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Economic Growth, Youth Unemployment and Poverty in Nigeria: A Granger Causality Approach

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Abstract: The aim of this study is to examine the direction of causality among economic growth, unemployment and poverty in Nigeria. In the recent times, the cases of youth unemployment have been on the increase in developing countries, especially in Nigeria. This is due to the fact that the youth population is rising at an alarming rate comparing to the rate at which economic growth is expanding. Meanwhile, there is little or no empirical evidence to establish a meaningful impact of economic growth on youth employment and poverty in Nigeria. Against this backdrop, this study examined a causal relationship been between economic growth, unemployment and poverty in Nigeria between 1990 and 2019. Consequently, the findings that emerged in this could be summarized as follows. There was no directional causality between youth unemployment and economic growth in Nigeria Similarly, no evidence to support the direction of causality between economic growth and poverty in Nigeria. However, unidirectional causality runs from poverty to youth unemployment in Nigeria. This implies that youth unemployment in Nigeria was largely motivated by high level of poverty in the country. In the light of the above findings, this study therefore makes the following recommendations for the policymakers in Nigeria that any time these policymakers want to address the problem of youth unemployment in the country, policy that will reduce poverty level should be embarked upon. Also, policy that stimulates economic growth should be encouraged in Nigeria.

Keywords: Economic Growth; Youth Unemployment; Poverty; Granger, Causality

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1. Introduction

Inability of economic growth to ensure availability of full employment and reduction of poverty in Nigeria has been generating growing concern among the scholars in the country (Olotu et al. 2015, Aderemi et al., 2021). This is because the submission of inclusive growth theory is that the spillovers of economic growth must have a trickle-down effect on poverty through employment creation. Meanwhile, a relative substantial economic growth was recorded in Nigeria during the periods of 1990s and early 2000s. The average growth rate during these period was 5.1% (NBS 2015). It is expected that economic growth experienced in Nigeria should be accompanied with sufficient job creation and poverty reduction in these periods, and beyond.

However, the evidence from the available data in Nigeria proves that unemployment, especially among the youthful population and general poverty level are critical issues that need urgent intervention. For instance, over 47.40% of the Nigerian youth are unemployed (NBS, 2019), and the country hosts the highest number of poor people in the globe at the same time (World Poverty Clock, 2018; Aderemi *et al.*, 2020). This is an indication that an urgent empirical study is needed to unravel the linkage between economic growth, youth unemployment and poverty in Nigeria. The current necessity of this study lies in the following reasons. Firstly, economic growth, decent employment and poverty reduction are very strategic SDGs goals, in which there is an ongoing advocacy in developing countries, especially Nigeria to achieve them within the period of 2030.

In the same vein, empirical studies on related issues surrounding jobless growth in Nigeria are just evolving in the recent times. It is instructive to register that in spite of the fact that recent studies in Nigeria such as Ajakaiye, Jerome and Alaba (2016), Dursun and Ogunleye (2016) and Oloyede (2014) have provided some empirical insights regarding this subject matter, yet these studies failed to account for youth unemployment in the country. Also, this study employed the technique of Granger causality to resolve methodological anomalies observed in the past studies in resolving the controversy surrounding the nexus among economic growth, youth unemployment and poverty in Nigeria. With respect to the above statement, this study is designed to provide empirical answers to the question what is the direction of causality among economic growth, youth unemployment and poverty in Nigeria between 1990 and 2019, in which no study has examined, to the best of our knowledge.

In addition, this paper contains three sections, in which section one focuses on introduction where the background information and the statement of the problem regarding the subject matter of the study were provided respectively. Section two gives room for the review of the extant literature. While the latter part of the study addresses methodology, results presentation and discussion alongside the policy implication of the research work.

2. Literature Review

This subsection provides a detailed information about the past empirical studies as regard to the subject matter of this study. For instance, Ademola and Badiru (2016) used secondary data with the application of Ordinary Least Square (OLS) to assess the relationship between unemployment, inflation and economic growth in Nigeria from 1981 to 2014.

There was a confirmation in the study that unemployment and inflation had a direct connection with economic growth in the country. In another study, Sherifat (2020) analyzed the effect of youth unemployment and its impact on economic growth in Nigeria making use of 600 respondents.

The analysis of the data was done with the use of percentages, frequency counts and Pearson product moment correlation. As such, the result indicated that youth unemployment has a significant impact on economic growth in Nigeria. Also, it showed that the principal reason for the existence of youth unemployment in Nigeria are; rapid increase in population, lack of industries, lack of employable skills, corruption, increase in labor force. It also revealed that youth being used as political thugs, used for anti-social vices are also some reasons for youth unemployment in the country. Akeju and Olanupekun (2014) applied Error Correction Model (ECM) in the evaluation of the nexus between unemployment and economic growth in Nigeria between 1980 and 2012. The author asserted that there was a presence of a short and long-run relationship between Nigeria's economic growth and unemployment. Similarly, Anyanwu *et al.* (2021) made use of Auto Regressive Distributed Lag (ARDL) and Error Correction Model (ECM) to analyze the implication of youth unemployment on economic growth in Nigeria from 1989-to 2020.

