CAUSAL RELATIONSHIP AMONG PUBLIC EXPENDITURE, EMPLOYMENT AND ECONOMIC DEVELOPMENT IN NIGERIA: EVIDENCE FROM TODA YAMAMOTO CAUSALITY TEST

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ABSTRACT

This study examines the causal relationship among public expenditure, employment and economic development in Nigeria (1985 - 2019). The study identifies that despite the continuous increase in government expenditure, it has not translated to increase in employment and improved economic development in Nigeria. Time series data was collected from the Central Bank of Nigeria (CBN) Statistical Bulletins of various years and World Development Indicators (WDI) 2022. Descriptive and trend analyses were first carried out on the variables which was followed by Unit Root test and then lag selection criteria. This study employed Toda-Yamamoto causality test to examine the causal relationship existing among the variables. Results indicate that there is a bidirectional causal relationship between employment and economic development, and between public expenditure and economic development. However, public expenditure has unidirectional causal relationship with employment in Nigeria. It is therefore recommended that; government should increase its expenditure aimed at generating employment for economic development in Nigeria.

Keywords*: Public Expenditure, Employment, Economic Development and Toda Yamamoto.*

INTRODUCTION

Despite the fact that Nigeria got her independence over sixty (60) years ago, the nation is still not developed as expected. Though growing, this has not translated into meaningful development as shown by the nation's development indicators. Thus, the quest to achieve the status of one of the developed countries in the world themed the spending policy and direction of the government. Nonetheless, this quest has eluded the country in the face of all economic development programmes and plans put in place by various successive governments since independence (Sanusi, 2012). However, each successive government has not been able to accommodate their various expenditure pattern to achieve these goals notwithstanding the quantum funds supposedly used to operate governance. Government expenditure is one of the most direct and effective instruments needed to bring about economic development through employment generation in a country. The government therefore uses its expenditures to improve the living standard of the citizens and also expand gross national income and more especially per capita income (PCI) of the citizens at a persistent growth rate in order to attain economic development.

The implementation of government expenditures (both capital and recurrent) in Nigerian has fallen short of providing expected macroeconomic targets especially in the area of employment generation, poverty reduction, income inequality reduction and increase in per capita income. The situation is worrisome as huge amount of approved budget every year often fails to yield commensurate improvement in the value of these economic development indicators in the country. Available statistics show a continuous increase in government expenditure (capital and recurrent), while employment rate, inflation rate, per capita growth rates of Gross National Income (GNI) have been fluctuating over the years. Furthermore, there are increases in poverty level, unemployment, income inequality and lower standard of living of Nigerians. Similarly, available data indicates that the growth rate of government expenditure is greater than the growth rate of GDP. For instance, as stated in Social Statistics in Nigeria (2016) published by National Bureau of Statistics, the growth rate of government expenditure in year "2000 and 2010 were 15.53 % and 2.15% respectively while the GDP growth rates were 8.79% and 1.54%", respectively in those two years.

The consequences of all the enumerated macroeconomic indices are that Nigeria is ranked as one of less developed countries of the world. This is evidenced by the United Nations Development Programme (UNDP) data on Human Development Index (HDI). The Human Development Report (HDR) statistical data 2019 ranked Nigeria as one of the countries with low human development. This means that the country is poor in terms of health, education and income per capita indexes. Successive government administrations in Nigeria have made various attempts with the use of public expenditure for the improvement in the living standard of the citizens. As it is expected, rising government expenditure should translate into significant higher living standard for Nigerians especially in the area of full employment, price stability, economic growth and balance of payments equilibrium which is not the case in Nigeria.

Iwayemi (2019) opined that the resultant effect of these lapses in Nigeria has hindered the country to transform its economic growth to economic development thus reflecting in insignificant higher living standards for the citizens, despite all available human and natural resources in the country. The country often referred to as the 'giant of Africa', is encumbered with fluctuating growth rate of Gross National Income (GNI) since independence in 1960 and more so in the 80s (OECD National Account Data Files – 2019).

