CAUSALITY ANALYSIS OF INTERNALLY GENERATED REVENUE, CAPITAL EXPENDITURE AND FISCAL STRESS IN THE NIGERIAN LOCAL GOVERNMENT

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Abstract: *Fiscal stress is the difference between internally generated revenue and the total expenditure. Whether internally generated revenue, and capital expenditure of government explain the phenomenon of fiscal stress still remains a puzzle particularly in the Nigerian public sector. This study investigates the causal link between internally generated revenue, capital expenditure and fiscal stress in the Nigerian local government between 1993 and 2020. The Toda and Yamamoto Granger non-causality test was applied to the annual time series obtained from Central Bank of Nigeria's statistical bulletin and the results indicate that capital expenditure has significant effect on fiscal stress in the Nigerian local government, with a unidirectional causality running from capital expenditure to fiscal stress. However, there is no causal relationship between internally generated revenue and fiscal stress in the Nigerian local government in the study period. It is therefore concluded that capital expenditure is a determinant of fiscal stress in the Nigerian local government. There is therefore the need for the Nigerian local governments to properly harness its capital expenditure and resources towards boosting their revenue-generating capacity. In managing fiscal stress, particular attention should be paid to the capital expenditure incurred by the local government in Nigeria.*
Keywords: *Internally generated revenue, capital expenditure, fiscal stress, local government, fiscal federalism, Toda-Yamamoto.*

Introduction

The 1999 Constitution of the Federal Republic of Nigeria establishes the local government as the third tier of government in Nigeria and also provides for a democratically elected local government system. Nigeria as a Federation of 36 States and Federal Capital Territory (FCT) is sub-divided into six geopolitical zones, and has a total of 774 local government councils. The 1976 Nigerian local government reform defines

local government as government at the local level exercised by the representative council created by law to perform certain functions within defined areas to meet the needs of rural dwellers (Salako & Ajibade, 2019). Local government has been characterized as a unit of government which operates at the grassroots level and within a defined geographical location; it is relatively autonomous; its functions are constitutionally defined; and its council is composed of elected representatives (Obisanya & Hassan, 2022). Local government can therefore be described as the government at the grassroots level and considered to be closest to the people in a political system. It was purposely created to facilitate the development at the grassroots. However, in their bid to achieve this lofty aim, local governments are embattled with certain challenges which ultimately undermine their capacity to improve the wellbeing of the people at the grassroots and localities. For instance, there is a problem of over-reliance on monthly statutorily allocations from federal and state governments (Oseni, 2013); persistent problem of fiscal deficit (Babarinde, 2022); poor financial control, scarcity of resources, dearth of political leadership, corruption, lack of autonomy and transparency (Obisanya & Hassan, 2022). Furthermore, Daba (2021) argues that the ever growing role of local governments in service delivery to the local community has put serious pressure on the unit of government to finance its operations and tasks using available scarce means. This suggests that a key limiting factor in the Nigerian local government is lack of financial muscle to generate enough local revenue needed for their operations. The falling internally generated revenue (IGR) reduces the ability of the local government to execute the required expenditures, particularly, capital expenditure, needed for the growth and development of the local communities. Okeke et al (2017) also observe that rising cost of governance and dwindling oil-revenue have propelled the three tiers of government (Federal, State and Local Governments) in Nigeria to develop strategies to improve their revenue base. This is because, the bulk of most State's revenue comes from allocations from the federation account and value added tax (Oseni, 2013; Okeke et al. 2017). Consequently, a financial condition, called fiscal stress, usually results when the government cannot generate enough local revenue for its operations. This situation of financial stress or handicap called fiscal stress, occurs when state revenues are unable to meet state expenditures, both at central and local levels (Nurhayati, 2020).

