-South (SS)	
Cluster 1	0		0	1	(	0	**1**
Cluster 2	4		1	2	2	2	**1** **3**
Cluster 3	1		0	0	(	1	**2**
Cluster 4	**2**		**6**	**3**	3	**3**	**2** **1**

Source: Computed by the authors

In the same vein, the cluster analysis was conducted for VAT to local governments (LGs) in Nigeria. Similarly, the specified arrangement of VAT was into ten clusters. The results are presented in figure 6 below. The graph shows the existence of a strong similarity in VAT for virtually all local governments in Nigeria (as shown in each cluster) as well as a strong dissimilarity among the clusters (that is, moving from one cluster to the other).

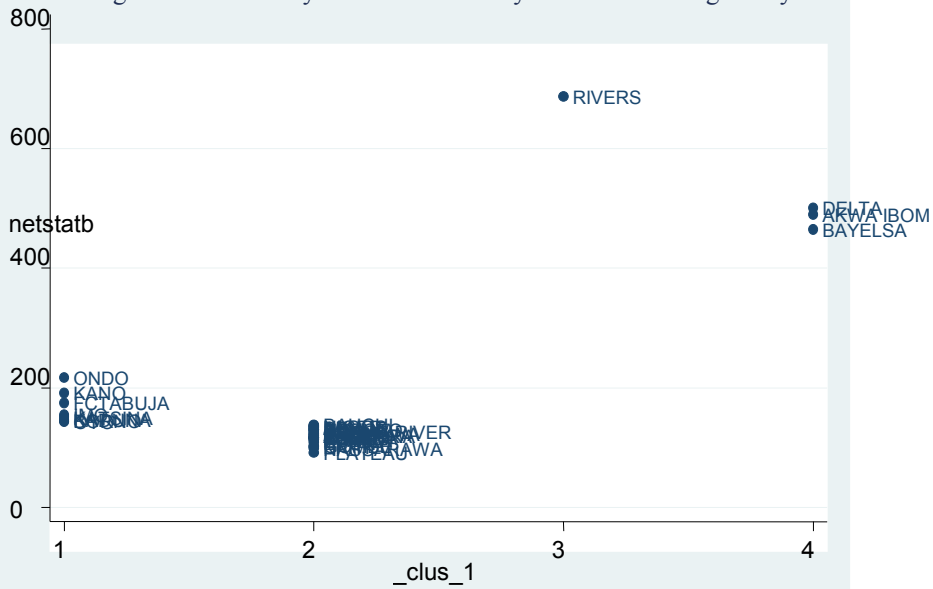


As it was observed in figure 5, figure 6 also shows that a very small number of LGs occupy the extreme cases (that is, highest and lowest VAT). Cluster 2 shows that as low as 26 LGs out of 776 LGs fall within the range of values of the highest VAT beneficiary and it is dominated by LGs in Lagos State. This trend can also be attributed to the earlier reasons adduced for VAT allocation to States in which Lagos is the highest beneficiary. Similarly, cluster 10 depicts that just about 13 LGs fall within the range of values of the lowest VAT beneficiaries dominated by North Central. This also confirms our earlier evidence and in fact gives an indication that North Central seems to be the least industrialized in the Country. In terms of the number of LGs constituting each cluster, it is seen that cluster 6 has the highest number of LGs (165 LGs to be precise) and cluster 10 has the lowest with 13 LGs. Overall, a good number of LGs in Nigeria have similar features in terms of VAT.

3.3.A Cluster Analysis of Net Statutory Allocation in Nigeria

Like statutory allocation and VAT, the cluster analysis for net statutory allocation (netstat) was carried out for states in Nigeria. The intention actually is to ascertain the impact of derivation fund and charges on debt incurred by some states on the available funds at their disposal. For the state governments, we also specified the arrangement of netstat into four clusters to see the similarity or dissimilarity in state netstat allocations. The following tables (6.5 and 6.6) as well as the graph below (figure 7) show the results of our cluster analysis.

