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Effects of Poverty and Unemployment on Economic Growth in Nigeria

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Abstract
This study determined the effects of poverty and unemployment on economic growth in Nigeria for a period of thirty-four (1990 to 2023). The study measured poverty and unemployment by poverty index, literacy rate, life expectancy and unemployment rate while economic growth was measured by Gross Domestic Product. The study made use of time series data and the data were sourced mainly from World Development Indicators (WDI) of the World Bank, Central Bank of Nigeria (CBN) statistical bulletin and National Bureau of Statistics (NBS) reports. The data analyses carried out in the study include: unit root test using Augmented Dickey-Fuller (ADF), bounds cointegration test and Autoregressive Distributive Lag (ARDL) model estimation. The findings of the study showed that: poverty index and unemployment rate have negative but significant effect on Gross Domestic Product in Nigeria while literacy rate and life expectancy have positive and significant effect on Gross Domestic Product in Nigeria. Premised on the findings, the study concluded that poverty and unemployment significantly retard economic growth in Nigeria. It was recommended among others that Nigerian government should invest significantly in education to improve literacy rates across all age groups. Also, government should implement comprehensive health programs to improve life expectancy, including expanding access to healthcare services, increasing investment in public health infrastructure, and promoting preventive healthcare measures.

Keywords: Poverty, Unemployment Economic Growth, Literacy Rate, Life Expectancy, Gross Domestic Product

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1.0 INTRODUCTION

The foremost macroeconomic objective of governments in almost all countries of the world is the actualization of rapid economic growth. The actualization of economic growth leads to higher and ever-increasing economic prosperity. This increasing economic prosperity is empirically linked to greater overall levels of societal progress and improvement. Conversely, without economic growth, economies of nations tend to stagnate thereby deficiency in the provision of the social and economic well-being of their citizens. Economic failure historically causes a loss of trust and social upheaval, frequent and ugly triggers of social conflicts, leading to high unemployment rate (Onwuka, 2021). Hence, of the greatest challenges of the Nigerian economy today is the high rate of unemployment that has maintained a rising trend over the years. The problem of unemployment has been of great concern to the economists and policy makers in Nigeria since early 1980s (Kemi & Dayo, 2014). Unemployment problem in Nigeria has different dimensions. There are underemployment cases in which people receive incomes that are inadequate to support their basic needs, in terms of food, clothing and shelter. There are also cases of disguised unemployment where people take up jobs that are below their educational attainment and experience. The worst case of all is that of people seeking for job opportunities but who cannot find any either in the public or the private sector. Some people are willing and ready to set up enterprises themselves and engage in one type of economic activity or the other but are constrained by the prevailing poor macroeconomic environment. All these have contributed significantly to the high level of unemployment and poverty in Nigeria (Sunusi & Ahmad, 2017). Unemployment refers to the condition and extent of joblessness within an economy, and is measured in terms of the unemployment rate, which is the number of unemployed persons who are willing and able to work divided by the total civilian labour force. Hence, unemployment is the condition of not having a job, often referred to as being "out of work", or unemployed. The effect of unemployment is very calamitous on the government and her citizens. It reduces the standard of living of members of the society. It has been evidenced that the insecurity, insurgency and terrorism ravaging the North East region of Nigeria as well as militancy, kidnapping, sea piracy and pipe line vandalism in the Niger Delta are as a result of the high rate of unemployment in the country (Egbulonu & Amadi, 2016). According to Ewubare and Ushie (2018) the socio-economic effect of unemployment includes: fall in national output, increase in rural-urban migration, waste of human resources, high rate of dependency ratio, poverty, depression, frustration, all sorts of immoral acts and criminal behavior e.g. prostitution, armed robbery etc. One of the obvious implications of unemployment in Nigeria is poverty that is fundamental to Millennium Development Goals (MDGs). Poverty has become an order of the day in Nigeria because of the high level of unemployment among the youth. Poverty is a global issue, plaguing both developed and developing economies of the world. Generally, it has a challenging effect on developing countries, the sub-Saharan Africa in particular (Addae-Korankye 2014). Poverty is multidimensional in nature and can be evident in different forms such as deficiency of material income, adequate to guarantee good living standard, hunger and under-nutrition, illness, limited education and health services, persistent rise in mortality and morbidity due to sickness, homelessness and insufficient housing, insecure environments and social exclusion and discrimination which consequently reduce economic growth (Ogbeide, Nwamaka & Agu, 2015). Globally, statistics has shown that more than 900 million persons are still living on less than $1.25 a day (United Nations Development Programme, 2022). However, the problem of poverty in Nigeria has over the years engaged the attention of the international community, governmental and non-governmental agencies, including scholars. Poverty in Nigeria is massive, pervasive and chronic, engulfing a large proportion of the society. In Nigeria, human conditions have greatly deteriorated (particularly in the last decade) with real

disposable incomes dwindled and malnutrition rates on the increase (Uma & Eboh, 2013). Thus, one of the challenges faced by Nigeria is the inability to tackle the high rate of poverty. The war on poverty in Nigeria is as old as the country itself. Successive governments at different levels have spent huge sums of money on programmes and projects to alleviate poverty. Thus, the worsening incidence of poverty necessitates continual assessment of anti-poverty strategies and programmes (Tamuno, 2013). Indeed, the main thrust of government policy and budget has been on poverty reduction in line with the United Nation's Millennium Development Goals (MDGs) which has as central theme the eradication of extreme poverty in half by 2015. Nevertheless, Nigeria is still much characterized by mass poverty both at the urban and rural areas. Illiteracy is very high and capital formation is low. Consequently, productivity and income are extremely low, leading to low economic growth (Fiderikumo, Bredino & Adesuji, 2018).

