



**INTERNATIONAL
JOURNAL OF
SOCIAL SCIENCES**

**HUMAN CAPITAL, SOCIAL INCLUSION AND ECONOMIC
DEVELOPMENT IN NIGERIA**

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DOI:<https://doi.org/10.60787/ijss.vol18no2.275>

Abstract

This study investigated the impact of human capital and social inclusion on economic development in Nigeria from 1981 to 2024. Utilizing annual time-series data from the Central Bank of Nigeria and World Bank Development Indicators, the Autoregressive Distributed Lag (ARDL) model is employed to examine both long-run and short-run dynamics. Per capita GDP (PCGDP) was used as the proxy for economic development, while explanatory variables included government expenditure on health and education, life expectancy, social inclusion index, employment, exchange rate, credit to SMEs, rural bank branches, and trade openness. The long-run findings showed that government health expenditure, social inclusion index and employment significantly promote economic development. Other variables such as education spending, financial inclusion, and SME credit exhibit weak or negative effects. In the short run, employment remains positively significant, while credit to SMEs has a negative

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significant impact. The error correction term is correctly signed and statistically significant, confirming a stable adjustment toward equilibrium. The model explains 69% of the variation in PCGDP and passed diagnostic checks. The study concluded that while human capital and social inclusion are crucial for development, structural inefficiencies limit policy effectiveness. It recommended stronger investment in healthcare, job creation, SME financing reforms, and improved rural financial access to foster inclusive and sustainable growth.

Keywords: ARDL, Economic Development, Human Capital, Social Inclusion index, Nigeria

JEL Classification: J24, I32, O15, G21, F31, C32

Résumé

Cette étude a examiné l'impact du capital humain et de l'inclusion sociale sur le développement économique au Nigeria entre 1981 et 2024. En s'appuyant sur des données annuelles de séries chronologiques provenant de la Banque centrale du Nigeria et des indicateurs de développement de la Banque mondiale, le modèle ARDL (Autoregressive Distributed Lag) a été utilisé pour analyser les dynamiques à long et à court terme. Le PIB par habitant (PIB/hab.) a servi d'indicateur du développement économique, tandis que les variables explicatives comprenaient les dépenses publiques de santé et d'éducation, l'espérance de vie, l'indice d'inclusion sociale, l'emploi, le taux de change, le crédit aux PME, les agences bancaires en milieu rural et l'ouverture commerciale. Les résultats à long terme indiquent que les dépenses publiques de santé, l'indice d'inclusion sociale et l'emploi favorisent significativement le développement économique. D'autres variables, telles que les dépenses d'éducation, l'inclusion financière et le crédit aux PME, présentent des effets faibles ou négatifs. À court terme, l'emploi demeure positivement significatif, alors que le crédit aux PME a un impact négatif significatif. Le terme de correction d'erreur présente le signe attendu et est statistiquement significatif, confirmant un ajustement stable vers l'équilibre. Le modèle explique 69 % de la variation du PIB/hab. et a satisfait aux tests de diagnostic. L'étude conclut que, bien que le capital humain et l'inclusion sociale soient cruciaux pour le développement, des inefficacités structurelles limitent l'efficacité des politiques. Elle préconise un renforcement des investissements dans la santé et la création d'emplois, des réformes du financement des PME ainsi qu'une amélioration de l'accès aux services financiers en milieu rural afin de favoriser une croissance inclusive et durable.

Mots-clés: ARDL Capital humain, Développement économique, Indice d'inclusion sociale, Nigeria

Classification JEL: J24, I32, O15, G21, F31, C32

Introduction

The importance of human capital to economic development cannot be overemphasized and has become a motivating factor for many scholars across the world to study its effect on growth and development. This observed importance led the Organization for Economic Co-operation and Development (OECD, 2001) to define it as the stock of competencies, skills, knowledge and personality attribute embodied in individuals which facilitate their ability to perform labour for the creation of personal, economic and social value. Prior to the OECD definition, precisely in the 1950s, human capital was not considered as an instrument of growth. However, since Schumpeter (1954) brought to the fore the role of innovation (which is a by-product of education) in the process of economic growth, and Solow (1956) whose work inexplicitly incorporated human capital into the growth model, where he posited that increase in the stock of physical capital, increases in the size of labour force, and a residual representing all other factors, were the essential things needed for growth to occur (Isola and Alani,

2012). Since then, very many scholars have tried to study the contribution of human capital to economic growth and development with earlier studies focusing on only the education side of the human capital. Scholars such as Schultz (1961), (Becker, 1964) among others looked at the contribution of education to the economic growth and development and discovered that the link between education and economic growth were illuminating.

