DETERMINANTS OF TAX COLLECTION BY LOCAL GOVERNMENTS: EMPIRICAL EVIDENCE FROM KWARA STATE

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ABSTRACT
Local governments in Nigeria depend so much on monthly statutory allocations from the federation account. The allocations have not only been insufficient in meeting the financial needs of local governments but are also characterised by uncertainties and volatilities. Debt profiles of local governments have mounted as a result. Looking inwards to taxation and related internal revenue sources seem the best sustainable resort to avoid fiscal sustainability crisis. This study examined the determinants of revenue collection at the local government level in Kwara State, Nigeria. The study specifies and estimates a panel data econometric model using data set for the sixteen (16) local governments (LGs) of the State for the period 2009-2016. A set of three panel data models were estimated using Generalized Least Square (GLS) method. The results show that population density, a proxy for tax base and overhead expenditure, a proxy for fiscal needs/efforts are the most consistent significant determinants of tax and non-tax revenue generation in the local governments. The study recommends that LGs should strive to provide social amenities to attract more people and businesses (tax base) to their jurisdictions and intensify tax efforts to improve internally generated revenue.

Keywords: Kwara State, Local Governments, Tax, Nigeria

1. INTRODUCTION
The flow of statutory allocation from the federation account to sub-national governments, especially local governments has been characterised by uncertainties and volatilities. Some of the recent episodes occurred in 2015 and 2016 when Nigeria's economy slides into recession. Even when the flow of statutory allocation is stable, in most cases, the funds are inadequate to meet the financial needs of the local governments. The situation in local governments deteriorated in recent times that most of them only struggled to pay staff salaries. Provision of basic amenities by LGs in many states, including Kwara state had to be put on hold. Public debt profiles have mounted as a result, as well as pressure on the local government councils by citizens to provide basic social services. Thus, the need to raise revenue from alternative sources, particularly, internal and independent sources has been the front burner of national discourse on Nigeria fiscal federalism. Taxation has become one of the most sustainable alternatives. However, in the fiscal federal set-up of Nigeria, as provided in the 1999 Constitution and subsequent amendments, LGs are accorded the least taxing powers. The taxes they administer are low revenue yielding ones compared to those of States and federal government (Iniodu, 1999).

The skewed assignment of fiscal responsibilities, though, premised largely on efficiency principle of fiscal federalism, has made local governments almost totally dependent on federal transfers to fund their activities . The global picture of local government finances from the database of the Central Bank of Nigeria (CBN) shows that federal transfers account for nearly 98 percent of total revenue of LGs in the country (See Table 1). At individual LG levels, revenue generation particularly tax collections differ from local government to local government within a state and across states in the country. Some LGs are doing well, while some are not. The reasons for the differences in revenue performance remains largely unknown from empirical studies on Nigeria. While studies on determinants of tax collections on other countries abound, there appears to be a knowledge gap with respect to the determinants of tax revenue at local government level in Nigeria. Recent studies such as Eiya and America (2018) and Ohiokha and Ohiokha (2018) focus on the effects of some macroeconomic variables on tax revenue at the national level. Others studies such as Gurama and Mansor (2015) looked at the challenges of taxation. Lack of long time series data is partly responsible for the dearth of empirical studies focusing on LGs.

The current study partly fills this gap by looking at the determinants of tax revenue performance at LG level in Kwara state, broadly, the effects on tax revenue of economic variables. The study (i) analysed the revenue performance of the local governments in the State, and (ii) examined how the LGs' tax and non- tax revenues respond to changes in economic variables—tax base, fiscal needs/efforts and flow of federal transfers/fiscal dependence. The study provided some useful empirical evidence about revenue generation by LGs in Nigeria. The findings also provided useful policy guides for designing revenue generation strategies at local governments level.

The paper is divided into six sections. This section is the introduction. The next section, presents an overview of revenue performance of LGs in Kwara State. Section three contains review of literature. The fourth section elucidates the methodology, while the fifth presents the results and discussion, including those of preliminary data analyses. Section six concludes with some recommendations.

2. OVERVIEW OF REVENUE PERFORMANCE OF LGs IN KWARA STATE

The local governments of Kwara State like other LGs in the federation have very limited taxing powers, hence the contribution of taxes to internally generated revenue (IGR) and aggregate revenue is very small. Table 1 shows the total IGR performance of the sixteen (16) LGs of Kwara, while Table 2 shows the percentage distribution of the IGR, and aggregate revenue of the LGs in comparison with all the LGs in the federation.

