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Government Expenditure and Electricity in Nigeria: Any Implications for Economic Growth?

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ABSTRACT

Study Aim: As an infrastructure, electricity should propel growth given the theoretical view of endogenous economists, the financial commitment of the Nigerian governments, as well as the size of the economy. Against this background, several researches have been provoked towards providing meaningful suggestions that can help nip the problem of electricity in the bud. However, despite barrage of recommendations, the problems of electricity appear to be getting worse.

Methodology: It is on this premise this paper examines the implications of government expenditure and electricity for economic growth using the Granger causality, Johansen co-integration and ECM techniques over the period 1981-2020.

Findings: While economic growth is proxy for real GDP per capita, findings reveal unidirectional causality running from economic growth to each of electricity consumption and electricity supply. Just as electricity consumption Granger-causes electricity supply. A long-run relationship is also affirmed among the variables.

Conclusion: As regard the ECM analysis, it appears that the trio of electricity consumption, electricity supply and government capital expenditure have no implication whatsoever for economic growth over the period considered.

Keywords: Causality, Capital Expenditure, Economic Growth, Electricity, Co-integration.

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Introduction

The neoclassical economists emphasise the importance of investment, while the endogenous counterpart stresses the ingenuity of human capital and innovation for growth. In this regard, Barro (1990) identifies the significance of public infrastructure as inducement to self-maintained growth. As a public infrastructure, electricity is adjudged paramount for economic growth and development: it is a key resource whose production, distribution and consumption, to a large extent, determine the living standard of the people. Basically, inadequate supply of electricity can hold back business, lower employment and productivity, and ultimately, economic growth (Macovich, 2012; Voser, 2012). Similarly, as a factor in Keynesian advocacy for government intervention, World Bank (2015) emphasises the importance of government expenditure. The Bank maintains that increased expenditure on core infrastructure will raise the quality of growth and enhance development process. As such, direct investment on infrastructure will stimulate economic activities, reduce transaction costs, create employment opportunities for the poor (Sahoo, Dash & Nataraj, 2010), raise the rate of capital formation and spur growth (Agenor & Moreno-Dodson, 2006).

Interestingly, economic growth in Nigeria is such that rises from -1.58% in 2016 to 2.27% in 2019 (National Bureau of Statistics [NBS], 2020). Even as the International Monetary Fund (IMF) forecasts a gross domestic product (GDP) growth of 2.5% for 2021, the country nonetheless records a 5.01% year-on-year growth in the second quarter with a whopping 6.74% real growth contribution from the non-oil sector (Federal Government of Nigeria (FGN), 2021). But then, following the increase in electricity tariffs amid incessant outages, inflation rises from 11.4% in 2019 to 12.8% in 2020 and 18.17% in 2021 (Africa Economic Outlook [AEO], 2021; FGN, 2021). Also, while capital expenditure climbs to 32% of total budget and consolidated public expenditure-to-GDP ratio reaches 11.8% in 2020, the 2022 budget provides additional NGN37 billion to settle electricity bills of Ministry, Department and Agencies (MDAs) (Federal Ministry of Finance, Budget and National Planning [FMFBNP], 2021). Nonetheless, despite the dismal contribution of electricity to the economy, the government through the National Development Plan [NDP] 2021-2025 is yet, set to drive a projected 4.7% real GDP growth over the plan period by dedicating significant resources to unlock added energy (FMBNP, 2021). It is on this backdrop this paper seeks answers to the perennial questions of whether, or not, government expenditure and electricity impact economic growth in Nigeria.

