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Economic Growth and Poverty in Nigeria

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Abstract
The study examined economic growth and poverty in Nigeria between the periods, 1980-2019. The study utilized quantitative data gathered from secondary sources such as the World Bank Development Indicators, and the National Bureau of Statistics (NBS) annual reports. Augmented Dickey Fuller test, Phillips-Quliaris cointegration test and cointegration regression, specifically, the Dynamic Least Square analysis (DOLS) were used in this study. The findings revealed that economic growth have an indirect long run relationship with poverty rate in Nigeria over the years under study. Accordingly, the result was statistically significant, and thereby conforms to apriori expectation. The study further revealed that unemployment and population growth rate has significant negative impact on poverty rate in Nigeria. While secondary school enrolment and foreign direct investment impacted positively, and are statistically significant on poverty rate in Nigeria. The study also found an absence of causality between economic growth and poverty in Nigeria. Implying that, economic growth has not been influencing the level of poverty in Nigeria since they both perform independently to each other. The study concludes that poverty reduction depends on economic growth, as deduced from the findings that growth is vital for poverty reduction in Nigeria. It therefore recommends among others, that the government of Nigeria should establish a more holistic approach to poverty reduction by focusing on pro poor growth. The changing growth pattern of low-income households should be incentivized through redistributive measures and expanding opportunities.
Keywords: Poverty, Economic Growth
JEL Classification Codes: P36; O40

1. Introduction

Alleviating poverty is one of the topmost challenges fronting humanity. Not only is poverty a global menace, it also possesses an overwhelming outcome on emerging economies, especially in sub-Saharan African countries (Addae-Korankye, 2014). The majority of

Nigeria's multitude are living in a state of penury, while a fairly small nonage is living in affluence (Osinubi & Gafaar, 2005). This reality presents a pathetic and worrisome situation, which successive government in Nigeria, have tried to unravel for the past three decades. Despite employing a litany of socio-economic policies and antipoverty programs, the riddle persists, and demystifying this puzzle has enthralled the minds of numerous researchers, policymakers, and academia.

More than millions of people around the world live in extreme poverty. As evidenced by the United Nations Development Program (UNDP) in 2015, more than 736 million people lived below the international poverty line. Accordingly, 70% of the world's poorest people live in Africa, and about 79% reside in the rural areas of the African continent (World Bank, 2018). While poverty rate has decreased in sub-Saharan Africa to 40% in 2018, from 56% in 1990, the number of poor individuals keep increasing. About 433 million Africans were estimated to live in extreme poverty in 2018, and this poverty rate has not dropped so well to keep abreast with the population growth (World Bank, 2020). In 2021, an estimated 490 million people in Africa live below the poverty line of 1.90 dollars per day. This is equally an estimated extra 37 million people than what was projected without the pandemic (United Nations Conference on Trade and Development [UNCTAD], 2021).

In Nigeria, despite the country being a lower-middle income economy, many Nigerians are living in abject poverty. In 2011, the United Nations Development Programme ranked Nigeria as the 159th country out of 165th poorest countries in the world. Nigeria was also placed at the bottom 152 in a ranking of 157 countries on the World Bank's Human Capital Index in 2018. In the global competitiveness report, Nigeria was ranked the 125th poorest country out of 137 economies (World Economic Forum, 2018). Furthermore, the report from the World Poverty Clock (2020), showed that poverty has risen in Nigeria with 105 million people living in extreme poverty. These individuals struggle to survive on an average of $1.90 per day or lower per person, and this figure represents 50% of the Nigeria's estimated population of about 205 million.

Nigeria is faced with chronic economic growth challenges which invariably are the so-called determinants of poverty. Among others is systemic corruption, which is one major economic growth challenge in Nigeria. A report from British Broadcasting Corporation (BBC) Africa in 2012 declared that oil accounts for an approximately, 80% of Nigeria's state revenue. Concurrently, Nigeria is Africa's biggest oil patron but unbridled corruption has tainted the entire sector. For the past consecutive years, there is a sharp increment in the country's revenue.

Especially, revenue from the oil sector but this increment has not been able to pull out many from poverty. Poverty has always been on the increase irrespective of the increase in output. Obviously, Nigeria's economic growth is not pro-poor. For example, the report released by the Central Bank of Nigeria (2019), for the fourth quarter of 2018, revealed that the overall oil revenue rose by 129% from N4.1 trillion in 2017, to N9.4 trillion in 2018. Accordingly, oil revenue accounted for 71% of the total collected revenue which rose by 82% from N7.3 trillion in 2017, to N13.3 trillion in 2018. This should have been a blessing that ought to be converted into a huge socioeconomic development. Rather became a discouraging problem to Nigeria, placing her as one of the top 25 poorest countries in the world.