Extant literature in both developed and developing countries have reported mixed results and deductions on the relationship between public expenditure and economic growth. This may be as a result of the channel(s) through which government expenditure relates with economic development. These channels could include; employment generation, aggregate demand, and so on, hence

by examining the employment channel, this is the first gap this paper fills. However, seeing that though the country experienced growth over the years, but has not translated to development, this study fills the second gap by introducing economic development (proxied by growth of per capita GDP as used by other authors). Therefore, this study examines the causal relationship existing among public expenditure, employment and economic development covering a period of 35 years from 1985 to 2019. The rest of the paper is organized into four sections. Section 2 gives the literature review while section 3 deals with methodology. Section 4 presents results of the causality test. While section 5 concludes and present policy recommendations.

LITERATURE REVIEW

Theoretically, the neo-classical theory of economic development was borne out of the inadequacies of previous theories on economic development such as classical theory and others. This theory is based on the behaviour of the economy in time of economic growth. It posits that the output during economic growth will depend of factors such as availability of land and natural resources, fixed capital stock, the available capital stock and technical knowledge in the economy. The theory emphasizes the importance of economic output as the contribution of annual growth rate of capital accumulation. Thus, in order to achieve a state of steady growth, there must be constant increase in aggregate output and per capita income. One of the flaws of this theory is that it does not take into consideration the role of regulatory institutions in shaping the economic development process (Addison, 2002). However, Adolph Wagner brought in the perspective of public expenditure to explain economic development when the German economist carried out an in-depth study related to the rise in government expenditure in the late 19th century. His study gave birth to "The Law of Increasing State Activity". It states that: 'as the economy develops over time, the activities and functions of the government increase.' This theory takes into account the fact that government activities are both extensive and intensive and that these have the objective of meeting the economic needs of the people. These government increased functions and activities therefore lead to increase in public expenditure (Omodero, 2016).

Recently, a new growth or endogenous theory developed after classical and neo-classical theories by Paul Romer and other economists. New growth theory places more emphasis on importance of continuous discovery of new knowledge to bring about economic growth in the economy. In this theory, development of knowledge is seen to be a key driver of economic development. This implies that for economic development to take place in an economy, innovation should be paramount to further discovery of new ideas to increase knowledge constantly. According to this theory, knowledge is not subject to decreasing returns, (as it is the case of land and labour) instead knowledge creates opportunities for growth. Also, knowledge drives growth and development faster than resource-based economies. This theory also brings to bear the importance of inventing in new knowledge creation for further economic growth and development. Factors which are incentives for knowledge creation are research and development (R&D), education, human capacity development, stable macroeconomic indices, entrepreneurship and openness to trade and new ideas. Government has crucial role in making available these incentives in the society in achieving economic development (Martinez, 2020).

Several authors have empirically assessed the theories above (as well as others theories) to examine the relationship among Public Expenditure, Employment and Economic Development though not together but in pairs. These results obtained from these studies do not converge, which could be as a result of the several divisions of public expenditure measure employed. More so, the various techniques used were diverse. Some studies were of the opinion that in less developed economies where capital expenditure is to provide public infrastructural projects such as roads, railways, ports and so on to boost trade and commerce in the economy have effect on economic growth.

For example, Madaki and Warren (2012) consider the impact of public spending (on education, health, economic affairs, defense, agriculture, transport and communication) on economic growth in Kenya. Using secondary data from 1972 to 2008, the study employs Ordinary Least Squares (OLS) technique to analyse the data. The secondary data estimation technique is the OLS. The findings show that expenditure on education has positive and significant relationship with economic growth while government expenditure on economic affairs, transport, communication, health and defense are all found to be insignificant in determining economic growth.

The role government investment in human capital plays in economic growth was analyzed for Nigeria by Campbell and Agbiokoro (2014) using time series data from 1980 to 2010. The study adopted the Ordinary Least Squares (OLS) and 3 Stage Least Squares analytical technique, with Augmented Human Capital-Solow Growth Model as theoretical framework. The regression result shows that human capital together with technological development and population growth have positive relationship with economic growth of the Nigerian economy. Relaxing Solow's employment assumption in this study, high population growth positively promotes productivity. The result also reveals that the Nigerian economy is not in line with relationship of high population growth/low productivity posited by Solow's hypothesis. Furthermore, the study found that government investment on human capital in form of education was higher than private investment and has the greatest impact on life expectancy of the citizens.