Meanwhile, it is imperative to note that several studies have expressed opinions on the growth-implications of electricity in the country. For example, Eke (2014) iterates the provision of quality and reliable electric power as catalyst for the growth of the Nigerian economy. Also, while capitalizing on growth opportunities in the Nigerian electricity market, the Federal government in 2014 presents analysis on the investment opportunities in the Nigerian power sector. The analysis submits that power sector has recorded major achievements and milestones in the country such that GDP growth rate averages 7% in the period 2008-2011. However, despite the submissions of earlier studies, majority of the populace are yet, experiencing blackout in the form that the percentage of the population with access to power is 41 in the rural[1] area in 2020. This, along with Figure 1, supports the view that about 55% of Nigerians cannot access electricity given poor per capita power consumption of 144 kilowatts per hour (kWh) as against 483kWh on the average for sub-Saharan Africa in the period 2017-2020 (FMBNP, 2021). Therefore, in the attempt to ascertain the contribution of electricity to growth, this study, by objective, examines the implications of government expenditure and electricity for economic growth in Nigeria.

Essentially, towards industrialising Nigeria, there is the need for adequate generation, effective transmission, and efficient distribution of electricity. The need necessarily informs the transformation and rebranding of the body in charge from National Electricity Power Authority (NEPA) to Power Holding Company of Nigeria (PHCN) and to the unbundling into six generating companies (GENCOs), a transmission company of Nigeria (TCN), and 11 distribution companies (DISCOs) following the birth of the Power Sector Reform Law in 2005. Incidentally, however, as the country faces infrastructural gap of 50%, an estimated USD20 billion is projected to revamp the power sector and approximately USD2.9 trillion is required to accelerate development in the energy sector, among others, between 2014 and 2043 (Foster & Pushak, 2011; Opia-Enwemuche & Oyeneyin, 2016; Kolawole, 2020). In this regard, the government makes concerted efforts to attract foreign investors to participate in the power sector by commissioning the Independent Power Projects (IPPs). Nevertheless, as expectation rises towards

[1] This is lower than 59.3 and 54.4% for the country in 2016 and 2017, respectively (World Bank, 2020). Basically, access to electrical and non-electrical modern energy is required for sustainable development (Attigah & Mayer-Tasch, 2013).

increasing power transmission to 7,000 megawatts (MW), the federal government is set to inject additional USD3 billion into the energy sector.

The remaining aspect of the paper is divided into five as follows. Section two reviews the literature and section three provides the methodology. While empirical results are presented and discussed in section four, section five gives concluding remarks with recommendations.

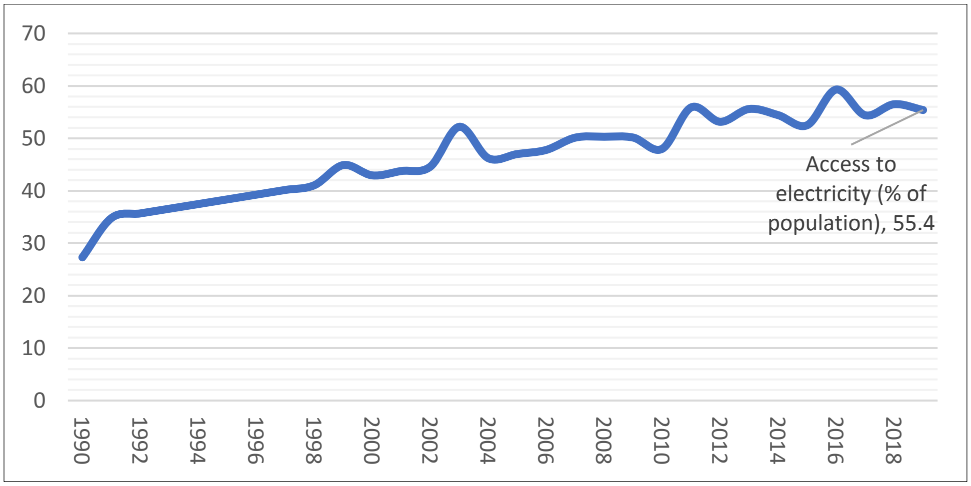

Figure 1. Access to electricity (% of population) in Nigeria, 1990-2019.

Source: Author's representation with data from World Bank (2020).