It was revealed that there is a significant relationship between youth unemployment and economic growth in Nigeria. Ayinla and Ogunmeru (2018), investigated how youth unemployment impacts Nigeria's economic development using descriptive and inferential statistics and also lines and tables to analyze data from 2010-to 2016. The study revealed that there is a significant relationship between youth unemployment and the GDP rate. Also, there is no significant connection between crime rate, labor efficiency, and youth unemployment. Conteh (2021), examined the relationship between unemployment and economic growth in Liberia from 2001 to 2019 using Auto Regressive Distribution Lag (ARDL) to analyze the data. The research found that there is a long-run connection between unemployment and economic growth. Ehinomen and Afolabi (2015), investigated the rising youth unemployment and its socio-economic impacts for economic growth and development in Nigeria. Historical analysis techniques were used to analyze the study. It found that the rapid increase in youth unemployment in the country is due to their participation in criminal activities.

Consequently, Enejoh and Tsauni (2017), analyzed the impact of unemployment on economic growth in Nigeria from 1970 to 2016. The study used ARDL and Error Correction Mechanism (ECM) to test the short-run and long-run impact of youth unemployment and interest rate on economic growth. The result shows that there is a negative and significant impact of youth unemployment and interest rate on economic growth in Nigeria both in the short run and long run. The study also revealed that youth enrollment rate and education expenditure has a positive and significant impact on economic growth. Eshun (2019), found that there is a negative relationship between unemployment and economic growth. That is, for any increase in unemployment, there will be a decline in economic growth. This was discovered in a research carried out to assess unemployment and economic growth where Ordinary Least Square (OLS) was used to analyze data from 10 West African countries from 2004 to 2017. Fung and Nga (2022), made use of multivariate analysis of variance to analyze data from 1996-2019 to examine the effect of unemployment and inflation on economic growth in ASEAN countries. The result discovered that unemployment has a negatively significant effect economic growth while inflation has a positively significant impact on economic growth in ASEAN countries. Katumo (2019), analyzed the relationship between youth unemployment and economic growth in Kenya using Ordinary Least Square (OLS) from 1991 to 2015. It was revealed that youth unemployment has a positive and significant impact on economic growth. Mukosa *et al.* (2020), evaluated the effect of unemployment on economic growth in Zambia. This research was analyzed using findings and facts from previous research carried out on youth unemployment and economic growth globally. This research found that there is a direct relationship between youth unemployment and economic growth.

3. Methodology

This study will make use of secondary data ranging from 1990 to 2019. It is assumed that this period is very long enough to examine how the Nigerian economic growth, youth unemployment and poverty interact over the time. Moreover, collection of data for the variables of interest is as follows; youth unemployment rate was extracted from ILO statistics, real GDP and GDP per capita data were extracted from the Central Bank of Nigeria Statistical Bulletin.

3.1. Model Specification

This study seeks to estimate the Granger Causality test in order to determine the direction of causality between unemployment, poverty and economic growth in Nigeria within the context of Pairwise Granger Causality Test. In achieving this, the

authors drew some insights from the previous recent studies such as Obiakor et al. (2021) and Opele et al. (2022) that have employed this technique as follows:

$$ECG_t = \alpha_0 + \sum_{i=0}^{p} \alpha_1 ECG_{t-1} + \sum_{i=0}^{p} \alpha_2 POVT_{t-1} + \sum_{i=0}^{p} \alpha_3 YUMR_{t-1} + \varepsilon_{1t} \quad (4)$$

$$POVT_t = \gamma_0 + \sum_{i=0}^{p} \gamma_1 POVT_{i-1} + \sum_{i=0}^{p} \gamma_2 ECG_{t-1} + \sum_{i=0}^{p} \gamma_1 YUMR_{t-1} + \varepsilon_{2t} \quad (5)$$

$$YUMR_t = \alpha_0 + \sum_{i=0}^{p} \alpha_1 UMR_{t-1} + \sum_{i=0}^{p} \alpha_2 POVT_{t-1} + \sum_{i=0}^{p} \alpha_3 ECG_{t-1} + \varepsilon_{3t} \quad (6)$$

3.2. Measurement of Variables

Table 1. Variable Description

Abbreviation	Description	Measurement of variables	Source
ECG	Economic growth/real GDP	Billions naira	CBN
YUMR	Youth unemployment rate. This is measured as the number of individuals who are unemployed (16-35 yrs) expressed as a percentage of the total labour force.	Percentage	ILO
POVT	This is measured by GDP per capita	Percentage	WDI

Source: Authors' Compilation (2022

4. Results and Discussion

Table 2. Descriptive Statistics of Annual Data Series (1990-2019)

