Journal of Research and Development Studies
Volume 5 No.1 (2021) 29 – 41
www.wdujournals.com

REVENUE GENERATION; A PANACEA FOR INFRASTRUCTURAL DEVELOPMENT: A CASE STUDY OF BAYELSA STATE

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ABSTRACT: ***This study empirically examines the impact of government revenue on infrastructural development in Bayelsa state using quarterly time series data ranging from 2000 – 2020, obtained from the Bayelsa State Ministry of Budget and Economic Planning and CBN statistical bulletin. The study made use of Ordinary Least Squares (OLS) regression technique in analyzing the data. The variables for the study (INFRD, BSGFAL, BSGRI, BSGTR and INF) were subjected to stationarity and co-integration tests using the augmented Dickey-Fuller test and Johansen cointegration test using Trace Statistics and eigen-value tests. Error Correction Mechanism (ECM) was used to reconcile the short run and long run equilibrium of the variables. The results revealed that BSGTR and BSGFAL have positive and significant impacts on infrastructural development in Bayelsa State. Also, BSGRI for the period reviewed had a significant positive impact on infrastructural development in the State. The study, concludes that government revenue has significant positive impact on infrastructural development in Bayelsa State. The study therefore recommends amongst others that government should intensify efforts in its revenue drive by way of eliminating all forms of revenue leakages through the automation of the state's revenue collection system.***

KEYWORDS*: Revenue, development, infrastructure, budgeting, accrual*

INTRODUCTION

Infrastructural development in any society is very key in its developmental pursuit. Thus, governments at different levels all over the worlds have strived to bring about the needed development to its citizenry through infrastructural development. To achieve this, governments have sourced for revenues from different sources to finance the development of infrastructural facilities in the domains they govern, Bayelsa State inclusive. Over the years, revenue has

accrued to the Bayelsa State government from several sources, with Federal allocation as its major source, which is supported by revenue from taxation.

It is worthy of note that from the creation of the State till date, over 80% of the annual revenue to the state came from Federal government as an allocation for the government to meet up with its expenditures (Bayelsa State Ministry of Budget and Economic Planning). The emergence of crude oil in Nigeria has significantly dictated the pace of economic, political, social and cultural progress in the country. Over the years, the importance of oil commodity has been made manifest in the economy of Nigeria in several ways. In the 1970s, the petroleum industry dominated the Nigeria economy after agriculture, generating substantial foreign exchange revenue. With emphasis on oil revenue and economic development in Nigeria, it is glaring that there have been positive changes in the economic life of Nigeria over the years. However, with the volatility in oil prices worldwide, the aggregate revenue generated from this source have dwindled and waned significantly, surprisingly, the Nigerian economy still depends to a large extent on crude oil, despite the significant decline in oil revenue over the years. The serious decline in the price of oil in recent years has consequently led to the decrease in the funds available for distribution to the states (Adesoji & Chike, 2013). Recent statistics show that most state governments generate only 15% of their revenue and depend on federal allocation for further sustenance. Unfortunately, this is no longer sustainable (Balogun, 2015).

Evidence from Scholars (Akindele & Obiyan, 2002; Ekpo & Ndebbio, 1998) has shown that, 90% of State governments in Nigeria depend solely on statutory allocations, from the Federal government to defray their expenditure. For example the Bayelsa State Government on Thursday 20th, December, 2018 disclosed that it posted N113.3bn as its annual internally generated revenue in 2018 as against the N4.5Million it realised in 2012, while the Federal allocated revenue same months was N15billion this indicates that 91 percent of the revenue are from federal account as such both sources are the major composition of Bayelsa state total revenue (NBS, 2018).

State governments now face more challenges in terms of struggling to be less dependent on the Federal government for financial resources. Though, the revenue allocation system mandates that a certain fraction of the Federation Account be allocated to state governments, these funds are not enough to meet expenditure requirements. This is because the size of the account is related to revenue from oil which is subject to fluctuations and the expenditures of state government far exceed available resources.