In another study, Ojong et al, (2016) investigated the effect of recurrent expenditure on the economic growth of Nigeria. The link between capital expenditure and economic growth was also examined. Secondary data was obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and other relevant publications. The exploratory and ex-post facto research designs were utilised for the study. Ordinary least square (OLS) multiple regression technique was employed in achieving the objectives. Findings from the regression analysis reveal that both capital and recurrent expenditures have significant relationship on economic growth and development of the Nigeria economy. Also, findings show that aggregate expenditure has positive impact on the growth of the Nigerian economy.

The analysis of the impact of government expenditure and efficiency on economic growth of Sub Saharan African low-income countries was undertaken by Kimaro et al, (2017). The paper used a panel data of 25 Sub-Saharan African low-income countries spanning between 2002 and 2015. Data was obtained from World Development Indicators database. Generalized Methods of Moments (GMM) technique was applied to achieving the set objectives. The results demonstrate that increasing government expenditure accelerates economic growth of low-income countries in Sub Saharan Africa. However, there is no evidence for government efficiency to boost the impacts of government expenditure on economic growth. Meanwhile, Chemingui (2007) assessed the impact of an increase in public spending on economic growth and poverty reduction on some selected priority sectors in Yemen, an oil producing country like Nigeria. The study employs Computable General Equilibrium (CGE) model for the analysis which is another unique technique of analysis for the period 1998-2016. The selected priority economic areas in the study are agriculture, education, and health. Disaggregating government expenditure to agriculture, education and health, reveals the sectors that are impacting positively on poverty reduction. Findings show that increased amounts of public expenditure towards education and health services will generate more economic growth than increasing public spending solely on the agricultural sector.

Oriavwote and Ukawe (2018) examine the relevance of government expenditure to poverty in Nigeria between 1980 and 2016. The authors used Error Correction Model (ECM) and Ordinary Least Square (OLS) techniques to analyse the data for that period. This study focuses on the effect of government expenditure on poverty proxied by per capita income for the period of thirty-seven years in Nigeria. Analysing secondary data using OLS technique shows that there is a significant and positive impact of government expenditure on the independent variables chosen for the study. Government expenditure on building and construction, education and health are independent variables and citizen's welfare was a proxy for per capita income which represents the dependent variable. The result shows that government expenditure on health, education, building and construction have significant and positive impact on per capita income indicating positive economic development. However, there is no causality between government expenditure on health, education, building and construction and per capita income.

Lustig (2018) identifies the relationship that exists between government spending and its effect on income and poverty in low-and middle-income countries employing regression analysis for a total of 19 developing economies. The regression analysis confirms the limited redistributive role of government expenditure in the countries. Findings suggest that the relationships are affected by a range of factors such as the size and direction of the spending and that there is no clear evidence that higher government spending had significant impact on poverty reduction in low and middle-income countries. This is consistent with the view that fiscal policy plays a much more limited redistributive role in developing countries, when compared with developed countries. Due to numerous challenges facing developing countries, government spending appears not to have immediate and significant effect on reduction in poverty levels. Some of these challenges are low capital formation due to low investment, poverty, low productivity, obsolete technology, corruption and so on. This situation is peculiar to developing and less developed countries like Nigeria.

Jabeen et al (2018) identify the relationship among economic growth, inequality and economic development in Pakistan using time series data for the period 1976 – 2011. The study employs Auto Regressive Distributed Lag (ARDL) econometric technique for the analysis. Results show that there is a long-term relationship between the dependent and independent variables used for the analysis. Also, there is a positive correlation between per capita Gross Domestic Product (GDP) and income inequality signifying that GDP per capita has relationship with income inequality and influences the latter positively, which establishes that there is a positive relationship among the variables involved. Awode (2019), conducted research on government expenditure and its influence on economic growth in the Nigerian economy. The study focuses majorly on capital and recurrent government expenditure using time series data from 1981 to 2016. The Error Correction Model were used in achieving the objectives of the study. Results indicate that recurrent expenditure exerts a significant positive influence on real GDP, while the influence of capital expenditure on real GDP turned out negative. The Granger causality test also reveals that both capital and recurrent expenditures Granger cause real GDP.

