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HUMAN CAPITAL FORMATION AND POVERTY DYNAMICS IN NIGERIA (1990–2024)

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ABSTRACT

Poverty remains a persistent and multidimensional challenge in Nigeria despite numerous policy interventions aimed at improving living standards. This study examined the effect of human capital formation on poverty dynamics in Nigeria, with the objective of determining whether investments in education, health, and employment significantly reduce multidimensional poverty. The study was anchored on the Basic Needs Theory, which emphasizes access to essential services such as education, healthcare, and decent work as fundamental to poverty reduction. A quantitative research design was adopted using annual time-series data covering the period 1990 to 2024. Poverty incidence, proxied by the National Multidimensional Poverty Index (NMPI), served as the dependent variable, while education expenditure, life expectancy, and unemployment rate were employed as indicators of human capital formation. The Ordinary Least Squares (OLS) technique was applied to estimate the long-run relationships among the variables, supported by relevant diagnostic tests to ensure robustness. The findings revealed that education expenditure and life expectancy exerted significant negative effects on poverty, indicating that improvements in education and health outcomes reduced multidimensional deprivation. Conversely, unemployment showed a positive and significant relationship with poverty, suggesting that labour market exclusion intensified poverty conditions. The study concluded that sustained investment in education, healthcare, and employment generation is essential for meaningful poverty reduction and recommended strengthened government commitment to these critical sectors.

Keywords: *Human Capital Formation, Poverty Dynamic, Basic needs theory, Nigeria.*

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INTRODUCTION

1.1 Background to the Study

Poverty remains a major socio-economic challenge in Nigeria, affecting millions of citizens across the country. According to the World Bank (2023), approximately 46% of Nigerians live below the national poverty line, reflecting not only low income but also deprivation in essential services such as education, healthcare, and housing. Poverty is multidimensional, encompassing both material insufficiency and limited access to social and economic opportunities. It can be categorized as absolute poverty, where basic survival needs are unmet; relative poverty, where individuals fall below societal averages; and multidimensional poverty, which considers deprivations in education, health, and living standards (Alkire & Foster, 2011; World Bank, 2020). In Nigeria, poverty dynamics are influenced by high unemployment, underemployment, poor infrastructure, rapid population growth, low productivity, weak institutions, and limited human capital formation (National Bureau of Statistics [NBS], 2022).

Human capital formation, defined as the process of developing individuals' skills, knowledge, health, and capabilities to enhance productive capacity, is widely recognized as a key driver of socio-economic development (Becker, 1964; Schultz, 1961). Unlike isolated investments, human capital formation emphasizes the cumulative and continuous development of education, vocational training, healthcare, nutrition, and skill acquisition over time. In Nigeria, government initiatives such as the Universal Basic Education (UBE) program, health sector reforms, and vocational training schemes reflect efforts to strengthen the human capital base and influence poverty dynamics.

Empirical evidence underscores the relationship between human capital formation and poverty evolution. Amire and Tiamiyu (2024) reported that increased education expenditure significantly reduced poverty levels, while high unemployment exacerbated them. Similarly, Olowe and Olagunju (2022) found that education and health interventions, as proxies for human capital development, have significant long-term effects on poverty outcomes in Nigeria. These findings suggest that sustained development of human capital—through education, health, and skill enhancement, shapes the trajectory of poverty by improving employability, income potential, and resilience against deprivation.

Indicators commonly used to measure human capital formation include education expenditure, literacy rates, school enrollment ratios, life expectancy, health expenditures, and composite indices such as the World Bank Human Capital Index (HCI) and UNDP Human Development Index (HDI) (World Bank, 2022; UNDP, 2020). Although government spending on education and healthcare has increased over the past three decades, outcomes remain suboptimal. For example, literacy rates were approximately 62% in 2021, life expectancy around 55 years in 2022, and only about 60% of children completed primary education (NBS, 2022). These trends suggest that while human capital formation has potential, challenges in policy implementation, resource allocation, and institutional capacity limit its impact on poverty dynamics.

Human capital formation represents a critical pathway for determining poverty dynamics in Nigeria. By systematically enhancing education, health, and skills over time, it strengthens productivity, income-generating capacity, and overall welfare. Building on this context, this study examines the effect of human capital formation on poverty dynamics in Nigeria between 1990 and 2024.