It is imperative to assert that Nigeria's inability to diversify her economy from the oil sector, to other more labour-intensive sectors has left the economy under the captivity of backwardness, and stunted growth. High rates of unemployment, inequality, debt (internal and external), population, inflation, poor health care systems, feeble institutional framework, political and social unrest, ethnic crises, and lack of human capital investment to mention a few, are some major economic growth challenges stagnating the economic progress of Nigeria. Kakwani and Pernia (2000) opined that any growth that is good for the poor (deliberately biased in favor of the poor) is a pro-poor growth. A growth that accrues a higher number of benefits to the poor than what is accrued to the non-poor is pro-poor. They argued that pro-poor growth is an inclusive economic growth that reduces poverty, while decreasing inequality concurrently amidst the course of growth. The level and changes in inequality determine the relationship between growth and poverty. This argument displayed a perfect picture of the situation of poverty in Nigeria. In history and beyond, it has not been recorded that the economic growth of Nigeria was, or is "inclusive" because of the too many daunting economic growth challenges deepening in all fabrics of the economy. The trickle-down effect which dominated in the 1950s also has an apparent relationship, and some element of truth with the poverty-growth situation in Nigeria. It is obvious that the benefits from growth in Nigeria go to the nonpoor first before trickling down to the poor through a vertical flow from the nonpoor. Irrespective of the fact that the poor benefit from economic growth indirectly in Nigeria, the benefit accruing to the poor is still, however, very low. Kakwani and Pernia (2000) used this knowledge of poverty to buttress that poverty reduction is a function of both growth rate, and the change in income distribution.

Nigeria, being an open economy, whose profitable conditioning primarily depends on the transnational market has been undergoing a

shifting profitable growth over the years. But to a momentous extent, growth was steady. In 1980, the GDP growth rate was 4.2% in the period between 1988 and 1997 (a time of economic liberalization, and post-structural adjustment). The GDP complied to economic modification policies, and grew at a positive rate of 4%. It reached an unprecedented high of 15.3% in 2002 and in 2006, the real GDP growth rate dropped to 6.1%. Statistics further showed that the economy when measured by the Real Gross Domestic Product (RGDP), grew by 8.0% in 2010, and recorded a negative in 2016 by -1.6%. With an estimated 397.2 bn US dollars, the economy expanded by 1.9% in 2018, higher than 0.8% in 2017 (375.7 bn US dollars). In 2019, Nigeria's GDP amounted to 448.1bn US dollars with an estimated growth rate of 2.3% (Macrotrends, 2020). In 2020, GDP decreased to 432.29 bn US dollars with a -1.79% estimated growth rate, and however increased to 440.78 bn US dollars with an estimated growth rate of 3.65% in 2021 (Macrotrends, 2022).

Critics like Ebunoluwa and Yusuf (2018); Bakere and Ilemobayo (2013), have maintained that economic growth which is meant to reduce poverty has unfortunately contributed to a worse socioeconomic result, intensifying the circumstances that lead to vulnerability and poverty. Some scholars like Gangas (2017); Olawole, Omobita and Yaqub (2015), argued that economic growth is really the principal factor of poverty reduction and promoting the standards of living. While others argued that output growth is not the key factor to poverty reduction in so many developing countries, since its contribution to poverty reduction is insignificant. (Sahn & Younger, 2001; Aigbokhan, 2000). Currently, the World Bank Group approved $1.5bn for Nigeria to reduce poverty, having discussed a new five-year Country partnership Framework from 2021-2024. The non-responsiveness of the growth-poverty nexus in Nigeria warrants this study to empirically evaluate economic growth and poverty in Nigeria spanning from the period, 1980 – 2019, and further provide a way forward to resolving the aged-long conundrum.

This paper is however organized into five sections. Section I is the introduction, and the following is section II which covers the literature review, and theoretical and empirical reviews. Section III discussed the methodology adopted in the study. Section IV consists of data analysis and presentation of results while section V concludes the study with some policy recommendations.

2. Literature Review

2.1 Conceptual Clarification

2.1.1 Concept of Poverty and Poverty Line

The common verity is that poverty has no universally accepted definition. But it has also gone beyond the mere description of lack or

inability to earn more (above 1.90 dollars per day). As a multifaceted concept, it encompasses both social, economic, and political elements. The United Nations Children's Fund considered this fact and gave a more detailed, and broadened definition of poverty. Poverty is a denial of human dignity and human rights. Poverty is insecurity, exclusion from the mainstream of society, discrimination, and exposure to violence. Poverty is not having a good basic school and a good health center to receive treatment. As well as, not having access to adequate sanitation, and safe drinking water. Poverty is also being stigmatized and constrained vocally to influence decision-making (United Nations Children's Fund [UNICEF], 2000).