Literature Review

The theoretical and empirical literature on electricity-growth nexus is scarce. The scarcity is however, traceable to the neglect of energy in the production function (Stern & Cleveland, 2004). As a matter of fact, an effort which incorporates energy as an input in production is the nested constant elasticity of substitution (CES) function by Stern and Kander (2012). But then, aside various empirical researches, the linkage between electricity and economic growth is examined by Henderson, Storeygard and Weil (2012). In this light, this section briefly reviews studies on expenditure-growth relationship and later dwells on electricity-growth nexus as follows.

Using the ARDL and Granger causality techniques, Bappahyaya and Bello (2020) explain how government expenditure impacts economic growth during the period 1970-2017 in Nigeria. The explanation affirms that capital expenditure is significant and Granger causes economic growth. Thus, the study opines that resources should be invested productively. Also, Aluthge, Jibir and Abdu (2021) adopt the ARDL technique to examine the impact of government expenditure on economic growth over the period 1970-2019 in Nigeria. The result reveals that capital expenditure impacts significantly positive on economic growth in the short and long runs. The study suggests an increased share of capital expenditure by the government.

As regards electricity-growth relationship, Asghar (2008) uses ECM and the Toda-Yamamoto techniques to ascertain the causal relationship between GDP and energy consumption in five South Asian countries. The study finds that unidirectional causality runs from GDP to electricity consumption in India, Sri Lanka and Bangladesh. Also, for Bangladesh, Masuduzzaman (2012) investigates the relationship between economic growth and electricity consumption using cointegration and causality analyses during the period 1981-2011. A long-run relationship is established along with a unidirectional causality running from electricity consumption to economic growth. Thus, a higher rate of electricity consumption leads to more economic growth in the country.

Moreover, the direction of causality between electricity and economic growth is investigated by Adom (2011) over the period 1971-2008 for Ghana. The Toda-Yamamoto methodology reveals a unidirectional causality running from economic growth to electricity consumption. In effect, the result supports growth-led-energy hypothesis in Ghana. Thus, by implication, the conservation of electricity energy is a viable option for the country. Similarly, using the VECM and ARDL approach, Bildirici (2013) investigates the relationship between electricity consumption and economic growth during the period 1970-2010 in Cameroon, Cote D'Ivoire, Congo, Ethiopia, Gabon, Ghana, Guatemala, Kenya, Senegal, Togo and Zambia. Aside revealing a cointegrating relationship between electricity consumption and economic growth, the results also establish that electricity consumption is an inferior good for Zambia, a necessity for Senegal, and luxury for Gabon and Guatemala. Furthermore, a bidirectional causality is affirmed between electricity consumption and economic growth in Gabon, Ghana and Guatemala.

Also, while seeking to ascertain the relationship between electricity consumption and economic growth in Nigeria, Ogundipe and Apata (2013) employ the Johansen-Juselius cointegration and VECM approaches to examine the relationship during the period 1980-2008. The results confirm a bidirectional causality between the variables and a significant impact of electricity consumption on economic growth. The study thus, suggest the strengthening of energy generating agencies in the country. Also, using the ARDL and VECM techniques, Oshota (2014) investigate the relationship between electricity consumption and economic growth over the period 1970-2011 in Nigeria. As long-run relationship is revealed, the results further show a Granger no-causality between the variables in the short-run. However, a bidirectional causal relationship is established in the long-run. It, therefore, implies that higher level of electricity consumption boosts economic growth, and vice versa, in the country.

Furthermore, Bayramoglu and Yildirin (2017) use asymmetric ARDL bounds test technique and quarterly data over the period 1973:1-2013:4 to assess the relationship between energy consumption and economic growth in the USA. While a long-run asymmetric effect of energy consumption is confirmed, the impact of the negative component is insignificant as compared to a significantly positive component. An energy saving policy is therefore suggested for a desired high growth. Moreover, Sanu and Ahmad (2017) assert that energy is an important source of growth over the period 1977-2014 in India following an investigation on the causal relationship between energy consumption and economic growth. Findings thus show, contrary to the view of neoclassicals, that energy is not neutral to growth. The study further reveals that growth and energy consumption cointegrate even as a unidirectional causality runs from real GDP to energy consumption in the short-run. In conclusion, it is affirmed that with increased income, household depends more on electric appliances for comforts and recreations.