1.2 Statement of the Problem

In principle, sustained human capital formation through education, healthcare, and skills development should enhance productivity, improve income levels, and influence poverty dynamics in Nigeria. In line with this, successive Nigerian governments have implemented various policies and programmes, including the Universal Basic Education (UBE) scheme, health sector reforms, and social investment initiatives, aimed at strengthening human capital and mitigating poverty.

Despite these interventions, poverty remains widespread and persistent. A substantial proportion of the population continues to experience both income poverty and multidimensional deprivation across education, health, and living standards. This suggests that existing human capital formation efforts have not translated into the expected improvements in welfare or meaningful changes in poverty dynamics.

While previous studies recognize the role of human capital in alleviating poverty, there is limited understanding of how specific components of human capital formation—such as education expenditure, health outcomes, and labor market conditions—interact to influence poverty over time. Moreover, the reasons for the persistence of poverty, despite increased investments and policy interventions, remain unclear, particularly regarding institutional, economic, and structural constraints.

These gaps highlight a critical problem: the apparent disconnect between human capital formation and the evolution of poverty in Nigeria. It is against this backdrop that this study is motivated to examine the effect of key human capital indicators on poverty dynamics in Nigeria between 1990 and 2024.

1.3 Objectives of the Study

The broad objective of this study is to examine the effect of human capital formation on poverty reduction in Nigeria between 1990 and 2024.

The specific objectives of the study are to:

1. Examine the effect of education expenditure on poverty reduction in Nigeria.
2. Assess the effect of life expectancy on poverty reduction in Nigeria.
3. Evaluate the effect of unemployment on poverty reduction in Nigeria.

1.4 Research Hypothesis

The following hypotheses are formulated to guide the study:

- H_{01}: Education expenditure has no significant effect on poverty reduction in Nigeria.
- H_{02}: Life expectancy has no significant effect on poverty reduction in Nigeria.
- H_{03}: Unemployment has no significant effect on poverty reduction in Nigeria.

1.5 Scope of the Study

This study examines the relationship between human capital investment and poverty reduction in Nigeria from 1990 to 2024. It focuses on three key indicators: education expenditure, life expectancy, and unemployment, and their effect on poverty incidence at the national level. The analysis adopts a macroeconomic perspective using time-series data to assess long-term relationships among the variables. The study is limited to national-level analysis and does not cover regional or sectoral comparisons. The findings are intended to provide empirical evidence to inform policies aimed at strengthening human capital development for sustainable poverty reduction in Nigeria.

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Concept of Human Capital Formation

Human capital formation refers to the continuous process of developing individuals' knowledge, skills, health, and overall productive capacity to enhance their economic and social participation. It is grounded in the idea that people are valuable assets whose development contributes to higher productivity, income generation, and national economic growth (Becker, 1964; Schultz, 1961). Unlike one-time investment, human capital formation emphasizes cumulative and sustained development through education, vocational and technical training, healthcare, nutrition, and skill acquisition programmes (Mincer, 1974; Psacharopoulos & Patrinos, 2018).

In Nigeria, human capital formation has been a central feature of development policy, manifested through initiatives such as the Universal Basic Education (UBE) programme, health sector reforms, and various vocational and social investment schemes. Common indicators employed to assess human capital formation include education expenditure, literacy rates, school enrollment ratios, life expectancy, and composite measures such as the World Bank Human Capital Index (World Bank, 2018; World Bank, 2022). Effective human capital formation enhances labour productivity, employability, and the capacity of individuals to engage meaningfully in economic and social activities (UNDP, 2020; Barro & Lee, 2013).

2.1.2 Concept of Poverty Dynamics

Poverty dynamics refers to the changes in poverty status over time, including transitions into, out of, or within poverty. It captures both income poverty and multidimensional deprivations, such as lack of access to education, health services, housing, and basic social amenities (World Bank, 2020; UNDP, 2022). Understanding poverty dynamics is essential for identifying persistent, transient, and cyclical poverty, and for designing policies that address the structural and temporal aspects of deprivation (Ravallion, 2016; Sen, 1999).