The increasing cost of running government coupled with dwindling revenue has led various State governments in Nigeria with formulating strategies to improve the revenue base. Despite the numerous sources of revenue available to the various tiers of government as specified in the Nigeria 1999 constitution, since the 1970s till now, over 80% of the annual revenue of the three tiers of government come from petroleum. However, the serious decline in the price of oil in recent years has led to a decrease in the funds available for distribution to the states. The need for state and local government to generate adequate revenue from internal sources has therefore become a matter of extreme urgency and importance. Development is a sine qua non for modern civilization. In order to carryout development at all nooks and crannies of the society, it is the responsibility of the Bayelsa State Government to provide direct development to her people to a certain level. Development is associated with

funds and much revenue is needed to plan, execute and maintain infrastructures at the state level.

The needed revenue generated for such developmental projects like construction of accessible roads, building of public schools, health care centres, construction of bridges is generated from taxes, royalties, haulages, fines, and grants from the states, national and international governments. These funds could either be obtained internally or externally. Thus, the Bayelsa State Government cannot embark, execute and possibly carryout the maintenance of these projects without adequate revenue generation. However, the tax system in Bayelsa State is characterized by evasion and avoidance; both which significantly reduce the supposed income to the government through tax and as such, the financial capacity of the State to embark on the infrastructural development could be hindered. Also, there is widespread false declaration of profit by the few available tax payers in an attempt to reduce their tax payment. Many petty traders do not maintain adequate record that could assist in establishing accurately their incomes for the purpose of determining tax. Thus, this study examined government revenue vis-à-vis the infrastructural development in Bayelsa State.

From the foregoing, the study was guided by the following objectives.

i. To examine the impact of Bayelsa state government tax revenue receipt on infrastructural development in Bayelsa State.
ii. To determine the impact of return on Bayelsa state government investment on infrastructural development in Bayelsa State.
iii. To examine the impact of federal government allocated revenue on infrastructural development in Bayelsa State.

LITERATURE REVIEW

Empirical Literature

Onwuka, and Christian, (2019) examined revenue generation as a tool for infrastructural development in Nigeria. They used time series data sourced from Federal Ministry of Finance, Office of the Accountant General of the Federation, Federal Republic of Nigeria Official Gazettes and the various States' Official Gazettes, Central Bank of Nigeria (CBN) and Nigeria Bureau of Statistics (NBS). Ordinary least square regression analysis was employed in this work with the used. The findings of this work reveal that revenue generated have significant effect on infrastructural development in Nigeria. Also, it was concluded that revenue generated have significant effect on economic growth in Nigeria.

Ajiteru, Adaranijo and Bakare, (2018) examined the relationship between tax revenue and infrastructural development in Osun State. The study adopted survey research design with the population involving the government officials at the ministry of finance of Osun state as well as the people of the state. A purposive sampling technique was used to select a total of 102 respondents for questionnaire administration. The questionnaires were analyzed using descriptive statistics. It was found that tax revenue is a very strong tool for infrastructural development in the State.

Olayinka and Irewole (2019) assesses the impact of internally generated revenue on infrastructural development in Lagos state. Data was sourced from State and Local Government Programme (SLGP) Consultants' Report 320and Lagos state ministry of Planning and Budgeting website. The result showed that there is a significant positive relationship between internally generated revenue and infrastructural development. Taxes, earnings and sales which are major components of internally generated revenue, do not have any significant impact on the infrastructural development of Lagos state. However, licenses, fines and fees have a significant impact on the infrastructural development of the state.

Owusu, (2015) carried out an assessment of the contributions of Internally Generated Fund (IGF) in the development of Metropolitan Assemblies in Ghana, using Kumasi Metropolitan Assembly (KMA) as a case study. The specific objective was to investigate the contribution of various revenue sources towards the development of KMA. The data generated for the study covered a period of six (6) years from 2009 to 2014. The revenue sources examined were rate, lands, licenses, rent, fees, fines and other income. The study employed a descriptive research design while simple percentage contribution was used to establish the extent of IGF contribution to economic development in KMA. The result showed that IGF contribution to Education was 26%, Health 1%, Environment 20%, Administration 15%, Economic 12%, Human Resources 5%, Office Equipment 5%, Project Management 9%, and other Miscellaneous 7%.