Focusing on a disaggregated level of public expenditure and their relationship with economic growth in Ghana from 1980-2017, Nyarko et al (2019) study considers the major sub-components of public expenditure: recurrent expenditure and capital expenditure. The authors employed VAR Granger Causality test to determine the direction of causality among these expenditure variables and economic growth. The results confirm that capital expenditure is a growth-enhancing variable while recurrent expenditures are detrimental to the economic growth in the Ghanian economy. The findings reveal that capital expenditure has positive effect while recurrent expenditure has negative effect on economic growth. In a related study, Nduka et al, (2019) examine the effect of expenditure pattern of the Federal Government of Nigeria on standard of living of the citizens from 1981 to 2018. The authors employ Autoregressive Distribute Lag and Granger Causality techniques. The findings of the study reveal that government expenditure has significant effect on the standard of living of her citizens which is empirically not the reality on ground as the level of poverty in country is high. Based on this result, the authors recommend that there should be increments of salaries and wages of workers.

Alamanda A. (2019) examines the effect of different types of government expenditure on income inequality and poverty by analyzing panel data set in Indonesia's 33 provinces from 2005 to 2017. Fixed effect, Random effect, and Seemingly Unrelated Regression techniques were employed in the analysis. The findings show that social aid, subsidy and grant expenditure have an insignificant effect on reducing income inequality and poverty in Indonesia. Also, infrastructure spending has a negative correlation with income inequality in urban and rural areas. It is negatively and significantly correlated with poverty in Indonesia with more significant impact in rural than urban areas. Jeff-Anyeneh et al (2020) determine the effect of government recurrent and capital expenditure on the standard of living in Nigeria using a test of causation. The long and short run estimates were done by utilizing an Autoregressive Distributive Lag (ARDL) model using secondary time series data from 1981 to 2018. The result reveals that government recurrent and capital expenditure have significant effect on standard of living in Nigeria. This might not be the true reflection of the situation in the country.

METHODOLOGY

This study is based on a conceptual framework linking public expenditure, employment and economic development based on the discussions from Keynes theory and the Neo-Classical theory of economic development. This framework argues that public expenditure engenders employment which leads to economic development through growth in aggregate demand. This is explained with a simple model as given below:

$$PEX_t = \alpha_0 + \alpha_1 EMP_t + \alpha_2 INF_t + \alpha_3 EDV_t + \mu_{1t}$$
$$EMP_t = \beta_0 + \beta_1 PEX_t + \beta_2 INF + \beta_3 EDV_t + \mu_{2t}$$
$$EDV_t = \partial_0 + \partial_1 EMP_t + \partial_2 PEX_t + \partial_3 INF_t + \mu_{3t}$$

Where: EDV is Economic Development; EMP is Employment; EGR is Economic Growth, INF is Inflation; PEX is Public Expenditure; μt is the Error term, α_0, β_0 and δ_0 are constants while α_1, α_2, α_3, β_1, β_2, β_3, δ_1, δ_2 and δ_3 are the parameters in the model.