With the recent call for realistic autonomy of local government in Nigeria, where local governments are required to organize their government, provide goods and public services for their citizens, understanding the factors that could predict fiscal stress is key, particularly, fiscal variables of government expenditure and internally generated revenue. Studies have shown that local revenue and capital expenditure have the potential to influence fiscal stress in the public sector (Nurhayati, 2020). The author explains that when the internally generated revenue increase, the local government will be able to increase the contribution of the internally generated revenue to its expenditures and as such when the government experiences fiscal stress, it must reduce asset expenditures in proportion of its income growth. Can this fiscal phenomenon be true in the Nigerian public sector, particularly at the local government level?

Understanding a problem and as well as its causal factors usually goes a long way in helping to resolve it. Thus, empirical investigation of determinants of the fiscal stress situation at the local government, most especially as it bothers on internally generated revenue, and capital expenditure; is key in solving the fiscal challenge so as to improve the

capacity of the government to accomplish its mission of grassroots growth and development. Therefore, this study aims to determine causal relationship between internally generated revenue, capital expenditure, and fiscal stress in Nigerian local governments between 1993 and 2020.

Following after this introduction are conceptual, theoretical and empirical review of related literature in section two. The methodology of the study is described in section three and the results of data analysis as well as discussion of findings is the subject matter of section four. Finally, the paper is concluded in section five.

Literature review

Conceptual Review

Fiscal Stress

Fiscal stress refers to a wide gap between needs and financial resources to meet them, such that there is a growing imbalance between revenues and expenditures over a period of time (Premchand, 1993). Fiscal stress simply refers to internally generated revenue minus total expenses (Nurhayati, 2020). Furthermore, fiscal stress is a budgetary pressure occasioned by limited local revenue which exerts significant influence on the provision of public goods and delivery of public services (Arnett, 2012). Fiscal stress which is synonymous with fiscal crisis, fiscal pressure, fiscal difficulties, poor fiscal health, poor financial conditions (Lhutfi et al., 2020), also refers to a gap between projected revenues and expenditures, which can either be short term, in the case of transitory economic shocks, or long term, in the case of structural budget imbalance (Delisle, 2010). In other words, fiscal stress is a fiscal condition of local finances in which the government cannot provide public services and meet its own operating needs to the extent that it previously did (Arnet, 2012; Maher & Gorina, 2016; Gorina et al., 2018). Fiscal stress is also conceptualized as a gap between planned expenditures and patterns of revenue, with the latter falling to cover the former (Neiman & Krimm, 2009). Fiscal stress can therefore be described as the excess of government needs over the means of satisfying the needs using internally generated revenue. Measured as the difference between internally generated revenue and total expenditure, fiscal stress in the Nigerian local government between 1993 and 2020 according to Central Bank of Nigeria [CBN], (2020), had a respective mean and total value of -797.5443 and -22.331.26 while it ranges between minimum and maximum values of -1777.620 and -17.76000 respectively in the same period. Fiscal stress does not just arise, it is occasioned by certain factors, among which are stagnant state aid, state mandates, personnel costs, aging infrastructure, aging population, economic development challenges, sales tax volatility, tax-exempt properties, poverty, population growth (Aldag et al., 2017). DiNapoli (2013) asserts that local government fiscal stress generally arises basically due to poor economic conditions or poor fiscal management. Fiscal stress is said to be negatively influenced by internally generated revenue and positively by capital expenditures (Nurhayati, 2020).

Internally Generated Revenue

Internal sources of local government finances, also called internally generated revenue, refers to the revenue that the local government generates within the area of its