Nonetheless, on the premise that emerging economies had experienced higher growth than developed countries, Bayar and Ozel (2014) investigate the relationship between economic growth and electricity consumption over the period 1970-2011 in emerging economies. While a bidirectional causality is affirmed, the Pedroni, Kao as well as the Johansen cointegration approach reveal that electricity consumption impacts positively on economic growth. However, in a panel study, Twerefou, Iddrisu and Twum (2018) examine the relationship between energy consumption and economic growth in 17 West African countries. As there is no causal relationship in the short-run, a unidirectional causality is revealed to be running from growth to electricity consumption. Meanwhile, in the long-run, electricity consumption impacts positively on growth. Policy choice is therefore advised to be focused on electricity.

Analytical Framework and Methodology

Analytical Framework

The basic mechanic of analysing economic growth and its determinants follows the Solow (1957) growth model in a Cobb-Douglas production function of the form,

$$Y_t = f(K_t, A_t L_t) \tag{1}$$

where, t is time, Y is growth or output, K is capital, L is labour, A is technical progress, technology, Knowledge or efficiency of work, and AL denotes effectiveness of labour. By invoking the condition of constant returns to scale and dividing equation (1) by L_t, it yields,

$$\frac{Y_t}{L_t} = f\left(\frac{K_t}{L_t}, 1\right) \tag{2}$$

where, $\frac{Y_t}{L_t} = y$ is per capita growth, output or income, and $\frac{K_t}{L_t} = k$ is capital-labour ratio. In effect, equation (2) transforms to,

$$y = f(k) \tag{3}$$

Moreover, as electricity is recognised to relate with economic growth (Hirsh & Koomey, 2015; Stern, Burke & Bruns, 2019), and Barro (1990) model affirms the effect of productive government expenditure, equation (3) therefore expands to,

$$y = f(k, e, g) \tag{4}$$

where, e is electricity, and g is productive government expenditure.

Methodology

The implication of government capital expenditure and electricity for economic growth is examined using econometric technique. Basically, a single equation is adopted in which real GDP per capita is proxy for economic growth, the dependent variable. The independent variables include electricity consumption, electricity production, and Federal government capital expenditure. Essentially, for the reason to obtain uniform scale of measurement and also to ease the interpretation of estimation coefficients, all the variables are transformed to natural logarithms. Moreover, in order to ascertain the impact of electricity on economic growth over specific operational era of NEPA, PHCN, GENCOs, TCN and DISCOs, the study covers the period 1981-2020. Imperatively, aside the data for government capital expenditure that are collated from CBN (2020), all data are obtained from World Bank (2021).

Meanwhile, in furtherance to equation (4), the study follows Kolawole (2016), Twerefou, Iddrisu and Twum (2018) with slight modifications, to specify the empirical model functionally as,

$$lnY_t = f(lnEc_t, lnEs_t, lnGx_t) \tag{5}$$

where, *Y* is real GDP per capita as proxy for economic growth, is GDP divided by midyear population with data in 2010 constant US dollars, *Ec* is electricity power consumption measured in kilowatt per hour (kWh per capita), *Es* is electricity supply as electricity production from oil, gas and coal sources as (% of total), *Gx* is government capital expenditure which is measured in NGN'billion, and *ln* denotes natural logarithm. The linear transformation of equation (5) is,

$$lnY_t = \beta_0 + \beta_1 lnEc_t + \beta_2 lnEs_t + \beta_3 lnGx_t + \varepsilon_t \tag{6}$$

where, β_0 is a constant, β_1, β_2 and β_3 are parameters to be estimated, and ε is the error term. The apriori expectation is that all the parameters will have positive coefficients.

Empirical Results and Discussion

The pre-estimation descriptive statistics in Table 1 show that average electricity power consumption reaches 107 kWh as electricity supply averaged about 70% of total production from oil, gas and coal.