Statement of the Problem

Nigeria is endowed with rich human and natural resources. Given this wealth in economic potentials, it is particularly disturbing and ironical that Nigeria is still rated as one of the poorest countries of the world. According to Statistics from United Nations Development Programme (2022) report revealed that Nigeria ranked number 161 out of 189 countries in Human development. The report puts Nigeria's Human Development Index at 0.539 which is below the prescribed level. Furthermore, statistics also show that in 2014, the poverty and unemployment rate in Nigeria were 7.2% and 7.8% respectively. As at 2022, the poverty and unemployment rate increased to 40.1% and 33.3% respectively (National Bureau of Statistics, 2022). Also, World Bank (2022) report on poverty in Nigeria shows that as many as 4 in 10 Nigerians live below the national poverty line. Many Nigerians especially in the country's North, also lack education and access to basic infrastructure, such as electricity, safe drinking water, and improved sanitation. Their report further notes that jobs do not translate Nigerians' hard work into an exit from poverty, as most workers are engaged in small-scale household farm and non-farm enterprises; just 17 percent of Nigerian workers hold the wage jobs best able to lift people out of poverty. Consequently, one of the greatest challenges facing the Nigeria economy is unemployment which has maintained a rising trend over the years. Unemployment in Nigeria after sixty-one (61) years of political independence is said to be the highest, this has made life difficult especially among the youth with enormous consequences. Every year, over 90 universities in Nigeria produce thousands of graduates. This is a welcome development but they linger in the labour market without jobs. Employers chalk it to them not being qualified for the available jobs. Out of frustration, most of them end up engaging in various social vices, such as robbery, kidnapping, drug trafficking, internet fraud etc just to earn a living. This has made many companies leave the countries which in turn leads to low economic growth. However, a considerable amount of literature examining the effect of poverty on economic growth as well as the effect of unemployment on economic growth in Nigeria are available with most of these literatures providing mixed evidences. To the best of the researcher's knowledge, none of these studies showed the combined effects of poverty and unemployment on economic growth in Nigeria. This therefore motivates the researcher to empirically determine the effects of poverty and unemployment on economic growth in Nigeria.

Aim and Objectives of the Study

The aim of this study is to determine the effects of poverty and unemployment on economic growth in Nigeria. The specific objectives are as follows:

a. To evaluate the effect of poverty index on Gross Domestic Product in Nigeria.
b. To examine the effect of literacy rate on Gross Domestic Product in Nigeria.

c. To analyze the effect of life expectancy on Gross Domestic Product in Nigeria.
d. To determine the effect of unemployment rate on Gross Domestic Product in Nigeria.

2.0 LITERATURE REVIEW

Theoretical Framework

Many theories of poverty, unemployment and economic growth exist. For the purpose of this study, Karl Marxian Theory of Poverty and Solow Growth theory, were adopted and reviewed as follows:

Karl Marxian Theory of Poverty

Karl Marxian which explains that poverty comes about as a result of the situation a poor person finds himself or herself, which resulted from so many factors that lead to making the poor a victim of circumstances that is critical of the production system (Alfandega, 2017). Karl Marx revealed that the entrepreneurial practices of the who owns means of production (capitalists) need to move away from labor to capital intensive ways of production to boost production hitch will result to increase profitability can also lead to massive unemployment, and this causes poverty. Capital intensive production will pressurize the capitalist to retrench workers to make way for increased profitability; as a result, it will lead to massive unemployment. In any case, retrenched workers will either migrate to resurface in urban areas or change professions. This continued retrenchment by capitalists will increase the number of poor in the economy, and the long-run effect is increasing in poverty levels. A series of structural failures give rise to an increase in the number of poor.

Gordon (1982) also observed these structural defects to be racial and gender discrimination and nepotism, resulting in deprivation of a particular section of the populace's opportunities for jobs, education, and social assistance. Albrecht and Milford (2001), in their contribution to this theory, opined that massive restructuring of economic systems would lead to increased economic and social marginalization of an entire group of people. Such groups end up poorer due to the lack of access to opportunities. The Marxist theory, in his recommendation, put poverty alleviation through better structures of production and increased education and training to those rendered extraneously by technological improvement to adapt through a change of environment to change of profession. Hence, to achieve this, as advised, small and medium scale enterprises can be adopted by the poor to solve their poverty problem with the help of government intervention. In the long run, the issue of poverty can be minimized.