jurisdiction from sources like rates from local shops and markets, fines, bicycle licence, canoe and wheelbarrow fees, motor garage fees, marriage registration, taxes (Udoudo & Ekpenyong; 2013). Internally generated revenue (IGR) can also be described as revenue generated internally apart from subventions, allocation, and grants from governments (Okeke et al., 2017). Therefore, IGR refers to local revenue and income derived from sources internal to the unit of government. The 1999 Constitution of Nigeria provides for the following types of internally generated revenue of local government councils: rates, radio and television licenses; revenue from establishment and maintenance of cemeteries, burial grounds and homes for the destitute or infirm; revenue from licensing of bicycles, trucks, canoes, wheel barrows and carts; revenue from establishment, maintenance and regulation of slaughter houses, slaughter slabs, markets, motor parks and public conveniences; revenue from other public facilities like parks, gardens, open spaces and others; revenue from registration of all births, deaths and marriages; tenements rates; revenue from control and regulation of out-door advertising and hoarding, movement and keeping of pets, shops and kiosks, restaurants, bakeries and other places for sale of food to the public, laundries, and revenue from licensing, regulation and control of the sale of liquor. Statistics (CBN, 2020) indicates that the total internally generated revenue of local government in Nigeria between 1993 and 2020 stood at N544.50billion while the mean value was N19.44643. Further statistics reveals that a minimum value of N1.040000billion was recorded in respect of IGR while the maximum value of IGR of Nigerian local government in the study period was N38.21000billion.

Capital Expenditure

Capital expenditure is an expenditure of a government whose benefits exceed one fiscal year exemplified as expenditure on land, machine tools, buildings, roads, irrigation and networks (Nurhayati (2020). Capital expenditure can also be conceptualized as an expenditure carried out in the acquisition of assets and investments which are of long duration, and whose benefits and values extend beyond a fiscal year like construction of bridges, houses, roads (Babarinde, 2022). In other words, government capital expenditure is the expenditure incurred by government on long-lasting projects (such as building of new hospitals, roads, electricity) for the purpose of improvement of wellbeing of the citizens (Ayinde et al., 2015). Statistics from CBN (2020) reveals N5,102.09billion as the total capital expenditure expended by the Nigerian local government for the period, 1993 to 2020 while the average capital expenditure in the same period was N182.2182billion. Furthermore, N4.080000billion and N562.5700billion are the minimum and maximum values of Nigerian local government capital expenditure in the study period (1993-2020).

Theoretical Review

Theory of Fiscal Federalism

Fiscal federalism is a multi-level government concept which entails the division of governmental functions and financial relations among the levels of government in a country. Institute of Chartered Accountants of Nigeria (2021) also describes fiscal federalism as the system of revenue generation and redistribution in a federal system of government and the financial and attendant functions and responsibilities of component units within a federation. Going by the constitutional name, Federal Republic of Nigeria,

Nigeria is a federation of 36 states and the Federal Capital Territory and consequently the principle of federalism in place in Nigeria has implications on the country's fiscal operations whereby the governmental functions of financing, investment, expenditure and other fiscal operations are shared among the three tiers of Federal, State and Local governments in the country. According to Okunola et al. (2020), fiscal federalism as bye-product of federalism, relates to how the nature of financial relations in a federal system impact the distribution of the nation's resources. The principle of fiscal federalism relates to division of responsibilities, including finances, among federal, state, and local governments in order for improvement of economic efficiency and attainment of public policy objectives (Driessen & Hughes, 2020).

Originally proposed by Musgrave (1959) and further developed by Oates (1972), the theory of fiscal federalism is concerned with the division of public-sector functions and finances in a logical way among multiple layers of government. The theory rests on the assumption of a federal system of management of government functions and economic and financial relations and as such the roles are shared among the levels of government. Accordingly, the economic stabilization and income redistribution functions should be the sole prerogative of the central/federal government while resource allocation function should be carried out by the state and local government (Musgrave, 1959).

Empirical Review

Skidmore and Scorsone (2011) examined the causes and responses to fiscal stress for cities in Michigan. Study reveals reduction in property values was a key determinant of fiscal stress in the cities. In another study, Gorina and Maher (2016) explored the determinant factors of local fiscal distress. From their analysis, the authors established the ability of fiscal reserves, revenue composition, and real estate pricing in determining local fiscal distress. Moreover, Gorina et al (2018)'s study reports that fiscal reserves, debt, and revenue composition as determinants of local fiscal distress. From the factor analysis of determinants of fiscal stress in the state budget in Indonesia and construction of optimum fiscal index in the country by Daniela and Muryani (2019), the authors establish among other, that, state expenditure, debt factors, education spending, general allocation funds, profit sharing funds, special autonomy funds, health spending, debt interest payments, state obligation, and number of population, as determinants of fiscal stress in the country.

