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Nexus between human capital formation and economic growth in Nigeria: The moderating roles of macroeconomic environment

Sola OLUWAGBENLE *

Department Of Economics, Bamidele Olumilua University of Education, Science and Technology, Ikere-Ekiti.

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Abstract

The study examined the relationship between human capital formation and economic growth in Nigeria between 1991 and 2024, using Vector Autoregressive (VAR) Model and Pairwise granger causality techniques. The study specifically examined the association among economic growth (RGDP), human capital formation (HCF), physical capital (PC), labour productivity (LPROTY) and macroeconomic environment captured by exchange rates (EXCR), interest rates (INTR) and foreign direct investment (FDI). The findings showed that a long-run relationship was not established among the variables. Through Wald test, the results showed that a short-run relationship was established among the variables employed such as human capital formation (HCF), physical capital (PC), labour productivity (LPROTY), exchange rates (EXCR), interest rates (INTR), foreign direct investment (FDI) and economic growth (RGDP). Unidirectional causality was established between foreign direct investment (FDI) and exchange rates (EXCR), trending from foreign direct investment to exchange rates (EXCR). Also, unidirectional causality was established between labour productivity (LPTOTY) and foreign direct investment (FDI), whereby labour productivity granger caused foreign direct investment. A uni-directional causality was established between between foreign direct investment (FDI) and interest rates (RINTR). Therefore, the study recommends that government should stabilize exchange rate policy in order to enhance foreign direct investment. Also, government should adequately monitor foreign direct investment and interest rates in order to positively contribute to labour productivity as it is expedient for government to increase expenditure on human capital so as to enhance labour productivity and economic growth in Nigeria.

Keywords: Human Capital Formation; Physical Capital; Economic Growth; Labour Productivity; Foreign Direct Investment; Interest Rates and Exchange Rates.

1. Introduction

Human capital formation is vital for enhancing economic growth and output expansion. It can drive economic growth by increasing labour productivity and efficiency (Schultz, 1961). Human capital formation is one of the concepts for reducing poverty because investing in education and healthcare is helpful in reducing poverty and improving living standards (World Bank, 2020). Human capital formation fosters innovation and entrepreneurship, leading to job opportunities and economic diversification (Adeyemi & Ogundipe, 2016). In terms of global impact, a skilled workforce enhances Nigeria's global competitiveness and attracts foreign investment (IMF, 2020).

According to Jaiyeoba (2015), education is one of the most direct forms of human capital investment, equipping individuals with technical knowledge, problem-solving skills and adaptability. More also, education fosters social mobility, reduces inequality and strengthens a democratic governance which are key elements of sustainable development. (Kalemli-Ozcan, Ryder & Weil, 2000). Health is another vital dimension of human capital. A healthy population is more productive, innovative and capable of contributing to economic growth. Investment in healthcare reduces disease burden, increases life expectancy and enhances workforce participation. Thus, without adequate healthcare, economies face reduced productivity and higher poverty rates.

* Corresponding author: Sola OLUWAGBENLE; ORCID: 0000-0003-1880-3541

Human capital investment, encompassing education, health, skills training and capacity building, is a fundamental driver of economic development. Unlike physical capital, human capital enhances productivity of labour, fosters innovation and builds the foundation for sustainable growth (Tang, 2025). Investment in human capital thus strengthens not only long-run growth but also the ability to withstand crises and adapt to global uncertainties (Tatoglu, 2011).

Investment in physical capital has something to do with increased productivity, infrastructure development, job creativity and economic diversification. From theoretical reviews, physical capital enhances labour productivity, leading to higher output and economic growth (Solow, 1956). Physical capital investment in infrastructure (roads, bridges, ports) supports economic activity and growth (Aschauer, 1989). Physical capital investment can create employment opportunities, both directly and indirectly (Kleinknecht, 2015). Also, physical capital investment can help diversify Nigeria's economy, reducing dependence on oil exports. In Nigeria, physical capital investment is necessary for improving energy infrastructure (power generation, transmission), enhancing transportation networks (road, railways, ports) and developing industrial capacity (manufacturing and processing) (World Bank, 2020). Human and physical capitals are key inputs that increase labour productivity, which in turn drive economic growth. Human capital (skills, education, and experience) and physical capital (machinery, infrastructure) are complementary and lead to higher output per worker or employee. A sustained increase in labour productivity results in economic growth through higher employment, consumption and living standards.