While many other studies like, World Bank (1991; 1999) discovered that additional years of education per person in the labour force increases real output or growth rate. However, since Crossman (1972) demonstrated that health is a form of human capital and Mankiw, Romer, and Weil, (1992) full incorporation of human capital investment (comprising of investment in health and education) into their growth model, scholars have come to term with the importance of healthy labour force for economic growth. This led Schultz (2002) to extensively submit that a good health condition was a precursor and one of the assurances required for a child to be able to withstand the challenges of school attendance. The place of the human person in the pursuit of economic development cannot be overemphasized even in the face of rising use of artificial intelligence, which is on the rise. It is a non-negotiated fact that it is the human intelligence that created and will also drive the artificial intelligence and so, the former remains the preferred focus for attention.

Of the different types of resources that drive development, namely, human, material and financial, it is evident that the place of humans cannot be underrated. This is because significant indications abound that humans are the utmost possessions any nation can have. For this reason, human capital development can be regarded as the sole propeller for economic development in the world. With the massively available human resources in Nigeria, there is need for more attention to be paid in this direction in order to harness these abundant resources for development of the nation. As understood, human capital remains the focal source for economic growth, the tangible rise or improvement in productivity and technological advancement point to the reasons why it remains the one option. Putting it in clearer terms, economic growth can only occur in developing nations and improved on by developed nation if and only if the crucial role that human capital development play in stimulating the inclusive development of the nations is encouraged. There is this obvious linkage between human capital development and economic development. Through this linkage, the contributions combination of education, of which are prerequisites for driving growth are recognized and utilized, without which there can exist an uphill task of achieving the desired accelerated economic development.

Human capital is explained as the contributions that the set of skills, knowledge, education, and workers experiences yield towards the realization of a robust economy. Relating human capital to social inclusion, it can be conditionally explained amongst other reasons that it provides-concrete backbones for the realization of economic development; just as economic opportunities created in the growth process are distributed. Due to market failure., it is seen that the poor are generally incapacitated in taking advantage of available new economic opportunities. This places the poor at a disadvantaged point and the non-poor at a more advantaged position to benefit more and better from the growth process thereby leading to poverty, income inequality and unemployment. To achieve growth that proffers poverty and unemployment reduction and also equitable distribution of income therefore, the normal practice must be altered while not leaving out alteration of the pattern and pace of growth so as to guarantee that the average citizens contribute and benefit from the growth process. The resultant effect of these would be an all-inclusive growth process that is broad-based. This will lead to practicalizing of the narrative that there is equal access to economic process that emphasizes the ominous need for an economic environment that allows individuals and groups to partake in the growth process. This makes the social inclusion strategy to become unavoidable in the comparison of

growth and development. For these reasons, it becomes obvious that human capabilities development as regards equal access to quality education and health care is key if inclusive growth as well as sustainable development are to be achieved.

Statement of the Problem

A dissection of the Nigerian process to economic development pattern will show that interestingly, a typical scenario of a non-inclusive economy persists. An average of 8.4% from 2000 to 2010 showed a trajectory with strong trajectory as far as GDP growth was concerned. Within the same period, there existed an increased nosedive in unemployment while poverty level continued to deepen. Example, is the number of people that live below the poverty line increasing to 112.5million in 2010 from 69 million in 2004. There was also a surge in unemployment and underemployment rates statistically to 21% in 2010 from 12% in 2006. In line with the expected outcome of an average GDP growth rate of -0.4% between 2016 and 2017, a surge resulted in rate of unemployment/underemployment to a high record level of 40% in 2017 (WDI 2020). The combination of evidence from narratives and other socio-economic indicators within these periods can only emphasize the necessity for an economy that is unarguably socially inclusive. Accurate, suitable and timely social data and policy decisions help in providing evidence, and also helps in evaluating the effectiveness of social and economic policies and programmes. For these reasons, it is imperative that improved decision-making process is bothered on provision of social data. Following this conclusion, human capital, economic and social inclusion policies and strategies can only be as efficient as the data generating processes, scope and depth.

Nigeria ranking on the human development index (HDI), 150 out of 157 countries in the world in recent years even in the face of some progress in socio-economic terms only shows that there are massive challenges as far as development is concerned. (World Bank's 2020 Human Development Index). These challenges include persistent overdependence on oil for exports and revenues, non-diversity of its foreign exchange sources, large infrastructure gap, absence of social inclusiveness, non-existences of strong and effective institutions, as well as not addressing governance issues and strengthening public financial management systems. There also exist income and opportunities inequalities which persistently remain high and adversely affect poverty reduction. The high poverty level is further armed due to lack of job opportunities, regional inequality, and social and political unrest. This is without leaving out the sad high inflation rate which has taken a toll on household's welfare. Reasons for Nigerians poverty status cannot be unconnected to those points raised. There are also climate risks that have contributed to declining per-capita food production. There are definitely key macroeconomic policy measure priorities which include adopting a single, market-responsive exchange rate, refocusing the central bank on its mandate to reduce inflation, and increasing non-oil revenues that must be adopted if the growth of the economy is to realized.

