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UNEMPLOYMENT, POVERTY AND ECONOMIC DEVELOPMENT IN NIGERIA: A TIME-SERIES ANALYSIS

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Abstract
This study examined the impact of unemployment and poverty on economic development in Nigeria. Specifically, the study investigated the impact of unemployment rate, poverty headcount ratio, inflation rate, and population growth rate on economic development in Nigeria. Economic development is proxied by human development index (HDI) while inflation rate and population growth rate were introduced as control variables. Autoregressive distributed lag (ARDL) model, error correction mechanism (ECM), and Granger causality test were utilized to analyze annual time-series data from 1990 to 2024. The data were obtained from secondary sources including Central Bank of Nigeria annual statistical bulletin for 2024, National Bureau of Statistics, and World Bank development indicators. The findings from the study revealed that unemployment rate and population growth rate have insignificant negative impact on economic development while poverty and inflation rate have significant negative impact on economic development. The study concludes that unemployment and poverty adversely affect the development of the Nigerian economy. Among other things, the study recommends that policies and programmes that will reduce the number of unemployed and poor persons in the country should be implemented.

Keywords: Unemployment, Poverty, Development, Time-Series

Introduction
Unemployment and poverty are two debilitating conditions that adversely affect the growth and development of any economy. Unemployment has been seen as a world-wide economic problem and has been categorized as one of the serious impediments to socio-economic progress. Apart from representing a colossal waste of a country's human resources, unemployment produces welfare loss in terms of lower output. This leads to lower income and lower standards of living among the people (Ndukwu & Njoku, 2024). Unemployment also accounts for most of the social vices perpetuated in the Nigerian society today. The accelerated level of prostitution, armed robbery, kidnapping and violence among the Nigerian youths can be largely attributed to unemployment in the country (Onwudiwe, 2015; Alabi, 2019; Ezeibe et al, 2025).
Similarly, people living in poverty face an increased risk of adverse outcomes, such as poor health and criminal activity, both of which may lead to reduced participation in the labour market. While the mechanism through which poverty affects health is complex, it has been asserted that adverse health outcomes can be due, in part, to limited access to healthcare occasioned by poverty. Poverty has equally been linked to increased social vices such as prostitution, armed robbery, kidnapping, etc. Poverty also has negative effects on economic growth by adversely affecting the accumulation of human capital. Economic theory has long considered human capital (i.e., education, work experience, training, health of the workforce, etc.) as one of the fundamental drivers of economic growth. The conditions associated with poverty can work against human capital development by limiting individuals' ability to remain healthy and develop skills. This in turn reduces the potential to contribute talents, ideas, and even labour to the economy. An educated labour force, for example, is better at learning, creating and implementing new technologies. Hence, when poverty affects a

significant portion of the population, these affects can extend to the society at large and produce slower rates of economic growth (Teles, 2005; Mood & Jonsson, 2015; Ighodaro & Agbonkhese, 2020; Jerry et al, 2025).

Beginning from the oil glut of the early 1980s, Nigeria has been grappling with the problems of unemployment and poverty. Nigeria's inability to engage a significant proportion of her youth meaningfully through job creation has the potential for social dislocation (Eniekezimene & Nathan, 2023). Unemployment rate averaged 4.47 percent from 1991 until 2024, reaching an all-time high of 30.2 percent in 2024. The dire unemployment situation which many graduates and those with advanced education in the country face is a cause for widespread concern. For instance, World Bank data put the percentage of unemployed Nigerians with advanced education at 13.69 percent in 2016, and 15.3 percent in 2019. This is worrisome as it translates to a bulging youthful, energetic unemployed population with no contribution to the growth of the country's economy. The International Labour Organisation (ILO) has linked unemployment in Nigeria to the phenomenon of jobless growth, increased number of school graduates with no matching job opportunities, a moratorium on employment in many public and private sector institutions, and continued job losses in the manufacturing and oil sectors (Odia & Iyamu, 2016; Onakoya et al, 2020; Lain & Pape, 2023; NBS, 2024).

Similarly, Nigeria was declared the poverty capital of the world in June 2018, having overtaken India, with an estimated 86.9 million (44.2 percent) of her population living in extreme poverty. By June 2019 (i.e., one year later), the figure has increased to about 93.7 million (47.7 percent), an increase of 6.8 million (3.5 percent) people living on less than US$1,90 per day. Thus, the poverty trend in Nigeria over the years has maintained an increasing pattern, defiling every policy initiative put in place to combat it. This is partly due to the mismanagement of the country's oil wealth in the face of corruption. Along with this, the country is going through a "population boom", which makes it more difficult to manage the poverty situation. Another major driver of poverty in Nigeria is the prevalence of inequality in the country. An overwhelming majority of Nigerians are detached from the fortunes of the country's huge oil and other natural resource wealth. Only an insignificant few privileged Nigerians benefit from the country's natural resource endowment. This has worsened the inequality situation in the country. Hence, Nigeria constitutes a perfect example of the phenomenon of resource curse, as many Nigerians suffer in the midst of plenty (Aigbokan, 2000; Thomas & Canagarajah, 2001; Alemu, 2019; Dauda, 2019; Dauda, 2019; Panchal, 2020; World Bank, 2025).