Labour productivity known as output per hour worked, measures the value of goods and services produced per hour of labour. It is a key indicator of economic efficiency and competiveness. Labour productivity growth is relevant to growth in the economy, increasing output and living standards (Solow, 1956). It is obvious that higher labour productivity can enhance a country's competitiveness in the global market (Porter, 1990). It can also lead to higher wages and improved living standards (BLS, 2020). Labour productivity measures the amount of output a worker can produce in a given amount of time. It is enhanced when a skilled workforce (human capital) uses better tools and equipment (physical capital). Productivity growth is essential for sustainable economic growth. In addition, labour productivity growth encourages innovation and technological advancements (Romer, 1990).

Economic growth is a sustained increase in the production of goods and services in an economy. As labour productivity rises, the economy can produce more, leading to economic growth and higher living standards. Economic growth indicates the increase in the value of goods and services produced by an economy which is often measured as the percentage change in real GDP (Mankiw, 2014).

An exchange rate is the price of one country's currency being expressed in terms of another currency. It is essential for international trade, investment, capital flows and economic policy. Exchange rate influences imports and exports, it affects inflation and interest rate, it determines foreign investment flows and it impacts economic growth and competitiveness (Krugman & Obstfeld, 2018; Mishkin, 2019).

Nigeria's economic growth has been hindered by inadequate human capital formation, insufficient physical capital, and low productivity. Despite its rich natural resources, the country has been struggling with; low human development index (HDI) which only ranked 152nd out of 189 countries as at 2020, poor education outcomes such as low literacy rates, inadequate skilled workforce, inadequate physical infrastructure as attached to power, transportation and healthcare; low productivity levels in agricultural sector, employing 70% of workforce which contributed only 20% to GDP (World Bank, 2020).

However, these challenges have resulted in the following; slow economic growth (averaged GDP growth rate of 2.5% between 2015 and 2020, averaged GDP growth rate of 3.2% between 2021 and 2024); high poverty rates (40% of population living below poverty line in 2020, and 47% of population living below poverty line of $2.15 per day in 2024; limited economic diversification (oil sector dominates exports, accounting for 90% of foreign exchange earnings) (World Bank, 2020; National Bureau of Statistic, 2020). Economic growth in developing countries remains unstable because of structural challenges like low income, inequality, unemployment, limited education and training and poor infrastructure (Asaleye & Ncanywa, 2025).

Based on the problems in the study, the following research questions are raised; what is the relationship among human capital formation, physical capital, labour productivity, macroeconomic environment and economic growth in Nigeria? What is the short and long-run association between the independent variables (human capital formation, physical capital, labour productivity, macroeconomic environment) and the dependent variable (economic growth)? What is the direction of causality among the variables within the period of study?

2. Literature review

2.1. Theoretical Literature

Human capital formation as supported by human capital theory of Schultz (1961) and Becker (1964), indicating that investment in education at all levels, healthcare and training and retraining enhances productivity and economic growth. According to endogenous growth theory as postulated by Romer (1987) and Lucas (1988), human capital accumulation has the capability to enhance and drive technological progress and economic growth.

In terms of labour productivity, according to Neoclassical Growth Theory as discussed by Solow (1956), labour productivity growth drives economic growth. Akerlof (1982) supporting efficiency wage theory, indicated that higher wages lead to increased productivity and vice versa. With reference to economic growth, linking to Classical Growth Theory (Smith, 1776; Ricardo, 1817), emphasizing that economic growth is driven by capital accumulation, technological progress and division of labour, while Keynesian Growth Theory by Harrod (1939) and Domar (1946) believe that investment and government intervention drive economic growth.

2.2. Empirical Review

Some of the empirical reviews made in the study are as follows;

Konte, Kouame and Mensah (2022) examined how structural reforms affected labour productivity in developing countries between 1975 and 2005, using secondary dataset. The findings indicated that most of the trade, product market and financial sector reforms have increased productivity growth within the period of study. It was revealed that structural reforms work mainly through the intra-allocative efficiency channel but not through the inter-allocative efficiency channel.

Bibi, Akhtar and Asad (2023) examined the relationship among economic growth and both physical and human capital in Pakistan between 1990 and 2020, using econometrics techniques. The findings showed the significance of both human and physical capital for Pakistan's growth. It was revealed that life expectancy in Pakistan influences human capital, while gross fixed capital formation influences physical capital. The findings revealed that average life expectancy in Pakistan is 63 years. In addition, it was shown that the pandemic of 2019 caused a reduction in gross fixed capital formation and life expectancy in the country.