They include eliminating the petrol subsidy by June 2023, as envisaged in the 2023 fiscal framework, which should be accompanied by strengthened social protection measures. This study, in furtherance of social inclusion debate seeks to investigate the effect of human capital and social inclusion on economic development. In this context, the study attempts to provide answers to the following research questions: (i) How does human capital impact economic development in Nigeria? (ii) What relationships exist among human capital, social inclusion and economic development in Nigeria? (iii) To what extent does social inclusion impact economic development in Nigeria?

Objective of the Study

The main objective of the study was to examine the impact of human capital and social inclusion on economic development in Nigeria. The specific objectives were to:

- (i). examine the long run relationship between human capital, social inclusion and economic development in Nigeria,
- (ii). determine the impact of social inclusion on economic development in Nigeria; and
- (iii). examine the effect of human capital on economic development in Nigeria.

Literature Review

Conceptual Issues

Economic Development

Economic development encompasses both the sustained increase in a nation's productive output and the advancement of its social and institutional systems. Proponents of the dependency perspective argue that development is uniquely aligned with addressing the challenges of less-developed nations, in contrast to economic growth which is more typical of industrialized economies (Jhingan, 2007). Maddison (1970) distinguished the two by noting that in high-income countries, economic progress is typically referred to as "growth," whereas in developing regions, it is more accurately termed "development."

Rains, Stewart, and Ramirez (2009) highlighted a close relationship between economic growth and development, suggesting that the former provides the means for the latter. As household incomes rise, individuals tend to allocate more resources toward education, health, and welfare, contributing to higher living standards. This increased investment in public infrastructure and consumption generates a reinforcing cycle that improves overall societal welfare. Furthermore, higher income levels provide the government with greater capacity to fund public goods such as healthcare, potable water, and sanitation, reinforcing development gains.

Economic Growth vs Economic Development

While economic growth typically refers to the expansion of a country's output, economic development encompasses broader, qualitative changes within an economy. Growth measures such as GDP quantify changes in production, but development includes structural transformation, technological innovation, institutional reform, and societal progress (Jhingan, 2007). A country can experience growth without meaningful development if it continues to suffer from inequality, unemployment, and poverty due to weak institutions or stagnant innovation. Thus, economic development is often conceptualized as "growth plus change," with emphasis on improved living conditions alongside material prosperity. In this study, macroeconomic indicators such as Per Capita Gross Domestic Product (PCGDP) and the Discomfort Index (DISCF) are employed as proxies for evaluating economic development.

Human Capital

Human capital comprises the knowledge, skills, competencies, health, and experience possessed by individuals, which collectively contribute to economic productivity. It incorporates dimensions such as intellectual ability, physical health, emotional resilience, and social connectivity.

For Nigeria to achieve inclusive and sustainable development, investment in human capital is essential. Empirical evidence, such as that provided by Ravallion (2004), demonstrates that spending on education and health yields positive outcomes for economic development. Enhancing human capital therefore, requires improving access to quality education, healthcare, and vocational training, while also addressing inequality. These investments expand people's ability to contribute meaningfully to the economy and to share in its benefits.

Health and education services, especially when made widely available, reduce maternal mortality and increase life expectancy—key indicators of development. Narayan, Saveedra, and Tiwari (2013) argued that health inequalities directly affect labour productivity, and as such, equitable health systems are vital. Consequently, a well-developed healthcare infrastructure supports a productive workforce and ensures broader participation in national development.

Enyekit, Amaehule, and Teerah (2011), along with Isola and Mesagan (2014), emphasized the importance of a conducive environment for nurturing human capital. This study adopts macroeconomic indicators such as public spending on health and education, life expectancy, and employment levels to measure human capital development.

Social Inclusion

Social inclusion refers to a societal condition where all individuals—regardless of identity or circumstance—have equitable opportunities to contribute to and benefit from economic, social, and political life. It seeks to eliminate systemic barriers that prevent marginalized groups from full participation. Social inclusion promotes equitable access to resources, representation in decision-making, and recognition of dignity and rights. It is instrumental in achieving inclusive economic growth. By enabling broader participation, social inclusion reduces poverty through mechanisms such as income redistribution and social transfer programmes (World Bank, 2023; UN DESA, 2016; UNESCO, 2022).

It is increasingly recognized at global, regional (e.g., African Union), and national levels that social inclusion is a powerful policy tool for addressing development challenges. Governments are encouraged to invest in social inclusion policies to foster equitable growth, particularly in developing nations like Nigeria, where growth has not equitably reached the poor (Holmes *et al.*, 2012; Mesagan and Adeniji-Ilori, 2018).