In the similar study by Adenugba, and Ogechi, (2013) in Lagos State, the authors found out that the effect of internal revenue generation has led to infrastructural development. The researchers also discovered that the infrastructural development in Lagos state is as a result of adequate internally generated revenue and that revenue generation supports infrastructural development. Furthermore, they found that Lagos state is ahead of other states in the provision of basic infrastructures due to its efficiency in generating revenue internally.

Adesoji, (2013), studied the effect of Internally Generated Revenue on infrastructural development of Lagos State. The research design used by the researcher is purposive and survey sampling methods to sampled respondents from the State Internal Revenue Board (SIRB). The data collection instrument used in the study was questionnaire whereas Descriptive (Simple Percentages) and Inferential (Spearman's Rank) statistical tool was used to analyze data collected. Two hypotheses were formulated to ascertain the correlation between internal generated revenue and infrastructural development. The result obtained shows that there was a positive relationship between the dependent and independent variables. The study however recommended that; the revenue administration agencies need to be revived if additional and improved revenue is to be generated in the state.

Ironkwe and Ndah (2016) studied the impact of internally generated revenue (IGR) on the performance of local governments in Rivers State Nigeria. The study adopted the ex-post facto research design and made use of a population size of 23 local government councils in Rivers State. The secondary data employed were from 2005 to 2014 and were collected from the authorities of Ogba/Egbema/Ndoni Local Government Council. The findings of the study revealed that TREV and NTRV had no significant impact on Local Government road construction (LGRC) in Ogba/Egbema/Ndoni Local Government Councils within the period studied.

Ehule (2015) studied the relationship between internally generated revenue and performance of a public sector. Data were collected using questionnaires with a five point liker response scale from 125 staff of Obio/Akpor Local Government Council drawn from a random sample. The Pearson product moment was used to determine the nature of relationship. The results show that permits and rates have a positive significant relationship with performance of Obio/Akpor Local Government Council.

Ekpung, (2014) analyzed the trend of government expenditure on infrastructural development in Nigeria between the years 1970-2010. The study revealed that infrastructural development has not yielded positive result over the years indicating that there is a deterioration in infrastructural development in the country. The study further recommended that government monitors the expenditure on infrastructural development and adhere strictly to due processes and procedures in order to manage funds.

Gap in Literature

In all, the empirical studies reviewed, some focused on internally generated revenue as it relates to government expenditures, government performance, economic development and economic growth; while Olayinka, and Irewole, (2019); Ekpung, (2014); Adesoji, (2013); and Adenugba, and Ogechi, (2013) dwelt much on the relationship between internally generated revenue and infrastructural development in Nigeria and some other states; while Onwuka, & Christians (2019), examined revenue generation and infrastructural development in Nigeria leaving little or no study in Bayelsa state. Also, the study departs from previous work by bringing in returns on state government investments as source of revenue (internally generated revenue) which other studies ignored. This is crucial as state governments embark on different forms of interest yielding investments as a way of augmenting the federal allocation that comes from the centre. The study therefore will attempt to bridge the gaps identified, which is government revenue on infrastructural development in Bayelsa state.

THEORETICAL LITERATURE

Theories of Welfare

Performance in some regards is synonymous with welfare. Generally, in most economic literatures, welfare has been viewed as the maximization of utilities or satisfaction derived from the use of public goods and services, as the utilitarians will put it, “the greatest happiness of the greatest number”. To appreciate our discussion in the domain of welfare economics concepts and theories of General welfare, economic welfare and social welfare are inevitable.

i. *The General Welfare Theory:* General welfare according to M.L. Jhingan (2012) refers to “all economic and non-economics goods and services that provide utilities or satisfaction to individuals living in a community”. This point of view suggests that increased Government expenditure on public goods and services will increase the satisfaction or otherwise utilities of the citizenry.
ii. *Economic Welfare Theory:* Pigou in Jinghan (2012) defines economic welfare “as that part of General Welfare which can be brought directly or indirectly into relation with the measuring rod of money”. Emphasis here is on the utility and satisfaction derivable by an individual from the use of economic goods and services or those that can be exchanged for money, as opposed to

the non-economic goods and services accommodated by the view of the General welfare economists. Pigou stressed that welfare can be measured with money.

iii. *Social Welfare Theory:* The socialists, in describing yet another dimension of general welfare, define social welfare as the "aggregation of the satisfaction or utilities of all individuals in a society".

