

## **Growth Analysis of The Impact of Human Capital Development Through Leadership in Nigeria**

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### **ABSTRACT**

*This study examines the growth analysis of the impact of human capital development in Nigeria. The study employs the autoregressive distributed lag cointegration framework, using annual data over the period 1986 to 2020. The objectives of the study were to determine the growth analysis of the impact of human capital development on different sectors in Nigeria. In the long-run government investment in education and secondary school enrolment rate was seen to have a positive and significant impact on Agricultural sector growth while investment in health was seen to have a negative impact on Agricultural sector growth. The study recommends that both government investment in education should be increased so as to have a positive impact on, Agricultural and Industrial sectors both in the short-run and long-run. The diagnosing test results show that the estimate obtained is valid, and thus, our findings are robust and reliable. This paper also delves into the crucial interplay between leadership styles and human capital development, focusing on Nigeria's unique context. As a nation brimming with potential, the effective utilization of its human resources is central to achieving sustainable growth. The paper conducts an in-depth analysis of various leadership styles employed in Nigeria and their impact on human capital development. By examining historical trends and contemporary approaches, this study aims to shed light on how leadership can catalyze human capital development and foster economic growth.*

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**Keywords:** Human Capital, Development, Growth, Leadership, Investment

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## **Introduction:**

Nigeria, with its vast human capital potential, stands at the precipice of transformative growth. However, realizing this potential hinges largely on effective leadership. As an economist, this paper explores the interplay between leadership styles and human capital development, dissecting the impact on Nigeria's economic growth trajectory. We delve into the leadership practices that have shaped the nation's journey, identifying their implications for human capital development and subsequent economic outcomes.

Human capital, often regarded as the most valuable asset of any nation, plays a pivotal role in shaping the trajectory of economic growth. Nigeria, a country teeming with a youthful population, holds significant potential for growth, but this potential can only be harnessed through effective leadership. Leadership styles have a profound influence on human capital development, and this paper seeks to analyze the impact of different leadership approaches in the Nigerian context.

## **Background to the Study**

The state of a nation's economic performance can be hinged on the prowess of its human resources. How developed the human resources of that nation depends on how much the country invests in human capital development. Human resources play a crucial role in the development of any economy. According to Shuaibu and Oladayo (2016), the significance of human resources is evident as one considers this factor in any economic activity as it is the element that commands, directs, controls, and manages the other resources in the production process or at the economic level. Human beings play the most important role and are the most active economic agents as they help accumulate capital, exploit natural resources, build social, economic, and political organizations, and carry forward national development (Sedat & Mesut, 2016).

Human capital affects economic growth through at least three channels: Firstly, it increases labour productivity, which leads to an increase in output. Secondly, it increases labour demand, which leads to an increase in output because the number of employed workers increases; thirdly, it leads to an increase in human capital stock, attracting physical capital from other countries, i.e. foreign investment (Amadeo, 2016). Human capital is mainly divided into two components: education and health. While health improves human capital's efficiency and effectiveness, education enhances human capital's quality. Health's great importance cannot be overemphasized because it supports the other elements of human capital; being healthy sets the ground for improving education.

## **Statement of the Problem**

The Agricultural, Industry and Service are the main contributors to the Gross Domestic Product (GDP); human capital, being the only active factor of production, should not only be sustained but also improved continually in order to be competitive in the current knowledge-driven global economy (Obasuyi, 2019). Most studies on human capital development and its impact on the Nigerian economy have independently considered human capital development in the individual sectors of the Nigerian economy. Saka and Olanipeku (2021) examined human capital's role in the relationship between the industrialization process and growth in Nigeria (Okumoko et al., 2018) studied The Dynamics of Human Capital Development and Industrial Growth in Nigeria. Other studies like James, (2021) studied the relationship among Human Capital Development,