Theoretical Framework

Dependency Theory

Originally proposed by Raul Prebisch in the 1950s and later expanded by scholars like Frank, Sunkel, Santos, and Amin, Dependency Theory posits that underdevelopment in less developed countries (LDCs) is due to their reliance on and exploitation by wealthier nations (Jhingan, 2007). According to this theory, the economic integration of LDCs into the global system is asymmetrical, channeling resources from the periphery (developing nations) to the core (developed nations), perpetuating poverty and inequality (Todaro, 2003; Amin, 1976).

Critics argued that the theory lacks a systematic approach and fails to account for internal dynamics such as class structures, production relationships, and the influence of capitalism. Others noted its limited empirical support and disregard for the role of external debt in sustaining economic dependency (Ijirshar, Fefa & Gadoo, 2016).

Gary Becker's Human Capital Theory

Becker's 1964 theory of human capital views education and training as investments that improve individual productivity and income, akin to investing in physical capital. This theory has shaped economic thought on the role of education in development.

However, critics argued that the theory oversimplifies complex socio-economic dynamics. It assumes rational decision-making and equal access to education and training, overlooking institutional barriers and structural inequality. It also narrowly defines human capital by excluding important

elements such as emotional intelligence, creativity, and health. Despite these limitations, the theory informs public policy by promoting education and skills development as a strategy for economic growth. It implies individual responsibility for economic outcomes and raises concerns about brain drain, inequality, and meritocracy in development processes.

Social Capital Theory

First was introduced by James Coleman (1988) and later expanded by Robert Putnam (1993). The theorists defines social capital as the norms, trust, and networks that enable collective action for mutual benefit. It underscores the value of social relationships in facilitating cooperation and inclusion. Putnam emphasizes that strong social networks support community participation and reduce inequality. Social capital plays a vital role in promoting development through civic engagement, empowerment, and equitable policy implementation. From a policy standpoint, strengthening social capital means supporting education, healthcare, and inclusive governance. It also requires addressing systemic discrimination and empowering communities through targeted development programmes.

Empirical Review

Several empirical works have explored the impact of human capital development on economic performance. Studies by Mba, Ogbuabor and Ikpegbu (2013), Eigbiremolen *et al.* (2014), Jaiyeoba (2015), and Omotayo (2015) confirmed the positive correlation between investments in human capital and economic growth. Mba *et al.* (2013), in particular, highlighted that investments in education and health promote inclusive and sustainable economic development. Dan and Odivwri (2024) investigated the role of Social Studies education in fostering social inclusion and national development. Using a quasi-experimental approach, their study emphasized the role of inclusive education in addressing social inequality and fragmentation. Their findings advocated for government policies that ensure equality and citizen participation in nation-building.

Similarly, Onuigbo (2021) conducted a descriptive analysis of human capital and economic development in Nigeria. The study concluded that sustained investment in education and skill building could positively influence future generations and national prosperity. Oludumila, Akinyemi, and Adediran (2018) examined the relationship between human capital and inclusive growth, linking their study to Sustainable Development Goal 4 (SDG-4). Using data from 1981–2015 and employing Error Correction Mechanism and Johansen cointegration, the study found a significant long-run relationship between human capital and inclusive growth. It concluded that skill acquisition and quality education are key to achieving inclusive development. However, measuring the effects of human capital investment remains complex. Baldacci *et al.* (2008) noted that the intertwined nature of education and health complicates empirical analysis. Improved education can lead to better health awareness, while good health enhances the ability to learn and earn. Challenges such as data availability and model design often result in inconsistent findings.

Otu and Adenuga (2006) also examined the relationship between human capital and economic growth in Nigeria using macroeconomic indicators and education data from 1970–2003. Their findings affirmed that infrastructure investments in education accelerate growth. The study recommended increasing enrolment in pre-primary and secondary education to improve literacy and long-term development outcomes.

Empirical Gap

Previous studies seem to have predominantly focused on education as the sole indicator of human capital. Limited attention was given to the role of social inclusion in fostering economic development.

This study addresses this empirical gap by examining both human capital and social inclusion as joint drivers of development in Nigeria.

Methodology

Source of Data

This research utilizes annual time series data spanning from 1981 to 2024, obtained from two main sources: The Central Bank of Nigeria (CBN) Statistical Bulletin (2024) and the World Bank's World Development Indicators (WDI, 2024). These data sources were selected due to their reliability and comprehensive coverage of Nigeria's macroeconomic variables relevant to the study's objectives.

The study employed appropriate econometric estimation techniques to analyze the relationships among the key variables. These include:

- **Unit Root Test:** to assess the stationarity properties of each time series variable.
- **Johansen Cointegration Test:** to determine the existence of long-run relationships among the variables.
- **Autoregressive Distributed Lag (ARDL) Bounds Testing Approach:** to capture both short-run and long-run dynamics among the variables.