The poverty line is the yardstick for living standards which filters the poor from the non-poor. It weighs, compares, and separates the rich from the poor using a specific benchmark to gauge the standard of living. A report from the National Bureau of Statistics (NBS) on the national poverty line in Nigeria stated clearly that a person living below the threshold of 137.4 thousand naira, which is roughly 361 U.S dollars per year is considered poor (NBS, 2020). The measure adopted by countries in separating the poor from the non-poor can be in the form of monetary (using a particular level of consumption) or nonmonetary (using a particular level of literacy) (Saji & Canagarajah, 2002).

Using various poverty lines can help in differentiating distinct levels of poverty. But how can poverty levels be accurately measured in Nigeria when there is no official poverty line? Following the confirmation of National Bureau of Statistics, Nigeria has no authorized poverty line (NBS, 2005 and 2012). The upper and the lower relative poverty lines are the two separate lines used to distinguish the degrees of poverty in Nigeria, based on the 1985-1986 Lagos prices. The upper poverty line is the two-third of the weighted mean value of consumption, and this is equivalent to a poverty line of 394.41 naira per person per year. The lower poverty line is the one-third of the mean value of consumption which is also equivalent to 197.71 naira. As a result, two levels of poverty exist; the extremely poor and the moderately poor. An individual who falls below the lower poverty line is referred to as the "extremely poor". If the person falls above this lower poverty line, but below the upper poverty line, he/she is described as "moderately poor". National Bureau of Statistics stated that as of 2020; 83 million (40%) of the total population of Nigeria lives below the country's poverty line (NBS, 2020).

2.2 Concept of Economic Growth

Economic growth is the continued rise in the capacity to supply increasingly diverse economic goods to the population of a country. This

growing capacity is based on the advancing technology, institutional, and the ideological adjustments that the economy demands (Kuznets, 1971). From the definition above, economic growth is acknowledged as the constant increase in the supply of goods and services. Anyanwu and Oaikhenan (1995) defined economic growth as the increase in the capacity of an economy to produce goods and services required to improve the wellbeing of individuals, in increasing numbers, and in diversity over time. Poverty reduction has become the ultimate goal for developmental efforts which can be achieved, either through economic growth or redistribution of income (Kakwani & Son, 2006).

It can, however, be deduced from the above meaning that Nigeria, having been utilizing its capacity to increase output for the wellbeing of its citizens, contrarily have little or no sinking effect in the improvement of welfare or quality of life of its citizens. Rather, economic growth which is meant to be a welfare criterion as strongly postulated by Adam Smith, is regrettably an irony, and in non-synchronization with the economic practicalities of Nigeria. The increase in output over time has not been able to accrue a greater proportion of benefits to the poor, having confirmed from statistics that 89 million Nigerians as of 2020 are living in extreme poverty, and will increase to about 95.1 million in 2022 (World Bank, 2022). Invariably, the benefits from growth accrued to the nonpoor in Nigeria are double times more than what goes to the poor.

2.3 Empirical Literature

Dada and fanowopo (2020) studied the role of institutions in the nexus between economic growth and poverty reduction in Nigeria, over the period, 1984 – 2018. The study used Auto Regressive Distributed Lag Cointegration technique, which revealed that an increase in corruption-free environment, aggregate institutional quality, and political stability reduces poverty in the short-run. While at the long-run, institutions have a direct relationship with household consumption which also reduces poverty. The result further revealed that capital accumulation is vital in poverty reduction, while primary school enrolment is not sufficient in reducing poverty at the long-run. The study recommended that institutions quality should be improved, and free and fair election should dominate in order to enhance political stability.

Using Error Correction Model (ECM) technique within an Auto Regressive Distributed Lag (ARDL) framework, Chude, Anah, Chude and Chukwunulu (2019) examined the relationship between government expenditure, economic growth and poverty reduction in Nigeria. Using time series data covering the period, 1980 – 2013, it was found from the study that government spending and economic growth has a positive

relationship. This is caused by the increase in real private investment, and fixed capital accumulation. The study recommended that the government should extend its role to ensure that the quality and the volume of private investment in Nigeria is very high, as it is a contributing factor to poverty reduction.

Adelowokan, Maku, Babasanya, and Adesoye (2019) investigated the links between unemployment, poverty and economic growth in Nigeria, between the period, 1985 – 2015. Having utilized the Error Correction Model (ECM) in establishing the short-run relationship between the variables, it was found that an absence of causality exists between poverty, unemployment, and growth in Nigeria. The short-run parameter estimates also revealed that unemployment, and poverty have an inverse – significant relationship with economic growth. The study recommended that the government should implement quality macroeconomic policies that will ensure equitable distribution of income, so that the poor can also benefit from economic growth.