In Nigeria, poverty dynamics remain a critical concern. Despite numerous government interventions, including social protection programmes and sectoral reforms, a large proportion of the population continues to experience income insufficiency and multidimensional deprivation. High unemployment, weak institutions, rapid population growth, and limited human capital formation have constrained meaningful poverty alleviation (NBS, 2022).

Human capital formation is conceptually and practically linked to poverty dynamics because improvements in education, health, and skills enable individuals to escape poverty, enhance resilience, and participate actively in economic and social life (Becker, 1964; Sen, 1999; World Bank, 2018). By shaping the trajectory of poverty, human capital formation serves as a key driver of long-term improvements in welfare and economic opportunity. Accordingly, this study positions human capital formation as central to understanding and addressing poverty dynamics in Nigeria from 1990 to 2024 (Ravallion, 2016; UNDP, 2022).

2.2 Theoretical Literature

This section reviews the key theories that explain the relationship between human capital investment and sustainable poverty reduction in Nigeria. These theories provide the conceptual basis for understanding how human capital influences poverty outcomes in the study.

2.2.1 The Basic Needs Theory (BNT)

The Basic Needs Theory (BNT), proposed by Streeten et al. (1981), argues that poverty arises mainly from the inability to meet essential human needs such as food, shelter, education, and healthcare. The theory emphasizes that economic growth alone is not enough to reduce poverty; rather, direct provision of basic services is necessary for human well-being and development. In Nigeria, this theory is relevant because government programmes such as the Universal Basic Education (UBE) scheme and primary healthcare initiatives aim to improve access to essential services as a strategy for reducing poverty. This supports the view that sustainable poverty reduction requires deliberate investment in education and health.

2.2.2 Capability Approach (CA)

The Capability Approach (CA), developed by Sen (1999), views poverty as a lack of real opportunities and freedoms rather than just low income. According to this approach, development should be measured by people's ability to live healthy, educated, and productive lives. In Nigeria, persistent poverty despite periods of economic growth suggests that many people still lack the capabilities needed for meaningful participation in society. This theory therefore supports investments in education, health, and employment opportunities that expand people's capabilities and promote sustainable poverty reduction.

Together, the Basic Needs Theory and the Capability Approach provide a strong theoretical basis for this study by highlighting the importance of education, health, and economic opportunities in achieving sustainable poverty reduction in Nigeria.

2.3 Empirical Review

Amire and Tiamiyu (2024) examined the impact of human capital development on poverty dynamics in Nigeria using annual data from 1981 to 2020, focusing on education expenditure, employment, and poverty levels. Applying the Robust Least Squares (RLS) estimation technique, the study found that increased education expenditure significantly mitigated poverty, while higher unemployment intensified it, highlighting the importance of human capital formation when complemented by job creation policies. The study concluded that sustained human capital development contributes meaningfully to poverty alleviation and recommended targeted education spending and employment-enhancing programmes. A limitation of this study is the exclusion of life expectancy as a distinct variable, restricting the assessment of health-related aspects of human capital formation. Nonetheless, the findings align with other empirical evidence linking education and employment to poverty dynamics and quantify the role of labour market conditions in shaping poverty trajectories.

Olowe and Olagunju (2022) investigated the effects of education and health expenditures on poverty in Nigeria using data from 1990 to 2019 and applied the Autoregressive Distributed Lag (ARDL) bounds testing approach. Key variables included education expenditure, health expenditure (as a proxy for life expectancy), unemployment rate, and poverty headcount. The results demonstrated that both education and health expenditures exert significant long-run negative effects on poverty, while unemployment had a significant long-run positive effect. The study concluded that sustained and efficient investment in education and health sectors, coupled with labour market interventions, is critical for reducing poverty. However, the use of health expenditure as a proxy may not fully capture life expectancy outcomes, which can vary independently of spending levels. Despite this limitation, the findings corroborate Amire and Tiamiyu (2024) and reinforce the importance of integrated human capital development policies.