Ezoji and Assari (2019) examined the influence on productivity of health and education and their delineation relative impact on the economic growth in Iran between 1974 and 2014, using ARDL technique. The findings showed that all variables excluding the index composition of human capital, flow) are bearing a positive and significant impact on labour productivity in the long-run. It was shown that the coefficient of composite human capital index (health and education, flow variables) was greater than that of composite human capital (health and education, stock variables).

Gul, Khan and Assari (2022) examined the role of human capital in labour productivity with special reference to Pakistan, using the Generalized Method Moments (GMM) technique. The findings revealed that there is a positive correlation between employee's education and labour productivity in Pakistan.The study showed that Pakistan education is more powerful element to enhance labour productivity. The findings showed that employee's age has negative correlation with labour productivity, leading to insignificant relationship. In addition, the employee's wage has positive and significant effect on labour productivity.

Popoola, Alege, Gershon and Asaleye (2019) examined the relationship between human capital and productivity in Nigeria between 1980 and 2017, using Vector Error Correction Model. The findings showed that there was no long-run causality between the variables but a short-run causality was established. The results also showed that primary school and secondary school enrolments have insignificant effect on productivity growth while tertiary institution enrolment and government expenditure on education have a positive effect on productivity growth. In addition, it was revealed that human capital formation through education and investment in research and development has not promoted productivity in Nigeria, but investment in research and development is imperative to promote productivity which enhances the skills needed in new technologies.

Magida, Ncanywa, Sibanda and Asaleye (2025) investigated the role of public health expenditure on human capital development in South Africa between 2012 and 2021, using ARDL, VECM, Quantile regression and granger causality techniques. The findings showed that government expenditure on health has significant impact on human development in the short-run and long-run, while unemployment and population growth exerted adverse effect. The results from

Quantile regression showed the heterogeneous impact of health spending across different levels of economic development in South Africa within the period of study. The causality analysis showed a unidirectional causal relationship from public health expenditure to human development.

Esomnofu and Onyejegbu (2025) investigated the impact of capital formation on economic growth in Nigeria, using Ordinary least square (OLS) technique. The findings showed that capital formation has positive and significant impact on economic growth in Nigeria within the period of study. The stock market showed a positive impact on the economic growth while interest rate has a negative impact on economic growth in Nigeria within the period of study. It was revealed that a long-run relationship was established between capital formation and economic growth in Nigeria.

Onwiodiokit and Otolorin (2021) re-examined the impact of capital formation on Nigeria's economic growth between 1981 and 2018, using Dynamic Ordinary Least Sqaure (DOLS) technique. The findings showed that gross fixed capital formation had a negative and significant impact on economic growth within the period of study. The results also showed that external debt and total labour force had a negative effect on economic growth. Also, human capital formation and interest rate had positive effect on economic growth in Nigeria, and that positive relationship was established between the quality of educational system and overall infrastructure in Nigeria. The education quality and her physical infrastructure are highly correlated.

Ehigiamusoe, Ramakrishnan, Babalola, Samsurijan and Rahmat (2024) examined the moderating role of human capital and physical capital on foreign aid growth nexus in Nigeria between 1980 and 2020, using ARDL approach. The research showed that foreign aid has a positive impact on economic growth, and that human capital and physical capital had significant modelling roles on the impact of foreign aid on growth. In addition, it was revealed that human and physical capital, together with foreign aid can complement domestic capital to enhance economic growth in Nigeria.

From the literature review, this study contributes to the existing literature on the relationship between human capital formation and economic growth in Nigeria by extending prior studies that mainly focused on the direct effects of education and health expenditure without adequately considering the moderating role of macroeconomic environment. Existing Nigerian studies largely report positive links between human capital and growth, but with mixed outcomes depending on methodology and variable selection.

First, the study introduces macroeconomic environment as moderating variable in the human capital and economic growth nexus. By incorporating indicators such as exchange rate, interest rate and foreign direct investment, the research shows whether favourable or unstable macroeconomic conditions strengthen or weaken the growth impact of human capital. This provides a deeper explanation for why human capital investments may fail to translate into sustained growth in Nigeria.