The data sample used for this study spans from 1985 to 2019. This time series data was collected from the Central Bank of Nigeria's Statistical Bulletins for 2020 and the World Development Indicators (WDI) 2020. In order to establish the objective of this study, Toda-Yamamoto causality test was employed, which produced the model:

$$EDV_t = \alpha_o + \sum_{i=1}^{k} \alpha_{1i} EDV_{t-1} + \sum_{i=k+t}^{k+d\max} \alpha_{2i} EDV_{t-i} + \sum_{i=1}^{k} \alpha_{3i} EGR_{t-1} + \sum_{i=k+1}^{k+d\max} \alpha_{4i} EGR_{t-1}$$
$$+ \sum_{i=1}^{k} \alpha_{5i} EMP_{t-1} + \sum_{i=k+1}^{k+d\max} \alpha_{6i} EMP_{t-1} + \sum_{i=1}^{k} \alpha_{7i} INF_{t-1} \sum_{i=k+1}^{k+d\max} \alpha_{8i} INF_{t-1}$$
$$+ \sum_{i=1}^{k} \alpha_{9i} PEX_{t-1} \sum_{i=k+1}^{k+d\max} \alpha_{10i} PEX_{t-1} + \mu_t$$

$$EMP_t = \alpha_o + \sum_{i=1}^{k} \alpha_{1i} EMP_{t-1} + \sum_{i=k+t}^{k+d\max} \alpha_{2i} EMP_{t-i} + \sum_{i=1}^{k} \alpha_{3i} EGR_{t-1} + \sum_{i=k+1}^{k+d\max} \alpha_{4i} EGR_{t-1}$$
$$+ \sum_{i=1}^{k} \alpha_{5i} EDV_{t-1} + \sum_{i=k+1}^{k+d\max} \alpha_{6i} EDV_{t-1} + \sum_{i=1}^{k} \alpha_{7i} INF_{t-1} \sum_{i=k+1}^{k+d\max} \alpha_{8i} INF_{t-1}$$
$$+ \sum_{i=1}^{k} \alpha_{9i} PEX_{t-1} \sum_{i=k+1}^{k+d\max} \alpha_{10i} PEX_{t-1} + \mu_t$$

$$PEX_t = \alpha_o + \sum_{i=1}^{k} \alpha_{1i} PEX_{t-1} + \sum_{i=k+t}^{k+d\max} \alpha_{2i} PEX_{t-i} + \sum_{i=1}^{k} \alpha_{3i} EGR_{t-1} + \sum_{i=k+1}^{k+d\max} \alpha_{4i} EGR_{t-1}$$
$$+ \sum_{i=1}^{k} \alpha_{5i} EDV_{t-1} + \sum_{i=k+1}^{k+d\max} \alpha_{6i} EDV_{t-1} + \sum_{i=1}^{k} \alpha_{7i} INF_{t-1} \sum_{i=k+1}^{k+d\max} \alpha_{8i} INF_{t-1}$$
$$+ \sum_{i=1}^{k} \alpha_{9i} EMP_{t-1} \sum_{i=k+1}^{k+d\max} \alpha_{10i} EMP_{t-1} + \mu_t$$

RESULTS

In order to determine the causal relationship among the three major variables in this study, descriptive analysis, and Unit Root test and lag length selection criteria were first conducted followed by the Toda-Yamamoto causality test. These test results are presented below:

The descriptive analysis of all the variables in order to verify the characteristics of the variables is presented in Table 1. The mean value for economic development (EDV) was 0.488 while its maximum value was 0.464 and the minimum value was 0.283. Its standard deviation was 0.053. This means that the values were not well dispersed and tending towards normal distribution. The skewness of economic development showed -1.065 and negatively skewed. The Kurtosis statistics with the value of 2.862 was platykurtic suggesting that the distributions of the series were flat relative to normal distribution. This means that it was not normally distributed. While the Jarque-Bera statistics of 6.643 and probability of 0.036 was not significant but normally distributed.

Table 1: Descriptive Analysis of the Variables

Mean	2196.178	0.488	3.8734	38499388	22.51131
Median	1018.156	0.4508	3.7846	37911234	11.63000
Maximum	9454.270	0.4638	33.736	49637558	113.0764
Minimum	13.04110	0.2835	-10.751	26029071	-5.66568
Std. Dev.	2487.211	0.0528	7.1492	6889056	27.0346
Skewness	-1.0650	1.7115	-0.0483	1.9353	1.1525
Kurtosis	2.8621	10.4014	1.9856	6.3487	3.5822
Jarque-Bera	6.6433	96.9755	1.5143	38.2010	8.2096
Probability	0.0369	0.0000	0.4690	0.0000	0.0165
Sum	76866.21	14.6602	135.569	1.35E+09	787.8956
Sum Sq. Dev.	0.0948	1733.395	1.61E+15	25964.89	2.10E+08
Obervation	35	35	35	35	35