Table 1 shows that tax collections by the local governments in the State are unstable and probably sensitive to vagaries of macroeconomic dynamics. For instance, total sum of taxes collected by the LGs stood at N 31.59 million in 2014. This figure declined to N9.78 million in 2015, but rose to N11.99 million in 2016. Meanwhile, looking at the composition, the share of taxes in IGR of the local governments presented in Table 2 was low. It ranges between 3.83 percent and 11.05 percent during the period under review.

Non-tax revenue comprising of rates, licences, fines and fees, and earnings and sales; interest and dividends, and others overwhelmingly dominated the revenue profile of the LGs in the State. Non-tax revenue jointly accounted for between 89 and 96 percent of the internal revenue generated by the LGs.

In comparison to the aggregate performance of all LGs in the federation, the contribution of IGR of LGs in Kwara State to total revenue is fairly similar to the figure for all LGs in Nigeria, as shown in Table 2. The share of IGR of all LGs in the federation to aggregate revenue ranges between 1.61 percent and 2.83 percent, while that of LGs in Kwara state ranges between 1.44 percent and 2.80 percent. This implies that the LGs depend on federal allocations for over 97 percent of their revenue. The similarity between the composition of revenue of LGs of Kwara State and that all the LGs of the federation stresses the fact that the situation in Kwara could effectively represent the global picture of LGs in the federation. The main issues of daunting concern in LGs public finances revolve around instability and very low share of taxes in internal revenue, and overall IGR in the aggregate revenue of LGs in the country. Addressing these issues particularly of the poor performance of IGR is germane to the sustainability of local governments as a third tier of government in Nigeria.

Table 1: Revenue Performance of the Sixteen (16) Local Governments of Kwara State (in Million N)

Revenue Items	2009	2010	2011	2012	2013	2014	2015	2016
Taxes	24.75	25.18	32.14	25.75	26.70	31.59	9.78	11.99
Rates	8.84	35.09	20.40	5.90	2.65	-	-	-
Licences, Fines & Fees	97.72	108.52	85.50	83.83	78.62	56.71	52.98	154.74
Earning & sales	98.69	106.06	117.33	117.51	82.26	134.77	112.12	99.14
Rent on Govt. property	17.77	13.88	15.26	10.24	28.23	23.61	17.60	31.22
Interest & Dividends	2.58	0.11	0.26	0.96	0.84	4.01	0.00	0.42
Others	58.54	22.63	62.87	44.62	22.26	3.57	40.95	15.77
Internal Revenue (IGR)	**308.87**	**311.46**	**333.76**	**288.80**	**241.55**	**254.27**	**233.43**	**313.27**
Taxes	24.75	25.18	32.14	25.75	26.70	31.59	9.78	11.99
Non-Tax Revenue	284.12	286.28	301.62	263.05	214.85	222.67	223.65	301.28
Federal Transfers	**13,241.66**	**10,754.77**	**13,093.50**	**14,106.18**	**14,817.64**	**12,902.94**	**9,585.91**	**21,502.14**
Total Revenue (Recurrent)	**13,550.53**	**11,066.23**	**13,427.26**	**14,394.97**	**15,059.19**	**13,157.21**	**9,819.34**	**21,815.41**
External &Internal Loans	-	76.89	-	-	-	237.31	-	-
Total Revenue*	**13,550.53**	**11,143.12**	**13,427.26**	**14,394.97**	**15,059.19**	**13,394.52**	**9,819.34**	**21,815.41**

Sources: Compiled from Annual Reports of Auditor General for Local Government, Kwara State

Table 2: Analyses of Revenue of the Local Governments of Kwara State compared with All Local Governments in Nigeria