Ebunoluwa and Yusuf (2018) examined the effects of economic growth on poverty reduction in Nigeria, from the period of 1980 – 2016. The study employed the Vector Auto Regression Estimate (VAR), which showed from its analysis that government expenditure is directly related to poverty incidence. Connoting that an increase in government expenditures increases poverty levels in Nigeria. The study however, further revealed a positive relationship between unemployment and poverty, and as such, recommended that the government should focus in creating avenues for gainful employment by strengthening the labour-intensive sectors (agricultural and Industrial sectors) in Nigeria.

Abasi, Edoko and Ezeanolue (2018) studied the impact of economic growth on poverty reduction in Nigeria, spanning from the period, 1980 – 2017. The result from the Ordinary Least Square analysis (OLS) showed that life expectancy, per capita income, and population have a positive relationship with Gross Domestic Product. On the other hand, mortality rate, poverty rate, and corruption contrarily have a negative relationship with GDP. The study recommended that the programs aimed at poverty reduction should be realistic in targeting the need, occupation, and the continued investment in human capital.

Omoniyi (2018) specifically explored the relationship between poverty and economic growth, the determinants of economic growth and poverty, spanning from 1980 – 2013. Having adopted the Error Correction Model (ECM), the result showed a negative relationship between poverty and economic growth in Nigeria. It revealed that investment was insignificant, while inflation, economic growth, and life expectancy showed significant and a positive relationship with poverty. Contrariwise, poverty, debt, corruption, mortality, and unemployment

have an inverse relationship with economic growth. The study recommended that the government should create an establishment of quality institutions and antipoverty programs to better the level of growth in Nigeria.

Orajaka and Okoli (2018) empirically scrutinized the effect of human capital development on poverty reduction in Nigeria over the period, 1991 – 2017. The study employed the Ordinary Least Square analysis, which concurrently found that human capital development, government expenditure, skill acquisition, small scale enterprise, health, and education are statistically significant in reducing poverty in Nigeria. The study further recommended that the government should prioritize investment in these areas mentioned above, and should endeavor to make such investment structurally balanced since they have positive influence on poverty reduction in Nigeria.

Utilizing the Ordinary Least Square (OLS) analysis, Gangas (2017) explored the relationship between economic growth and poverty in Nigeria, covering the period, 1980 – 2013. The study discovered the existence of an inverse relationship between poverty index and economic growth in Nigeria. Also, an inverse relationship between unemployment and GDP was found in the study. However, the study conclusively recommended that the government should enforce strong fiscal policies that are capable of promoting productivity and private investment.

Hassan (2015) investigated the impact of GDP growth rate on poverty reduction in Nigeria, using time series data sourced from the Central Bank of Nigeria statistical bulletin, and the National Bureau of Statistics spanning from 1986 – 2012. The Ordinary Least Square (OLS) estimation technique result revealed a direct relationship between unemployment rate and GDP. The study however, recommended that the government should prioritize the key sectors of the economy (agriculture, industry) as they are highly capacitated to generate and absorb more labour in order to solve unemployment problems, and reduce poverty.

Akanbi and Du toit (2011) examined the macro-econometric models for the Nigerian economy with the purpose of providing and explaining the long-term solution for the persistent divergence in growth and poverty. The time series data spanning from 1970 – 2006 was estimated using the Engle-Granger two-step cointegration technique to capture both the short-run and long-run dynamics of the economy. It was found from the study that substantial socioeconomic constraints are the main impediments of the increasing levels of poverty in Nigeria. The study recommended that the government should ameliorate the economy’s productive capacity so it can reduce poverty and achieve sustainable growth.

Using multiple regression analysis, Ijaiya, Ijaiya, Bello and Ajayi (2011) examined the impact of economic growth on poverty reduction in Nigeria, from the period, 1980 – 2008. The study found that an initial level of economic growth is not likely to reduce poverty, but a positive change in economic growth is inclined to reduce poverty. The study utilized difference-in-difference estimator that explains that economic growth has a significant influence on poverty reduction (poverty reduction depends on economic growth). The study therefore recommended that stable macroeconomic policies, infrastructural development, investment and good governance should be implemented in order to achieve poverty reduction.