Over the years, successive governments in Nigeria have put in place several policies and programmes to address the problems of poverty and unemployment in the country. The overall goal of these policies and programmes was to empower vulnerable Nigerians to acquire skills, develop entrepreneurial aptitude, and encourage self-employment so as to reduce unemployment and poverty in the country (Ogwumike, 2001; Onuoha & Woghiren, 2019; Dauda, 2020; Odeh & Okoye, 2014; Bello & Sanusi, 2019; Abubakar, 2023). However, inspite of the huge resources spent on the various policies and programmes, the incidence of unemployment and poverty keeps deteriorating. This can be attributed to policy and programmes inconsistencies, lack of faithful implementation, government corruption, etc. (Damachi, 2001; Mbah & Agu, 2013; Amire & Chidi, 2015; Gidigbi, 2023; Amakoromo et al, 2024).

The foregoing discussion clearly shows that both unemployment and poverty have been increasing in Nigeria, despite various policies and programmes introduced to combat them. There is the need therefore to develop strategies to reduce these two economic problems in the country. However, such strategic policy measures require empirical evidence on the impact of unemployment and poverty on economic development in Nigeria.

Literature Review

Conceptual Clarifications

Unemployment

Unemployment refers to when an individual who is able to work and seeking for a job at the prevailing wage rate, cannot find a job. Unemployment also includes individuals who are waiting to return to a job after being discharged. However, unemployment does not include individuals who have stopped looking for a job in the past four weeks due to various reasons such as leaving work to pursue higher education, retirement, disability and personal issues (Ohale & Onyema, 2003).
The unemployment rate refers to the number of persons considered unemployed expressed as a percentage of the total labour force.

That is, Unemployment Rate = $\frac{\text{Number of Unemployed Persons X 100}}{\text{Total Labour Force}}$

Poverty

Poverty is a multidimensional concept that seeks to measure levels of deprivation encountered by a person, household or community. Absolute poverty is a condition of being unable or only barely able to meet the subsistent essentials of food, clothing and shelter.
For this study, absolute poverty is measured by the poverty headcount ratio. Poverty headcount refers to the number of people whose income fall below the absolute poverty line which is put at US$1.90 per day for this study. Hence, for this study, poverty is measured by the poverty headcount ratio which is defined as the proportion of Nigeria's total population living belowUS$1.90 per day.

Economic Development

Economic development is a multidimensional concept and as such, it has been defined in different ways by different scholars. Todaro and Smith (2011) defined economic development as "the process of improving the quality of all human lives and capabilities by raising peoples' levels of living, self-esteem and freedom". They see development as a multidimensional process involving major changes in the social structure, popular attitudes, and national institutions as well as the acceleration of economic growth, the reduction of inequality and eradication of poverty. Similarly, Akpakpan (1999) defines economic development as "a process of improvement in the various aspects of the economy and the society that supports it".
For the purpose of this study, economic development is measured in terms of the human development index (HDI). The human development index is a composite index developed by the United Nations in 1990. It serves as a benchmark for assessing how well countries are doing in terms of improving peoples' quality of life, focusing on elements such as health, education and income. The human development index is composed of four dimensions of interest: mean years of schooling, expected years of schooling, life expectancy at birth, and gross national income per capita. It was created to emphasize that people and their capabilities should be the ultimate criteria for accessing the development of a country, not economic growth alone.

Theoretical Literature Review

Okuns Law

In economics, Okun's law is an empirically observed relationship between unemployment and losses in a country's production. It is named after Professor Arthur Melvin Okun, who first proposed the relationship in 1962 (Cuaresma, 2008; Prachowny, 1993). In its most basic form, Okun's law investigates the statistical relationship between a country's unemployment rate and the growth rate of the economy. It explains how much of a country's gross domestic product (GDP) may be lost when the unemployment rate is above its natural rate. The logic behind Okun's law is that output depends on the amount of labour used in the production process, so there is a positive relationship between output and employment. Total employment equals the labour force minus the unemployed,

so there is a negative relationship between output and unemployment (Cuaresma, 2008; Gordon, 2010; Ball et al, 2013).

There are two versions of the Okun's law. The gap version focuses on the relationship between unemployment and GDP. It states that for every 1 percent increase in the unemployment rate, a country's GDP will be roughly an additional 2 percent lower than its potential GDP. The difference versions describes the relationship between quarterly changes in unemployment and quarterly changes in real GDP. Thus, the difference versions states that when unemployment falls by 1 percent, GDP rises by 3 percent (Lancaster and Tulip, 2015; Onakoya & Seyingbo, 2020).