Revenue Items	2009	2010	2011	2012	2013	2014	2015	2016
Percentage Distribution of IGR of LGAs in Kwara State								
Taxes	8.01%	8.08%	9.63%	8.92%	11.05%	12.43%	4.19%	3.83%
Rates	2.86%	11.27%	6.11%	2.04%	1.10%	0.00%	0.00%	0.00%
Licences, Fines & Fees	31.64%	34.84%	25.62%	29.03%	32.55%	22.30%	22.70%	49.40%
Earning & sales	31.95%	34.05%	35.15%	40.69%	34.05%	53.00%	48.03%	31.65%
Rent on Govt. property	5.75%	4.45%	4.57%	3.55%	11.69%	9.28%	7.54%	9.96%
Interest & Dividends	0.83%	0.04%	0.08%	0.33%	0.35%	1.58%	0.00%	0.13%
Others	18.95%	7.27%	18.84%	15.45%	9.22%	1.41%	17.54%	5.03%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Tax and Non-Tax Revenue of LGs in Kwara State (as % Share of Aggregate Revenue)								
Taxes	0.18%	0.23%	0.24%	0.18%	0.18%	0.24%	0.10%	0.05%
Non-Tax Revenue	2.10%	2.57%	2.25%	1.83%	1.43%	1.66%	2.28%	1.38%
Internal Revenue (IGR)	**2.28%**	**2.80%**	**2.49%**	**2.01%**	**1.60%**	**1.90%**	**2.38%**	**1.44%**
Federal Transfers	**97.72%**	**96.51%**	**97.51%**	**97.99%**	**98.40%**	**96.33%**	**97.62%**	**98.56%**
External & Internal Loans	**0.00%**	**0.69%**	**0.00%**	**0.00%**	**0.00%**	**1.77%**	**0.00%**	**0.00%**
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
All LGAs Revenue (as % Share of Total Revenue)								
Internal Revenue (IGR)	**2.42%**	**2.11%**	**1.92%**	**1.61%**	**1.61%**	**2.26%**	**1.92%**	**2.83%**
Federal Transfers	**97.01%**	**97.63%**	**97.67%**	**98.13%**	**97.89%**	**97.54%**	**97.63%**	**96.59%**
External & Internal Loans	0.56%	0.26%	0.41%	0.26%	0.50%	0.21%	0.45%	0.58%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Sources: Computed from Annual Reports of Auditor General for Local Government, Kwara State for various years, and CBN Statistical Bulletin, 2016 and 2017

3. LITERATURE REVIEW

Literature on determinants of tax revenue collections highlighted some factors including economic, political and institutional factors. The economic factors include tax base of the government, usually measured by size of per capita income or population growth; efforts and capacity to collect such taxes, nature of economic activities, and macroeconomic dynamics. These do have direct impact on tax revenue (Karran, 1985). In India for example, increase in per capita income had a direct positive impact on tax revenue in some, but not in all states , while the effect of population growth on tax revenue in Nigeria was found to be insignificant .The later findings could be attributed to the social and economic characteristics of the population. Majority of Nigerians are poor and the rate of unemployment is high. Moreso, the economic growth experienced in the country has not been inclusive (Yaru, 2015). It is growth in productive population and inclusive growth that can impact positively on local tax revenue.

Meanwhile, the political factors affect tax revenue through economic factors (i.e., tax base, capacity, rates, and tax efforts) (Karran, 1985). They could also affect tax revenue by influencing the willingness of citizens to comply. Some empirical evidence from selected rural local governments in India however showed that the ideological leanings of political parties may not have significant effect on tax revenue generation. A similar finding was found for Britain (Karran, 1985).

That different politicians and political parties may have issues with the structure of tax or tax policy, but they all need tax revenue to fulfil some electoral promises.

The institutional framework governing intergovernmental fiscal relation that determines the scope of fiscal activities and extent of fiscal dependence of lower levels of government on central government also matter for potential and actual tax revenue generation by states and local governments. Institutional factors affect tax revenue through the tax base, fiscal needs and revenue efforts. But empirical evidences on how fiscal needs, fiscal dependence and fiscal efforts could affect local tax revenue are mixed. For instance, dependence on fiscal transfers or untied grants reduces tax efforts, and by implications, internal revenue of local governments (Nicholson-Crotty, 2008; Rajaraman & Vasishtha, 2000; Rao, 2001). Contrarily, Sobel and Crowley (2014) demonstrated that grants or stimulus by the federal government to sub-national governments may result in the introduction of new programmes. The increase in fiscal needs to continue the new programmes would result to increment in taxes or tax efforts. This fiscal behaviour is popularly known as "Ratchet Effect." But Peacock and Wiseman (1961) referred to it as "displacement and inspection effects" of public expenditure growth.

Meanwhile, evidence from theories and empirics warns that a sudden increase in taxes may not result in corresponding increase tax revenue. An aggressive tax administration or ambitious increase in tax rate might affect economic activities negatively as suggested by "Laffer Curve", or might lead to fiscal migration (Tiebout, 1956). For example, a high tax rate may hurt the employment level, and consequently tax revenue . High tax rate also provide incentive to corruption in the form of bribery of revenue collectors and evasion by taxpayers. These often affect tax revenue (Ajaz & Ahmad, 2010).