National Security and Agricultural Sector Growth in Nigeria. While some studies like Ifunanyachukwu (2019) researched Education, Health Expenditure, and the Quality of Life in Nigeria, Matthew (2018), (Paul & Akindele, 2016), Jaiyeoba (2015), Popoola, Alege, Gershon, and Ashley (2019), Ogunleye et al. (2017) all examined the impact of human capital development on the economic growth of Nigeria within different time frame. Some cross country analyses have been also carried out by different researchers on the subject matter like Ayşen and Hakan, (2014) analyzed the relationship between economic growth and human capital for the period between 1990 and 2011 in 15 MENA (the Middle East and North Africa) countries, (Lloyd, 2016) which studied the study investigated government spending on education and economic growth in West African countries, Fuhmei, (2015), analysis the impact of health care expenditure in a growing economy in OECD, Serdar and Ebru (2016) studied Health Expenditures and Economic Growth in G8 Countries, Xuewei et al. (2020) studied the effect of Effects of Government Healthcare Expenditure on Economic Growth in 31 provinces in China, Ethem and Merve (2021) looked into the effects of health spending on economic growth in Turkey, Serge and Julius, (2017) in their paper comparatively analyze the impact of health expenditure between countries in the CEMAC sub-region and five other African countries. Also, Studies like Ifunanyachukwu *et al.* (2019), Matthew (2018), Paul and Akindele (2016), Popoola et al. (2019), Ogunleye et al. (2017), Obasanjo and Idogun (2020), and Jaiyeoba (2015) tried to capture the impact of human capital development on the economy as a whole. Hence, there seems to be insufficient information about the impact of human capital development on the different sectors of the Nigerian economy (Agricultural and industrial).

### **Research Questions**

The following research questions have been generated to guide this study based on the abovementioned issues.

1. What effect does human capital development have on the Agricultural sector in Nigeria?
2. What effect does human capital development have on the Industrial sector in Nigeria?

### **Objectives of the Study**

This study aims to determine the relationship between human capital development and its effect on different sectors in Nigeria from 1981 to 2020. The study will evaluate the following specific objectives:

1. To determine the effect of human capital development on the Agricultural sector in Nigeria.
2. To ascertain whether human capital development significantly influences the Industrial sector in Nigeria.

### **Hypotheses of the Study**

The following Hypotheses are tested in the study.

H1 Human capital development has no significant impact on the Agricultural sector in Nigeria.

H2 Human capital development has no significant impact on the Industrial Sector in Nigeria.

### **Scope of the study**

This study is based on secondary data from the World Development Indicator and CBN Statistical Bulletin, which covers a period of 35 years (1986-2020); this is to achieve a comprehensive analysis of the impact of human capital development on different sectors of the Nigerian economy.

### **The Concept of Human Capital.**

Human capital as a phrase was made famous by Theodore W. Schultz in 1960; ever since then, this phrase has gained the attention of many. According to Gary Backer (1964), human capital is a physical means of production. Organizations invest in human capital via education, training, and health. Later, Thomas Davenport (1999) advanced that "the component of human capital consisted of abilities, knowledge, skill, personal talent, behaviour, and effort when those three components plus time.

### **2.2.4 Human Capital Development**

Todaro and Smith (2011) state that human capital development is the productive investments embodied in human persons, including skills, abilities, ideas, health and locations, often resulting from expenditures on education, on-the-job training programmes and medical care. Becker (1967) refers to it as the abilities and qualities of people that make them productive; knowledge to him is the more important of these, although other factors, like a sense of punctuality to the state of someone's health, also matter. As construed by the Organization of Economic Co-operation and Development (OECD), aptitude, abilities, versatility, and other features encapsulated in people are noteworthy to productive activities (OECD, 1998). As perceived by Gbosi (2007), the workforce is the level of aptitude and efficient talents embedded in an individual who plays in the production arena. Human capital development, which is conterminous with human capital formation, human resource development, and investment in human capital, on the other hand, refers to the process of acquiring and increasing the number of persons who have skills, education and experience which are critical for the economic and political development of a country (Wilson, 2017).

### **Leadership Styles in Nigeria: A Historical Overview:**

Nigeria's historical trajectory reveals an evolving landscape of leadership styles. From the post-independence era, marked by visionary leaders such as Nnamdi Azikiwe and Obafemi Awolowo, to the challenges of military rule and democratic transitions, the country has witnessed various leadership approaches. The leadership landscape encompasses authoritarian, charismatic, transformational, and transactional styles, each leaving a distinctive imprint on human capital development and economic growth.