In the study of Hassan (2015), the model specification bears only one independent variable. This does not give a reliable result because it increases the margin of error, and as a result, the methodology could not accurately determine the overall fit of the model. The research works of Akanbi and Du toit (2011); Ijaiya, Ijaiya, Bello and Ajayi (2011) are largely one-sided. It particularly focused on the numerous government policies, successive anti-poverty programs, and their impact on poverty. Not if the growth performances thus far, are pro-poor in Nigeria. The ongoing debate in the theoretical literature on whether a country should first and foremost, concentrate in reducing poverty by guaranteeing that it will lead to growth, or a country should concentrate in attaining growth and afterward ensure that the output pattern is pro-poor is still unclear and inconclusive. This study wants to add to the debate, and by adding to the debate, it also wants to add to the pool of knowledge by filling these gaps.

3. Methodology

3.1 Data Source

Basically, the data for the research will be annual time series data which shall be obtain from secondary source. The World Bank Development Indicators annual reports and National Bureau of Statistics are to be the main sources of data, over the period of 1980 – 2019. To ensure a comprehensive research, secondary data of real Gross domestic product (RGDP), poverty index, unemployment rate, literacy rate, foreign direct investment and population growth rate will be used spanning from 1980 – 2019.

3.2 Theoretical Framework and Model Specification

The combination of the Solow-Swan growth theory of 1956, and the endogenous growth model of Romer, 1989; Lucas 1988, are important to this research as they proffer solutions, and explain better the economic growth-poverty nexus in Nigeria. One of the key variables

identified in the Solow-Swan growth model is labour (workforce) and as such, the theory developed a relationship between economic growth and population growth. The theory asserted that population growth is one of the reasons for long-term economic growth in an economy. It explained that countries with higher population growth rates generally have lower capital-labour ratio, and hence lower income which in turn increases poverty. An increase in population has a positive impact at the aggregate output level but a negative impact on per capita growth. Due to this relationship, this study adopted the use of population growth as one of the control variables that determine poverty.

However, the Solow-Swan growth theory failed to take innovation into account, and do not explain the machinery that brings about long-run growth. To account for innovation and the apparatus for long-run growth, the endogenous growth model is thus introduced. Endogenous growth theory postulated that long run growth depends on investment decisions rather than technology. Invariably, investment is seen as a mechanism for continued growth through the strengthening of human capital. Foreign Direct Investment (a proxy for investment) is therefore anchored on this principle, and further introduced in this study as one of the determining factors of poverty. Adopting the endogenous growth model fits the real world perfectly well, most especially, Nigeria. This is because the theory has some important policy implications against the background of weak, slow, and volatile rate of economic growth which is accompanied with poverty, structural imbalances, debt burden, unemployment, economic shocks, declining productivity signals, and uncertainties. The endogenous growth theory has revealed that human capital development is a necessary, and a sufficient condition for long-term growth. Either because it offers some positive externalities (Lucas, 1988), or because it is a direct input into research (Romer, 1994). Using this growth model, the present study can focus more on the variables that define poverty in development, research, as well as in human capital, considering that these are believed to be the principal elements that aid sustainable growth in an economy.

The study adopted the analytical tool employed by Bakere and Ilemobayo (2013) as the foundation for the model. In their study, poverty incidence is the function of gross domestic product growth rate (GDPGR), unemployment rate (UNMR) and literacy rate (LITR). It is stated in its functional form as follows;

$$\mathrm{POV} = \mathrm{f}(\mathrm{GDPGR}, \mathrm{UNMR}, \mathrm{LITR}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (1)$$

This study modified the model by introducing foreign direct investment and population growth rate, to provide more explanatory variables that may be suitable in explaining economic growth-poverty relationship in Nigeria. The usage of these variables; foreign direct

investment and population growth rate are justified on its adoption from the theoretical framework (Solow-Swan and Endogenous growth theory). The model is modified to include poverty incidence (POVT) as the dependent variable while, Real Gross Domestic Product (RGDP), unemployment rate (UNEM), literacy rate (LITR), foreign direct investment (FDI) and population growth rate (POPG) were included as the independent variables. It is specified in its implicit functional form in equation (2) below;

$$\mathrm{POVT} = \mathrm{f}\,(\mathrm{RGDP}, \mathrm{UNEM}, \mathrm{LITR}, \mathrm{FDI}, \mathrm{POPG}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (2)$$

The mathematical form of the model is therefore represented as;

$$\mathrm{POVTt} = \beta 0 + \beta 1\mathrm{RGDPt} + \beta 2\mathrm{UNEMt} + \beta 3\mathrm{LITRt} + \beta 4\mathrm{FDIt} + \beta 5\mathrm{POPGt} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (3)$$