Other institutional factors such as governance and citizen perception of governance also matter (Ajaz & Ahmad, 2010). Good governance viewed by citizens as provision of basic amenities has been identified as an important determinant of voluntary tax compliance by taxpayers and to a large extent tax revenue collection. Empirical evidence from Latin America shows that taxpayers would be more willing to pay taxes when the government is performing . Similarly, Yaru and Awodun (2019) based on the experience of the Kwara State informal sector showed that taxpayers attributed their unwillingness to pay taxes to lack of social amenities and dismal trust in government. These studies suggest that rather than relying on aggressive enforcements and penalties, good governance would improve tax compliance and reduce cost of collections. Unfortunately, local governments in Nigeria have not been performing well enough with respect to the provision of basic amenities due largely to issues related to the inadequacy of revenue.

Another institutional factor identified in the literature is corruption (Ajaz & Ahmad, 2010). And this has been found to have had a negative and significant impact on tax revenue generation in Nigeria, though at the aggregate level. Corruption leads to revenue leakages and thus has a negative impact on tax revenue (Ajaz & Ahmad, 2010).

All the factors identified above, particularly, tax base, fiscal dependence and tax efforts have tendencies to influence tax and non-tax revenue generation at the local level. This is particularly true for Nigeria, given the perennial dependence of local governments on federal transfers in financing their activities. But the review of literature suggests

existence of knowledge gap on how these factors affect revenue collection by the local governments in Nigeria. Thus, this study intends to fill this gap by focusing on how economic factors impact on revenue collection.

3. METHODOLOGY

The study uses both simple descriptive statistical analysis and panel data econometric modeling approach to achieve its objectives. The descriptive analyses include measures of central tendencies (mean) and deviations. Other measures include pairwise correlation analysis. The theoretical framework of the model specification and method of estimation have been elucidated below.

Theoretical Framework of the Model

The theoretical framework for the model presented in equation 4 stems from the Ability-to-Pay principle of taxation. This theory argues that citizens should be taxed based on their respective abilities to pay. An individual's ability-to-pay is gauged by his/her income, consumption or wealth, usually constituting the tax base. Tax revenue accrual from any source depends on the size of the tax base, rate and effectiveness of tax administration (Karran, 1985). Adhering to the ability-to-pay principle and taking into consideration the variables stressed by Karran (1985), tax revenue could be defined by the basic tax revenue models presented in equations (1-3), where T = tax revenue, t = tax rate/ tax per unit/head, and and ß= tax base (i.e., the statutory items/objects on which the tax is levied, usually defined by law). The aggregate tax base of a local government is the product of tax rate (t), tax bases of the respective individuals (ß) and the number of taxable individuals or items (Q). It is intuitive to note that as t, ß or Q increases, T is expected to increase, "all things being equal". However, as "Laffer Curve" points out, the relationship between tax rate, and tax revenue, T may not be linear. Too high tax rate could result in lower revenue under certain conditions.

Meanwhile, for simplicity, a linear relationship is assumed in the model since the tax rate remains fairly stable and same across LGs. More so, tax cannot be collected without effort/administration. Hence, a more realistic tax model would include tax effort/administration as defined by equation 2.

$$T = t\text{ß}, \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \tag{1}$$

$$T = t\text{ß} + TE \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \tag{2}$$

TE = Tax Effort (policies, strategies and measures for effective tax administration).

Taking cognisance of the taxable units, equation 2 can be expressed as 3:

$$T = t(\text{ß}) \ Q + TE \dots\dots\dots\dots\dots\dots\dots\dots\dots \tag{3}$$

Where Q = the number of people/items in the tax net as defined by the tax law.

Due to dearth of data and limited number of observations, the empirical model for this study considers a few variables as measures of tax base, fiscal needs, government performance and fiscal dependence respectively. Details of the variables, measurement and sources are presented in Table 3.

Empirical Model
The empirical model for the study is presented in equation 4. The model recognises four sets of explanatory variables—measures of tax base, fiscal needs/efforts, fiscal dependence and government performance[2].

$$T_{it} = \beta_{1i} + \beta_2 POD_{it} + \beta_3 LGEX_{it} + \beta_4 FDTRs_{it} + \beta_5 CAPEX_{it} + e_{it} \ldots \quad (4)$$

Where: T_{it} = Vector of Tax and Non-Tax Revenue of ith LG at year t,

POD_{it} = Population density of ith LG at year t as a proxy for tax base

$FDTRs_{it}$ = Vector of Federal transfers, specifically statutory allocations and capital receipts to i^{th} LG at year t as a proxy for fiscal dependence

Lg_{it} = Vector of personnel and overhead expenditure of ith LG at year t as a proxy for fiscal needs and efforts respectively.