METHODOLOGY

Data and Sources

Secondary data is used for the study. Data for infrastructural development, state government total tax revenue receipt and Bayelsa state government return on investment and federal allocations to Bayelsa State were obtained from Bayelsa State Ministry of Budget and Economic Planning. While data on inflation rate was collected from CBN statistical bulletin, 2019 edition. The study makes use of time series data.

Model Specification and Method of Data Analysis

To achieve the objectives of the study, the Ordinary Least Square (OLS) estimation techniques is used because it possesses a unique property of Best Linear Unbiased Estimator (BLUE) when compared to other estimating techniques. To ensure that a spurious regression result is be obtained, the variables were subjected to Augmented Dickey Fuller test (ADF) and Johansen cointegration test to ascertain their stationarity and long-run properties. Thereafter, the error correction model was estimated to identify the speed at which the model will oscillate back to its equilibrium path in the event that a short-term disturbance causes it to deviate away from its equilibrium position.

To test the competing views on the role of revenue in promoting infrastructural development, the study relied on the general welfare theory which states that increase in government expenditure should result to an increase in the services provided by government, which translates into increased satisfaction. Thus, the theory is presented as;

GOVSERV = f(GOVREX) - - - - - 3.1

Where GOVSERV = government services

GOVREX = Government expenditure

But, GOVREX = f (GOVREV) - - - - - 3.2

Where; GOVREV = Government revenue

It is also worthy of note that government revenue can be disaggregated into; tax revenue, federal allocations to the State, return on State government's investment, etc. thus, in other to achieve the objective of this study, equation 3.2 was modified to the following;

INFRD = f (BSGFAL, BSGTR, BSGRI, INF) - - - 3.3

Presenting equation 3.3 in the mathematical form yields;

$INFRD_t = \psi_o + \psi_1 BSGFAL_t + \psi_2 BSGTR_t + \psi_3 BSGRI + \psi_4 INF$ - 3.4

The corresponding econometric model for equation 3.4 was specified after taking the logarithmic transformation of the variables as:

$logINFRD_t = \psi_o + \psi_1 logBSGFAL_t + \psi_2 logBSGTR_t + \psi_3 logBSGRI + \psi_4 INF + \varepsilon_t$ 3.5

Where:

INFRD = Infrastructure development (measured by Capital expenditure)

BSGFAL = federal allocations to Bayelsa State

BSGTR= Bayalsa state Government tax revenue

BSGRI= Bayelsa state government return on investment

INF = Inflation rate

ε_t = error term

ϕo= Intercept

$\phi_1, \phi_2, \phi_3, \phi_4$ = Coefficients of the independent variables

Apriority Expectation

Total Tax revenue and return on investment and federal allocations as independent variables in the models are expected to be positively related to infrastructural development. This is because an increase in tax revenue generated should lead to an increase in infrastructural development, hence economic welfare. Also increase in return on investment is expected to lead to increase in infrastructural development, and same with federal allocation. Inflation on the other hand is negatively related to infrastructural development as any increase in inflation would reduce the purchasing power of the naira, thereby reducing the number infrastructural facilities that could have been built. Therefore, $\phi_1 > 0$, $\phi_2 > 0$, $\phi_3 > 0$ and $\phi_4 < 0$

Description of the Variables in the Model

a. Infrastructural Development: as used in the model represents all capital expenditure on the provision of infrastructural facilities in Bayelsa state for the period under review. This is measured in billions of naira.

b. Federal Allocation: has to do with all forms revenue that have accrued to Bayelsa State from the federated accounts of the Federal government of Nigeria over the study period. This is measured in billions of naira.