A detailed explanation of the econometric model and procedures adopted is provided in the following subsections.

Method of Data Collection and Variables Used

This study is based solely on secondary data sources that provided both the data and relevant macroeconomic insights needed to achieve the research objectives. Time series data were primarily drawn from multiple publications of the World Development Indicators (WDI) and various editions of the CBN Statistical Bulletin, including Annual Reports and Statement of Accounts. The key variables employed in the model estimation include:

- **Per Capita Gross Domestic Product (PCGDP):** Used as a core indicator of economic development.
- **Discomfort Index (DISCF):** Also used as a proxy for measuring economic development.
- **Government Expenditure on Education (GOVEXPED)**
- **Government Expenditure on Health (GOVEXPHEL):** Representing public investment in human capital.
- **Life Expectancy (LIFEX):** A human capital proxy reflecting the overall health status of the population.
- **Employment Rate (EMP):** Another key indicator for labour-related dimensions of human capital.
- **Financial Deepening (rural banking):** Measured by the number of bank branches (NBB) per 1,000 adults.
- **Financial Sector Efficiency (FSE):** Measured as the difference between savings and lending rates.
- **Credit to Small and Medium Enterprises (CTS: Credit to SMEs):** Serves as a proxy for social inclusion and access to financial resources.
- **Social inclusion index (SINCLD):** constructed from indicators of income, education, and participation which serve as a major proxy for social inclusion.
- **Access to basic services index (electricity, water, sanitation)**

Other relevant macroeconomic control variables included:

- Openness (OPEN): Reflecting trade exposure.
- Exchange Rate (EXR): To capture currency volatility effects.
- Investment (INV): Representing capital accumulation within the economy.

The Autoregressive Distributed Lag (ARDL) Model was employed due to its suitability for analyzing series with mixed orders of integration (I(0) and I(1)) and its strength in modeling both short-run adjustments and long-run equilibrium relationships. This technique enabled a robust exploration of the dynamic relationships among human capital development, social inclusion, and economic development in Nigeria over the 1981–2024 period.

Model Specification

Human Capital, Social Inclusion, and Economic Development Equation

This study specifies a functional model to evaluate the joint influence of human capital and social inclusion on economic development in Nigeria. The general form of the model is outlined as:

PCGDP = F (DISCF, GOVEXPED, GOVEXPHEL, LIFEX, OPEN, INV, EMP, EXR, NBB, FSE, CTS, SINCLI)1

The model's econometric form is given as:

PCGDP_t = b₀ + b₁DISCF_t + b₂GOVEXPED_t + b₃GOVEXPHEL_t + b₄LIFEX_t + b₅OPEN_t + b₆INV_t + b₇EMP_t + b₈EXR_t + b₉NBB_t + b₁₀FSE_t + b₁₁CTSt + SINCLIt + U_t 2

Linearizing it we will have:

logPCGDP_t = logb₀ + b₁logDISCF_t + b₂logGOVEXPED_t + logb₃GOVEXPHEL_t + b₄logLIFEX_t + logb₅OPEN_t + b₆logINV_t + b₇logEMP_t + b₈logEXR_t + b₉logNBB_t + b₁₀logFSE_t + b₁₁logCTSt + b₁₂SINCLIt + U_t

Variable Definitions:

- PCGDP_t: Per Capita Gross Domestic Product at time *t*
- DISCF_t: Discomfort Index at time *t* (computed as the sum of inflation and unemployment, relative to GDP)
- GOVEXPED_t: Government expenditure on education at time *t*
- GOVEXPHEL_t: Government spending on health at time *t*
- LIFEX_t: Life expectancy at time *t*
- OPEN_t: Trade openness at time *t*
- INV_t: Investment at time *t*
- EMP_t: Employment opportunities at time *t*
- EXR_t: Exchange rate at time *t*
- NBB_t: Number of rural bank branches per 1,000 adults at time *t*
- FSE_t: Financial sector efficiency (difference between savings and lending rates) at time *t*
- CTSt: Credit Extended to SMEs at time *t*
- SINCLIt: Social Inclusion index in time *t*
- U_t: Error term capturing random disturbances

Expected Signs (A Priori Expectations):

- β₁ (-), β₂ (+), β₃ (+), β₄ (+), β₅ (+), β₆ (+), β₇ (+), β₈ (-), β₉ (+), β₁₀ (+), β₁₁ (+), β₁₂ (-)
These signs indicate the hypothesized direction of influence for each variable on economic development.

Model Estimation Procedure

The study adopts a multi-step econometric approach to assess the time-series characteristics of the data and to estimate the proposed model effectively.