Second, the study applies the Vector Autoregressive (VAR) model, which captures dynamic interdependence, feedback effects, and endogeneity among variables. Unlike single-equation regression models, the VAR framework allows the study to trace how shocks to human capital formation and macroeconomic variables transmit to economic growth over time through impulse response functions and variance decomposition.

Third, the study generates country-specific evidence for Nigeria, where persistent exchange rate volatility, and policy inconsistency may constrain the productivity returns from human capital accumulation. The findings therefore enrich policy debates on how to align macroeconomic stabilization policies with education and health sector investments.

Fourth, the study provides an integrated policy framework, suggesting that human capital expenditure alone may not be sufficient for growth unless accompanied by stable macroeconomic conditions.

Finally, the study fills an empirical gap by demonstrating that the effect of human capital on growth in Nigeria is not only direct but also conditional on the quality of the macroeconomic environment, thereby advancing knowledge in Macroeconomics, Development Economics and Growth literature.

3. Model Specification

$$RGDP = f(HCF, PHYC, LPRO, EXCR, INTR, FDI) \quad \ldots\ldots\ldots\ldots (1)$$

Where:

RGDP = Economic growth proxy by real GDP
HCF = Human capital formation

PHYC = Physical capital
LPRO = Labour productivity
EXCR = Exchange rates
INTR = Interest rates
FDI = Foreign direct investment

Macroeconomic Environment is captured by exchange rates (EXCR), interest rates (INTR) and foreign direct investment (FDI) in the model.

The above equation can be written in econometrics form as follows:

$RGDP_t = \beta_0 + \beta_1 HCF_t + \beta_2 PHYC_t + \beta_3 LPRO_t + \beta_4 EXCR_t + \beta_5 INTR_t + \beta_6 FDI_t + \varepsilon_t$..... (2)

Where:
β_0= intercept
$\beta_1 - \beta_6$ = parameters to be estimated
ε_t= error term

4. Results and Discussion

Table 1 Descriptive Statistics

	EXCR	FDI	HCF	LPROTY	RGDP	PHYC	RINTR
Mean	23.38464	-40.06080	3.842708	14.06183	-189.6031	7.724925	-18.77522
Median	4.990336	-1.829268	0.000000	0.000000	-19.44444	2.596701	-24.17582
Std. Dev.	59.95572	248.7034	34.78605	96.90393	1103.589	30.16434	542.9936
Skewness	4.088452	-5.157190	3.614727	5.064387	-4.797246	1.154262	1.025525
Kurtosis	20.16371	28.83155	19.56317	28.34451	26.61166	4.646270	11.99583
Jarque-Bera	497.0004	1063.776	408.2544	1024.287	893.1516	11.05430	117.0561
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.003977	0.000000
Observations	33	33	30	33	33	33	33

Source: Author's Computation (2026).

Table 1 showed the descriptive analysis of the distribution where the mean ranged from RGDP (-189.6031) to EXCR (23.38464). The table indicated that the values of standard deviation for all the variables are positively deviated, ranging from PHYC (30.16434) to RGDP (1103.589). Based on the skewness, EXCR, HCF, LPROTY, PHYC and RINTR have positive skewed values, while FDI and RGDP have negative skewed values. In the case of Kurtosis, it is obvious that all the variables have values greater than 3, showing that all the variables are leptokurtic.

The p-value of the Jarque-Bera showed that all the variables have p-value greater than 5% significance value, showing that none of the variables are normally distributed.

Table 2 Lag Order Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1173.564	NA	9.89e+27	84.32602	84.65907*	84.42783
1	-1103.463	100.1442*	2.46e+27*	82.81880*	85.48321	83.63334*

Source: Author's Computation (2026).

Table 2 showed the lag order criteria of the distribution, where NA, EPE, AIC and LR suggest that lag 1 is optimal for the analysis. Therefore, the optimal lag length for the model in this study is 1 based on most of the selected criteria.

Table 3 Unit Root Test

Variable	Augmented Dickey-Fuller (ADF)			PHILIP-PERON		
	STAT	5% C. V	INTEG	STAT	5% C. V	INTEG
EXCR						
RGDP	-5.717715	-2.957110	I(0)	-5.718238	-2.957110	I(0)
HCF	-7.139072	-2.971853	I(0)	-7.497983	-2.971853	I(0)
PHYC	-8.557031	-2.957110	I(0)	-8.530839	-2.957110	I(0)
LPROTY	-3.991326	-2.963972	I(2)	-3.821027	-2.963072	I(2)
RINTR	-4.063698	-2.957110	I(0)	-4.082879	-2.957110	I(0)
FDI	-5.290514	-2.957110	I(0)	-5.288507	-2.957110	I(0)

Source: Author's Computation (2026).