c. Bayelsa State Government Tax Revenue: refers to all forms of revenue that accrue to the Bayelsa State government as internally generated revenue from the different forms of tax collected by the government in the State. This is measured in millions of naira.

d. Inflation rate: this variable has been included in the model as a control variable because it has a way of influencing the dependent variable. Inflation on the is inversely related with infrastructural development as an increase in inflation rate would reduce the purchasing power of the naira, thereby reducing the number infrastructural facilities that could have been built

RESULTS AND DISCUSSION

The table below shows the descriptive statistics of the variables used in the model

Table 4.1 Descriptive Statistics

VARIABLES	INFRD	BSGTR	BSGRI	BSGFAL	INF
Mean	122.0399	129.0034	17.22645	1879.347	6.496916
Median	108.4900	107.9680	18.92140	579.4948	13.62326
Maximum	273.6400	285.7370	21.30726	9955.140	18.13637

Minimum	49.78700	60.57469	11.84515	87.62399	11.21798
Std. Dev.	62.24509	59.38189	3.327988	2800.023	196.4322
Skewness	1.038151	1.208719	0.392563	1.692146	1.599732
Kurtosis	3.336679	3.717966	1.558157	4.729189	4.191383
Jarque-Bera	3.502635	5.034589	2.133806	21.66530	17.48394
Probability	0.173545	0.080678	0.344072	0.000020	0.000160

Source: E-Views Output

The minimum and maximum value of INFRD (49.78) & (273.64) respectively, whereas the mean value is (122.03) and standard deviation is (62.24). Similarly, the minimum and maximum value of BSGTR (60.57) & (285.73) respectively, with a mean value of (129.00) and standard deviation of (59.38). BSGRI has minimum and maximum value of (11.84) & (21.30) respectively; with a mean value of (17.22) and standard deviation of (3.32). For BSGFSL, the minimum and maximum values are (87.62) & (9955.14) respectively. For INF, the minimum and maximum values are (11.22) & (18.14) respectively for the period under review. The descriptive statistics result showed that the variables are rightward skewed. That is, positively skewed. Therefore, we conclude the distribution to be approximately normal. The coefficient of the kurtosis of BSGRI indicates platykurtic given that the kurtosis values are below 3.00, thus they are normally distributed; while the coefficient of the kurtosis of INFRD, BSGFAL, INF and BSGTR indicates a peak (Leptokurtic) given that the kurtosis values are above 3.00 relative to be normal. The Jarque-Bera statistics values of the variables and their corresponding probability values shows that the data set employed for the analysis in this work are trendy or non-stationary. Thus, the Augmented Dickey-Fuller test of stationarity was conducted to test the stationarity status of the variables.

Table 4.2 Augmented Dickey-Fuller Unit Root Test

Variable	**Level**	**1st diff.**	**Critical Value @ 5%**	**Lag(s)**	**Model**	**Order of integ.**
log(BSGRI)	-1.816150	-3.730677**	-3.710482	2	Trend & Intercept	I(1)
Log(INFRD)	-2.780351	-6.062043***	-3.7104821	2	Trend & Intercept	I(1)
Log(BSGTR)	-3.223948	-6.083829***	-3.791172	2	Trend & Intercept	I(1)
Log(BSGFAL)	-0.855027	-9.512182	-3.7104821	2	Trend & Intercept	I(1)
INF	2.904948	4.659793	-3.7104821	2	Trend & Intercept	I(1)
ECT	-4.364722***	-1.966270		0	None	I(0)

Source: Author's computation, using E-Views Output

Note: *(**) *** denotes statistically significant at 1%, 5% and 10% level respectively.

To avoid the estimated regression being spurious, and ascertain the stationarity of the data the Augmented Dickey-Fuller unit root test is conducted as shown in table 4.2. The Augmented Dickey-Fuller unit root test results showed that all the variables have unit root at level; but are stationary at their first difference; thus agrees with the fact that most variables are stationary at first difference and justified the test for cointegration.

Having established that the variables are integrated at order one, i.e., 1(1), and the generated residual is stationary at level, as well as having confirmed the stability of the model. The Johansen Co-integration Rank test was estimated to determine the number of cointegrating equations in the error correction model and thus, confirm if the variables are co-integrated.