$CAPEX_{it}$ = Capital expenditure of ith LG at year t as a proxy for government performance.

e_{it} = Error Term, i=1,2,3,……,16 and t=1,2,3,……,8.

A-Priori Expectation
Based on theory and empirical evidence we expect a positive relationship between tax revenue and tax base as well as fiscal needs/efforts. Fiscal needs stimulate fiscal efforts of government which may result to increased tax base through expansion of tax net, changes in tax laws/policies or improved collections.

Meanwhile, the a-priori expectation about federal transfers, a proxy for fiscal dependence of local government is conditional on revenue adequacy and fiscal response of the LG. Federal transfers in forms of statutory allocation or capital receipts may result to reduced internal revenue efforts/drive if they sufficiently meet the financial needs of receiving government (Nicholson-Crotty, 2008; Rajaraman & Vasishtha, 2001; Rao, 2001).

On the other hand, some studies argued that capital receipts, when used for temporary expansion of government that may have to be continued in future, would create a "ratchet effect" and this would, in turn, lead to improved future tax efforts and increased tax collection in response to the increased fiscal needs (Sobel & Crowley, 2014) or what was summed as "displacement effect" of public expenditure, and "inspection effects" on the revenue side according to Peacock and Wiseman (1961). The effect of this variable (fiscal dependence) on tax collections would depend on how a government responds to fiscal transfers.

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[2]Though mindful of possible pairwise correlations between fiscal variables,

Data and Model Estimation

Table 3 presents details of the variables, measurement and sources of data. The data used for the study were panel data on demographics (population density), and public finances of the sixteen (16) local governments of Kwara State between 2009 and 2016. The demographic data, specifically on population density was computed based on annual population projection for the sixteen (16) LGs. The projections were based on the 2006 population census figures reported in Annual Abstract of Statistics, published by National Bureau of Statistics (NBS) in 2012, and 3.2 percent annual population growth rate estimate proposed by National Population Commission. Data on public finances of the local governments were compiled from the Annual Reports of Auditor General for Local Governments of Kwara State for various years.

Table 3: Variables, Measurements and Sources of Data

Variable	Classification	Measurements	Source
Revenue (T) represented by Tax revenue (Taxes), Non-tax revenues (NonTR) and Overall IGR (TIGR)	Revenue Collections	Nominal tax revenue and Non-tax revenue are measured in Naira.	Annual Reports of Auditor General for Local Governments, Kwara State for various years, 2009-2016
Population Density (POD)	Tax base	Number of persons per Km^2 measured as Population divided by Landmass	Annual Abstract of Statistics, 2012 & Author's computation.
Federal Transfers represented by Statutory Allocation (FedTRs) and Capital receipts (CAPReceipt)	Fiscal dependence	Nominal value of federal transfers in Naira	Annual Reports of Auditor General for Local Governments, Kwara State for various years, 2009 -2016
Recurrent Expenditure represented by Personnel cost (Pcost) and Overhead cost (Ohcost)	Fiscal Needs/Efforts	Personnel cost, overhead cost measured in nominal Naira value	
Capital Expenditure (CAPEX)	Government Performance	Capital expenditure measured in nominal Naira value	

Source: Author, 2019.

Three variants of the empirical model in equation 4 were estimated using Generalised Least Square (GLS) method. The GLS method is the best for short panel data such as the one used for this study. (Gujarati & Porter, 2009). Both fixed and random effects models' forms were considered. Hausman's test was used to determine the appropriate model between the fixed and random effect for each of the variants. Table 6-8 present the results of three variants of the estimated model respectively.