Solow Growth Theory

The Solow Growth theory postulates a continuous production function, linking output to the inputs of capital and labour which are substitutable. That is, the production function relates growth in output to increase in labour and other variables. However, Solow theory expanded on the Harrod – Domar formulation by adding a second factor, labour, and introducing a third independent variable, technology (which could be labour augmenting by increasing the effective amount of labour), to the growth. It allows for substitution between capital and labour (Solow, 1956).

The aggregate production function, Y= f (K, L) is assumed characterized by constant returns to scale. Given the Cobb – Douglas production function which is widely used in economic analysis:

$$Y = f(K, L) \qquad (2.1)$$

More formally, the standard exposition of the Solow neoclassical growth model uses an aggregate production function in which we have:

$$Y = K^{\alpha}(AL)^{1-\alpha} \quad (2.2)$$

At any time t, we have:

$$Y(t) = K(t)^{\alpha} A(t) L(t)^{1-\alpha} \quad (2.3)$$

Where Y is real gross domestic product, K is stock of capital (which may include human capital as well as physical capital), L is labour, and A (t) represents the productivity of labour which grows over time at an exogenous rate. The Robert Solow theorem has shown that the basis for economic growth exists by increasing the employed labour force (Solow, 1956). Since output is produced with capital and labour, technological possibilities are represented by the production function;

$$Y = f(K, L) \quad (2.4)$$

L represents total employment.

This is because population is growing exogenously, the labour force increases at a constant relative rate n. Thus, $L(t) = Lo^{nt}$

Solow regards n as Harrod's natural rate of growth in the absence of technological change, and L (t) as the available supply of labour at time (t). Lo^{nt} shows the rate of the growth of labour force from period o to period t. Alternatively, the equation $L(t) = Lo^{nt}$ can be regarded as a supply curve of labour. The labour supply is a vertical line, which shifts to the right in time as the labour force grows, then the real wage adjusts simply put, unemployment declines due to fall in real wages so that all available labour is employed, and the national output rises rapidly (Solow, 1956).

As postulated by the Solow growth theorem, growth in labour employed as a result of employment generation encourages economic growth (Solow, 1956). The question is how much of a country's growth can be explained by labour force growth. According to Solow's model, a one percent growth in the labour force leads to a 0.64 percent increase in output. This alone tells how important employment of labour is to economic growth (Solow, 1956).

Empirical Review

Olaniyan and Omotosho (2024) appraised the response of poverty to unemployment rate and economic growth in Nigeria between 1980 and 2020.Annual time series secondary data covering the period within 1980 to 2020 were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin (2020) World Development Indicator (WDI) and National Bureau of Statistics. The study made used of Vector Autoregressive estimation techniques (VAR) and Vector Error Correction Model (VECM). Pair wise Granger Causality was used to check the direction of causality. The descriptive statistics indicate a good level of consistency in the data series. The econometric analysis shows a bidirectional causal relationship, running poverty to unemployment. While there is an independent causal relationship running from economic growth to poverty.

Ezebunwa and Njoku (2024) examined the effects of unemployment rate on economic growth of Nigeria from (1990-2022). The research focuses on determining the causes and effects of

unemployment and how the problem of unemployment in Nigeria was reduced to a minimal level or even eradicated. It focuses on this objective: to determine the relationship between unemployment and economic growth in Nigeria (GDP).The method of analysis used in testing the hypothesis is the t-test, f-test e.t.c. Data for the study were obtained from the World Development Indicators Website for Nigeria.. The major findings were that unemployment rate has a negative effect on the gross domestic product (GDP) of the Nigerian economy.

Lawal, Hawau and Aliyu (2022) investigated the effect of poverty on socioeconomic development. However, the nature and existence of this relationship are found to be mixed and inconclusive (i.e., positive and negative relationship between the study variables). These have prompted scholars, experts, and authorities to re-examine the relationship between effect of poverty and socio-economic development. This study addressed the research deficit and proposes a conceptual framework to measure the effects of poverty on socio-economic development, which could be used by government and non-governmental organizations.

Nnam and Inyang (2022) examined economic growth and poverty in Nigeria between the periods, 1980-2019. Augmented Dickey Fuller test, Phillips-Quliaris cointegration test and cointegration regression, specifically, the Dynamic Least Square analysis (DOLS) was 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. 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.

Onwachukwu (2021) examined the impact of unemployment on the economic growth in Nigeria. The study used time series data from 1985 to 2019. The variables used in the study include real GDP Growth (RGGR) which serves as a dependent variable, while the independent variables are inflation rate and unemployment rate. The study employed ordinary least squares (OLS) and Augmented Dickey Fuller methods. The result shows that unemployment has significant negative effect on economic growth in Nigeria. It was also observed that the inflation has an insignificant negative effect on the economic growth in Nigeria.

Isiwu, Lawrence and Jerome (2021) examined the impact of rising GDP on poverty reduction in Nigeria for the period 1982-2019. Autoregressive Distributed Lag (ARDL) model is adopted in the estimation procedure. The empirical results showed that GDP growth rate, which measures economic growth, has negative and significant impact on poverty rate in the short run. However, its impact on poverty rate is positive and significant in the long run. Inequality has positive and significant impact on poverty rate both in the short run and in the long run.

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.