Table 4.3: Johansen cointegration test Result

Series: BSGFAL BSGRI BSGTR INF INFRD

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.939394	127.7741	69.81889	0.0000
At most 1 *	0.909428	80.11690	47.85613	0.0000
At most 2 *	0.780036	39.28950	29.79707	0.0030
At most 3	0.465715	13.54652	15.49471	0.0962

At most 4	0.156359	2.890481	3.841466	0.0891

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.939394	47.65722	33.87687	0.0006
At most 1 *	0.909428	40.82740	27.58434	0.0006
At most 2 *	0.780036	25.74298	21.13162	0.0104
At most 3	0.465715	10.65604	14.26460	0.1723
At most 4	0.156359	2.890481	3.841466	0.0891

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

***Source*:** E-view Output

The Unrestricted Cointegration Rank Test (Trace) above indicates three (3) co-integrating equations at 5% level indicating that the variables are co-integrated. That is, there exists a long-run or equilibrium relationship among the variables employed in the model.

Table 4.4: Parsimonious Error Correction Result

Dependent Variable:log(INFRD)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-356.8090	137.9284	-2.586915	0.0271
Dlog(BSGTR)	103.3319	27.91606	3.701520	0.0041
Dlog(BSGTR (-1))	9.881182	4.210188	2.346969	0.0321
Dlog(BSGTR (-2))	12.85225	7.342084	1.750490	0.0992
Dlog(BSGRI)	14.06724	6.050007	2.325162	0.0424
Dlog(BSGRI (-2))	0.656787	4.733561	0.138751	0.8914
Dlog(BSGRI (-3))	7.665728	4.097286	1.870928	0.0798
Dlog(BSGFAL)	0.986329	0.290978	3.389703	0.0037
Dlog(BSGFAL (-2))	0.342219	0.475451	0.719779	0.4820
Dlog(BSGFAL (-3))	0.511989	0.626378	0.817380	0.4257
D(INF)	-0.264607	0.195014	-1.356861	0.1937
D(INF(-3))	-7.665728	4.097286	-1.870928	0.0798
ECT(-1)	-0.592192	0.240915	-2.458095	0.0194

R-squared	0.753067	Mean dependent var	146.2125
Adjusted R-squared	0.684294	S.D. dependent var	60.46234

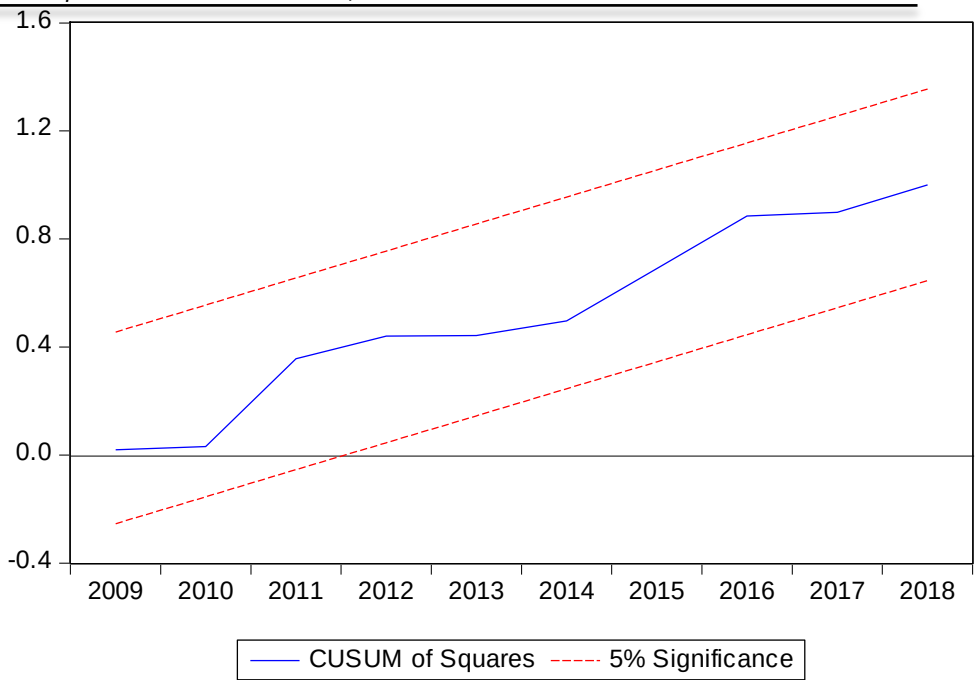
S.E. of regression	39.62737	Akaike info criterion	10.45812
Sum squared resid	14713.23	Schwarz criterion	10.69414
Log likelihood	-72.51289	Hannan-Quinn criter.	10.45560
F-statistic	5.919408	Durbin-Watson stat	1.986523
Prob(F-statistic)	0.000423		