Firstly, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests were employed to determine the stationarity of the variables and the order of integration (i.e., whether the series are $I(0)$ or $I(1)$). Understanding the integration order is crucial before selecting the appropriate cointegration technique.

For variables integrated at order one, Johansen's Cointegration Test is applied to assess whether a long-run equilibrium relationship exists among the variables. However, if the variables are a mixture of $I(0)$ and $I(1)$, the Autoregressive Distributed Lag (ARDL) Bounds Test is considered more appropriate.

This study implements both Johansen's Test and the ARDL Bounds Testing Approach to ensure robustness in detecting cointegrating relationships. Specifically:

- The ARDL model is utilized to analyze the dynamics of human capital and social inclusion as they relate to economic development.
- An Error Correction Model (ECM) is also applied within the ARDL framework to capture both short-run adjustments and the speed of convergence to long-run equilibrium.

All statistical estimations and diagnostics were conducted using EViews version 9, which offers reliable tools for time-series analysis.

Results and Discussion of Findings

Long-Run Dynamics of Human Capital, Social Inclusion, and Economic Development

Table 4.1: Long-run Coefficients

Variables	Coefficients	Std. Error	t-Statistic	Prob.
OPEN	-8.467163	5.123095	-1.652744	0.1243
NBB	-0.005721	0.004029	-1.419749	0.1811
LEXP	0.382416	0.775560	0.493084	0.6309
GOVEXHEL	13.377811	3.141323	4.258655	0.0011
GOVEXE	0.003700	0.012943	0.285868	0.7799
EXR	-0.098736	0.058133	-1.698452	0.1152
EMP	0.160015	0.042879	3.731742	0.0029
DISCF	0.035937	0.057027	0.630179	0.5404
CTS	-0.092166	0.061641	-1.495188	0.1607
SINCLI	0.700110	0.000059	2.849939	0.0002
C	-17.723528	36.434313	-0.486452	0.6354

Source: Researcher's Computation (2025)

Interpretation of Long-Run Coefficients

The regression output reveals that government health spending (GOVEXHEL) and employment (EMP) exhibit statistically significant positive effects on per capita GDP (PCGDP). Specifically:

- A 1% increase in GOVEXHEL corresponds to a 133.78% rise in PCGDP, underscoring the vital role of public health investment in economic transformation. This finding aligns with the perspectives of Otu and Adenuga (2006) and Onuigbo (2021).
- Employment also significantly influences development, with a 1% increase translating into a 16.00% rise in PCGDP, affirming employment creation as a growth-enhancing tool.
- A 1% increase in SINCLI corresponds to a 70.01% rise in PCGD, underscoring the vital role of social inclusion index in economic development.

In contrast, openness (OPEN), exchange rate (EXR), number of bank branches (NBB), discomfort index (DISCF), and credit to SMEs (CTS) show negative, albeit statistically insignificant, associations with economic growth. These results imply that although theoretically relevant, these variables lacked economic traction in driving long-run development over the studied period. For example, the negative coefficient of NBB implies limited reach of rural banking in fostering financial inclusion.

Furthermore, life expectancy (LEXP) and education spending (GOVEXE) are positively associated with economic growth, but these effects are statistically weak. This may reflect institutional or systemic inefficiencies in Nigeria's human capital development strategies, particularly in public education and healthcare funding frameworks.

Short-Run Dynamics

Table 2: Short-Run ARDL Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GOVEXHEL)	8.036469	4.849871	1.657048	0.1234
D(GOVEXHEL (-1))	-18.657228	6.391640	-2.919005	0.0129
D(EMP)	0.184439	0.086550	2.130995	0.0545
D(CTS)	-0.193863	0.082893	-2.338717	0.0375
SINCLI	0.000057	0.000017	3.296757	0.0036
CointEq(-1)	-0.517166	0.218710	-2.364619	0.0283

Model Summary:

$R^2 = 0.696275$ | $Adj. R^2 = 0.377364$ | $F\text{-statistic} = 2.183$ | $D\text{-}W\text{ stat} = 2.19$

Source: Author's Computation (2025)

Interpretation of Short-Run Results

In the short term, GOVEXHEL exerts a positive effect in the immediate period, but becomes significantly negative in the following period. This pattern could indicate temporal inefficiencies or delayed effects in health spending. Similarly, EMP shows a strong positive effect initially but becomes negative and insignificant after a lag, suggesting that employment gains may not be sustained or of high quality.

Credit to SMEs (CTS) demonstrates a significant and negative short-run effect on PCGDP, potentially due to poor loan administration, limited SME capacity, or inadequate monitoring mechanisms. Though theoretically SME financing is growth-enhancing, the observed effect suggests systemic flaws in credit disbursement.