Fig. 7: Cluster Analysis for Net-Satutory Allocation in Nigeria by States



The netstat is determined by subtracting charges on debt incurred by each state from its gross allocation. The gross allocation actually is the sum of statutory allocation, derivation fund and VAT. The cluster analysis as presented in tables 8 and 9 for the netstat in Nigeria by states reflects the significant impact of derivation fund and charges on debt incurred by some states as virtually all the states of the Niger Delta (South-South geo-political zone) occupy the range of values for high netstat (see tables 8 and 9). Specifically, table 8 shows that cluster 3 with 1 state (Rivers) occupy the highest range of values of netsat followed by cluster 4 with 3 states (Akwa Ibom, Bayelsa and Delta), cluster 1 with 8 states and cluster 2 with 25 states.

These findings suggest that the oil producing states seem to receive the largest net statutory allocation even far above the highest industrialized state in Nigeria – Lagos. The single factor responsible for this trend is the Derivation fund allocated to the oil producing states. ***One can safely deduce from the analysis that exploitation of natural resources rather than population or even level of industrialization determines net allocation from the federation account in Nigeria.*** By looking at the distribution of the clusters by geo-political zones (table 9), it can be seen that all the geopolitical zones are represented only in clusters 2 while clusters 3 and 4 featured only the SS zone, cluster 1 featured all the geo-political zones excluding the SS .

Unlike what is observed in tables 6 and 7, table 8 and 9 show that a very large number of states occupy one of the extreme cases (that is, the lowest nestat). Cluster 2 shows that 25 states out of 37 fall within the range of values for the lowest nestat. This observation may not

be unconnected with the fact that just about 9 out of the 37 states (including FCT) in Nigeria are eligible for the derivation fund that often shoots up the gross allocation for these states. Overall, a good number of States in Nigeria have similar features in term of net statutory allocation

Table 8: Cluster analysis of net statutory allocation in Nigeria by states

Range of Allocations (N Billion)	Clusters	Rank of Clusters	States	No. of States	Remark
686.69	Cluster 3	1	Rivers	1	Highest Beneficiary
465.12 – 500.51	Cluster 4	2	Balyesa, Akwa Ibom and Delta	3	
142.96 – 217.18	Cluster 1	3	Borno, FCT Abuja, Imo, Kaduna, Kano, Katsina, Ondo, Oyo	8	
91.41 – 137.97	Cluster 2	4	Abia, Adamawa, Anambra, Bauchi, Benue, Cross River, Ebonyi, Edo, Ekiti, Enugu, Gombe, Jigawa, Kebbi, Kogi, Kwara, Lagos, Nassarawa, Niger, Ogun, Osun, Plateau, Sokoto, Taraba, Yobe, Zamfara	25	Least Beneficiaries

Source: Computed by the authors

Table 9: Cluster Analysis of VAT Allocation by Geo-political Zones

Cluster	Geo-political Zone						Number of States
	North West (NW)	North East (NE)	North Central (NC)	South West (SW)	South East (SE)	South-South (SS)	
Cluster 1	3	1	1	2	1	0	**8**
Cluster 2	4	5	6	4	4	2	**25**
Cluster 3	0	0	0	0	0	1	**1**
Cluster 4	**0**	**0**	**0**	**0**	**0**	**3**	**3**

Source: Computed by the authors

3. Concluding Remarks

The focus of this paper is to present the quantitative and cluster analysis for statutory allocations, VAT and crude oil excesses revenue allocations to States in the Nigeria over the period of under review (1999-2008). At the state level, Kano and Lagos state were found to have had more statutory allocations than any other states in the federation. Also, Lagos state has the highest in terms of VAT while the states from south-south region got the largest percentage in the share of crude oil excesses. In effect, the distributional consequences have implications for the growth and development of the constituent units in particular and the federation in general. Apart from these, the results from cluster analysis also offer insightful evidences on the earlier results. For instance, a small number of states constituting each of the clusters in terms of statutory allocation, VAT and net statutory allocation occupied the range of values for highest and lowest allocations. In sum, it can be concluded that a good number of states in Nigeria have similar features in terms of the distribution of statutory allocation, VAT and net statutory allocation.

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Olubusoye, O. E. and **Oyedotun, T. D. T. (2011)** Spatio-temporal information system analysis of revenue allocation in Nigeria (1999 – 2008) ***European Scientific Journal*, Vol. 7, No. 26,** December, 2011 Edition, pages 182 - 201.(Available online: http://eujournal.org/Chapters10/esj_dec2011_vol26.pdf)