#### ***Authoritarian Leadership and Human Capital Development:***

Historically, authoritarian leadership has played a significant role in Nigeria, often characterized by centralized decision-making and limited public participation. This style, while offering swift policy implementation, can stifle human capital development through reduced emphasis on education, healthcare, and social services. The consequences of such an approach can hinder sustainable economic growth in the long term. Historically, Nigeria has grappled with authoritarian leadership styles, which often hindered the development of human capital. Such leadership, characterized by top-down decision-making and limited participation, has constrained opportunities for skill development and innovation.

#### ***Charismatic Leadership and Inspiration for Human Capital:***

Charismatic leaders, on the other hand, possess the ability to inspire and mobilize the populace. Figures like Nelson Mandela and Patrice Lumumba have demonstrated the transformative power of charisma. In Nigeria, leaders with charismatic attributes have, at times, invigorated

human capital development by fostering national pride and aspiration. However, sustainability remains a challenge when charisma is not backed by sound policies and institutions.

### ***Transformational Leadership and Holistic Development:***

The transformational leadership style, which focuses on long-term, holistic development, has the potential to unlock Nigeria's human capital. This approach places emphasis on education, skills development, and healthcare, aligning with sustainable economic growth objectives. Leaders who adopt transformational styles can inspire a culture of innovation and entrepreneurship, nurturing human capital that is more adaptable and competitive in the global arena. Contemporary Nigerian leaders have increasingly embraced transformational leadership, characterized by inspiring and motivating followers to achieve their full potential. This approach, when implemented effectively, has the potential to enhance human capital development by fostering a culture of continuous learning and innovation.

***Transactional Leadership and Short-Term Gains:*** Transactional leadership, characterized by a focus on short-term objectives and rewards, may secure immediate benefits but can neglect long-term human capital development. In Nigeria, transactional leaders have at times favored patronage networks over merit-based systems, hindering the nation's potential for inclusive growth.

***Democratic Leadership:*** The emergence of democratic leadership has been a significant development in Nigeria. By allowing for more inclusive decision-making processes and enabling participation, this style has the potential to promote the development of human capital. However, the challenge lies in its effective implementation and ensuring accountability.

### **The Path Forward: Leadership for Inclusive Human Capital Development**

For Nigeria to harness its demographic dividend and promote inclusive human capital development, leadership must be purposeful, adaptive, and committed to long-term sustainable growth. A blend of transformational and charismatic leadership is necessary to inspire and mobilize the populace while implementing sound policies that prioritize education, healthcare, and skills development. This approach can foster a workforce that is globally competitive and prepared to contribute to Nigeria's economic growth.

### **The Impact of Leadership Styles on Human Capital Development**

- **Education and Skills Development:** Effective leadership can promote policies and initiatives that enhance access to quality education and skills development. Transformational and democratic leadership styles are more likely to prioritize investments in education and training.
- **Innovation and Entrepreneurship:** Transformational leadership, with its emphasis on innovation and creativity, can stimulate entrepreneurial endeavors and the development of human capital in various sectors, thereby contributing to economic growth.
- **Healthcare and Well-being:** Leadership styles influence the prioritization of healthcare infrastructure and services. A commitment to the well-being of the workforce can enhance human capital, leading to a healthier and more productive population.

## Challenges and Opportunities

- **Corruption and Weak Governance:** Corruption remains a significant challenge in Nigeria and can undermine the positive impact of leadership on human capital development. Strengthening governance structures is imperative.
- **Youth Unemployment:** Nigeria's youthful population can be an asset or a liability, depending on how effectively they are integrated into the workforce. Leadership must address the challenge of youth unemployment.

## 2.3 Theoretical review

### 2.3.1 Human Capital Theory

In the labor market, people bring different levels of education, knowledge, skill, abilities, and expectancy to the workplace. James (2021) states that "a more educated, better-trained person can supply a more significant amount of proper productive effort than one with less education and training. The value of human capital theory is widely accepted to increase organizational performance, so an organization relies on employees' skills, knowledge, and ability as a key concept of value creation.

### 2.3.2 Schultz's Theory of Human Capital

In his theory of Human Capital, Schultz posits that knowledge and skill are a form of capital and that this capital is a product of "deliberate investment." Schultz highlights Western countries and explains their increase in national output because of investment in human capital. He also makes a direct link between an increase in investment in human capital. Firstly, Schultz Argued that economists have been afraid to relate to human beings as capital.