***Source*:** E-Views Output

Table 4.4 shows the Error Correction Term (ECT) with probability value of -0.0194 means that ECT(-1) is well quantified and the analytic statistics are good. Specifically, the ECT also report that approximately 59.2% speed of adjustment towards equilibrium. This implies that 59.2% of disequilibrium caused by short run fluctuations in the previous period was corrected in the current period.

From the error correction model result in table 4.4, the adjusted coefficient of determination (R^2) value of 0.6843 shows that about 68.43% variation in infrastructural development is jointly explained by Bayelsa state government tax revenue receipt, federal government allocation, inflation rate and Bayelsa state government return on investment, while the remaining 32.57% is explained by other factors that accounts for variation in infrastructural development captured by the error term or not included in the estimated model.

The test for the overall significance of the model shows that the model is statistically significant as shown by the F-statistic of 5.9194 and probability value of 0.010 reveals that the entire model is statistically significant at the 5% significance level. Also, the Durbin Watson statistic value of 1.9865 reveals the absence of first order serial or autocorrelation in the estimated model. This result is therefore void of spuriousness, hence, can be depended upon for policy decision making.

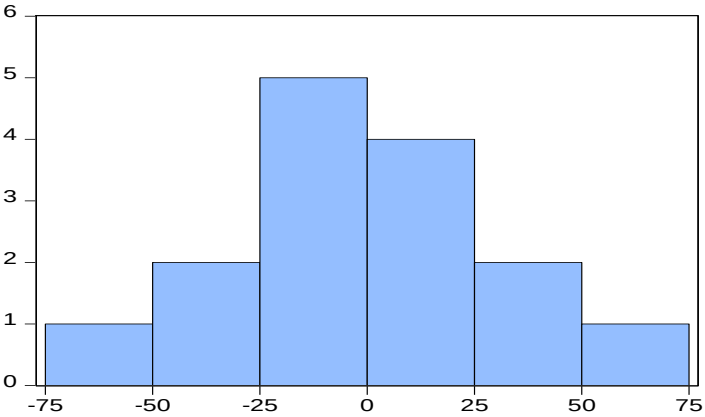


4.1.5: **Stability Diagnostic Test**

Fig. 4.2 Cumulative Sum of Square (CUSUM of square)
Source: E-Views Output

The Cumulative Sum (CUSUM) and the Cumulative Sum of Square (CUSUM of square) test presented in figure 4.1 and 4.2 shows that the parameters of the model are relatively stable over the study period. This is evidence as the cumulative sum does not go outside the area between the two critical lines. From the results of the diagnostic test, we therefore conclude that the specified error correction model is correctly specified with the appropriate variables.

Residual Diagnostic Test



Series: Residuals	
Sample 2001Q1 2018Q4	
Observations 72	
Mean	-2.10e-13
Median	-1.179587
Maximum	55.64002
Minimum	-68.02534
Std. Dev.	33.49124
Skewness	-0.427122
Kurtosis	2.546070
Jarque-Bera	0.584866
Probability	0.746445

Fig. 4.3 Normality Test
***Source*:** E-Views Output

From the histogram normality test in fig. 4.2 showed that the variables are leftward skewed. Therefore, we conclude the distribution to be approximately normal. Kurtosis measures the highness or flatness of the data relative to the normal distribution. The coefficient (2.546) of the kurtosis of the variables indicates that the variables are normally (mesokurtic).