Anyanwu and Erhijakpor (2010) explored the relationship between human capital, unemployment, and poverty across African countries, including Nigeria, from 1980 to 2005. Using panel data methods, they included education attainment, life expectancy, unemployment, and poverty headcount as explanatory variables. Results indicated that higher education levels and longer life expectancy significantly reduced poverty, whereas higher unemployment rates increased it. Although not Nigeria-specific, the study's inclusion of life expectancy as a distinct human capital indicator makes it highly relevant for understanding the Nigerian context. The authors highlighted the need to consider education, health, and labour market variables jointly when analyzing poverty dynamics.

2.4 Knowledge Gap

Despite extensive research on poverty and human capital in Nigeria, there is limited empirical evidence examining the combined effects of education, health outcomes, and labour market conditions on poverty dynamics within a single, coherent framework. Most studies focus on one or two human capital indicators in isolation or employ varied methodologies, making direct comparison difficult. Consequently, there remains a gap in integrated, policy-oriented analyses that quantify how these key components of human capital formation simultaneously influence poverty trajectories in Nigeria over time. This study seeks to fill this gap by using time-series data and a unified analytical framework to evaluate the joint impact of education, life expectancy, and unemployment on poverty dynamics between 1990 and 2024.

METHODOLOGY

3.1 Theoretical Framework

This study is anchored on the Basic Needs Theory, which conceptualizes poverty as more than income deprivation. The theory posits that poverty arises from the inability of individuals to meet essential human requirements such as education, healthcare, adequate skills, and productive employment. It emphasizes that sustainable improvements in welfare depend on strengthening human capabilities necessary for economic participation and social inclusion.

Within this framework, human capital formation plays a central role in shaping poverty dynamics. Access to quality education enhances knowledge and skills; improved health increases productivity and labour efficiency; and expanded employment opportunities strengthen income-generating capacity. When these components develop cumulatively over time, they improve individuals' ability to meet basic needs and reduce vulnerability to deprivation. Conversely, deficiencies in education, poor health outcomes, and labour market exclusion reinforce persistent poverty.

The theoretical relationship can be expressed functionally as:

$$P=f(E,H,L)$$

In this study, poverty dynamics, proxied by the National Multidimensional Poverty Index (NMPI), are modeled as a function of education (education expenditure), health status (life expectancy), and labour market performance (unemployment rate). The theory predicts that improvements in education and health will exert a negative effect on poverty, while rising unemployment will intensify poverty conditions. Thus, the Basic Needs framework provides a strong foundation for examining how human capital formation influences poverty trajectories in Nigeria between 1990 and 2024.

3.2 Empirical Model Specification

This study adopts Thorbecke's (2007) needs-based poverty framework and formally anchors it on the basic needs theory (BNT) to develop an econometric model appropriate for the Nigerian context. The study conceptualized poverty as multidimensional deprivation in education, health, and living standards, and his empirical findings demonstrated that improvements in these basic needs significantly reduce poverty incidence. Although the framework was not explicitly grounded in the basic needs theory, its strong conceptual alignment with the theory justifies its adaptation for this study.

The adopted functional model was specified as:

$$PI=\beta0+\beta1EDU+\beta2HEA+\beta3LS+\mu \quad (3.2)$$

where PI represents poverty incidence, EDU denotes education (literacy rate), HEA captures health (access to healthcare), and LS reflects living standards, including access to basic services. The model implies that improvements in education, health, and living conditions enhance human capabilities and reduce poverty.

However, despite its strength in conceptualizing poverty as multidimensional, this model framework has limitations in the Nigerian context. It does not explicitly incorporate key variables such as unemployment, education expenditure, life expectancy, inflation, and income, which are critical determinants of poverty dynamics in Nigeria. In addition, its cross-country nature limits its ability to capture country-specific conditions and long-run adjustments.

To address these gaps, this study modifies and expands the framework in line with the basic needs theory and Nigeria's socio-economic realities. The study incorporates relevant human capital and macroeconomic variables and adopts a time-series approach.