Table 3 obviously showed the unit root test results, using both Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) test. The tests determine whether each variable is stationary or not. From both ADF and PP test, it was indicated that all the variables are stationary at level [1(0)] except labour productivity (LPROTY), having 2nd order stationarity. Based on the findings, Vector Autoregressive technique is suitable for the analysis of the study.

Table 4 Least Squares

Dependent Variable: EXCR				
Method: Least Squares (Gauss-Newton / Marquardt steps)				
Sample (adjusted): 1993 2024				
Included observations: 29 after adjustments				
EXCR = C(1)*EXCR(-1) + C(2)*FDI(-1) + C(3)*HCF(-1) + C(4)*LPROTY(-1) + C(5)*PGDP(-1) + C(6)*PHYC(-1) + C(7)*PINTR(-1) + C(8)				
	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.264577	0.193818	1.365080	0.1867
C(2)	-0.081221	0.010511	-7.727311	0.0000
C(3)	0.016603	0.071447	0.232389	0.8185
C(4)	0.064343	0.110424	0.582688	0.5663
C(5)	0.000906	0.002093	0.432817	0.6696
C(6)	0.031938	0.090883	0.351413	0.7288
C(7)	-0.001628	0.007747	-0.210136	0.8356
C(8)	6.102709	2.998799	2.035051	0.0547
R-squared	0.826656	Mean dependent var		12.59135
Adjusted R-squared	0.768875	S.D. dependent var		26.21053
S.E. of regression	12.60084	Akaike info criterion		8.134355
Sum squared resid	3334.406	Schwarz criterion		8.511540
Log likelihood	-109.9482	Hannan-Quinn criter.		8.252485
F-statistic	14.30662	Durbin-Watson stat		2.137552
Prob(F-statistic)	0.000001			

Source: Author's Computation (2026).

Table 4 showed the estimation equation from the Vector Autoregressive where C(1) has the coefficient of 0.264577 with p-value of 0.1867, making it to have positively insignificant value. Based on the findings, a long-run relationship could not be established among the variables employed for the study within the period of study.

Table 5 Wald Test

Test Statistic	Value	df	Probability
F-statistic	10.20257	(7, 21)	0.0000
Chi-square	71.41801	7	0.0000

Source: Author's Computation (2026).

Table 5 showed the results of the Wald test being used to examine the short-run association of the variables employed. The f-statistic has a value of 10.20257 with a significant p-value of 0.0000, while the Chi-square value is 71.41801 with a significant p-value of 0.0000. Based on the outcome of the findings, it is obvious that there is a short-run association among the variables employed for the study within the period of study.