Table 1: *Summary statistics.*

	Y	EC	ES	GX
Mean	1780.510	107.1172	70.16710	502.5075
Median	1586.049	98.97802	69.51137	315.2000

Maximum	2550.470	156.7972	82.40869	2289.000
Minimum	1317.360	50.90104	58.13510	4.100000
Std. Dev.	447.7856	28.69169	7.099003	551.8024
Skewness	0.507801	0.128795	0.161104	1.274673
Kurtosis	1.605051	1.733257	1.787713	4.314643
Jarque-Bera	4.962220	2.784982	2.622431	13.71242
Probability	0.083650	0.248456	0.269492	0.001053
Sum	71220.39	4284.688	2806.684	20100.30
Sum Sq. Dev.	7819965.	32105.30	1965.438	11874951
Observations	40	40	40	40

Source: Author's computation

Also, an average of NGN502 billion is expended on capital items while per capita output (growth) is approximately USD1780. Ordinarily, given these figures, even if there is any impact of capital expenditure and electricity on economic growth, such impact would be insignificant considering the population size of the country.

Furthermore, Perron (1989) affirms the use of tests to establish the existence of unit root if a time series exhibits stationary fluctuations around a trend. This follows from the fact that majority of time series data are non-stationary due to the presence of unit root (Nelson & Polser, 1982; Stock & Watson, 1988; Campbell & Perron, 1991). As such, to avoid the use of non-stationary time series data, the Augmented Dickey-Fuller (ADF) of Dickey and Fuller (1979), Phillips-Perron (PP) of Phillips and Perron (1988), and the technique of Kwiatkowski, Phillips, Schmidt and Shin (KPSS) (1992) are employed to test for unit root. The results are as presented in Table 2.

Table 2: *Results of unit-root tests.*

	ADF			**PP**			**KPSS**		
Variable	Level	1st Diff	Order	Level	1st Diff	Order	Level	1st Diff	Order
lnY	-1.012	-3.923	I(1)	-0.346	-3.923	I(1)	0.628	0.320	I(1)
lnEc	-2.590	-8.630	I(1)	-2.586	-9.083	I(1)	0.675	0.124	I(1)
lnEs	-1.241	-6.994	I(1)	-1.201	-7.003	I(1)	0.404	0.121	I(1)
lnGx	-1.080	-6.346	I(1)	-1.080	-6.346	I(1)	0.716	0.178	I(1)

Note: Statistical decisions are based on 5% level of significance.

Source: Author's computation.

Given the results of the unit-root test, it then follows that the Johansen (1988) technique is appropriate for checking if the series co-integrate in the long-run. As such, the Johansen co-integration process follows a simple vector auto-regressive (VAR) of order *p* as,

$$y_t = \gamma_1 y_{t-1} + \ldots + \gamma_p y_{t-p} + Ax_t + \in_t \qquad (7)$$

where, at time *t*, *y* is a *k* – vector of I(1) variables, *x* is a *d* – vector of deterministic variables, and $\in$ is a vector of *n* x 1 residuals. However, in a re-specification, the VAR may take the form,

$$\Delta y_t = \varphi y_{t-1} + \sum_{r=1}^{p-1} \vartheta_t \Delta y_{t-1} + Ax_t + \in_t \qquad (8)$$

where, $\varphi = \sum_{i=1}^{p-1} \gamma_t - 1$ and $\vartheta_i = -\sum_{j=i+1}^{p} \gamma_j$.