Mathematically, the gap version of Okun's law can be expressed as follows:

$U_t - U_t^* = \beta (Y_t - Y_t^*)$ (1)

where U_t = The Natural Level of Unemployment

U_t^* = The Potential Level of Unemployment

Y_t = The Real Output (GDP)

Y_t^* = The Potential Output

β = The Okun's Coefficient

Similarly, the difference version can be expressed mathematically as follows:

$\Delta U = \alpha - \beta (\Delta Y/Y)$ (2)

$\beta \Delta U_t = \alpha - (\Delta Y/Y)$ (3)

Equation (3) can be re-written in a linear regression model as follows:

$U_t - U_{t-1} = \alpha + \beta (Y_t - Y_{t-1}) + \varepsilon_t$ (4)

where U_t = Unemployment Rate at Time t

Y_t = Level of Real GDP at Time t

ε_t = The Error Term

The parameter β is called the Okun's coefficient which is expected to be negative. It represents the expected change in unemployment associated with a 1 percent increase in GDP. This figure varies from one country to another.

One important implication of Okun's law is that an increase in labour productivity or an increase in the size of the labour force can mean that real net outputs grows without net unemployment rate falling. This is referred to as the phenomenon of jobless growth. Jobless growth is a situation where economic growth does not lead to job creation. The term was coined by the economist, Nick Perna in the early 1990s (Tobi, 2017).

The Vicious Circles Theory of Poverty

In 1953, Ragnar Nurkse analyzed the poverty trap as circular relationships, known as the vicious circles of poverty, that tend to perpetuate low level of development in the less developed countries. It is a circular cause and effect relationship between poverty and economic development. For Nurkse, poverty leads to economic stagnation and underdevelopment, and that poor countries find it difficult to break away from this self-fulfilling vicious circle (Rohima et al, 2013; Kumar, 2022). In the words of Nurkse, "it implies a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty. For example, a poor man may not have enough to eat; being underfed, his health may be weak; being physically weak, his working capacity is low, which means that he is poor, which in turn means that he will not have enough to eat; and so on. A situation of this sort relating to a country as a whole, can be summed up in the trite proposition "A *country is poor because it is poor*" (Nurkse, 1953: p4).

The basic vicious circles theory of poverty is often explained from both the demand side and supply side. Based on the demand-side version, the vicious circle of poverty states that low level of real income brings about a low level of demand (i.e., low purchasing power) which, in turn, leads to a low rate of investment. Since investment is low, there will be capital deficiency, which in turn, leads to low productivity and hence, low level of real income and low savings. From the supply-side

version, low income leads to low savings and low investment which, in turn, brings about low rate of capital formation (i.e., capital deficiency). The deficiency of capital, in turn, results in low level of productivity and low income, and so, the circle continues ad infinitum (Ball et al, 2009; Jhingan, 2016; Kumar, 2022).

Empirical Literature Review

Njoku et al (2025) established that poverty and unemployment have significant negative impact on economic growth (proxied by GDP) in Nigeria. Abiodun et al (2025) found that unemployment has insignificant negative impact on real GDP (a proxy for economic growth) in Nigeria while poverty has significant negative impact on economic growth. Stanley (2025) found out that poverty and unemployment have insignificant negative impact on economic growth in Nigeria. Aniemeka (2024) established significant negative impact of unemployment and insignificant positive impact of poverty on economic growth in Nigeria. Ndukwu and Njoku (2024) examined the impact of unemployment on economic growth in Nigeria and established that unemployment has significant positive impact on economic growth. Similarly, Omotayo et al (2023) found insignificant positive impact of unemployment on economic growth in Nigeria. Nnachi and Ugochukwu (2023) established that unemployment has significant negative impact on economic growth in Nigeria. Olakunle (2022) found that poverty has significant positive impact on economic growth while unemployment has significant negative impact on economic growth in Nigeria.

Furthermore, Wilson et al (2022) found that unemployment and poverty have insignificant positive impact on economic growth in Nigeria. Obiekezie (2022) established significant negative impact of youth unemployment on economic growth in Nigeria. In the same vein, Omolua and Oyinkepreye (2022) found that unemployment has significant negative impact on economic growth in Nigeria. Egbetunde and Adesina (2022) found that poverty has significant positive impact on economic growth while unemployment has insignificant negative impact on economic growth in a panel of 5 Sub-Saharan African countries. Salam et al (2021) established significant positive impact of unemployment on economic development (proxied by per capita income) in Nigeria while Good-Wilson (2020) found that unemployment has insignificant positive impact on economic growth. Bala et al (2020) established significant negative effects of poverty on economic growth in Nigeria. Ojima (2019) used data from 1980 to 2017 to study the impact of unemployment on economic development (proxied by human development index) in Nigeria. The study established significant positive impact of unemployment on economic development. Ekine et al (2019) found that youth unemployment has insignificant positive impact on economic growth while poverty has significant negative impact on economic growth in Nigeria. Adelowokan et al (2019) found that poverty has insignificant positive impact on economic growth while unemployment has significant negative impact on economic growth in Nigeria. Seth et al (2018) established significant positive impact of unemployment on economic growth in Nigeria.