Obele (2019) investigated the effect of unemployment on economic growth in Nigeria. This study was carried out in Nigeria between the period of 1986 and 2008. The data were analyzed using the ordinary least square approach. The study also employed the techniques of stationary test, co – integration test, and error correction model to estimate the dynamic relationship between dependent and the independent or explanatory variables. The result showed that the explanatory variables are statistically significant in explaining the economic growth in Nigeria.

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.

Iloabuchi (2019) estimated the impact of unemployment on the economic growth in Nigeria, using time series data from 1999 to 2017. The data used were sourced from the Central Bank of Nigeria database and World Bank' data Bank. Explanatory research design was employed using Augmented Dickey-Fuller, Philip Perron Unit root tests, OLS and pair-wise Granger Causality. The major objective of this work was to analyse the impact as well as the direction of the causality among the GDP which proxies for economic growth and in line with Okun's law. The Granger causality test shows a unidirectional relationship between unemployment and Nigeria's economic growth. The population growth result which is also included in model is contemporaneous to the economic growth.

Literature Gap

The theoretical and empirical review of related literature with respect to the effects of poverty and unemployment on economic growth in Nigeria has been provided in this study. Based on the empirical literature reviewed, it was observed that there exists some empirical studies on the effect of poverty on economic growth in Nigeria as well as the effect of unemployment on economic growth but sadly, there is dearth of literature that examined the joint effects of poverty and unemployment on economic growth in Nigeria. Also, their findings of the related studies reviewed are controversial. Moreover, most of these studies used basically descriptive statistics while none of them covered up to 2023. Lastly, none of the previous studies made use of the same set of variables used in this study to proxy poverty and unemployment. It is against this background that this study aims at empirically determining the effect of poverty and unemployment on economic growth in Nigeria. Also, (poverty rate, literacy rate, life expectancy and unemployment rate were adopted to proxy poverty and unemployment. Lastly, the researcher, as a matter of necessity also extended the scope of the study to 2023 in order to examine how poverty and unemployment affect economic growth in Nigeria in the recent time especially during post COVID-19 era.

3.0 METHODOLOGY

This study made use of secondary data (time series data) which ranged from 1990 to 2023 and these data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank Development Index/Indicators.

Model Specification

The model employed in this study is an economic model built on the model of Adelowokan, Maku, Babasanya and Adesoye (2019) who investigated the links between unemployment, poverty and economic growth in Nigeria. The model is modified to accommodate all the

variables of this study. The modified model therefore shows the relationship between the dependent variable (Gross Domestic Product) and the independent variables (poverty rate, literacy rate, life expectancy and unemployment rate). In this model, Gross Domestic Product depends on poverty index rate, literacy rate, life expectancy and unemployment rate. The model is specified below:

Functional Model
Expressing the model in its functional form, we have:

$$GDP = f(PI, LR, LE, UMR) \quad (3.1)$$

Mathematical Model
Transforming equation (3.2) into a mathematical model, we have:

$$GDP = \delta_0 + \delta_1 PI + \delta_2 LR + \delta_3 LEP + \delta_4 UMR \quad (3.2)$$

Econometric Model
Transforming equation (3.3) into an econometric model gives:

$$GDP = \delta_0 + \delta_1 PI + \delta_2 LR + \delta_3 LEP + \delta_4 UMR + \mu_t \quad (3.3)$$

The long-run Autoregressive Distributed Lag (ARDL) model is stated thus:
Expressing the model in its ARDL form, we have:

$$\Delta \ln(GDP_t) = \delta_0 + \delta_{1i}\Delta(GDP_{t-1}) + \delta_{2i}\Delta(PI_{t-1}) + \delta_{3i}\Delta(LR_{t-1}) + \delta_{4i}\Delta(LE_{t-1}) + \delta_{5i}\Delta(UMR_{t-1}) + \sum_{t=1}^{p}\alpha_{1i}\Delta(GDP_{t-1}) + \sum_{t=1}^{q}\alpha_{2i}\Delta(PI_{t-1}) + \sum_{t=1}^{q}\alpha_{3i}\Delta(LR_{t-1}) + \sum_{t=1}^{P}\alpha_{4i}\Delta(LE_{t-1}) + \sum_{t=1}^{P}\alpha_{5i}\Delta(UMR_{t-1}) + \varepsilon_{1i} \quad (3.4)$$

The short-run Autoregressive Distributed Lag (ARDL) model is stated thus:

$$\Delta \ln(GDP_t) = \alpha_0 + \sum_{t=1}^{p}\alpha_{1i}\Delta In(GDP_{t-1}) + \sum_{t=1}^{q}\alpha_{2i}\Delta(PI_{t-1}) + \sum_{t=1}^{q}\alpha_{3i}\Delta(LR_{t-1}) + \sum_{t=1}^{P}\alpha_{4i}\Delta(LE_{t-1}) + \sum_{t=1}^{P}\alpha_{5i}\Delta(UMR_{t-1}) + \delta ECM_{t-1} + U\varepsilon_i \quad (3.5)$$

Where: GDP = Gross Domestic Product, PI = Poverty index, LR = Literacy rate, LE = Life expectancy, UMR = Unemployment rate, δ_0 = Regression constant, δ_1 - δ_5 = Long-run Coefficients/Parameters, α_1 - α_5 = Coefficients/parameters, In = Natural log, Δ = Difference operator and indicates the optimum, *et* = Error term, U_t = Stochastic or error term which captures the effect of variables that are not included in the model.