Accordingly, the modified functional model is expressed as:

$$PHC= f(EduExp, LifeExp, Unemp, Inflation ,Income) \quad (3.3)$$

Given the above functional relationship, the empirical model to be estimated using Ordinary Least Squares (OLS) is specified as:

$$PHC=\beta0+\beta1EduExp+\beta2LifeExp+\beta3Unemp+\beta4Inflation+\beta5Income+ \varepsilon t \quad (3.4)$$

Where,

PHC = poverty headcount ratio (proportion of the population living below the poverty line)
EduExp = education expenditure (capturing government investment in education)
LifeExp = life expectancy (proxy for health and well-being)
Unemp = unemployment rate (reflecting labor market conditions)
Inflation = changes in purchasing power and living standards
Income = per capita income
εt = stochastic error term (capturing unobserved factors that influence poverty but are not included in the model).
β_0 = the intercept term (representing the baseline level of poverty when all independent variables are zero).
β_1, β_2, β_3, β_4, β_5 are the slope coefficients measuring the effect of each independent or control variable on poverty;

Based on theory and empirical evidence, it is expected that higher education expenditure (β_1) and life expectancy (β_2) will reduce poverty, while higher unemployment (β_3) and inflation (β_4) will increase poverty, and higher per capita income (β_5) will contribute to poverty reduction.

This equation captures the direct effects of human capital investment and labor market conditions on poverty reduction, while controlling for macroeconomic influences through inflation and income.

The study's model is justified on theoretical and empirical grounds as it is anchored on Thorbecke's needs-based framework and the Basic Needs Theory, which view poverty as a multidimensional outcome influenced by human capital conditions. Consequently, education expenditure, life expectancy, and unemployment are considered appropriate determinants of poverty in Nigeria. The study employs the Ordinary Least Squares (OLS) technique because of its desirable statistical properties and its suitability for estimating linear relationships in time-series analysis. The evaluation of results is based on economic, statistical, and econometric criteria, including the expected signs of coefficients, t-statistics, R^2, F-statistics, and diagnostic tests for autocorrelation, heteroskedasticity, and multicollinearity. Hypothesis testing is conducted at the 5 percent significance level, while data are sourced from credible institutions such as the National Bureau of Statistics, Central Bank of Nigeria, and the World Bank.

DATA PRESENTATION AND ANALYSIS

4.1 Unit root test

The null hypothesis of a unit root is rejected at the 5% significance level if the probability value of the Levin, Lin, and Chu test is less than 0.05; otherwise, it is not rejected.

Table 4.1 Unit root Summary Table

VARIABLES	5% CRITICAL V	ADF STAT	PROB. VALUE	ORD. OF DIFF	DECISION
LIFE EXPECT	-3.562882	-3.642806	0.0423	1(1)	Reject null
UNEMP	-1.952910	-2.154213	0.0322	1(1)	Reject null
INFLAT RATE	-1.952066	-4.670131	0.0000	1(1)	Reject null
POVERTY HCT	-1.952910	-5.291503	0.0000	1(1)	Reject null
EDUC EXP	-1.952910	-2.341587	0.0209	1(1)	Reject null
LNADJ INCO	-1.952473	-4.366752	0.0001	1(1)	Reject null

Source: Researchers computation from E-view 2025

LIFE EXPECT = Life expectancy, UNEMP= Unemployment, INFLAT RATE = Inflation rate, POVERTY HCT = Poverty head count, EDUC EXP = Education expenditure

Table 4.1 displayed the outcome of the stationary series as tested. Our observations indicated that all the variables are stationary at difference order one 1(1), since the ADF values in absolute terms are more negative than the critical values at 5% level of significance. The probability value is less than 5% level of significance, therefore all the series are said to be stationary at difference order one respectively.

4.2 Test for Multi-collinearity.

Multicollinearity is present if the centered VIF (CVIF) exceeds 10 (H_0); otherwise, it is considered absent (H_1).

Table 4.2 Multi-collinearity Test
Variance Inflation Factors
Date: 11/26/25 Time: 13:19
Sample: 1990 2024
Included observations: 31

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.201987	74.33499	NA
POV_HDCR	8.27E-05	76.86656	1.037710
INFL	1.04E-05	2.356536	1.037710

Source: Researchers computation from E-view 2025

Table 4.2 displayed the outcome of multi-collinearity test. The values of centered variance inflation factor (CVIF) with their respective explanatory variables as indicated on the table 4.2 are not greater than 10 in absolute terms (POV_HDCR=8.27E-05, CVIF=1.037710 and INFL=1.04E-05, CVIF=1.037710), therefore, the null hypothesis is not accepted and the study state that there is no evidence of multi collinearity among the variables.