Evaluation of the Empirical Literature Reviewed

The empirical literature reviewed revealed that majority of previous studies on the topic in Nigeria concentrated on the impact of economic growth on unemployment and poverty, and the impact of unemployment and poverty on economic growth. These studies measured economic growth in terms of either GDP or real GDP. It is only Salam et al (2020) and Ojima (2019) that examined the impact of unemployment and poverty on economic development in Nigeria. However, while Salam et al (2020) measured economic development in terms of per capita income, Ojima (2019) measured economic development in terms of human development index (HDI). Again, Ojima (2019) used data from 1990 to 2017 and did not include poverty in his study. The present study measured economic development in terms of HDI but utilized a more up-to-date data period (1990 to 2024) than Ojima

(2019). In addition, Ojima (2019) concentrated on the impact of unemployment on economic development without including any measure of poverty.

It is also observed from the empirical literature that there is no consensus in the findings of previous studies on the topic in Nigeria. For instance, Adelowokan et al (2019), Wilson et al (2022), Olakunle (2022), and Aniemeka (2024) established positive impact of poverty on economic growth. On the other hand, Ekine et al (2019), Bala et al (2020), Njoku et al (2025), Abiodun et al (2023), and Stanley (2025) found that poverty has negative impact on economic growth. Similarly, Ekine et al (2019), Good-Wilson (2020), Wilson et al (2022), Omotayo et al (2023), and Ndukwe and Njoku (2024) showed that unemployment has positive impact on economic growth. On the other hand, Bala et al (2020), Olakunle (2022), Obiekezie (2023), Njoku et al (2025), Stanley (2025), etc. found that unemployment has negative impact on economic growth.

To fill the gaps identified above, the present study examined the impact of unemployment and poverty on economic development in Nigeria, using data from 1990 to 2024. Economic development is proxied by HDI.

Method of Study

Model Specification

The model used for this study is specified based on Ragnar Nurkse's vicious circles of poverty and the analytical model used by Olakunle (2022) which is expressed functionally as follows:

GDPPCG= f (POPGR, POV, INF, TFR, UNEMP) (5)

where GDPPCG = Gross Domestic Product per Capita Growth Rate (a proxy for economic growth)
POPGR = Population Growth Rate
POV = Poverty Rate
INF = Inflation Rate
TFR = Total Fertility Rate
UNEMP = Unemployment Rate

To allow for the inclusion of the variables of the present study, the baseline model above was slightly modified. Hence, the model used for this study is specified in its functional form as follows:

HDI= f (UNPR, PHCR, INFR, PGR) (6)

where HDI=Human Development Index (a proxy for economic development)
UNPR = Unemployment Rate
PHCR = Poverty Headcount Ratio
INFR = Inflation Rate
PGR = Population Growth Rate
F= Functionality Notation

HDI is the dependent variable while UNPR, PHCR, INFR and PGR are the explanatory variables. INF and PGR were introduced as control variables.

The econometric equation based on the functional model above is expressed as follows:

$HDI= \beta_0+\beta_1UNPR+\beta_2PHCR+\beta_3INFR+\beta_4PGR+U$ (7)

where β_0 is the regression constant, β_1-β_4 are the coefficients of the explanatory variables while U is the stochastic variable. All other variables are as earlier interpreted.

Apriori Theoretical Expectations

Based on apriori theoretical reasoning, the following signs of the coefficients of the explanatory variables are expected.

$\beta_1 < 0, \beta_2 < 0, \beta_3 < 0, \beta_4 < 0$

The implication of the above signs of the parameter estimates is that an increase in each of the explanatory variables is expected to be associated with a decrease in human development index.

Description of Variables

Dependent Variable

The dependent variable for this study is economic development. It is proxied by the human development index. The human development index is a composite measure that is used in assessing how well countries are doing in terms of improving human capabilities, focusing on health, education and income.

Independent Variables

i. **Unemployment Rate**
This refers to the number of persons considered unemployed expressed as a percentage of the total labour force.

ii. **Poverty Headcount Ratio**
This refers to the percentage of Nigeria's total population living below US$1.90 per day.

iii. **Inflation Rate**
Inflation refers to the sustained or prolonged increase in the general level of prices of goods and services over time. Inflation rate is calculated as the percentage difference between the current year's consumer price index (CPI) and the previous year's consumer price index. It is used as a control variable in this study.

iv. **Population Growth Rate**
In economic parlance, population simply refers to the number of persons living in a particular geographical area during a given time period. The population growth rate is the annual average change in the size of the population expressed as a percentage of the total population in the previous year. It is used as a control variable in this study.

Nature and Sources of Data

The data used for this study are annual time-series data from 1990 to 2024. The data were obtained from secondary sources including the Central Bank of Nigeria (CBN) annual statistical bulletin for 2024, the National Bureau of Statistics, and the World Bank Development Indicators.

Techniques of Data Estimation

This study made use of time-series data. It is therefore necessary to account for the peculiar properties associated with time-series data. To this end, the analytical procedure was started with stationarity test. The essence of the stationarity test is to determine whether the time-series are stationary or not and to determine their various orders of integration. The stationarity test was conducted using the augmented Dickey-Fuller (ADF) unit root test. The ADF unit root test tests the null hypothesis of unit root (i.e., series is non-stationary) against the alternative hypothesis of no unit root (i.e., series is stationary). The ADF unit root test is estimated in its general form by the following regression equations:

$$\Delta Y_t = a_0 + a_1 Y_{t-1} + \sum_{i=1}^{n} a \Delta Y_i + \in_t \quad (8)$$

$$\Delta Y_t = a_0 + a_1 Y_{t-1} + \sum_{i=1}^{n} a_1 \Delta Y_i + \delta_t + \in_t \quad (9)$$

Where Y_t is a time-series, t is is a linear time trend, Δ is the first difference operator, a_0 is a constant, n is the optimal number of lags in the dependent variable, while $\in_t$ is the error term. Equation (8) contains only drift while equation (9) contains both drift and linear trend.