4. RESULTS AND DISCUSSION OF FINDINGS

Preliminary Analysis

This section presents the results of the preliminary analysis (mainly descriptive statistics and pairwise correlations) of the data used for the study. Table 4 and 5 show the descriptive statistics and pairwise correlation matrix of the variables in the estimated models respectively. Among the variables, Taxes, NonTR and TIGR are the dependent variables, while POD, FedTRs, CAPReceipt, Pcost, Ohcost, and CAPEX constitute the explanatory variables. Table 4 indicates that the average tax revenue (Taxes) collections by the LGs was N1.86 million during the period covered. The value of non-tax revenue (NonTR) collections averaged N16.40 million, while value of IGR averaged N17.9 million. Federal transfers (FedTRs) averaged N412.00 million. These statistics suggest dominance of non-tax revenue in the IGR profiles of LGs and excessive dependence on federal transfers for funding. On the expenditure side, personnel cost (Pcost) averaged N 374 million, overhead cost, N 183.00 million and capital, N 218 million. Again this confirmed the skewedness of the LG expenditure towards recurrent expenditure.

Table 4: Descriptive Statistics of Variables in the Model

Variable	Obs	Mean	Std. Dev.	Min	Max
Taxes	101	1,860,200.00	2,713,024.00	450.00	16,500,000.00
NonTR	128	16,400,000.00	15,300,000.00	93,450.00	93,400,000.00
TIGR	128	17,900,000.00	15,700,000.00	1,047,862.00	94,400,000.00
POD	128	494	800	19	2,818
Pcost	128	374,000,000.00	143,000,000.00	149,000,000.00	772,000,000.00
Ohcost	123	183,000,000.00	96,000,000.00	56,700,000.00	645,000,000.00
FedTRs	128	412,000,000.00	225,000,000.00	48,700,000.00	1,210,000,000.00
CAPReceipt	127	412,000,000.00	168,000,000.00	82,500,000.00	880,000,000.00
CAPEX	126	218,000,000.00	87,000,000.00	400,000.00	986,000,000.00

Source: Author's Computation

Population density ranged between 19 and 2,818 persons per square(Sq) kilometres (Km) with a mean of 494 persons per Sq/Km. The LGs in the central and south senatorial districts of the State have relatively smaller land mass and moderate to high population densities, while those in the north have larger land mass and lower population densities. This explained the huge difference between the maximum value of population density and minimum.

Table 5 presents the pair-wise correlation matrix between the variables in the model. The correlation coefficients show that tax revenue correlates weakly with all variables in the model. The strongest correlate of tax revenue (Taxes) with the independent variables in the model is population density (POD) with a correlation coefficient of 0.2703, followed by overhead expenditure with 0.2246 and the weakest is capital receipt (CAPreceipt) with 0.0147. The weak correlation coefficients suggest that other factors rather than those considered in the model have significant influence on tax revenue collection by the

LGs. The results conform to some realities. Tax administration requires operational cost, while staff monthly salaries are sacrosanct. Operational expenditure if well channeled to collect revenue would result in higher tax collections.

Table 5: Correlation Matrix of Variables in the Model

	Taxes	NonTR	TIGR	FedTRs	CAPReceipt	Pcost	Ohcost	POD	CAPEX
Taxes	1								
NonTR	0.0598	1							
TIGR	0.2255	0.9872	1						
FedTRs	0.0834	0.5190	0.5157	1					
CAPReceipt	0.0147	0.5253	0.5193	0.3710	1				
Pcost	0.0192	0.4212	0.4208	0.1395	0.4647	1			
Ohcost	0.2246	0.4848	0.5119	0.2910	0.2886	0.2999	1		
POD	0.2703	0.2372	0.2756	0.2973	0.0903	0.2975	0.0107	1	
CAPEX	0.1372	0.3618	0.3759	0.2351	0.2979	0.0794	0.4722	0.1717	1

Source: Author's Computation, 2019

Meanwhile, non-tax revenues (NonTR) which jointly account for the bulk of internally generated revenue have relatively higher correlation with other variables in the model as shown in column III of Table 5. The strongest correlation is with total IGR with 0.9872, followed by capital receipt (CAPReceipt) with 0.5253 and federal transfers (FedTRs) with 0.5190. The very high correlation coefficient between non-tax revenue and total IGR reiterates the overwhelming dominance of non-tax revenue (NonTR) in the total IGR of LGs in section two. In other words, the trend of total revenue collections is dictated by non-tax revenue. Surprisingly, the correlation between non-tax revenue (NonTR) and population density (POD) is the weakest, with a coefficient of 0.2372. The strong and weak correlation between federal transfers and population density and total IGR respectively seem to be in line with the findings of Karran (1985) in Britain. That tax revenue trends are largely dictated by macroeconomic dynamics and much less by tax base and rates.