	ECG	YUMR	POVT
Mean	4.546357	10.36031	235505.7
Median	4.823564	9.696000	150220.3
Maximum	15.32916	17.72000	724704.1
Minimum	-2.035119	8.218000	5195.157
Std. Dev.	3.986615	2.123037	228162.9
Skewness	0.430109	2.432709	0.683958
Kurtosis	3.313360	7.812938	2.091483
Jarque-Bera	1.047712	58.54583	3.370746
Probability	0.592233	0.000000	0.185375
Sum	136.3907	310.8094	7065170.
Sum Sq. Dev.	460.8998	130.7113	1.51E+12
Observations	30	30	30

Source: Authors` Computation (2022)

The above result from table 1 shows the descriptive statistics of the data set. Descriptive statistics is used to show various characteristics of the data set. Firstly, GDP which is used to proxy economic growth had the minimum value of -2.035 in the data set while GDP per capita (GDPPC) which was used to proxy poverty had the maximum value of 724704.1 in the data set. Also, the mean and median value of the data set are almost equal except for GDP per capita (GDPPC) which is different. This shows that the distribution of the data set is fairly symmetrical.

Table 3. Unit Root Test

Variables	ADF TEST						
	Level	Prob.	1st Diff	Prob.	2nd Diff	Prob.	Remark
ECG	-2.967767	0.0169					I (0)
YUMR	-2.967767	0.9986	-2.971853	0.0071			I (1)
POVT	-2.967767	1.0000	-2.971853	0.4292	-2.976263	0.0000	I (2)
Variables	PP TEST						
	Level	Prob.	1st Diff	Prob.	2nd Diff	Prob.	Remark
ECG	-2.967767	0.0120					I (0)
YUMR	-2.967767	0.9986	-2.971853	0.0072			I (1)
POVT	-2.967767	1.0000	-2.971853	0.5381	-2.976263	0.0000	I (2)

Source: Authors` Computation (2022)

The table above shows the unit root result of the data set. Unit root was checked in this study via the employment of the Phillip Perron (PP) Test and Augmented Dickey Fuller (ADF) Test. The result showed that data set are stationary at different levels. This is an evidence to validate that the dataset is the combination of I (0), I (1), and I (2).

Table 4. Johansen Cointegration Test (Trace Statistics) and (Maximum Eigen value)

HYPOTHESIZED NO. OF CE(S)	EIGENVALUE	TRACE STATISTIC	PROB.**	MAX-EIGEN STATISTIC	PROB.**
NONE	0.446494	26.06303	0.1268	16.56153	0.1937
AT MOST 1	0.254864	9.501503	0.3210	8.237276	0.3551
AT MOST 2	0.044147	1.264228	0.2609	1.264228	0.2609

Source: Authors` Computation (2022)

The table above shows the estimated results of the long run equilibrium relationship between economic growth, youth unemployment and poverty reduction in Nigeria within the context of Johansen Cointegration Test. It could be therefore affirmed from the above table that at least two (2) cointegration vectors existed among the variables.

Table 5. Pairwise Granger Causality Test

Null Hypothesis:	F-Statistic	Prob.	Decision	Causality
YUMR does not Granger Cause ECG	0.07507	0.9279	Accept	No Causality
ECG does not Granger Cause YUMR	0.40599	0.6710	Accept	No Causality
POVT does not Granger Cause ECG	0.47873	0.6256	Accept	No Causality
ECG does not Granger Cause POVT	0.40612	0.6709	Accept	No Causality
POVT does not Granger Cause YUMR	6.95524	0.0043	Reject	Unidirectional
YUMR does not Granger Cause POVT	1.46744	0.2513	Accept	No Causality

Source: Authors` Computation (2022)

The table above shows the result of the pairwise granger causality among the variables of interest. It was discovered from Table 6 that there was no directional causality between youth unemployment and economic growth in Nigeria. In the same vein, no evidence to support the direction of causality between economic growth and poverty in Nigeria. However, unidirectional causality runs from poverty to youth unemployment in Nigeria. This implies that youth unemployment in Nigeria was largely motivated by high level of poverty in the country.

4.2. Conclusion and Recommendation

In this study, causal relationship has been examined between economic growth, unemployment and poverty in Nigeria between 1990 and 2019. Consequently, the findings that emerged in this could be summarized as follows. There was no directional causality between youth unemployment and economic growth in Nigeria Similarly, no evidence to support the direction of causality between economic growth and poverty in Nigeria. However, unidirectional causality runs from poverty to youth unemployment in Nigeria. This implies that youth unemployment in Nigeria was largely motivated by high level of poverty in the country. In the light of the above findings, this study therefore makes the following recommendations for the policymakers in Nigeria that any time these policymakers want to address the problem of youth unemployment in the country, policy that will reduce poverty level should be embarked upon. Also, policy that stimulates economic growth should be encouraged in Nigeria.

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