Based on the result of the ADF unit root test, the autoregressive distributed lag (ARDL) approach to cointegration was used to test the long-run (equilibrium) behaviour of the time-series variables while the error correction mechanism (ECM) was used to determine the short-run (dynamic) behaviour of the variables. The ARDL and ECM models are specified as follows:

$$\Delta HDI_t = a_0 + \sum_{i=1}^{p} \beta_i \Delta HDI_{t-1} + \sum_{j=1}^{p} y_j \Delta UNPR_{t-1} + \sum_{k=1}^{p} \delta_k \Delta PHCR_{t-1} + \sum_{l=1}^{p} \lambda_t \Delta INFR_{t-1} + \sum_{m=1}^{p} \pi_m \Delta PGR_{t-1} + \lambda ECMt\text{-}1 + yHDI_{t-1} + yUNPR_{t-1} + yPHCR_{t-1} + y\,INFR_{t-1} + y\,PGR_{t-1} + \varepsilon_t \quad (10)$$

where the terms with zigma ($\sum$) represent the error correction model (ECM) dynamics, a_0 is the constant term, and Δ is the first difference operator. Also, β, y, $\boldsymbol{\delta_k}$ and π_m are the short-run coefficients, i, j, k, l, and m represents 1, 2, 3, 4, and 5 respectively, p is the optimal lag length of the ECM model, λ is the coefficient of the ECM (-1) term, y – y are the long-run coefficients while ε_t is the white noise error term.

The Granger causality test was used to test the nature and direction of causality between the variables. Considering a bivariate linear autoregressive model of two variables, X_1 and X_2, the Granger causality test estimates the following pairs of regression:

$$X_{2t} = \sum_{i=1}^{p} A_{11,i} X_{1t-1} + \sum_{i=1}^{p} A_{12,i} X_{2t-1} + E \quad (11)$$

$$X_{2t} = \sum_{i=1}^{p} A_{21,i} X_{1t-1} + \sum_{i=1}^{p} A_{22,i} X_{2t-1} + E \quad (12)$$

where p is the maximum number of lagged observations included in the model, the matrix A contains the coefficients of the model (i.e., the contributions of each lagged observation to the predicted values of X_{1t} and X_{2t}, and E and E are the residuals (prediction errors) for each time series.

Presentation of Results

Descriptive Statistics

The descriptive statistics results are summarized in table 1

Table 1: Descriptive Statistics Results

Variable	HDI	UNPR	PHCR	INFR	PGR
Mean	0.478486	11.49743	54.01800	18.77429	2.620286
Median	0.492000	11.90000	54.70000	13.20000	2.610000
Maximum	0.561000	30.20000	68.10000	72.80000	2.800000
Minimum	0.379000	1.900000	40.10000	5.400000	2.310000
Std. Dev	0.059418	7.128732	9.614063	15.85201	0.120696
Skewness	-0.271373	0.680427	-0.112394	2.060735	-0.511870
Kurtosis	1.682108	3.022473	1.440385	6.475499	2.757777
Jargue-Bera	2.962474	2.701462	3.620936	42.38734	1.613963
Probability	0.227356	0.259051	0.163578	0.000000	0.446203
Sum	16.74700	402.4100	1890.630	657.1000	91.71000
Sum Sq. Dev.	0.120039	1727.840	3142.627	8543.727	0.495297
Observations	35	35	35	35	35

Source: E-view Output

From the descriptive statistics results in table 1, the variables have mean values of 0.478486, 11.49743 percent, 54.01800 percent, 18.77429 percent, and 2.620286 percent for HDI, UNPR, PHCR, INFR, and PGR respectively. Based on the standard deviation statistic, INFR (15.85201) is the most fluctuating or least stable variable while HDI (0.059418) is the most stable or least fluctuating variable. The skewness statistic shows that HDI, PHCR, and PGR are negatively skewed while UNPR and INFR are positively skewed. From the Kurtosis statistic, UNPR and INFR are leptokurtic since their values are greater than 3. This means that they have heavier tails relative to normal distribution. On the other hand, HDI, PGCR and PGR are platykurtic since their values are less than 3. This implies that they have lighter tails relative to normal distribution.

Stationarity Test

The stationarity test was conducted using the augmented Dickey-Fuller (ADF) unit root test and the result is presented in table 2.