4.3 Test for Homoscedasticity

Homoscedasticity implies that the variability of the dependent variable (after accounting for the predictors) is the same across all levels of the independent variables. This means that the residuals (errors) should exhibit a uniform spread or dispersion, regardless of the value of the independent variables. The variance of the error terms are not correlated if the P-values are greater than 5% level of significance.

Table 4.3 Heteroskedasticity Test:
Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.570018	Prob. F(2,27)	0.0951
Obs*R-squared	4.797789	Prob. Chi-Square(2)	0.0908
Scaled explained SS	3.168704	Prob. Chi-Square(2)	0.2051

Source: Researchers computation from E-view 2025

Table 4.3 displayed the outcome of Homoscedastic test .The values of F-stat, Observed R squared and Scaled explained SS are (2.570018, 4.797789 and 3.168704) with their corresponding probability values as (0.0951, 0.0908 and 0.2051).Since the values of the respective probability values are less than 5% level of significance, we therefore state that there is evidence of homoscedasticity .This implied that the variance of the error terms are not correlated.

Test of Hypothesis One

Statement of null hypothesis.

H_{01}: Education expenditure has no significant effect on poverty reduction in Nigeria.

Decision Criteria: Accept the null hypothesis if the probability value of t-statistic is not less than 5% level of significance, otherwise reject the null hypothesis.

Note: The decision criteria is applicable to Hypothesis two and three

Ordinary Least Squares Model (OLS)

4.4 OLS Model Table

Dependent Variable: EDU__EXP
Method: Least Squares
Date: 11/26/25 Time: 13:22
Sample (adjusted): 1990 2024
Included observations: 32 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	28.00976	0.449429	62.32294	0.0000
POV_HDCR	-0.129283	0.009092	-14.21970	0.0000
INFL	-0.027717	0.003221	-8.605525	0.0000

R-squared	0.925432	Mean dependent var	21.03996
Adjusted R-squared	0.919908	S.D. dependent var	1.008863
S.E. of regression	0.285513	Akaike info criterion	0.425579
Sum squared resid	2.200973	Schwarz criterion	0.565699
Log likelihood	-3.383690	Hannan-Quinn criter.	0.470405
F-statistic	167.5428	Durbin-Watson stat	1.211997
Prob(F-statistic)	0.000000		

Source: Researchers computation from E-view 2025

Table 4.4, shows the outcome of the OLS model test where the coefficients of the explanatory variables are associated with negative values. This implied that there is evidence of non- positive impact of these variables mentioned (POV_HDCR) and (INFL) on the dependent variable. The corresponding probability values of all the explanatory variables are less than 5% level of significance in absolute terms as indicated in the same table 4.4.

There is evidence of 92% level of explanation on the impact of the explanatory variable on the explained variable, leaving a balance of 08% unexplained as a result of variables not accounted for or not included in the model. There is evidence of serial autocorrelation among the series since the DW is valued at 1.21. The probability value of F-statistic (0.0000) indicates that the overall regression is statistically significant since the value is less than 5% level of significance.
Decision: Education expenditure had a significant impact on poverty alleviation in Nigeria. The observation implied that null hypothesis is not accepted.

Test of Hypothesis Two

Statement of null hypothesis.
H_{02}: Life expectancy has no significant effect on poverty reduction in Nigeria.