Specifying the model equation (3) in an Econometrics function, introducing the random term the explicit functional form becomes;

$$\mathrm{POVTt} = \beta 0 + \beta 1\mathrm{RGDPt} + \beta 2\mathrm{UNEMt} + \beta 3\mathrm{LITRt} + \beta 4\mathrm{FDIt} + \beta 5\mathrm{POPGt} + \varepsilon\mathrm{i} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Where;

$POVT_t$ = Poverty Index at period t; a proxy for poverty

$RGDP_t$ = Real Gross Domestic Product at period t,

$UNEM_t$ = Unemployment rate at period t,

$LITR_t$ = Literacy rate at period t, (where secondary school enrollment (SSENR) shall be used as a proxy)

FDI_t = Foreign Direct Investment at period t

$POPG_t$ = Population growth rate at period t,

β0 = Constant term, β1, β2, β3, β4, β5 = Regression coefficients of the parameters of the explanatory variable to be estimated.

t = The period of the observation (time subscript), and

Ɛi = Stochastic error term (unobserved factors) at period t.

This study however, utilized the Dynamic Least Squares (DOLS) regression as its tool for analyzing the effect of economic growth and poverty in Nigeria, using the multiple regression method. The choice of DOLS is based on the fact that in most cases, the relationships between economic variables are dynamic and not static. DOLS, therefore, provides better estimates in the presence of a dynamic relationship between the variables (economic growth and poverty). Secondly, the relationship between economic growth and poverty is non-contemporaneous (current to current) which is better captured with the use of DOLS. However, the analysis is carried out based on the sign, size and significance of the parameters. This makes it incorrect to use the OLS regression technique.

4. Results and Discussion

Table 1: Result of ADF Unit Root Test

Variables	ADF at LEVEL	ADF at 1st DIFF	5% Critical value	Order of Integration.
POVT	-2.445375	-11.62193	-2.941145	I (1)
P-value	(0.1371)	(0.0000)		
LnRGDP	-0.679127	-4.237289	-2.941145	1 (1)
P-value	(0.8347)	(0.0019)		
UNEM	-0.389092	-5.509507	-2.954021	1 (1)
P-value	(0.9012)	(0.0000)		
LnFDI	-1.787937	-10.22771	-2.943427	1 (1)
P-value	(0.3806)	(0.0000)		
SSENR	-1.228232	-6.945230	-2.941145	1 (1)
P-value	(0.6525)	(0.0000)		
POPG	-2.849703	-4.933312	-2.941145	1 (1)
P-value	(0.0610)	(0.0003)		

Source: Author's computation 2022

Table 1 above contains the results of the unit root test using Augmented Dickey-Fuller (ADF) test. It shows the summary of the results both at level and at first difference for the variables. The result reveals that all the time series variables are non-stationary at level, but stationary at first difference. In each case at first differencing, the ADF statistics in absolute terms is greater than 5% critical value. Also, in using the probability values as a basis for comparison, it is revealed from the result that the probability values of the series are less than 0.05. Therefore, the null hypothesis of the unit root is rejected and concluded that all-time series are stationary after first differencing at 5% level of significance. Inferring from the result, it can also be concluded that all the variables are integrated of the same order giving rise to the necessity of a cointegration test, in order to establish the long run relationship either between or among the variables. To identify the long run relationship among the variables, Phillips-Quliaris cointegration test will be employed. Phillips-Quliaris test is considered appropriate for single equations, and it best verifies the existence of the long-run stationary relationship between the explanatory variables, using a 5% level of

significance. But before then, the study shall proceed to access the causal link between economic growth and poverty in Nigeria, which is the second objective of the study.

4.2 Causality Test

Table 2: Granger Causality Test

Null Hypothesis	F – Statistics	Probability Values
LNRGDP does not Granger Cause POVT	0.08294	0.9206
POVT does not Granger Cause LNRGDP	0.51161	0.6042
UNEM does not Granger Cause POVT	0.19206	0.8262
POVT does not Granger Cause UNEM	0.22019	0.8035
SSENR does not Granger Cause POVT	0.44281	0.6460
POVT does not Granger Cause SSENR	0.69937	0.5041
POPG does not Granger Cause POVT	0.03689	0.9638
POVT does not Granger Cause POPG	2.16354	0.1309
LNFDI does not Granger Cause POVT	1.29383	0.2882
POVT does not Granger Cause LNFDI	1.69820	0.1991

Source: Author's computation 2022

Table 2 above contains the causality result which showcases the absence of causality between the control variables (LNRGDP, UNEM, SSENR, LNFDI & POPG) and the dependent variable (POVT). Invariably, economic growth does not granger cause poverty, and poverty in turn, does not granger cause economic growth in Nigeria over the period under study. This further implies that the short run relationship

is not unidirectional or bidirectional but 'neither'. This means that economic growth has no influence on poverty rate in Nigeria.