Table 3.1: Priori Expectation

VARIABLES	Parameters	Expected Sign	Conclusion
Poverty index	δ_1	Negative	$\delta_1 < 0$
Literacy rate	δ_2	Positive	$\delta_2 > 0$
life expectancy	δ_3	Positive	$\delta_3 > 0$
Unemployment rate	δ_4	Negative	$\delta_4 < 0$

Source: *Researchers' Idea in Line with Economic Theory.*

Description of Research Variables
Operationally, the variables of this study are classified as explained (dependent) variable and independent (explanatory) variable:

The Dependent (Explained) Variable
For the purpose of this study, the explained (dependent) variable is economic growth and it is measured by Gross Domestic Product.

Gross Domestic Product (GDP): This is the total monetary value of all goods and services produced over a specific time period.

The Independent (Explanatory) Variables
For the purpose of this study, the independent (explanatory) variables are poverty and unemployment and it is proxied by poverty index, literacy rate, life expectancy and unemployment rate:

Poverty Index: The poverty index, also known as the poverty rate or poverty line, refers to the percentage of the population living below a certain income threshold considered necessary to meet basic needs such as food, shelter, and clothing. It is commonly used as a measure of economic deprivation and social inequality within a population**.**

Literacy Rate: This is a measure of the percentage of the population aged 15 and above who can read and write with understanding a simple sentence in any language. It serves as an indicator of educational attainment and human capital development within a society. Literacy rates are often disaggregated by age group, gender, and level of education attained to provide a more nuanced understanding of literacy levels within a population.

Life Expectancy: This refers to the average number of years a person is expected to live from birth, based on current mortality rates. It is a key indicator of population health and well-being, reflecting the overall level of healthcare, sanitation, nutrition, and socio-economic conditions within a society.

Unemployment Rate: This is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labour force.

Data Analysis Techniques
Data gathered for research purposes are meaningless if not analyzed. The time series data sourced for the purpose of this study was analyzed and interpreted using Autoregressive Distributed Lag (ARDL) method was used to estimate the parameters of the regression model. The adoption of this technique was based on the premise that the result of unit root test generated Mixed of I(0) and I(1).

4.0 DATA ANALYSIS AND FINDINGS

Unit Root Test
Testing of the unit roots of a series is a precondition to the existence of cointegration relationship. Therefore, this study first employed the popular Augmented Dickey-Fuller (ADF) unit root test to investigate the stationarity of all the variables used. The results of the unit root test are presented in Table 4.1 below:

Table 4.1: Augmented Dickey-Fuller (ADF) Test Results

Variables	ADF				I(d)	Stationary @
	Level	Critical Value @ 5%	1st Difference	Critical Value @ 5%		
$InGDP_t$	-2.963755	-2.935001	-	-	I(0)	Level
$lnPI_t$	-1.471477	-2.936942	-4.928631***	-2.936942	I(1)	1st Difference
$lnLR_t$	-0.601922	-2.936942	-10.19578***	-2.936942	I(1)	1st Difference
$lnLE_t$	-2.195499	-2.935001	-5.426452***	-2.936942	I(1)	1st Difference
$lnUMR_t$	-3.377965**	-2.935001	-	-	I(0)	Level

Source: ***Authors' Computation, 2024.***

Table 4.1 showed that Gross Domestic Product (GDP) and unemployment rate (UMR) attained stability at levels and are integrated of order zero [i.e., I(0)]. On the other hand, poverty index (PI), literacy rate (LR) and life expectancy (LE) attained stability at first difference and are integrated at order one [i.e., I(1)]. The attainment of mixed stationarity in the variables (that is stationary at order zero and stationary at order one) necessitated the use of ARDL in the estimation of the long run relationship among the variables and the error correction model.

Bounds Cointegration Test

Table 4.2: Bounds Cointegration Test Results

	Critical Value Bound		F-Statistics
F_{GDP}(GDP/PI, LR, LE, UMR) K = 4			5.443036***
Significance	I(0) Bound	I(1) Bound	
10%	2.08	3	
5%	2.39	3.38	
2.5%	2.7	3.73	
1%	3.06	4.15	

Note: Null hypothesis: No level relationship; K = number of regressors; *, ** and *** denote significance at 10%, 5% and 1% level, respectively.
Source: ***Authors' Computation, 2024.***

In order to determine if there is cointegration among Gross Domestic Product (GDP), poverty index (PI), literacy rate (LR),life expectancy (LE) and unemployment rate (UMR), bounds test was conducted. The result of ARDL Bounds correlation test in Table 4.2 showed that bounds test indicates presence of long run relationship among Gross Domestic Product (GDP),poverty index(PI), literacy rate (LR),life expectancy (LE) and unemployment rate (UMR) given that the F-statistics value of 5.443036 is higher than the 5% upper bound critical value of 3.38. By this, the null hypothesis is rejected, which leads to the study concluding that there is cointegrating relationship among the variables. The confirmation of long run dynamics among the variables further necessitated the estimation of the extent of the relationship between the dependent and independent variables through estimation of Autoregressive Distributed Lag (ARDL) model.