### Human Capital as a Factor of Production

The microeconomic analysis of investment in human capital is the underpinning of our understanding of the contribution of human capital to the aggregate level of income and its growth rate. The microeconomic view most directly applies to analyzing labor heterogeneity and the resulting wage structure. Given sufficient labor mobility, wages tend to be similar for the same human capital stock in various employments, regardless of differences in size and quality of other factors of production in such employments. Equilibrium wage differentials within the economy may reflect differences in individual magnitudes of human capital stocks. To understand macroeconomic differences in levels and income growth, it is best to start with the view of human capital as a factor of production alongside physical capital in an aggregate production function.

### Human Capital and Technology

Human capital and technology On this note, human capital is seen as the standard factor of production and the stock of knowledge as the source of technology. Human capital activities involve the transmission and embodiment of available knowledge in people and the production of new knowledge, which is the source of innovation and technical change (Bulman et al. (2014). With new knowledge, larger quantities of existing physical capital and more widespread education and health would likely create continuous global productivity growth, according to Lorna *et al.* (2015). In a fundamental sense, modern economic growth results from the scientific revolution: the growth of systematized scientific knowledge.

### **Becker's Theory of Human Capital**

Becker's theory of Human capital included

- an explanatory framework for the shape of age-earning profiles,
- the concentration of human capital investment at earlier ages and
- the personal distribution of income based on the accumulation of human capital.

As indicated in his 1962 paper. Becker (1962) started his analysis by slightly overlooking on-the-job training, which was like the focus of others. He, therefore, tried to investigate the economic decision-making process regulating the quantity of and time spent in training. In his theory, Becker introduced a classic distinction between specific and general human capital.

### **2.3.5 The Solow Neoclassical Growth Model**

This theory was propounded by Robert Solow of the Massachusetts Institute of Technology, also known as the Solow growth model or exogenous growth model. The theory seeks to understand the determinants of long-term economic growth by accumulating factor inputs such as physical capital and labour. They revealed a significant contribution from technical progress, defined as an exogenous factor. Solow (1957) and Swan (1956) are among those who first demonstrated this.

Solow (1957) and Swan (1956) are among those who first demonstrated using the aggregate production function, which exhibits a constant return to scale in labour and reproducible capital.

$$Y = f(K, L)$$

Where Y is gross domestic product (output), K is the stock of capital (which may include human and physical capital), and L is Labour. Solow (1975) modified the above model by supposing a productivity (or technology) parameter A in the aggregate production function that reflects the current state of technological knowledge.

$$Y = f(\bar{A}KL)$$

A sustained rise in capital investment increases the growth rate only temporarily because the ratio of capital to labour goes. However, the marginal product of additional units of capital may (there are diminishing returns) capital and thus, an economy moves back to the long-term growth path, with real GDP growing at the same rate as the growth of the workforce plus a factor to reflect improving productivity.

A Steady-state growth path is reached when output, capital and labour are all growing at the same rate, so output per worker and capital per worker are constant. The Neoclassical economist believed that raising the growth trend requires an increase in the labour supply plus a higher level of productivity of labour and capital. The difference in technological changes between countries is the reason for the variation in growth rate, which is exogenous and independent of the amount of capital investment.

### **Endogenous Growth Theory**

The controversies surrounding the performance of the neoclassical theories in shedding more light on the sources of long-term economic growth have led to dissatisfaction with traditional growth theory. Any increase in economic growth that cannot be attributed to short-term adjustments in either labour or capital stock is ascribed to a third category, the Solow residual. This residual is responsible for half of the historical changes in today's industrial nations. Neoclassical theory credits this bulk of growth to an exogenous or completely independent process of technological progress. Hence, it was impossible to determine the determinants of technological advancement because it is entirely independent of the decisions

of economic agents. This dilemma led to the endogenous growth theory or the new growth theory.

The new growth theory provides a theoretical framework for analyzing endogenous growth, persistent economic growth determined by the system governing the production process rather than by forces outside the system. More succinctly, endogenous growth theorists seek to explain the factors that determine the size of  $\dot{N}$  or GDP growth rate that is left unexplained and exogenously determined in the Solow neoclassical growth equation (i.e., the Solow residual).