Source: Author's Compilation, 2022

From Table 1 also, economic growth rate (EGR) mean value was 3.873%, its maximum and minimum values were 33.736 and -10.751% respectively. It also has a standard deviation value of 7.140%, implying that economic growth rate was well dispersed to the mean value but not normally distributed. The skewness statistics had the value of 1.712 and positively skewed. The kurtosis statistics was 10.401 and it was leptokurtic meaning that the distributions of the series were peaked relative to normal distribution and thus it was not normally distributed. The Jarque-Bera statistics of economic growth (EGR) was 96.976 with probability value of 0.000. Meaning it was significant but not normally distributed.

Employment (EMP) statistics reveal that the mean value was 38.5 million in numbers. Maximum and minimum values were 49.6 million and 26.0 million respectively. The value of the standard deviation was 68.9 million. This reveals that the values were not well dispersed and they tend towards normal distribution. The skewness statistics for employment was -0.04 and negatively skewed. The kurtosis statistics was 1.986 and it was platykurtic meaning that the distributions were flat with respect to normal distribution. The Jarque-Bera statistics was 1.514 and probability value 0.469. This means it is not significant but normally distributed.

With respect to statistics of public expenditure (PEX), the mean value was 2196.178, maximum value was 9454.270 and the minimum value was 13.041. Its standard deviation was 2487.211. This shows a well dispersed values to the mean value and not normally distributed. Also, its skewness statistics was 1.153 and positively skewed. The Kurtosis statistics was 3.562 and it was leptokurtic meaning that the distributions were peaked relative to normal distribution. The Jarque-Bera statistics had a value of 8.210 and probability value of 0.016, meaning that it was significant but not normally distributed.

Table 2: Unit Root Test Result

Variable	At Level		At First Difference		At Level		At First difference		
	t-Statistics	Critical Values	t-Statistics	Critical Values	t-Statistics	Critical Values	t-Statistics	Critical Values	
EDV	- 1.53	- 2.62	- 3.08	- 2.95**	- 1.36	- 2.95**	- 3.17	- 3.65***	I (1)
EGR	- 4.29	-3.63***	----	----	- 4.14	-3.64	----	7.47***	I (0)
LEMP	- 2.61	- 1.92	- 3.65	-6.83***	- 2.61	-2.13	- 3.65	- 6.79***	I (1)
INF	- 5.67	- 2.95**	---	----	- 5.67	-3.65***	----	-2.954**	I (0)
LPEX	-2.62	- 2.47	-2.625	-2.01	-2.95	-3.33**	- 3.08	----	I (0)

Note: *, **, ***, represent 10%, 5%, 1% respectively
Source: EViews 10, 2022

The Unit Root test carried out was the Augmented Dickey-Fuller test which was corroborated with the Philip-Peron test. From the result of these tests, all included variables are shown to be a combination of I(0) and I(1) variables (Table 2). In order to ascertain the nature of causality, the lag length selection criteria test was conducted. The result, based on the Schwarz information criterion (SC), shows that the optimal lag length selected is two (2) at 5% (five percent) level of significance (Table 3).

Table 3: Lag Length Selection Criteria

Variables: (EDV), D(EMP), D((PEX)						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-594.9559	NA	1.63e+14	41.23834	41.23834	41.28264
1	-583.5121	19.73063	1.38e+14	41.06980	41.06980	41.24700
2	-562.7797	31.45609*	6.31e+13*	40.26067	40.26067*	40.57076*
3	-556.0735	8.787372	7.85e+13	40.41887	40.41887	40.86185
4	-543.1574	14.25226	6.73e+13	40.14879	40.14879	40.72467
5	-534.0008	8.209360	8.21e+13	40.13799*	40.13799*	40.84677