Long-Run and Short-Run Estimation of Autoregressive Distributive Lag (ARDL) Model

The results of the long-run and short-run estimation of Autoregressive Distributive Lag (ARDL) model are presented in Table 4.3:

Table 4.3: Results of Estimated Long-Run and Short-Run ARDL Model

Dependent Variable = $lnGDP_t$				
Long-Run Results				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PI_t	-0.081195	0.028333	-2.865704	0.0107
LR_t	0.157440	0.053715	2.931012	0.0093
LE_t	0.210686	0.049536	4.253188	0.0005
UMR_t	-0.369542	0.078756	-4.692218	0.0002
C	4.211541	0.391968	10.74460	0.0000
*EC = PI - (-0.0812*ln(PI) + 0.1574*LR + 0.2107*LE- 0.3695*UMR + 4.2115)*				
Short-Run Results				
$D(lnGDP_{t-1})$	0.409879	0.141986	2.886750	0.0102
$D(lnGDP_{t-2})$	0.536119	0.156505	3.425581	0.0032
$D(PI_t)$	-0.176752	0.036125	-4.892846	0.0001
$D(PI_{t-1})$	0.081792	0.029899	2.735587	0.0141
$D(PI_{t-2})$	-0.239231	0.037556	-6.370074	0.0000
$D(LR_t)$	0.523678	0.098898	5.295113	0.0001
$D(LR_{t-1})$	0.159060	0.076146	2.088888	0.0521
$D(LE_t)$	0.070221	0.013730	5.114252	0.0001
$D(UMR_t)$	-0.489146	0.080215	-6.097942	0.0000
CointEq(-1)*	-0.945048	0.131627	-7.179746	0.0000
R^2 = 0.741268				
Adjusted R^2 = 0.583779				
Durbin-Watson stat = 2.312918				

Source: ***Authors' Computation, 2024.***

Interpretation of Long-Run and Short-Run ARDL Model Results

Poverty Index (PI) and Gross Domestic Product (GDP)

The long-run estimates of the ARDL model are shown in Table 4.3. The results revealed that poverty index has a negative and significant relationship with the Gross Domestic Product in Nigeria. This is evidenced by the negative coefficient value (-0.081195) of poverty index and its p-value (0.0107) which is less than 0.05. This implies that an increase in the poverty index by a unit will lead to 0.081195 significant decrease in Gross Domestic Product in the long run. Also, the short-run estimates of the ARDL model results revealed that poverty index has a negative and significant relationship with the Gross Domestic Product in Nigeria. This is evidenced by the negative coefficient value (-0.176752) of poverty index and its p-value (0.0001) which is less than 0.05. This implies that an increase in the poverty index by a unit will lead to 0.176752 significant decrease in Gross Domestic Product in the short run.

Literacy Rate (LR) and Gross Domestic Product (GDP)

Furthermore, the results of the long-run estimates of the ARDL model revealed that literacy rate has significant positive long-run relationship with Gross Domestic Product in Nigeria. This is evidenced by the positive coefficient value (0.157440) of literacy rate and its p-value (0.0093) which is less than 0.05. This implies that an increase in the literacy rate by a unit will lead to 0.157440 significant increase in Gross Domestic Product in the long run. Also, the results of the short-run estimates of the ARDL model revealed that literacy rate has significant positive long-run relationship with Gross Domestic Product in Nigeria. This is

evidenced by the positive coefficient value (0.523678) of literacy rate and its p-value (0.0001) which is less than 0.05. This implies that an increase in the literacy rate by a unit will lead to 0.523678 significant decrease in Gross Domestic Product in the short run.

Life Expectancy (LE) and Gross Domestic Product (GDP)

Moreover, the results of the long-run estimates of the ARDL model revealed that life expectancy has significant positive long-run relationship with the Gross Domestic Product in Nigeria. This is evidenced by the positive coefficient value (0.210686) of life expectancy and its p-value (0.0005) which is less than 0.05. This implies that an increase in the life expectancy by a unit will lead to 0.210686 significant increase in Gross Domestic Product in the long run. Also, the results of the short-run estimates of the ARDL model revealed that life expectancy has significant positive long-run relationship with the Gross Domestic Product in Nigeria. This is evidenced by the positive coefficient value (0.070221) of life expectancy and its p-value (0.0001) which is less than 0.05. This implies that an increase in the life expectancy by a unit will lead to 0.070221 significant increase in Gross Domestic Product in the short run.