Table 2: ADF Unit Root Test Result

Varia	ADF Test Statistic (At Levels)	Critical Values		Prob	ADF Test Statistic (At Ist Diif.)	Critical Values		Prob	Order of Integration
		1%	5%			1%	5%		
HDI	-1.720868	-3.639407	-2.951125	0.4121	-3.101654**	-3.646342	-2.954021	0.0362	I(1)
UNPR	-1.235633	-3.639407	-2.951125	0.6474	-5.718126*	-3.646342	-2.954021	0.0000	I(1)
PHCR	-4.664763*	-3.639407	-2.951125	0.0007					I(0)
INFR	-2.141704	-3.639407	-2.951125	0.2305	-4.651908*	-3.646342	-2.954021	0.0007	I(1)
PGR	0.646975	-3.639407	-2.951125	0.9890	-4.152357*	-3.646342	-2.954021	0.0027	I(1)

Source: E-view Output

Note: * and ** denote rejection of the null hypothesis of unit root at the 1 percent and 5 percent critical values respectively.

Based on the ADF unit test result in table 2, PHCR is stationary at levels at the 1 percent critical value; HDI is stationary at first difference at the 5 percent critical value, while UNPR, INFR, and PGR are stationary at the 1 percent critical value.

Cointegration Test

The result of the ARDL bounds test approach to cointegration is presented in table 3

Table 3: ARDL Bounds Test Result

Sample: 1992 2024

Included observations: 33

Null Hypothesis: No Long-Run Relationships Exist

Test Statistic	**Value**	**K**
F-Statistic	**6.709837**	**4**
Critical Value	**Bounds**	
Significance	**I0 Bound**	**I1 Bound**
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.75	5.06

Source: E-view Output

From the ARDL bounds test result in table 3, the estimated F-statistic of 6.709837 is greater than the upper bound (I1) critical value of 4.01 at the 5 percent level of significance. Therefore, the null

hypothesis that no long-run relationships exist is rejected. Hence, based on the result, there exist long-run (equilibrium) relationships among the variables of the study.

Estimated Short-Run and Long-Run Regression Results

The ARDL estimated short-run and long-run regression results are presented in the upper and lover panels of table 4 respectively.

Table 4: ARDL Estimated Short-run and Long-run Regression Results

ARDL Cointegrating and Long-Run Form
Dependent Variable: HDI
Selected Model: ARDL (2, 0, 2, 0, 2)
Sample: 1990 2024
Included observations: 33

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (HDI(-1))	0.344153	0.150954	2.279859	0.0327
D (UNPR)	-0.000134	0.000123	-1.090980	0.2871
D (PHCR)	-0.000031	0.000051	- 0.596228	0.5571
D (PHCR(-1))	0.000181	0.000071	2.593079	0.0166
D (INFR)	-0.000172	0.000051	-3.335823	0.0030
D (PGR)	0.013857	0.012419	1.115794	0.2766
D (PGR(-1))	0.028274	0.012525	2.257384	0.0342
CointEq(-1)	0.655224	0.250943	-2.611045	0.0160

Cointeq = HDI – (-0.0024 * UNPR – 0.0074* PHCR - 0.0031* INFR – 0.00680 * PGR + 1.1606

Long-Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
UNPR	- 0.002425	0.001552	- 1.562304	0.1325
PHCR	- 0.007412	0.001950	- 3.800329	0.0010
INFR	- 0.003106	0.000759	- 4.094519	0.0005
PGR	- 0.068027	0.086813	- 0.783610	0.4416
C	- 0.160587	0.300804	3.858276	0.0009

Source: E-view Output

From the short-run regression result in the upper panel of table 4, the error correction term (CointEq(-1)) turned up with a correct negative coefficient and it is also significant at the 0.05 level of significance. The coefficient of the error correction term is -0.655224. This means a reversal of any disequilibrium in short-run to the long-run (equilibrium) trend of the model with a speed of adjustment of about 65 percent within one year in the current period. The long-run result in the lower panel shows that unemployment rate and population growth rate have insignificant negative impact on human development index while poverty headcount ratio and inflation rate have significant negative impact on human development index.

Post-Estimation Tests

The ARDL is a linear regression model and the classical linear regression model (CLRM) is based on some underlying assumptions. These assumptions include linearity (i.e., model is linear or correctly specified), homoscedasticity (i.e., model is homoscedastic due to the constant variance of the residuals), no serial correlation (i.e., model is not affected by the problem of autocorrelation of the residuals), normality (i.e., data are normally distributed), and stability (i.e., model is appropriate and stable). These assumptions need to be verified for the ARDL estimated result to be considered

valid. The results and decisions of these tests of assumptions are summarized in table 5 and figures 1 and 2.