Note: LR Sequential modified LR test statistic (each test at 5% level), the Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) and the Hannan-Quinn Information Criterion (HQ).
* Indicates lag order selected by the criterion
Source: EViews 10, 2022

The result of the Toda-Yamamoto causality test is presented in Table 4 shows that public expenditure (PEX) causes economic development (EDV) at 10% level of significance in the short run, while employment causes economic development (EDV) at 1% level of significance in the short run. Economic growth (EGR), public expenditure (PEX), employment (EMP) and inflation (INF) cause economic development (EDV) at 5% level of significance in the short run. Thus, similar conclusions were drawn by some past studies for example Olayiwola & Ogun (2014), Oyediran et al (2016), Muritala & Abayomi (2018) and so on.

Furthermore, the figure reveals that economic development (EDV) and inflation (INF) cause employment (EMP) at 5% level of significance in the short run while all the variables cause employment (EMP) at 5% level of significance in the short run. This means that economic development leads to employment generation when there is continuous and increasing government activities.

Table 4: Result of Toda-Yamamoto Causality Test

Hypothesis	Chi-Square	Probability
EGR Causes EDV	1.479	0.477
PEX Causes EDV	5.079	0.079
EMP Causes EDV	12.18	0.002
INF Causes EDV	0.787	0.683
All Cause EDV	17.726	0.023
EDV Causes PEX	7.156	0.028
EGR Causes PEX	1.666	0.435
EMP Causes PEX	9.723	0.008
INF Causes PEX	3.4	0.177
All Cause PEX	14.983	0.060
EDV Causes EMP	6.143	0.046
EGR Causes EMP	4.287	0.117
PEX Causes EMP	4.343	0.112
INF Causes EMP	7.557	0.023
All Cause EMP	16.526	0.035

Source: EViews 10, 2022

In Summary, causality among employment (EMP), economic development (EDV) and public expenditure (PEX) was bidirectional. This means that both of them granger cause each other. Also, there was a unidirectional causality from employment (EMP) to public expenditure (PEX) and significant at 1% level during the period of this study.
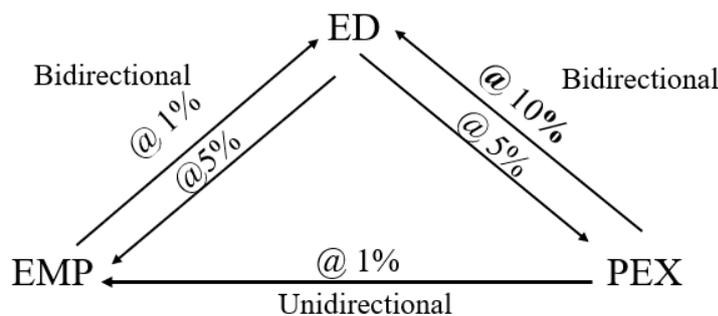
Figure 1: Causality Relationships among the Variables
Source: Author's compilation, 2022

CONCLUSION

This study investigates the causal relationship among public expenditure, employment and economic development in Nigeria for the period of 1985 to 2019. The study uses aggregate public expenditure (PEX), employment (EMP), economic growth (EGR) and inflation (INF) values as independent variables while economic development is the dependent variable. Secondary time series data of these variables were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin (various issues), publications of National Bureau of Statistics (NBS) and World Development Indicators (WDI) for the period under consideration. The new Human Development Index (HDI) was adopted and computed to proxy for economic development. Analyses on the variables are of descriptive and trend analyses in nature. Causality results show that: employment (EMP) causes economic development (EDV) at 5% level of significance in the short run, while public expenditure (PEX) does not cause economic development (EDV) in the short run. Both employment (EMP) and public expenditure (PEX) cause economic development (EDV) in the short run. This implies employment causes economic development.

Based on the findings of the study it is recommended that capital expenditure should be increased by the government, so as to generate more employment, thereby leading to economic development in Nigeria. It also becomes very important for government to ensure that capital expenditure trickles down to other aspects of human development such as education and health which will lead to economic development in the long run.

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