Unemployment Rate (UMR) and Gross Domestic Product (GDP)

Moreover, the results of the long-run estimates of the ARDL model revealed that unemployment rate has significant negative long-run relationship with the Gross Domestic Product in Nigeria. This is evidenced by the negative coefficient value (0.369542) of unemployment rate and its p-value (0.0002) which is less than 0.05. This implies that an increase in the unemployment rate by a unit will lead to 0.369542significant decrease in Gross Domestic Product in the long run. Also, the results of the short-run estimates of the ARDL model revealed that unemployment rate has a significant positive long-run relationship with the Gross Domestic Product in Nigeria. This is evidenced by the negative coefficient value (0.489146) of unemployment rate and its p-value (0.0000) which is less than 0.05. This implies that an increase in the unemployment rate by a unit will lead to 0.489146 significant decrease in Gross Domestic Product in the short run.

Interpretation of CointEq(-1) Result

The results of the short run dynamic coefficients associated with the long run relationships obtained from the error correction model are given in Table 4.3. The signs of the short run dynamic interactions are consistent with that of the long run relationship. The estimated error correction coefficient of -0.945048 (with p-value of 0.0000) is highly significant, has the correct sign, and imply a fairly high speed of adjustment to equilibrium after a shock. This implies that approximately 95% of disequilibria from the previous year's shock converge back to the long run equilibrium in the current year.

Interpretation of Adjusted R-Squared (Adj. R^2) Value

The Adjusted R-squared value of 0.583779 from the results of the short-run estimates of the ARDL model in Table 4.3 indicated that the estimated model is well fitted as the systematic changes in explanatory variables (poverty index, literacy rate, life expectancy and unemployment rate) explained approximately 58 percent (R-squared) variation in Gross Domestic Product while the remaining 42% is explained by other variables of factors outside the model.

Interpretation of Durbin-Watson Statistic Value

Lastly, Durbin-Watson stat of 2.312918 which is greater than 2 indicates the absence of serial autocorrelation.

Post Estimation Tests

The results of the diagnostic tests are presented and discussed below:

Table 4.4: Post-Estimation Test Results

Test	Null Hypothesis	X^2 Value	X^2 Prob	Remark
Jarque-Bera	Normal distribution exists	2.515384	0.300451	Normal residuals
Breusch-Godfrey LM	Serial correlation does not exist	0.492494	0.6206	Serial independence
Breusch-Pagan-Godfrey	Homoscedasticity exists	1.309044	0.2898	Constant Variance
Ramsey RESET	Model is stable	3.115488	0.0966	correctly specified model

Source: ***Authors' Computation, 2024.***

The Jarque Bera (Normality) test result in Table 4.4 shows that the probability value (0.300451) is greater than 0.05 level of significance which imply that the null hypothesis of Normal distribution cannot be rejected. Thus, this necessitates the acceptance of null hypothesis and therefore concludes that the model is normally distributed. Also, the Breusch-Godfrey Serial Correlation LM test result in Table 4.4 shows that the probability values (0.6206) is greater than 0.05 level of significance which imply that the null hypothesis of no serial correlation cannot be rejected. Thus, this necessitates the acceptance of null hypothesis and therefore concludes that the model has no serial correlation problem. Additionally, the Breusch-Pagan-Godfrey heteroskedasticity test result in Table 4.4 shows that the probability values (0.2898) is greater than 0.05 level of significance which imply that the null hypothesis of homoscedasticity cannot be rejected. Thus, this necessitates the acceptance of null hypothesis and therefore concludes that the model has homoscedasticity. This implies that relevant variables were not omitted. Lastly, the Ramsey RESET test result in Table 4.4 shows that the probability values (0.0966) is greater than 0.05 level of significance which imply that the null hypothesis of correctly specified cannot be rejected. Thus, this necessitates the acceptance of null hypothesis and therefore concludes that the model is correctly specified. This implies that the functional form of the model is correct.