Panel Regression Results

Table 6-8 present the results of three variants of the estimated model respectively. In estimating the models, the dependent revenue (T) was considered in three variants—Taxes, Non-taxes (NonTR), and then the total IGR (TIGR) which is the sum of Taxes and non-tax revenue. The Tax Revenue Model (Model I) examines the impact of population density (POD), federal transfers (FedTRs), a proxy for fiscal dependence and local recurrent government expenditure (Pcost and Ohcost), proxy for fiscal needs, and capital expenditure (CAPEX), proxy for government performance on tax revenue (taxes) of LGs, while Non tax Revenue Model (Model II) examines the impact of the explanatory variables on non-tax revenues, which include rates, licences, fines and fees, earnings and sales, investment income, etc. Model III examines the impact of the same independent variables on the overall IGR. The results of Model I, Model II and Model III

are reported in Tables 6, 7 and 8 respectively. The results are for both the Fixed Effects and Random Effects models. The appropriate model for each of the models was suggested by the Hausman test. The test statistics are presented along sides with the results. In Table 6, the test statistics suggest that Random Effects was the more appropriate for the Tax model (Model I), while Fixed Effects models were suggested for the Non-Tax revenue model (Model II) and Total Internal Revenue Model (Model III) in Table 7 and 8 respectively.

The individual effects of the explanatory variables on tax revenue (taxes) in Model I based on the Random Effects Estimates, show two variables were significant in the model at 1 and 5 percent significance levels, i.e., population density (POD), which represents tax base; and overhead expenditure, a proxy for fiscal needs/efforts respectively. Other variables including federal transfers, personnel expenditure, capital receipt and capital expenditure did not appear as significant determinants of tax revenue in the LGs. The results suggest that an increase in population density (POD) by one person would lead to an increase in tax revenue by N1,205.77 in Model I.

In Model II and III based of the Fixed Effect Estimates, it is only population density that came out significant and at 1 percent level of significance among all the independent variables in the models. Increase in population density would increase Non-Tax revenue by N47, 150.6 and overall IGR byN54,246.83. This finding contradicts (Ohiokha & Ohiokha, 2018) which found that population growth (a proxy for growth in tax base) had an insignificant effect on tax revenue at an aggregate level in Nigeria. The reason for the contradiction might be that Ohiokha and Ohiokha (2018) used aggregate data on population while the current study used local government level data on population density.

However, federal transfers, capital receipt and overhead expenditure appeared as significant determinants of the non-tax internal revenues based on the Random Effects Estimates in Table 7. Meanwhile, population density came out insignificant in the model. For overall IGR, the results of the Random Effects in Table 8 show all the variables that were significant in Model II based on the Random Effects Model are also significant, and besides, population density was significant, but marginally.

Meanwhile, capital expenditure which could be a proxy for the provision of local public amenities to citizens or government performance was not significant in any of the models. This might be due to the very low share of capital expenditure in the total expenditures of the respective LGs. In some years, the percentage share was as low as 1 percent of total expenditure.

Table 6: Model I: Tax Revenue Model Estimates

Variables	Fixed Effect Estimates			Random Effect Estimates ††		
	Coef.	T	P>t	Coef.	z	P>z
C	-1548850	-0.42	0.674	1333737	1.46	0.143
POD	7870.554	1.38	0.171	1205.722***	3.21	0.001
Ohcost	0.0065427*	1.66	0.100	0.0075385**	2.26	0.024
Pcost	-0.0039154	-1.2	0.236	-0.0036604	-1.53	0.126
FedTRs	-0.0018707	-1.09	0.281	-0.001665	-1.12	0.265
CAPReceipt	-0.0011185	-0.42	0.676	0.0011948	0.55	0.581
CAPEX	0.0030034	1.08	0.282	0.000373	0.21	0.836
Hausman test Chi2(1) = 1.28 Prob>chi2 = 0.2588	No. of Obs. 94 Group No. 16 R-Sq= within = 0.0874 between = 0.4029 overall = 0.1020 F(6,72) = 1.15 Prob> F = 0.3433			No. of Obs. 94 Group No. 16 R-Sq= within = 0.0605 between = 0.4422 overall = 0.158 Wald chi2(6) = 16.33 Prob> chi2 = 0.0121		

*, ** and *** Significant at 10%, 5% and 1% respectively. Z-statistics are in parenthesis.†† more appropriate model