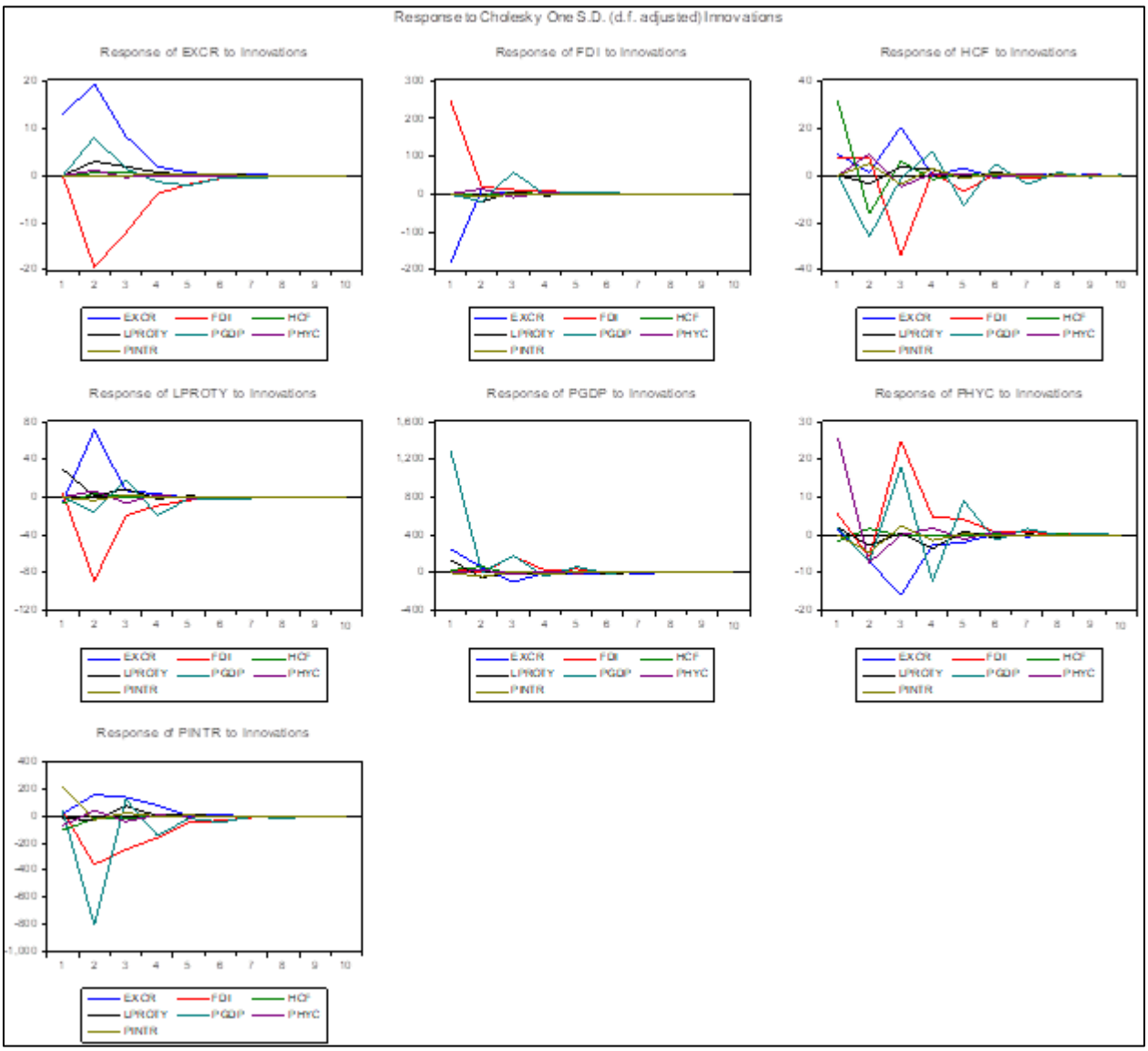

Figure 1 Impulse Response

This figure indicates that the impact of EXCR converges back to zero after period 4. The impact of HCF converges back to zero after period 5. The impact of LPROTY to innovations converges back to zero after period 3. The impact of RGDP

to innovations converges back to zero after period 2 while the impact of PHYC to innovations converges back to zero after period 2.

Figure 2 Variance Decomposition

This figure showed the variance decomposition which enables us to determine how the independent variable is stronger in explaining the variability in the dependent variable over time. The figure indicated that the variance decomposition of EXCR oscillated from period one to two, having a parallel trending between 40% and 60%. The variance decomposition of HCF oscillated from period one to three, with a parallel trending between 20% and 40%. The variance decomposition of RGDP did not oscillate but trended between 80% and 100%. While variance decomposition of PHYC oscillated from period one to three, having a parallel trending between 20% and 40%.