4.3 Cointegration Test

Table 3: Phillips-Quliaris Co-Integration Test Result

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
POVT	-5.012033	0.0661	-35.52985	0.0149
LNRGDP	-3.800261	0.3954	-20.57236	0.4266
UNEM	-4.088507	0.2803	-26.64211	0.1524
SSENR	-5.199854	0.0467	-29.35013	0.0835
LNFDI	-4.776347	0.0998	-30.65582	0.0605
POPG	-5.120099	0.0542	-30.44730	0.0638

Source: Author's computation 2022

The null hypothesis states that there is no co-integrating equation (series are not cointegrated), while the reverse is the case for the alternative hypothesis. The decision criteria requires that H_0 is rejected if the probability value is less than 5% level of significance, and the alternative not rejected if otherwise. The calculated Z statistics value for poverty (POVT) is -35.52985 at 5% level of significance, with the degree of freedom equal to 38 and a probability value of 0.0149, which is less than 0.05 ($0.05 > 0.0149$). This explains that POVT is significant, and as such, we reject H_0 and do not reject H_1 and conclude that the series are cointegrated. Therefore, there is a long run relationship. The calculated Z statistics value for real gross domestic product (LNRGDP) is -20.57236 at 5% level of significance with a degree of freedom equal to 38, and the probability value of 0.4266 which is greater than 0.05 ($0.05 < 0.4266$). This implies that the variable (LNRGDP) is not significant at 5% level, therefore, we do not reject the null hypothesis and further conclude that the series are not cointegrated. Hence, there is no long run relationship.

4.4 Regression Analysis

Following the existence of Co-integrating relationship, it is obvious to reveal the long-run estimates. The analysis is carried out based on the sign, size, and significance of the parameters. The main objective of this research is to scrutinize the effect of economic growth on poverty rate in Nigeria. In a bid to achieve this objective, there is need to run this regression below;

Table 4: Regression Result
Dependent variable: POVT
Method: Dynamic Least Squares (DOLS)

Variable	Coefficient	Standard Error	T-statistics	Prob. Values
LNRGDP	-21.91607	9.425593	-2.325166	0.0345
UNEM	-1.201760	0.428162	-2.806786	0.0133
SSENR	1.952671	0.517341	3.774437	0.0018
LNFDI	7.735028	2.032860	3.804998	0.0017
POPG	-119.6483	22.49414	-5.319089	0.0001
C	656.2334	221.6171	2.961114	0.0097
R-squared	0.791070	Mean dependent var		43.11667
Adjusted R-squared	0.512497	S.D. dependent var		4.831415
SE. of regression	3.373362	Sum squared residual		170.6936
Long run variance	7.499572			

Source: Author's computation 2022

From the summary of the estimated results in table 4 above, the effect of economic growth on poverty rate in Nigeria, within the scope of the model formulated has been adequately tested. The coefficient of the constant parameter (656.2334) shows a positive relationship with POVT. This implies that the value of POVT is 656.2% when all other independent variables (LNRGDP, UNEM, SSENR, LNFDI, POPG) are zero or held constant. Thus, in as much as the intercept has no economic meaning, the apriori expectation is that the intercept could be positive or negative so it conforms to apriori expectation.

Table 4 shows that the long-run coefficient of real gross domestic product (LNRGDP) is negative, and statistically significant on poverty rate. It further x-rayed that a one percent increase in the real gross domestic product will result to about 21.9% decrease in poverty rate (POVT) over the period under study. This conforms with economic theory which states that a rise in economic growth will lead to a fall in poverty levels. It implies that economic growth plays a significant role in reducing poverty in Nigeria. This view is in total contrast with the economic realities of Nigeria because poverty is increasing amidst the increase in economic growth. In other words, the study strongly asserts

that a country should ultimately concentrate in achieving economic growth first, before ensuring on a later note that its pattern of growth is pro-poor.

The long-run coefficient of unemployment (UNEM) is negative and statistically significant on poverty rate. The result revealed that a one percentage increase in unemployment will result to a decrease in the poverty rate (POVT) by 1.20% over the period under study. This finding is not in tandem with the apriori expectation of a positive relationship with poverty rate. A deep implication for this result is that unemployment has left many unemployed youths in Nigeria with the choice of venturing into various illicit businesses. This is exactly one salient effect of having weak institutions (systems) in an economy like Nigeria, where there are no strong rules and regulations put in place to guide and oversee the activities of the aggregate body. To this effect, these youths make multiple returns from such illegal businesses, and it tends to pull them out from poverty even at the detriment of others. The more they spend, the more funds in circulation in the economy.