Furthermore, Nurhayati (2020) investigated the effect of local revenue and capital expenditure on fiscal stress in the Kunci Bersama Area. The study concludes that local revenue has a negative effect on fiscal stress, while capital expenditure has positive and significant effect on fiscal stress in the area. Lhutfi et al (2020) examined the effect of local government revenue growth and capital expenditure growth on fiscal stress in West Java Province in Indonesia. The study found that growth in both original local government revenue and capital expenditures simultaneously have positive effect on fiscal stress but partial effect of the growth of local government revenue on fiscal stress was negative unlike the growth of capital expenditures which partially has an insignificant effect on fiscal stress in the Province. The effect of growth in local revenue, growth in capital expenditures and economic growth on fiscal stress in district governments in South Sumatra was studied by Sanjaya et al. (2021). From their analysis, the authors reveal that growth in capital expenditures has a significant effect on fiscal stress, but growth of local revenue and economic growth do not affect fiscal stress in the country.

In Nigerian context, few studies have also examined fiscal stress. A case in point is Nwoba (2015) which investigated the impact of fiscal crisis on the local government administration in South Eastern Nigeria. From the survey, the study establishes that internal generated revenue of local government in South Eastern Nigeria is not viable and the non-specification of local government revenue jurisdiction encourages corruption in the system. In another study, Usang et al (2016) also examined the development's implications of the financial condition of local governments in Nigeria. The study shows that the financial condition of local governments in Nigeria is poor, indicating financial distress, which prevents community development. Furthermore, Okeke et al (2017) examined ways of enhancing internally generated revenue in states in Nigeria. From the review, the study establishes that internally generated revenue constitutes a small proportion of the state finance and the system of revenue generation in place is embattled with serious problems. The study also reveals that the revenue base of the states to be uneven and narrow.
In summary, empirical study on determinants of fiscal stress in local government is scarce, if not non-existent, in a developing country like Nigeria. Most past studies in Nigeria on the subject matter of fiscal stress are descriptive and review of literature. Thus study seeks to replicate Nurhayati (2020)'s study of the effect of local revenue and capital expenditure on fiscal stress using Nigerian local government time series data.

Methodology

This study adopts the model of Nurhayati (2020)'s study on the effect of local revenue and capital expenditure on fiscal stress in the Kunci Bersama Area. The study is replicated in Nigeria using the local government data for the period, 1993 to 2020 based on ex-post facto research design. The Toda-Yamamoto (T-Y) (1995) methodology is applied to the data in order to establish the nexus between fiscal stress and other factors like capital expenditure and internally generate revenue in Nigeria. Toda-Yamamoto Granger non-causality test reveals the existing link between two possible causal combinations of variables in an empirical model (Toda & Yamamoto, 1995; Etudaiye-Muhtar, & Agboola, 2019). In addition to the preliminary test of descriptive statistics; this study employs the T-Y methodology using the following procedures: unit root testing to ascertain the order of integration of the variables; determination of the maximum order of integration for the set of variables of study; such that the highest order of integration among the variables is selected as the maximum (and denoted as d_max). For instance, if variable X is stationary in level, it is said to be integrated of order 0, and if variable Y is integrated of order 2 and variable Z is integrated of order 1, then d_max=2; estimation of Vector autoregression (VAR) model at levels not minding the order of integration order of the series; determination of the optimum lag length of the variables based on the conventional information criteria like Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), Final Prediction Error (FPE) and Hannan-Quinn (HQ) Information Criterion and the optimum lag length is denoted ias (k); re-estimation of another VAR model based on new lag order formation of [〖k+d〗 _max]; conducting of the non-Granger causality test using standard Walt test; and finally, performance of model diagnostic tests. Of significant importance among these diagnostic test according to Adejoh et al. (2020) is the residual serial correlation test. This study measured fiscal stress as the difference between internally generated revenue and the total expenditure. Annual time

series data on internally generated revenue and capital expenditure were obtained from Central Bank of Nigeria (2020)'s statistical bulletin and they are expressed in billion Naira.