Social inclusion index (SINCLI) demonstrates a significant and a positive short run effect on PCGDP, indicates that social inclusion policies and programmes immediately stimulate economic activities, improve welfare, and strengthen short term economic performance in Nigeria. However, it's worth noting that sustaining this effect in the long run depends on institutional quality, policy continuity, and effective inclusion frameworks that go beyond temporary empowerment initiatives.

The error correction term (CointEq(-1)) is appropriately signed and statistically significant, confirming a strong adjustment process. Approximately 51.71% of disequilibria are corrected within a year, indicating rapid convergence to long-run equilibrium.

The R-squared value (0.696275) implies that over 69% of the variation in economic development is explained by the explanatory variables, while the Durbin-Watson statistic (2.19) confirms the absence of serial correlation, thereby ensuring the robustness of the short-run estimates.

Discussion of Findings

The empirical findings reveal a nuanced interplay between human capital, social inclusion, and Nigeria's economic performance. Among the indicators:

- Government expenditure on health and employment consistently demonstrate a positive and significant influence on economic growth both in the short and long run, confirming their developmental importance.
- Education spending, while positively signed, lacks statistical weight, suggesting implementation gaps in the educational sector.
- Financial inclusion metrics, such as number of rural bank branches (NBB) and credit to SMEs, not only underperform but exert negative effects. This may imply financial exclusion, credit misallocation, or limited SME productivity within the review period.
- Trade openness and exchange rate movements showed no significant long-run impact, potentially reflecting Nigeria's structural reliance on oil exports and limited export diversification.
- The discomfort index, comprising inflation and unemployment, showed a counterintuitive weak positive effect in the long run, possibly due to the resilience of certain sectors or compensatory macroeconomic measures.
- Social inclusion index showed significant short and long run impact on economic development. Indicating that social inclusion policies and programmes immediately stimulate economic activities, improve welfare, and strengthen short term economic performance in Nigeria.

These findings resonate with existing literature (Onuigbo, 2021; Oludumila *et al.*, 2018; Baldacci *et al.*, 2008), reinforcing the role of strategic human capital investment and inclusion-driven reforms in fostering development. However, the inconsistencies between theory and empirical outcomes underscore the need for institutional reform and targeted policy interventions to address systemic inefficiencies in education, SME financing, and rural financial services.

Policy Recommendations

In response to the empirical evidence, four strategic policy directions are proposed to drive inclusive and sustainable economic development in Nigeria:

Optimize Health and Human Capital Investments

i). Expand Preventive and Primary Healthcare:

Scale up access to affordable basic healthcare services through increased funding and targeted infrastructure development.

ii). Strengthen Health Financing Mechanisms:

Broaden national health insurance coverage and leverage public-private partnerships to improve delivery efficiency and outcomes.

Drive Employment-Led Economic Growth

iii). Promote Skills Development and Vocational Training:

Invest in technical education and youth entrepreneurship to boost labor productivity and reduce unemployment.

iv). Target High-Impact Sectors for Job Creation:

Prioritize employment generation in agriculture, ICT, and construction sectors through fiscal and industrial policy support.

Reform SME and Rural Financial Access

v). Improve SME Credit Efficiency:

Establish performance-based SME lending and monitor credit utilization to ensure economic value addition.

vi). Expand Rural Financial Inclusion:

Deploy digital financial services and financial literacy programs to bridge the rural banking gap.

Stabilize the Macro-Economy for Growth

vii). Ensure Exchange Rate Stability:

Pursue consistent monetary-fiscal coordination and diversify foreign exchange sources beyond oil exports.

viii). Control Inflation and Boost Welfare:

Implement inflation-targeting policies and scale up labor market programs to reduce macroeconomic discomfort and poverty.

Social Inclusion Index Effect

vix). Social inclusion drives economic development by empowering citizens, expanding productive capacity, and ensuring equitable access to opportunities

x). Policy should aim at deepening, institutionalizing and sustaining inclusion, not treating it as a temporary welfare measure.

Conclusion

The empirical results offer a well-rounded platform for policy interventions geared toward strengthening human capital and promoting social inclusion. For these recommendations to be impactful, coordinated efforts by key government ministries and agencies are essential. Implementing the proposed reforms within the suggested timelines will not only bolster economic performance but also advance Nigeria's journey toward inclusive and sustainable development.