The long-run coefficient of secondary school enrolment (SSENR) is positive and as well, statistically significant. A one percentage increase in secondary school enrolment will cause about 1.95% increase in poverty rate over the period under study. The result does not fall in line with the apriori expectation of an inverse relationship with poverty. An explanation for this result could be that most literates in Nigeria, having finding it difficult to secure a gainful employment that could keep them above the poverty line for a long period, are most likely trapped, or not being able to secure one at the long term. Whereas virtually the uneducated individuals have better living standards as they initially, substitute their years of schooling for small-scale business startups. In reality, the case is quite similar because most literates in Nigeria are not majorly the successful ones.

The long-run coefficient of foreign direct investment (FDI) is positive and statistically significant. But it does not conform to economic theory which expects that an increase in foreign direct investment should reduce poverty in Nigeria. As a result, FDI has not impacted on poverty reduction in Nigeria. The possible implication for this result is that the increase in production (output) from FDI multinational companies in Nigeria usually triggers a hike in the prices of domestic goods and services due to low taxes, no ease of doing business, low wages, feeble and unfriendly environmental standards which are highly associated with Nigeria. This goes further to hamper the required capital accumulation, as well as savings and investment of the country, which Keynes (1936) outrightly described as the variables that regulate the economy. Secondly, most FDI's in Nigeria are clustered in mega cities of the

country such as Lagos, Port Harcourt, and Abuja. The rural areas are left out and abandoned as FDI's are not evenly distributed across the state. The stagnation in these rural areas slows economic growth and increases poverty in Nigeria.

The long-run coefficient of population growth (POPG) is negative and statistically significant. The result showed that a one percent increase in population growth will lead to about 119.6% decrease in poverty over the period under study. The result does not conform to apriori expectation of a positive relationship with poverty. This may imply that the increasing population growth in Nigeria is productive holding per capita income constant. From the regression result, the coefficient of determination (R-squared), which measures the model's overall goodness of fit is 0.791070. That is, $(0.79 \times 100) = 79\%$ of the total variation in the poverty level of Nigeria is jointly explained by the variation in all the explanatory variables: RGDP, SSENR, FDI, and POPG. The remaining 21% could be attributed to the stochastic error term not included in the model.

The empirical results revealed that economic growth, proxy by real gross domestic product which had a negative effect on poverty rate, agreed with the findings of Gangas (2017); Abasi, Edeoko, and Ezenolue (2018); Kolawole, Omobita and Yaqub (2015); Aigbokhan (2000). These studies found a negative impact on economic growth and poverty in Nigeria. On the contrary, the empirical result from the study contradicts with the studies of Omoniyi (2018); Bakere, and Ilemobayo (2013), who found that economic growth had a positive impact on poverty rate.

5. Conclusion and Recommendations

The study examined economic growth and poverty in Nigeria, and has critically established that economic growth matters for the reduction of poverty in Nigeria. This main conclusion was drawn from the regression result, which conforms to economic theory and earlier studies. Based on the objective, the study utilized the argument postulated by Kakwani and Pernia (2000), and concludes that economic growth of Nigeria has not been inclusive, and the nonpoor benefits more than the poor in Nigeria. This is in contrast with the aphorism that Nigeria is the mammoth of Africa whereas majority of its citizens are poor. On the basis of findings, the following conclusions were made; there is an evidence of a significant long run relationship between Economic growth and poverty in Nigeria. At the short-run, Economic growth has no influence on poverty rate in Nigeria, but at the long-run there is a co-integrating relationship.

Based on the findings, the study recommends that the government of Nigeria should focus on achieving inclusive growth. They

should put into consideration the provision of redistributive measures and expanding opportunities for the poor, so that the quality of life will be improved. Prioritizing the means of how the benefits of growths are shared by individuals should be the target of the government, so that benefits from growth can be accrued directly to the poor. In addition, the fight against poverty by the government should be channeled at the fighting of unemployment. Skill acquisition should be made mandatory and affordable for the poor.

This can be achieved through the establishments of various entrepreneurial platforms in each of the states, so that creativity, innovation and development will thrive. Unfinished projects in the rural areas shouldn't be overlooked. Local and foreign direct investments should be implemented in these areas for development to spur. Since majority of Nigerians are living in extreme poverty, the government should prioritize education, especially, female educational attainment and put to checks the barriers affecting them. Studies have shown that investing in the education of a 'woman' is investing in the universe, because it goes a long way in yielding sustainable returns. One could see a sinking effect in the improvement of individuals as it continues to pass on to generations after generations. Lastly, the government should also provide affordable and easy access to good health services to the poor. Health status shouldn't be overlooked in the formulation of policy measures to reduce poverty, because a healthy society is a society that can work.

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