The T-Y model for the study are as specified in equations (1), (2), and (3):

$$FS_t = \alpha_0 + \sum_{i=l}^{k} \alpha_{1i} FS_{i-l} + \sum_{j=i+l}^{k=dmax} \alpha_{2j} FS_{i-j} + \sum_{i=l}^{k} ß_{1i} CAPEX_{i-1} + \sum_{j=i+l}^{k+d\ max} ß_{2j} CAPEX_{i-j} + \sum_{i=l}^{k} \Psi_{1i} IGR_{i-1} + \sum_{j=i+l}^{k+d\ max} \Psi_{2j} IGR_{i-j} + \varepsilon_{li} \quad (1)$$

$$CAPEX_t = \alpha_0 + \sum_{i=l}^{k} \alpha_{1i} FS_{i-l} + \sum_{j=i+l}^{k=dmax} \alpha_{2j} FS_{i-j} + \sum_{i=l}^{k} ß_{1i} CAPEX_{i-1} + \sum_{j=i+l}^{k+d\ max} ß_{2j} CAPEX_{i-j} + \sum_{i=l}^{k} \Psi_{1i} IGR_{i-1} + \sum_{j=i+l}^{k+d\ max} \Psi_{2j} IGR_{i-j} + \varepsilon_{li} \quad (2)$$

$$IGR_t = \alpha_0 + \sum_{i=l}^{k} \alpha_{1i} FS_{i-l} + \sum_{j=i+l}^{k=dmax} \alpha_{2j} FS_{i-j} + \sum_{i=l}^{k} ß_{1i} CAPEX_{i-1} + \sum_{j=i+l}^{k+d\ max} ß_{2j} CAPEX_{i-j} + \sum_{i=l}^{k} \Psi_{1i} IGR_{i-1} + \sum_{j=i+l}^{k+d\ max} \Psi_{2j} IGR_{i-j} + \varepsilon_{li} \quad (3)$$

where FS is fiscal stress; IGR represents internally generated revenue; CAPEX corresponds to capital expenditure; K denoted the optimal lag length, dmax is the maximum order of integration; α's , ß's, Ψ's are the coefficients of the parameters, while ε represents the error term.

Results and discussion

Presentation of Data

Table 1 contains the annual time series data on fiscal stress, capital expenditure and internally generated revenue of local government in Nigeria for the period, 1993 to 2020.

Table 1. Annual time series data on fiscal stress (FS), capital expenditure (CAPEX) and internally generated revenue (IGR) of local government in Nigeria (1993-2020).

Years	FS (IGR-Total Expenditure) (N Billion)	CAPEX(N Billion)	IGR (N Billion)
1993	-18.44	5.51	1.04
1994	-17.76	4.08	1.21

1995	-20.33	6.13	2.11
1996	-20.45	6.05	2.21
1997	-28.54	8.62	2.73
1998	-43.16	18.54	3.33
1999	-55.76	18.83	4.68
2000	-146.71	59.96	7.15
2001	-165.35	48.66	6.02
2002	-159.40	45.12	10.42
2003	-341.54	150.08	20.18
2004	-438.64	165.40	22.41
2005	-563.94	213.46	24.04
2006	-642.61	267.66	23.23
2007	-806.10	143.80	21.30
2008	-1,358.85	562.57	23.11
2009	-1,041.55	363.00	26.06
2010	-1,330.47	533.00	26.20
2011	-1,600.32	352.15	31.60
2012	-1,618.19	299.39	26.62
2013	-1,777.62	392.95	29.29
2014	-1,577.34	181.23	36.49
2015	-1,222.29	95.90	24.03
2016	-1,048.45	90.80	36.39
2017	-1,300.38	144.07	38.21
2018	-1,692.47	319.77	32.50
2019	-1,689.93	316.69	32.60
2020	-1,604.65	288.69	29.34