Table 5: Post-Estimation Test Results

Tests	Value	Prob.	Decision
Linearity (Ramsey RESET) t-statistic F-statistic	 0.921980 0.850047	 0.3670 0.3670	Accept H_0 (Model is linear and therefore, correctly specified)
Heteroscedasticity (Breusch-Pagan-Godfrey) Test F-statistic	0.986413	0.4828	Accept H_0 (Model is homoscedastic as residuals have constant variance)
Serial Correlation LM Breusch-Godfrey) Test F-statistic	1.692696	0.2093	Accept H_0 (No autocorrelation of the residuals)
Normality (Jarque-Bera) Test F-statistic	3.348139	0.187483	Accept H_0 (Data Normally Distributed)

Source: E-view Output

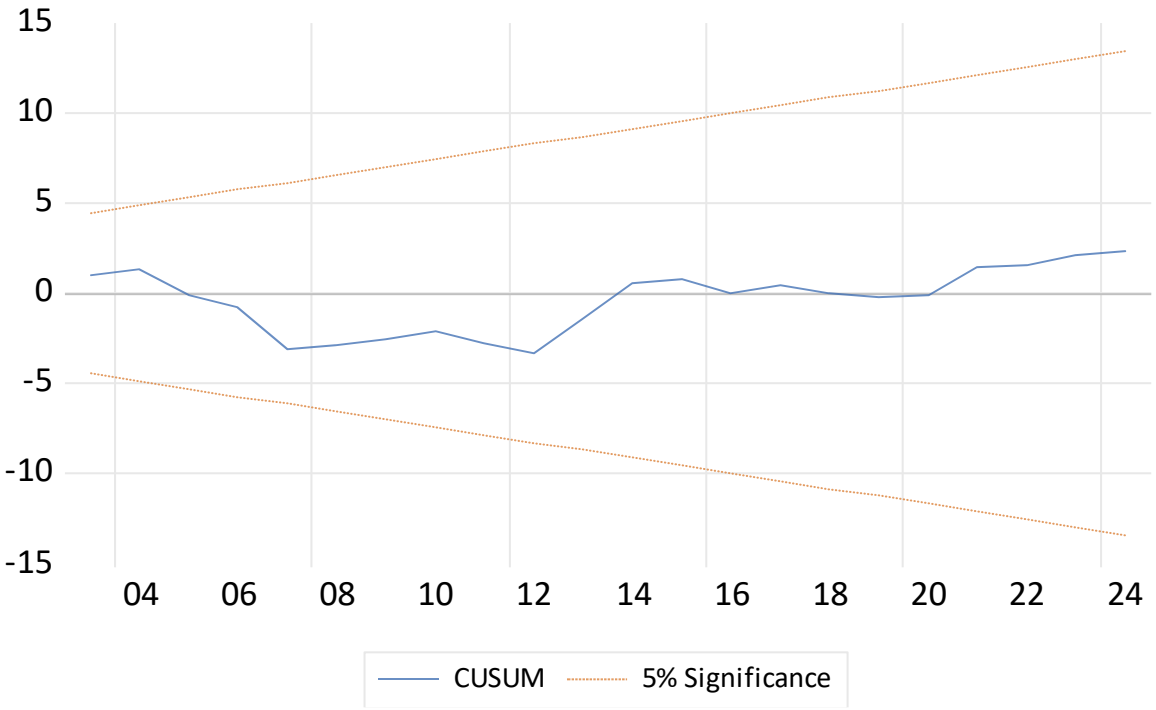

Figure 1: Cumulative Sum (CUSUM) Test for Stability
Source: E-view Output

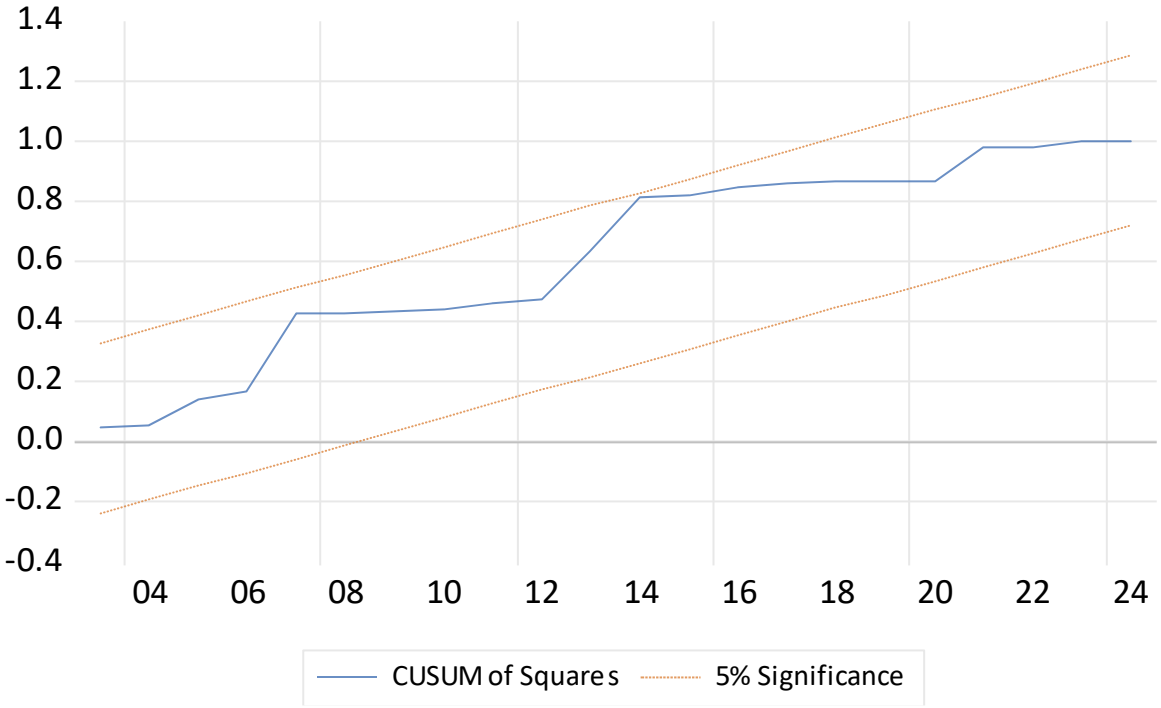

Figure 2: Cumulative Sum of Square (CUSUMSQ) Test for Stability
Source: E-view Output
For each of the tests in table 5, the null hypothesis is accepted since the estimated probability value is greater than 0.05. For the stability tests in figures 1 and 2, since the plots lie within the 5 percent critical bounds, the model is considered stable and therefore good for prediction.

Granger Causality Test
The result of the Pairwise Granger casuality test is presented in table 6.
Table 6: Granger Causality Test Result
Pairwise Granger Causality Test
Sample: 1990 2024
Lags: 2

Null Hypothesis	Obs	F-Statistic	Prob.
UNPR does not Granger Cause HDI	33	1.35522	0.2743
HDI does not Granger Cause UNPR		3.77520	0.0354
PHCR does not Granger Cause HDI	33	0.53246	0.5930
HDI does not Granger Cause PHCR		1.34476	0.2769
INFR does not Granger Cause HDI	33	0.61513	0.5477
HDI does not Granger Cause INFR		0.92057	0.4100
PGR does not Granger Cause HDI	33	1.02538	0.3717
HDI does not Granger Cause PGR		2.31637	0.1172
PHCR does not Granger Cause UNPR	33	3.08918	0.0613
UNPR does not Granger Cause PHCR		2.13682	0.1369

Source: E-view Output

The Granger causality test in table 6 indicates one unidirectional causality from HDI to UNPR.

Discussion of Findings

Estimated Long-run Result

From the estimated long-run regression result, unemployment rate and population growth rate have insignificant negative impact on economic development. In terms of size, one percent increase in the rate of unemployment is associated with an average decrease of 0.002425 in human development index while one percent increase in population growth rate is associated with 0.068027 decrease in human development index on the average. On the other hand, poverty headcount ratio and inflation rate have significant negative impact on economic development. Thus, one percent increase in poverty headcount ratio is associated with an average decrease of 0.007412 in human development index while one percent increase in inflation rate is associated with an average decrease of 0.003106 in human development index.

Estimated short-run Result