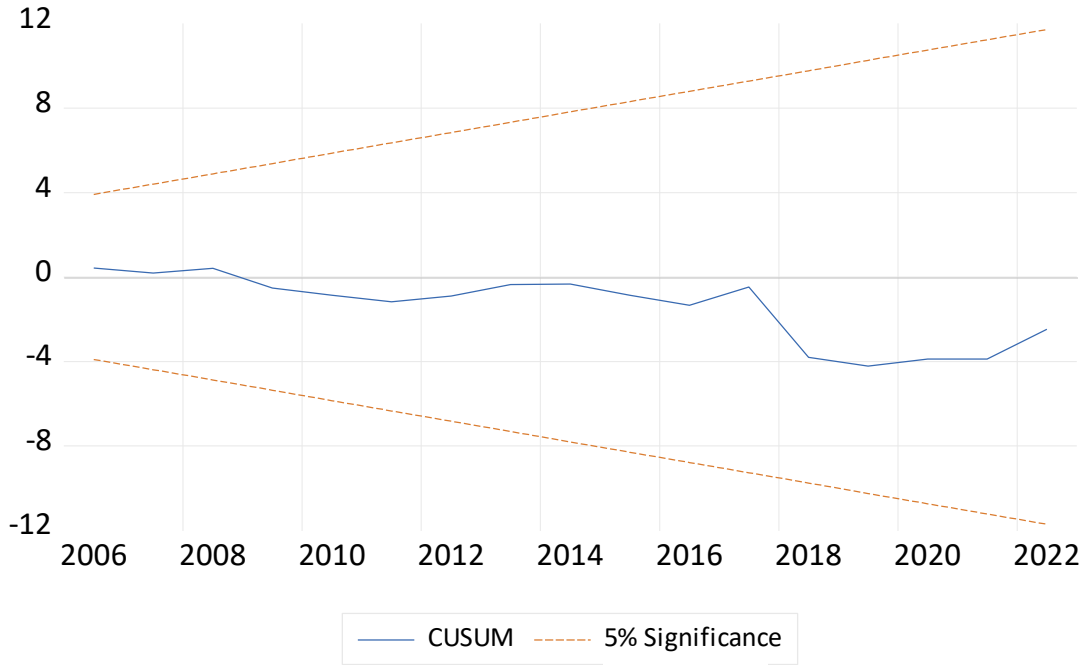


Figure 4.1: Stability Cusum Test

The cumulative sum (CUSUM) indicates that the CUSUM line stayed within the 5 percent critical bound while neither did CUSUM plot crosses the 5 percent critical lines. The implication of this is that there is stability of the long-run coefficients of the study variables.

Discussion of Findings

This study has empirically analyzed the time series data sourced to determine the effect of poverty and unemployment on economic growth in Nigeria from 1990 to 2022 using Autoregressive Distributive Lag (ARDL) estimation technique and E-Views 12 statistical package to run the analysis. The results of the long-run and the short-run estimates revealed that poverty index has a negative and significant effect on Gross Domestic Product in Nigeria. This implies that an increase in the poverty index will lead to significant decrease Gross Domestic Product in the long-run and short-run. This finding is supported by the empirical results of Isiwu, Lawrence and Jerome (2021) who found that Goss Domestic Product growth rate, which measures economic growth, has negative and significant impact on poverty rate in the short run. Also, the results of the long-run and the short-run estimates revealed that literacy rate has positive and significant effect on Gross Domestic Product in Nigeria. This implies that an increase in the literacy rate will lead to significant increase in Gross Domestic Product in Nigeria in the long-run and short-run. This finding conforms to the finding of Lawal, Hawau and Aliyu (2022) who found that literacy rate as a measure of poverty has had a substantial positive influence on socioeconomic development. In addition, the results of the long-run and the short-run estimates revealed that life expectancy has positive and significant effect on Gross Domestic Product in Nigeria. This implies that an increase in the life expectancy will lead to significant increase in Gross Domestic Product in Nigeria in the long-run and short-run. This finding conforms to the finding of Adelowokan, Maku, Babasanya and Adesoye (2019) who showed the existence of positive relationship between life expectancy and Gross Domestic Product in Nigeria. Lastly, the results of the long-run and the short-run estimates revealed that unemployment rate has negative but significant on Gross Domestic Product in Nigeria. This implies that an increase in the unemployment rate will lead to significant decrease in Gross Domestic Product in Nigeria in the long-run and short-run. This finding conforms to the finding of Onwachukwu (2021)

whose findings revealed the existence of a negative and significant relationship between unemployment rate and economic growth in Nigeria.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of Findings

The findings obtained are summarized as follow:

1. First, Gross Domestic Product and unemployment rate were stationary at level and integrated at order zero that is, I(0) while poverty index, literacy rate and life expectancy were stationary at first difference and integrated at order one that is, I(1).
2. Secondly, there is cointegration among Gross Domestic Product, poverty index, literacy rate, life expectancy and unemployment rate.
3. Poverty index has a negative but significant relationship with Gross Domestic Product in Nigeria.
4. Literacy rate has a positive and significant effect on Gross Domestic Product in Nigeria.
5. Life expectancy has a positive and significant effect on Gross Domestic Product in Nigeria.
6. Unemployment rate has a negative and significant effect on Gross Domestic Product in Nigeria.

Conclusion

Drawing from the foregoing, this study empirically examined the effect of poverty and unemployment on economic growth in Nigeria. The findings of the study indicated that poverty index and unemployment rate as indicators of poverty and unemployment that have significant negative effect on Gross Domestic Product, indicating that increase in poverty index and unemployment rate will lead reduction in Gross Domestic Product in Nigeria. Premised on the findings, the study concluded that poverty and unemployment significantly retard economic growth in Nigeria.

Recommendations

The following recommendations are proffered based on the findings of this study:

i. Nigerian government should invest significantly in education to improve literacy rates across all age groups. This should include increasing funding for schools, enhancing teacher training, and developing adult education programs.
ii. The government should implement comprehensive health programs to improve life expectancy, including expanding access to healthcare services, increasing investment in public health infrastructure, and promoting preventive healthcare measures. This should encompass initiatives for reducing maternal and child mortality, combating infectious diseases, and addressing non-communicable diseases.
iii. The government should design and implement targeted poverty alleviation programs that address the root causes of poverty and provide direct support to the most vulnerable populations. This includes social safety nets, microfinance programs, skills training, and employment generation initiatives.
iv. To address high unemployment rates, the government should strengthen employment creation policies and labor market interventions. This includes supporting entrepreneurship, enhancing vocational training programs, and fostering partnerships between the private sector and educational institutions to align skills with labor market needs.

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