Table 7: Model II: Non-Tax Revenue Model Estimates

Variables	Fixed Effect Estimates ††			Random Effect Estimates		
	Coef.	T	P>t	Coef.	z	P>z
C	-4864177	-0.51	0.614	-11500000.00***	-2.83	0.005
POD	47150.6***	2.92	0.004	1768.036	0.98	0.326
Ohcost	-0.0018716	-0.15	0.877	0.0258824	1.98	0.047
Pcost	-0.0111792	-1.15	0.255	0.0130296	1.37	0.170
FedTRs	0.0072976	1.52	0.131	0.0200671***	3.85	0.000
CAPReceipt	-0.0039414	-0.52	0.607	0.0194377**	2.50	0.012
CAPEX	0.0072449	1.03	0.308	0.0067863	1.04	0.299
Hausman test Chi2(1) = 8.03 Prob>chi2 = 0.0046	No. of Obs. = 120 Group No. 16 R-Sq= within = 0.1422 between = 0.0748 overall = 0.0665 F(6,98) = 2.71 Prob> F = 0.0178			No. of Obs. = 120 Group No. 16 R-Sq= within = 0.0100 between = 0.8851 overall = 5257 Wald chi2(6) = 65.15 Prob> chi2 = 0.0000		

*, ** and *** Significant at 10%, 5% and 1% respectively. Z-statistics are in parenthesis.†† more appropriate model

Table 8: Model III: Total Internal Revenue Model Estimates

Variables	**Fixed Effect Estimates††**			Random Effect Estimates		
	Coef.	T	P>t	Coef.	z	P>z
C	-6082508	-0.64	0.521	-9803875**	-2.35	0.019
POD	54246.83***	3.42	0.001	3118.928*	1.67	0.095
Ohcost	0.0050923	0.43	0.669	0.0323746**	2.47	0.013
Pcost	-0.0154339	-1.61	0.111	0.0094156	0.98	0.327
FedTRs	0.0056934	1.21	0.23	0.0184291***	3.53	0.000
CAPReceipt	-0.004673	-0.62	0.536	0.0192051	2.45	0.014
CAPEX	0.0096793	1.39	0.167	0.0070718	1.08	0.28
Hausman test Chi2(1) = 10.55 Prob>chi2 = 0.0012	No. of Obs. = 120 Group No. 16 R-Sq= within = 0.1638 between = 0.1040 overall = 0.0892 F(6,98) = 3.20 Prob> F = 0.0065			No. of Obs. = 120 Group No. 16 R-Sq= within = 0.0102 between = 0.8769 overall = 5431 Wald chi2(6) = 64.77 Prob> chi2 = 0.0000		

*, ** and *** Significant at 10%, 5% and 1% respectively.†† more appropriate model

Overall, the results suggest that population density, a measure of tax base and overhead expenditure, which roughly estimates fiscal needs/efforts are the most consistent determinants of revenue in LGs. This is not surprising as Local governments depends on internally generated revenue for financing their operations, and on federal transfers for personnel cost (salaries), hence, a LG with higher overhead cost has to put efforts to generate more revenue from internal sources. The positive relationships between fiscal needs, efforts and overhead expenditures suggest the consistent significant coefficient of overhead cost in all models. Government overhead expenditure could also indicate it fiscal efforts because when the government fails to provide funds for the operation, tax and other revenue collectors would not be able to perform their functions.

The overall explanatory power of the models, particularly of the fixed effects models were low. The random effect model appeared to have performed better but happened to have been less preferred as indicated by the Hauman test in two of three variant models estimated. The low explanatory power may be due the short period covered by the study, omission of relevant variables or similarity in the behavior of the LGs as regards IGR.

5. CONCLUSION AND RECOMMENDATIONS

This paper examined the determinants of tax and non-tax revenue collections by local government in Nigeria based on empirical data on the sixteen (16) LGs of Kwara State. The theoretical determinants of tax revenue revolve around the tax base and tax rate. Other determinants such as fiscal dependence, revenue efforts, institutional factors and willingness of citizens to comply with tax payment affect tax revenue through their respective influence on the tax base or rate. Due to the dearth of data, the study focused

on the relative influence of tax base, fiscal needs/efforts, government performance and fiscal dependence on tax and non-tax revenue generation by the LGs. The conclusion from the study is that population density, a proxy for tax base, and overhead expenditure, a proxy for fiscal needs/efforts appeared as the most consistent significant determinants of tax revenue generation in local governments. Given the Tiebout (1956) model of potential fiscal competition among local governments, a local government that intends to increase its revenue (tax and non-tax) should improve its efforts and adopt fiscal measures that would attract more people and businesses from other neighbouring local governments to its jurisdiction.

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