Moreover, on the basis of likelihood ratio (LR) test, and following Johansen and Joselius (1990) proposal to test for the number of co-integrating vectors in a long-run relationship, the trace and maximum eigenvalue statistics are defined as,

$$\mu_{Trace} = -\sum_{i-r+1}^{n} log(1-\theta_i) \qquad (9)$$

and

$$\omega_{Max} = -Tlog(1-\theta_{r+1}) \quad (10)$$

Nonetheless, and consequent upon establishing a long-run equilibrium among the variables, the error correction model (ECM) can be employed to analyse the short-run adjustment as follows,

$$\Delta x_t = \partial_0 + \partial_1 e_{t-1} + \sum_{i=1}^{m} \partial_i \Delta x_{t-1} + \sum_{j=1}^{n} \partial_j \Delta y_{t-j} + e_t \quad (11)$$

$$\Delta y_t = \beta_0 + \beta_1 u_{t-1} + \sum_{i=1}^{m} \beta_i \Delta y_{t-1} + \sum_{j=1}^{n} \beta_j \Delta y_{t-j} + u_t \quad (12)$$

where, through OLS method, *e* is residual from regressing *x* on *y* and *u* is the residual from regressing *y* on *x* while e_{t-1} and u_{t-1} are residuals error correction terms. Incidentally, for all *i*, if ∂_0=0 and ∂_i=0, *x* does not Granger-cause *y* just as *y* does not Granger-cause *x* if β_0=0 and β_i=0 (Granger, 1988). Thus, the co-integration results are as presented in Tables 3 and 4.

Table 3: *Unrestricted co-integration rank test (Trace).*

No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.623192	67.40513	47.85613	0.0003
At most 1 *	0.344661	31.29242	29.79707	0.0334
At most 2 *	0.241158	15.65610	15.49471	0.0473
At most 3 *	0.136858	5.445513	3.841466	0.0196

Note: CE = co-integrating equation. * = number of co-integrating equations.

Statistical decisions are based on 5% level.

Source: Author’s computation.

Imperatively, while the trace statistics present four co-integrating equations, the maximum eigenvalue statistics rather reveal two co-integrating equations.

Table 4: *Unrestricted co-integration rank test (Maximum Eigenvalue).*

No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.623192	36.11271	27.58434	0.0032
At most 1	0.344661	15.63632	21.13162	0.2468
At most 2	0.241158	10.21059	14.26460	0.1985
At most 3 *	0.136858	5.445513	3.841466	0.0196

Note: CE = co-integrating equation. Statistical decisions are based on 5% level.

Source: Author’s computation.

As reported in Table 5, 80% of the criteria select lag length of 2 which is necessarily required for ascertaining the causal relation between respective pair of the variables, and for further estimation.

Table 5: *Lag order selection criteria.*

Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	35.09627	NA	2.29e-06	-1.636646	-1.464268	-1.575315
1	176.9091	246.3066	3.06e-09	-8.258376	-7.396489*	-7.951723
2	199.6159	34.65763*	2.22e-09*	-8.611361*	-7.059964	-8.059386*

Source: Author's computation.

Meanwhile, as presented in Table 6, none of electricity consumption, electricity supply, and government expenditure Granger-causes per capita growth. Rather, it is economic growth that Granger-causes each of electricity consumption and electricity supply. That is, a unidirectional causality running from economic growth to electricity consumption corroborates the findings by Oshota (2014), Sanu and Ahmad (2017), and Twerefou, Iddrisu and Twum (2018). Also, electricity consumption is reported to Granger-cause electricity supply.

Table 6: *Causal relationship between government expenditure and electricity, and economic growth.*

Null Hypothesis:	**F-Statistic**	**Prob**	**Decision**
LNEC does not Granger Cause LNY	3.23935	0.0519	Cannot reject
LNY does not Granger Cause LNEC	13.1874	6.E-05	Reject
LNES does not Granger Cause LNY	0.09988	0.9052	Cannot reject
LNY does not Granger Cause LNES	6.40436	0.0045	Reject
LNGX does not Granger Cause LNY	1.80094	0.1810	Cannot reject
LNY does not Granger Cause LNGX	0.26277	0.7705	Cannot reject
LNES does not Granger Cause LNEC	0.31821	0.7297	Cannot reject
LNEC does not Granger Cause LNES	6.28821	0.0049	Reject
LNGX does not Granger Cause LNEC	0.62322	0.5424	Cannot reject
LNEC does not Granger Cause LNGX	1.28971	0.2889	Cannot reject

Note: Statistical decisions are based on 5% level of significance.
Source: Author's computation.