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APPENDIX

YEAR	EMP	PCGDP	EXR	OPEN	DISCF	LEXP	GOVEXE	NBB	CTS	GOVE XHEL	SINCLI
1981	0	-15.45	0.61	0.18	DISCF	45.6	0.17	240	2.1	0	214.4
1982	0	-9.20	0.67	0.16	4.71	45.9	0.19	308	2	0	278.3
1983	0	-13.15	0.72	0.12	4.87	46	0.16	407	3.2	0	464.3
1984	0	-3.58	0.76	0.1	6.02	46.1	0.2	432	6.1	0	768.3
1985	0	3.23	0.89	0.1	8.66	46.1	0.26	451	8.5	0	1119.6
1986	0	-2.51	2.02	0.1	6.99	46.1	0.26	481	9.3	0	1009.2
1987	0	0.53	4.02	0.07	7.32	46	0.23	529	20.46	0	1217.5
1988	61.21	4.55	4.54	0.19	11.02	46	1.46	602	20.69	0	1779.2
1989	61.12	-0.71	7.39	0.16	9.64	45.9	3.01	756	20.6	0	1394.6
1990	60.92	8.93	8.04	0.21	11.49	45.9	2.4	765	22.9	0	1859.3
1991	60.82	-2.16	9.91	0.31	11.54	45.9	1.26	765	23.8	0	2424.0
1992	60.72	2.03	17.3	0.35	13.01	45.9	0.29	774	27.04	0	4206.1
1993	60.58	-4.46	22.05	0.38	20.8	45.8	8.88	775	17.41	0	6010.1
1994	60.44	-4.23	21.89	0.31	25.45	45.8	7.38	763	14.32	0	9050.6
1995	60.32	-2.53	21.89	0.21	25.09	45.9	9.75	701	15.86	0	15502.0
1996	60.21	1.63	21.89	0.59	23.79	45.9	11.67	675	16.6	0	21260.5
1997	60.17	0.41	21.89	0.5	24.69	45.9	14.85	675	13.12	0	21686.6
1998	60.07	0.06	21.89	0.51	25.29	46	13.59	714	11.53	0	25767.2
1999	60.05	-1.90	92.69	0.35	25.39	46.1	43.61	714	10.43	0.58559412	24569.6
2000	59.88	2.42	102.11	0.39	110.19	46.3	57.96	722	7.58	0.8576929	24742.8
2001	59.85	3.29	111.94	0.42	120.21	46.5	39.88	722	6.21	0.53133184	40880.7
2002	59.81	12.46	120.97	0.4	125.64	46.8	80.53	722	8.68	0.92982918	59005.5
2003	59.82	4.66	129.36	0.29	133.17	47.2	64.78	722	7.49	1.202034	68293.7
2004	59.89	6.49	133.5	0.39	144.16	47.7	76.5	722	3.62	1.14133215	86080.0

2005	59.94	3.72	132.15	0.38	145.3	48.3	82.8	4.18	2.54	0.90186709	107899.2
2006	59.99	3.33	128.65	0.45	144.05	48.8	119.02	3.78	0.99	0.7786122	118631.1
2007	59.99	3.82	125.83	0.36	142.05	49.4	150.78	5.21	0.85	0.66059941	179184.3
2008	59.98	3.97	118.57	0.37	140.43	49.9	163.98	6.27	0.17	0.57001245	184947.7
2009	60.02	5.20	148.9	0.41	134.47	50.4	137.12	6.48	0.17	0.44847032	216141.4
2010	57.56	5.16	150.3	0.32	168.6	50.9	170.8	6.56	0.14	0.47937736	261881.5
2011	55.11	2.53	153.86	0.37	171.4	51.3	335.8	6.41	0.16	0.54436672	289293.9
2012	54.8	1.47	157.5	0.42	177.76	51.8	348.4	5.82	0.13	0.48927844	289111.0
2013	54.4	3.85	157.31	0.35	168.1	52.2	390.4	5.9	0.13	0.44593188	377517.1
2014	53.91	3.51	158.55	0.31	167.31	52.7	343.75	5.61	0.12	0.58907843	399638.2
2015	54.88	-0.03	193.28	0.26	168.25	53.1	325.19	4.98	0.1	0.47496933	444053.0
2016	55.81	-4.17	253.49	0.21	203.18	53.5	339.28	4.74	50.57	0.53266305	479447.1
2017	56.66	-1.79	190.66	0.18	265.09	54	403.96	4.44	55.51	0.49754828	508842.9
2018	56.24	-0.68	306.19	0.22	205.06	54.3	465.3	4.3	0.29	0.46980387	541722.9
2019	56.45	-0.38	306.96	0.31	322.89	54.7	593.33	4.78	0.71	0.50597858	580967.2
2020	56.35	-4.26	385.61	0.35	320.56	55	646.75	4.45	0.32	0.567843442	253408.1
2021	57.93	1.12	346.23	0.33	321.73	54.4	620.59	4.56	0.38	0.654321342	343644.2
2022	60.65	1.13	365.92	0.34	321.15	52.2	567.75	4.22	0.38	0.654732156	366492.1
2023	65.42	1.15	1540	0.35	330.45	54.6	650.82	5.35	0.4	0.564321678	721560.3
2024	67.43	1.25	1750	0.38	350.67	55.4	670.23	5.44	0.52	0.65342146	1265586.5

SOURCE: WDI 2024