The Jarque-Bera (JB) test measures the difference of the skewness and kurtosis of the series with those from the normal distribution. The model with the JB value of 0.584866 and a corresponding probability of 0.746445 confirm the normality of the series and suitability of generalization. It also indicates the absence of outliers in the data.

DISCUSSION OF FINDINGS

From the Error Correction result in table 4.4 above, it is evident that Bayelsa state government revenue in the form of tax revenue is positively related with infrastructural development in the state. This means that tax revenue receipt of Bayelsa state government has a positive impact on the level of infrastructural development in the state. The impact of Bayelsa state government tax revenue on infrastructural development is also statistically significant. Findings shows that any attempt to increase tax revenue in the state by one 1% would result to about 103.3% increase in infrastructural development in Bayelsa state. This corroborates the apriori expectation earlier state in chapter three of this study. This finding in tangent with the work of Olayinka and Irewole (2019), Ajiteru, et al (2018), Ironkwe, et al (2016), Ehule (2015) and Owusu (2015).

The same is true with Bayelsa state government return on investment as finding from table 4.4 indicates that the state government's return on investment and infrastructural development are positively related. Meaning that, Bayelsa state government return on investment has a positive impact on infrastructural development in the state. As also indicated from the result in table 4.4 above, the said impact between the state government return on investment and infrastructural development is statistically significant. This also implies that a 1% increase in the state government's return on investment would result to about 14.06% increase in infrastructural development in the state. This also corroborates the apriori expectation earlier state in chapter three of this study.

From table 4.4 above it can be seen that the same is true with federal government allocated revenue to Bayelsa State and infrastructural development are positively related. Meaning that, federal government allocated revenue to Bayelsa State has a positive impact on infrastructural development in the State. As also indicated from the result in table 4.4 above, the said impact between the state government receipt from federal allocation and infrastructural development is statistically significant. This also implies that a 1% increase in the federal government allocated revenue to Bayelsa State would result to about 98.6% increase in infrastructural development in the state, all things being equal. This also corroborates the apriori expectation earlier state in chapter three of this study.

From table 4.4 above it can also be seen that inflation rate and infrastructural development are inversely related. Meaning that, inflation rate has a negative impact on

infrastructural development in the State. As also indicated from the result in table 4.4 above, the said impact between inflation rate and infrastructural development is statistically not significant. This also implies that a 1% increase in inflation rate would result to about 26.5% decrease in infrastructural development in the state, all things being equal. This also corroborates the apriori expectation earlier state in chapter three of this study.

CONCLUSION AND RECOMMENDATIONS

From the findings, the study concludes that government revenue in the form of total tax revenue receipt; federal government allocation and return on investments made by the Bayelsa state government have positive and significant impact on the development of the infrastructural facilities in Bayelsa state. This corroborates the works of Olayinka and Irewole (2019), Ajiteru, et al (2018), Ironkwe, et al (2016), Ehule (2015) and Owusu (2015).Therefore, the following recommendations are made:

i. Bayelsa state government is doing a lot with regards to the collection of tax revenue. However, there should be intensified efforts to improving the internally generated revenue drive of the state by eliminating all forms of revenue leakages through the automation of the state's revenue collection system. This would not only increase the internally generated revenue profile of the state but also increase the revenue base of the state for infrastructural development.
ii. Since, return of government investment has a positive and significant impact on infrastructural development in Bayelsa state, it is recommended for the Bayelsa state government to invest more on profit or interest yielding ventures as this would also improve the revenue of the state as a source of internally generated revenue, thereby, leading to improvement in the level of infrastructural development in the state.
iii. Government should show some degree of accountability and honest on the revenue collected to make citizen understand the connection between tax revenue and infrastructural development.
iv. The Bayelsa State government should consciously utilize the revenue that accrue to the State from the federation account to provide infrastructural facilities in the State to bring about improved welfare of Bayelsans and those that resides in the State.

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