From the estimated short-run regression result, human development index lagged by one period has significant positive impact on human development index in the current period. Therefore, one point increase in HDI lagged by one period is associated with an average increase of 0.344153 in HDI in the current period. Unemployment rate and poverty headcount ratio in the current period have insignificant negative impact on HDI. In terms of size, one percent increase in unemployment rate produces an average decrease of 0.000134 in HDI while one percent increase in poverty headcount rate produces an average decrease of 0.000031 in HDI. Poverty headcount ratio lagged by one period has significant positive impact on HDI. Thus, one percent increase in poverty headcount ratio in period one is associated with an average increase of 0.000181 in HDI. Inflation rate in the current period has significant negative impact on HDI. One percent increase in inflation rate produces an average decrease of 0.000172 in HDI. Population growth rate in the current period has insignificant positive impact on HDI while its value lagged by one period has significant positive impact on HDI. In terms of size, one percent increase in population growth rate in the current period is associated with an average increase of 0.013857 in HDI while one percent increase in population growth rate lagged by one period is associated with an average increase of 0.028274 in HDI.

The short-run regression result also revealed that the error correction term displayed a correct negative coefficient and it also significant at the 0.05 level of significance. With an estimated coefficient of -0.655224 for the error correction term, the implication is that any disequlibrium in the short-run is reversed to long-run (equilibrium) trend of the model within one year in the current period. The Granger causality test result revealed only one unidirectional causality from HDI to unemployment rate.

CONCLUSION AND RECOMMENDATIONS

Conclusions

This study investigated the impact of unemployment and poverty on economic development in Nigeria. Based on the outcome of the study, it is concluded that unemployment and poverty adversely affect the development of the Nigerian economy.

Recommendations

Based on the findings of the study, the following policy measures are recommended.

i. There is the need to reduce the level of unemployment and poverty in Nigeria. To this end, policies and programmes that will create jobs and reduce poverty should be implemented.
ii. The National Directorate of Employment (NDE) should be revitalized and properly funded to contribute significantly to job creation in the country.

iii. Governments at all levels should organize skills acquisition and entrepreneurship training programmes across the country. This will equip the youths with the skills required for gainful employment. It will equally reduce the level of poverty in the country.

iv. There is the need to reduce the growth rate of the Nigerian population. To achieve this, the government should emback on public enlightenment campaigns to educate Nigerians on the need to have fewer number of children.

v. To reduce the level of inflation in Nigeria, there is the need for investment in infrastructural facilities that will boost the productive capacity of the economy to produce goods and services. An increase in the quantity of goods and services produced in the country, relative to demand, will lower the price level.

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