Source: Central Bank of Nigeria (2020)'s Statistical Bulletin

Descriptive Statistics

The summary statistics of fiscal stress (FS), capital expenditure (CAPEX) and internally-generated revenue (IGR) of local governments in Nigeria between 1993 and 2020 are presented in Table 2. The average capital expenditure (N182.2182billion) exceeds that of the internally-generated revenue (N19.44643bilion) of the local government in Nigeria in the study period. Both variables, however, do not have their mean widely dispersed from their standard deviation. The maximum IGR and capital expenditure stands at N38.21billion and N562.57billion respectively as against their respective minimum values of N1.04billion and N4.08billion. The Jargue-Bera statistics also reveals that the three variables (FS, CAPEX and IGR) are normally distributed. The mean of fiscal stress with a mean of N-797.5443billion, ranges between a minimum of N-1777.620billion and

a maximum of N-17.7600billion. The variable (FS) is said not to be relatively stable over the stable period considering its mean value which is less than the standard deviation.

Table 2. Descriptive statistics

	Mean	Minimum	Maximum	Std. Dev.	Jarque-Bera	Probability
FS	-797.5443	-1777.620	-17.76000	668.5977	3.135068	0.208559
CAPEX	182.2182	4.080000	562.5700	163.7848	2.546828	0.279874
IGR	19.44643	1.040000	38.21000	12.58767	2.545752	0.280025

Source: Authors, 2022

Unit Root Test

Considering the Toda-Yamamoto technique, the unit root is only necessarily carried out in order to ascertain the maximum order of integration of the variables of study for inclusion in the model estimation. Hence, the results of the Augmented Dickey-Fuller (ADF) unit root test conducted on each of the variables are presented in Table 3. The ADF test at level indicates that the hypothesis of unit root cannot be rejected at level but after first difference; fiscal stress, capital expenditure and internally-generated revenue became stationary in first difference at one per cent significance level. This is because at first difference, the probability value of the ADF test is less than one per cent significance level, which culminates in the rejection the null hypothesis of unit root in each of the three variables of study.

Table 3. Augmented Dickey-Fuller unit root test statistics

Variables	ADF at Level	Remarks	ADF at First Diff	Remarks	I(d)
FS	-0.720137[0.8251]	Not Stationary	-4.775407[0.008]	Stationary	I(1)
CAPEX	-2.159544[0.2246]	Not Stationary	-8.248369[0.0000]	Stationary	I(1)
IGR	-1.278874[0.6236]	Not Stationary	-7.221181[0.0000]	Stationary	I(1)

Source: Authors, 2022

Optimal Lag Selection

Another preliminary test required in the Toda-Yamamoto procedure is the optimal lag selection test, in which case the VAR lag order selection criteria test was performed on the variables. Table 4 indicates that the sequential modified likelihood ratio (LR) and Schwarz (SC) information criteria suggest lag length one while the trio, final prediction error (FPE), Akaike information criterion (AIC), and Hannan-Quinn information criterion (HQ) select two as the optimum lag length. This study aligns with the latter and therefore carried out the T-Y causality test based on lag length two.

Table 4. VAR lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-443.4642	NA	1.65e+11	34.34340	34.48857	34.38520
1	-392.7270	85.86307*	6.71e+09	31.13284	31.71350*	31.30005
2	-381.4042	16.54864	5.80e+09*	30.95417*	31.97032	31.24678*

Source: Authors, 2022

Note: * indicates lag order selected by the criterion, being the minimum value.