Table 6 Pairwise Granger Causality

Hull Hypothesis	Obs.	F-Stat	Prob.	Decision
FDI does not Granger Cause EXCR EXCR does not Granger Cause FDI	32	4.37198 0.15095	0.0454 0.7005	Unicausality
HCF does not Granger Cause EXCR EXCR does not Granger Cause HCF	28	0.41292 1.85652	0.5263 0.1852	No causality
LPROTY does not Granger Cause EXCR EXCR does not Granger Cause LPROTY	32	0.07741 0.17474	0.7828 0.6790	No causality
RGDP does not Granger Cause EXCR EXCR does not Granger Cause RGDP	32	0.18149 0.97459	0.6732 0.3317	No causality
PHYC does not Granger Cause EXCR EXCR does not Granger Cause PHYC	32	0.19085 1.12058	0.6654 0.2985	No causality
RINTR does not Granger Cause EXCR EXCR does not Granger Cause RINTR	32	0.00316 0.07497	0.9556 0.7862	No causality
HCF does not Granger Cause FDI FDI does not Granger Cause HCF	28	0.00295 0.03467	0.9571 0.8538	No causality
LPROTY does not Granger Cause FDI FDI does not Granger Cause LPROTY	32	0.04473 303.488	0.8340 7.E-17	Unicausality
PGDP does not Granger Cause FDI FDI does not Granger Cause PGDP	32	0.00043 7.9E-06	0.9837 0.9978	No causality
PHYC does not Granger Cause FDI FDI does not Granger Cause PHYC	32	0.11013 0.05623	0.7424 0.8142	No causality
RINTR does not Granger Cause FDI FDI does not Granger Cause RINTR	32	0.50074 57.2109	0.4848 2.E-08	Unicausality
LPROTY does not Granger Cause HCF HCF does not Granger Cause LPROTY	28	0.00321 0.01436	0.9553 0.9056	No causality
RGDP does not Granger Cause HCF HCF does not Granger Cause RGDP	28	0.11706 0.05333	0.7351 0.8192	No causality
PHYC does not Granger Cause HCF HCF does not Granger Cause PHYC	28	3.51296 0.38829	0.0726 0.5388	No causality
RINTR does not Granger Cause HCF HCF does not Granger Cause RINTR	28	0.00050 0.00103	0.9824 0.9746	No causality
PGDP does not Granger Cause LPROTY LPROTY does not Granger Cause PGDP	32	0.02435 0.02528	0.8771 0.8748	No causality
PHYC does not Granger Cause LPROTY LPROTY does not Granger Cause PHYC	32	0.03402 0.00233	0.8550 0.9618	No causality
RINTR does not Granger Cause LPROTY LPROTY does not Granger Cause RINTR	32	0.02438 0.36854	0.8770 0.5485	No causality
PHYC does not Granger Cause PGDP RGDP does not Granger Cause PHYC	32	0.25568 0.10680	0.6169 0.7462	No causality
PINTR does not Granger Cause PGDP	32	0.25568	0.5988	No causality

PGDP does not Granger Cause PINTR		0.14615	0.7050	
PINTR does not Granger Cause PHYC PHYC does not Granger Cause PINTR	32	0.11990 0.04659	0.7316 0.8306	No causality

Source: Author's Computation (2026).

Table 7 indicated that findings from the pairewise granger causality, showing the effect of one variable on the other. Based on the findings, a uni-directional causality was established between FDI and EXCR, between FDI and LPROTY, and between FDI and RINTR. From the results, it is obvious that FDI only granger caused EXCR, LPROTY as well as RINTR. No bi-directional causality was established at all.

5. Conclusion and policy implications

Economic growth remains a central objective of Nigeria's development agenda, yet the country continues to experience persistent challenges such as unemployment, low productivity, poverty, and underinvestment in critical growth-enhancing sectors. Among the key drivers of sustainable economic growth identified in economic theory and empirical literature are human capital formation and physical capital accumulation. However, the nature and strength of the interconnectedness among these variables within the Nigerian context remain insufficiently understood, thereby justifying the need for this study. The study examined the relationship among human capital formation, physical capital, economic growth in Nigeria bearing in mind the moderating roles of macroeconomic environment between 1991 and 2024, using Vector Autoregressive (VAR) Model and Pairwise granger causality techniques. The study specifically examined the association among human capital formation (HCF), physical capital (PC), labour productivity (LPROTY), exchange rate (EXCR), interest rate (RINTR), foreign direct investment (FDI) and economic growth (RGDP) in Nigeria. The findings showed that a long-run relationship was not established among the variables. Through Wald test, the results showed that a short-run relationship was established among the variables employed (human capital formation (HCF), physical capital (PC), labour productivity (LPROTY), exchange rate (EXCR), interest rate (RINTR) foreign direct investment (FDI) and economic growth (RGDP). Unidirectional causality was established between foreign direct investment (FDI) and exchange rate (EXCR), trending from foreign direct investment (FDI) to exchange rate (EXCR). Also, unidirectional causality was established between labour productivity (LPTOTY) and foreign direct investment (FDI), whereby labour productivity (LPTOTY) granger caused foreign direct investment (FDI). Therefore, the study recommends that government should stabilize exchange rate policy in order to enhance foreign direct investment. Also, government should adequately monitor foreign direct investment and interest rates in order to positively contribute to labour productivity. Government should also increase expenditure on human capital so as to enhance labour productivity and economic growth in Nigeria.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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