Furthermore, as presented in the ECM results in Table 7, economic growth in the immediate past year impacts positively on growth in the current year. That is, 3.3 percentage point increase in the current year's growth is achieved from a 10% of the immediate past year economic growth. Also, as expected, the coefficient of ECM is significantly negative and shows that given a disturbance in the equilibrium position of the economy in the short-run, it takes the system a speed of approximately 22% to adjust back to long-run equilibrium. However, electricity consumption, electricity supply and government capital expenditure are not impactful on economic growth over the period considered. Essentially, this result speaks to the fact that growth is not affected because in areas where there is access to electricity, the supply is drastically low and inadequate such that the economy loses an estimated USD29.3 billion annually (Ofikhenua, 2019). And, as capital expenditure is sterile despite power distribution companies requiring USD4.3 billion, out of which the government needs to contribute 40% or USD1.7 billion to recapitalise (Nnodim, 2019), then the economy cannot grow.

Table 7: *Implications of government expenditure and electricity for economic growth.*

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.008282	0.006486	1.276880	0.2114
D(LNY(-1)	0.336872	0.135534	2.485523	0.0187
D(LNEC)	0.105380	0.052900	1.992055	0.0555
D(LNEC(-2)	0.031598	0.041851	0.755013	0.4561
D(LNES)	0.240045	0.128333	1.870489	0.0712
D(LNGX)	-0.012574	0.016174	-0.777455	0.4430
ECM(-1)	-0.219149	0.087052	-2.517452	0.0174

Note: Statistical decisions are based on 5% level of significance.

Source: Author's computation.

In comparison with other studies, the study is in line with Oshota (2014) on long-run relationship; and, Sanu and Ahmad (2017) and Twerefou, Iddrisu and Twum (2018) who assert a unidirectional causality from economic growth to electricity consumption in the short-run. Although Sanu and Ahmad (2017) uses energy rather than electricity, yet the corroboration in findings is not out of place. But then, there is departure from other studies like Ogundipe and Apata (2013), Bayal and Ozel (2014) and Oshota (2014) who affirm bidirectional causality running between electricity consumption and economic growth in the long-run. Also, the study digresses from Bayal and Ozel (2014) and Twerefou, Iddrisu and Twum (2018) findings that electricity consumption impacts positively on economic growth. More interestingly, the study is slightly at variance with Kolawole and Odubunmi (2015) who reports a bidirectional causality between capital expenditure and economic growth. In addition, it contradicts Bappahyaya and Bello (2020) who finds a unidirectional causality running from capital expenditure to economic growth. Essentially, the departure of the findings of present study from others is specifically due to its measure of economic growth using real GDP per capita. Probably the study would have arrived at more corroborating results in terms of causality and impact if economic growth was measured using real GDP or annual growth rate of GDP, or if statistical decisions were based on 10% level. Nonetheless, probably if the structural break methodology was used in line with Kolawole (2021), the study would have revealed certain historical reasons to the ineffectiveness of capital expenditure, electricity consumption, and electricity supply on economic growth.

Conclusion

This study examined the implications of government capital expenditure and electricity for economic growth in Nigeria over the period 1981-2020 using the Johansen co-integration and ECM techniques. Study concluded that while 40% of the population access electricity, power supply averages 2,447MW amidst an estimated demand of 10,000MW and as the government targets 75% access to electricity by 2020, it aims to connect an average of 1.5 million households annually with the hope to borrow USD1 billion from the World Bank. In the process, the TCN secures USD1.55 billion from multilateral donors while domestic banking sector supports the drive with an approximately NGN163.1 billion as intervention fund for power projects. In addition, even as the government plans to end subsidies on power, yet, government capital expenditure, electricity consumption, and electricity supply neither Granger-cause nor impact economic growth in Nigeria.

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Conflict of Interest

Author has no conflict of interest.

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