Toda-Yamamoto Causality Test

The kernel of this study is to investigate the link between internally-generated revenue, capital expenditure and fiscal stress at the Nigerian local government using Toda-Yamamoto Granger non-causality test. In line with the T-Y procedure, since all the variables are integrated of the same order one, the maximum order of integration still remains one (1), that is d_max=1. Revelation from VAR lag order selection test (Table 4) indicates the optimum lag (k) to be 2. Based on the Akaike Information Criterion (AIC) and in conjunction with the unit root test result, then [〖k+d〗 _max=3]. Thus, a VAR model with a lag interval of 1 and 3 was estimated and thereafter the Toda-Yamamoto Granger non-causality test was carried based on the VAR Granger causality/block exogeneity Wald tests approach.

The results of the test as shown in Table 5 indicate that capital expenditure (CAPEX) has a statistically significant effect on fiscal stress in the Nigerian local government. The p-value for the modified Wald statistic of the measure of capital expenditure is statistically significant at a 10% level of significance suggesting a rejection of the null hypothesis of no causal relationship between capital expenditure and fiscal stress. The causality direction is observed to be unidirectional running from capital expenditure (CAPEX) to fiscal stress (FS). This finding is consistent with the position of Nurhayati (2020) concludes that capital expenditure has positive effect on fiscal stress in Kunci Bersama Area. Furthermore, this study shows that there is no causality between IGR and fiscal stress in the Nigerian local government.

Table 5. Toda-Yamamoto granger non-causality test

Dependent Variables			
	FS	CAPEX	IGR
FS	-	0.420886	3.291056
		[0.8102]	[0.1929]
CAPEX	5.463641	-	2.895507
	[0.0651]***		[0.2351]
IGR	2.251957	2.041243	
	[0.3243]	[0.3604]	-

Source: Authors, 2022

Notes: The modified Wald statistic (Chi-sq) are reported in { } and the p-values for the modified Wald statistic are reported in [ ].

Diagnostic Tests

The result of the VAR residual serial correlation LM test which is the most relevant post-estimation test for multivariate models (Adejoh et al, 2020), is presented on Table 6.

Table 6. VAR residual serial correlation LM tests

Null hypothesis: No serial correlation at lag h						
Lag	LRE* stat	Df	Prob.	Rao F-stat	Df	Prob.
1	10.50930	9	0.3108	1.221636	(9, 34.2)	0.3143
2	12.02088	9	0.2121	1.427046	(9, 34.2)	0.2153
Null hypothesis: No serial correlation at lags 1 to h						
Lag	LRE* stat	Df	Prob.	Rao F-stat	Df	Prob.
1	10.50930	9	0.3108	1.221636	(9, 34.2)	0.3143
2	18.22720	18	0.4408	1.026161	(18, 31.6)	0.4603
*Edgeworth expansion corrected likelihood ratio statistic.						

Source: Authors, 2022

Conclusion

The kernel of this study is to investigate causal link between internally-generated revenue, capital expenditure and fiscal stress in the Nigerian local government for the period, 1993-2020. From the application of Toda-Yamamoto Granger non-causality test, this study reveals that capital expenditure has statistically significant effect on fiscal stress in the Nigerian local government. The causality direction is observed to be unidirectional from capital expenditure to fiscal stress. However, there was no causal link between internally generated revenue and fiscal stress in the Nigerian local government in the study period. It is therefore concluded that capital expenditure is a determinant of fiscal stress in the Nigerian local government.

There is the need for Nigerian government to properly harness its capital expenditure and resources towards boosting the revenue-generating capacity at the local level, such that the internally generated revenue is increased by the proceeds of the capital expenditure. The Nigerian local governments should seek new revenue sources such as additional taxes, fees and levies as well as local investments which are capable of boosting their internally generated revenue. In managing fiscal stress, particular attention should be paid to the capital expenditure incurred by the local government in Nigeria. It is also suggested that further studies should investigate the determinants of fiscal stress at the federal and state levels and incorporate other explanatory variables in their models. This current study is time series in approach, a set of countries and regions should be examined using panel data approach. The Nigerian local government should mitigate fiscal stress by executing developmental project that are capable of transforming the local communities as well boosting the revenue generating capacity of the local government.

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