Table 4.5 OLS Table
Dependent Variable: LIFE_EXP
Method: Least Squares
Date: 11/26/25 Time: 23:47
Sample (adjusted): 1990 2024
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.48208	1.257360	8.336574	0.0000
LIFE_EXP	0.199154	0.027687	7.193056	0.0000
ADJ_INC	0.000604	9.64E-05	6.267390	0.0000

R-squared	0.975837	Mean dependent var	20.97878
Adjusted R-squared	0.974171	S.D. dependent var	1.007245
S.E. of regression	0.161879	Akaike info criterion	-0.714879
Sum squared resid	0.759936	Schwarz criterion	-0.577467
Log likelihood	14.43807	Hannan-Quinn criter.	-0.669331
F-statistic	585.5982	Durbin-Watson stat	1.830469
Prob(F-statistic)	0.000000		

Source: Researchers computation from E-view 2025

Table 4.5, shows the outcome of the OLS model test where the coefficients of the explanatory variables are associated with non-negative values. This implied that there is evidence of non- positive impact of these variables mentioned (LIFE_EXP) and (ADJ_INC) on the dependent variable. The corresponding probability values of all the explanatory variables are less than 5% level of significance in absolute terms as indicated in the same table 4.5.

There is evidence of 97% level of explanation on the impact of the explanatory variable on the explained variable, leaving a balance of 03% unexplained as a result of variables not accounted for or not included in the model. There is no evidence of serial autocorrelation among the series since the DW is valued at 1.83. The probability value of F-statistic (0.0000) indicates that the overall regression is statistically significant since the value is less than 5% level of significance.

Decision: There is a statistically significant effect of life expectancy on poverty reduction in Nigeria. Therefore, the null hypothesis is rejected.

Test of Hypothesis Three

H_{03}: Unemployment has no significant effect on poverty reduction in Nigeria.

Table 4.6 OLS Table
Dependent Variable: UNEMP
Method: Least Squares
Date: 11/26/25 Time: 23:26
Sample (adjusted): 1990 2024
Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.78591	0.328143	57.24914	0.0000
UNEMP	0.187536	0.084094	2.230094	0.0339
ADJ_INC	0.001212	6.11E-05	19.84017	0.0000

R-squared	0.944526	Mean dependent var	20.99992
Adjusted R-squared	0.940564	S.D. dependent var	1.016658
S.E. of regression	0.247856	Akaike info criterion	0.139830
Sum squared resid	1.720116	Schwarz criterion	0.278603
Log likelihood	0.832636	Hannan-Quinn criter.	0.185066
F-statistic	238.3721	Durbin-Watson stat	1.367567
Prob(F-statistic)	0.000000		

Source: Researchers computation from E-view 2025

UNEMP= Unemployment, ADJ_INC= Adjusted income
Table 4.6, shows the outcome of the OLS model test where the coefficients of the explanatory variables are associated with non-negative values. This implied that there is evidence of non- positive impact of these variables mentioned (UNEMP) and (ADJ_INC) on the dependent variable. The corresponding probability values of all the explanatory variables are less than 5% level of significance in absolute terms as indicated in the same table 4.6.

There is evidence of 94% level of explanation on the impact of the explanatory variable on the explained variable, leaving a balance of 06% unexplained as a result of variables not accounted for or not included in the model. There is evidence of serial autocorrelation among the series since the DW is valued at 1.36. The probability value of F-statistic (0.0000) indicates that the overall regression is statistically significant since the value is less than 5% level of significance.

DISCUSSION AND INTERPRETATION OF RESULTS

The results of this study indicate that education (EDU EXP) significantly influences poverty dynamics in Nigeria. This implies that improvements in educational attainment, literacy levels, and access to quality education enhance human capital formation, strengthen employability, and expand income-generating opportunities, thereby reducing poverty. These findings are consistent with Psacharopoulos and Patrinos (2018), who argued that the development of human capital through education generates substantial economic and social returns that facilitate poverty alleviation. Similarly, the World Bank (2020) emphasizes that progress in educational outcomes is a critical driver of inclusive economic growth. In the Nigerian context, Okafor (2019) also found that better educational outcomes and access significantly reduced poverty by improving skills and workforce readiness. Collectively, the evidence underscores that human capital formation through education, rather than mere expenditure, is pivotal in shaping poverty dynamics and promoting sustainable reductions in deprivation across Nigeria.

The results of this study reveal that life expectancy (LIFE EXP) significantly influences poverty dynamics in Nigeria. This indicates that improvements in health outcomes and longevity contribute to the formation of human capital by enhancing individual productivity, labour efficiency, and resilience to income shocks, which in turn reduces vulnerability to poverty. These findings are consistent with Bloom, Canning, and Sevilla (2004), who argued that healthier populations with longer life expectancies are more productive and capable of generating higher economic returns, thereby improving overall welfare. Similarly, Adekunle and Adeniyi (2020) found that increases in life expectancy positively impacted poverty reduction in Nigeria, highlighting the importance of health as a key component of human capital formation. Collectively, the evidence underscores that health improvements, reflected in life expectancy, are central to strengthening human capital and shaping poverty dynamics in Nigeria.

The results of this study show that unemployment (UNEMP) significantly affects poverty dynamics in Nigeria. Higher unemployment exacerbates poverty by limiting individuals' opportunities to generate income and develop productive capacities, while reductions in unemployment enhance livelihoods and support poverty alleviation. These findings align with Adeyemi and Oladipo (2019), who demonstrated that elevated unemployment levels are closely linked to increased poverty in Nigeria and that sustainable job creation is critical for improving welfare and promoting inclusive economic development. Overall, the evidence highlights that access to employment is a vital component of human capital formation, as it enables individuals to apply their skills effectively, earn incomes, and escape cycles of deprivation, thereby shaping poverty dynamics in the country.

5.1 Findings

The major findings that emanated from this study within the period under review are summarized as follows:

(i) Government expenditure on education has a significant effect on poverty reduction in Nigeria, indicating that increased investment in education enhances human capital development and reduces poverty levels.

(ii) Life expectancy has a significant effect on poverty reduction in Nigeria, implying that improvements in health and longevity contribute to increased productivity and lower poverty incidence.

(iii) Unemployment has a significant effect on poverty reduction in Nigeria, suggesting that higher unemployment increases poverty, while reductions in unemployment contribute to improved livelihoods and poverty alleviation.

5.2 Conclusion

This study on Human Capital Formation and Poverty Dynamics in Nigeria (1990–2024) demonstrates that human capital development is a critical determinant of poverty outcomes in the country. The findings reveal that education, health (proxied by life expectancy), and employment conditions significantly shape poverty dynamics.

Improved education enhances human capital formation by developing skills, increasing employability, and expanding income-generating opportunities, thereby reducing poverty. Similarly, longer life expectancy strengthens productivity and resilience, decreasing vulnerability to income shocks and supporting poverty alleviation. In contrast, high unemployment exacerbates poverty, while increased access to employment enables

individuals to apply their skills effectively, improve livelihoods, and escape cycles of deprivation.

Overall, the study concludes that sustainable poverty reduction in Nigeria requires coordinated efforts to strengthen human capital formation across education, health, and employment sectors. Fragmented interventions are unlikely to achieve lasting impact; rather, integrated policies that develop skills, improve health outcomes, and expand labour market opportunities are essential for reshaping poverty dynamics and promoting inclusive development. The evidence underscores that the future of poverty alleviation in Nigeria hinges on a holistic approach to human capital formation, rather than on isolated investments alone.

5.3 Recommendations

1. The government should increase and sustain adequate support for the education sector, focusing on improving access, quality, and employability. Strengthening educational outcomes will deepen human capital formation and amplify its contribution to poverty reduction.

2. Strategic investments in healthcare, particularly primary health services and preventive care, should be prioritized to improve life expectancy. Better health outcomes will enhance productivity, resilience, and overall human capital, thereby mitigating poverty vulnerability.

3. Effective job creation policies should be implemented, including support for small and medium-sized enterprises (SMEs) and labour-intensive sectors. Expanding access to employment opportunities will allow individuals to apply their skills, generate income, and reduce poverty, reinforcing human capital formation as a driver of sustainable development.

5.4 Contribution to Knowledge

This study contributes to knowledge in the following ways:

1. Human Capital Formation Focus: It examines how education expenditure, life expectancy, and unemployment influence poverty reduction, emphasizing human capital formation rather than mere investment.

2. Theoretical Advancement: By applying the Basic Needs Theory (BNT), the study addresses a gap in the literature where this framework is underutilized in analyzing human capital and poverty.

3. Empirical and Policy Insights: Covering 1990 to 2024, the research provides robust evidence on the effects of key human capital variables and offers actionable guidance for designing education, healthcare, and employment policies to foster sustainable socio-economic development in Nigeria.

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