Given a simple equation  $Y = AK$

Just like the Harrod –Domar model, where A is Technology and K is Human and physical capital. Since there are no diminishing returns to capital, there is a possibility that investment in physical and human capital will generate eternal economies and productivity, thereby increasing that exceed private gains by an amount sufficiently enough to offset diminishing returns. Hence, the net result is sustained long-term growth.

### **The Lucas endogenous growth model**

Lucas assumes that investing in education leads to human capital production, which is an essential determinant in the growth process. He buttresses his stands by distinguishing between the internal effect of human capital, where the individual worker undergoing training becomes more productive, and the external effect, which causes spillover and increases the productivity of capital and other workers in the economy. Investing in human capital rather than physical capital causes a spillover effect, increasing the technology level.

Given  $Y = A(k) \cdot (H)$ . He

Where Y is the Output, A is the technical coefficient, K and H are the inputs of Physical and Human Capital, and  $H_i$  is the average economy's average level of human capital. The parameter  $e$  represents the strength of the external effects of human capital on productivity. In the Lucas model, each firm faces a constant return to scale while there are increasing returns for the whole economy. Learning by doing or on-the-job training has a spillover effect that involves human capital. In this model, technology is endogenously provided as a side effect on investment by firms.

### **2.3.6.2 The Romer Model**

Romer's model of *Endogenous Technical Change* of 1990 identifies research as a research sector specializing in producing ideas. This sector invokes human capital alongside the existing stock of knowledge to produce ideas and new knowledge. To Romer, ideas are more important than natural resources. New knowledge enters the production process through three channels. A new design is used in the intermediate goods sector to produce a new intermediate input. In the final sector, labour, human capital and available producer durables produce the final product. A new design increases the total knowledge stock, increasing the productivity of human capital employed in the research sector.

### **Empirical Review**

To review empirically related studies on this subject matter, different literatures were reviewed, domestic, international, and cross-country literature, to understand human capital development better. The literature is as follows: Dayo and Jimoh (2021) examined human capital's role in the relationship between the industrialization process and growth in Nigeria between 1980 and 2016. The two-stage least squares were adopted. It was shown from the result of the

industrialization process that it is germane for economic growth, and likewise, male literacy rates can complement the industrial process to improve growth. In the same vein, stable growth facilitates the process of industrialization while human capital.

Okumoko et al. (2018) studied The Dynamics of Human Capital Development and Industrial Growth in Nigeria, using Time series data spanning the 1976-2016 period on relevant variables were analyzed using both descriptive and econometric techniques; the results reveal that in the long run, the variables got closer to equilibrium. The findings also demonstrate that recurrent education and health expenditures negatively influence industrial growth. The goodness of fit was encouraging. This article claims that strict adherence to graduate skill acquisition programs, as well as adherence to the UNESCO-mandated minimum financial allocation of 26% for education, will have a favourable impact on industrial growth.

Matthew (2018) study explores the relative impact of human capital formation on economic growth in Nigeria from 1981 to 2014 using time series data of thirty-four (34) years. The study examined the existence of long-run and short-run dynamic links between human capital formation and economic growth in Nigeria using ARDL bound estimation techniques. The findings reveal that in Nigeria, there is a long-run dynamic link between human capital accumulation and economic growth. As a result, it is recommended that to achieve economic growth, policymakers increase not only the amount of money spent on education but also the percentage of total spending allocated to the sector. Furthermore, improving healthcare personnel development and ensuring adequate distribution of healthcare facilities within the federation are critical.

Sajjad et al. (2019) examined the empirical relationship between the knowledge-based economy and economic growth in MENA countries, Using the GMM-DIFF robust two-step estimation techniques from 2010-2015. Institutions, human capital and research, infrastructure, and business sophistication were pillars of a knowledge-based economy. According to empirical results collected using the generalized method of the moments dynamic panel, they were found to have significant and positive economic growth in MENA nations. The recommendation was that governments in this region should pursue knowledge-related policies to speed up the transition to a knowledge-based economy and increase economic performance.

## METHODOLOGY

### Theoretical framework

The Endogenous Growth Theory is the theoretical foundation for this research. Endogenous growth models, unlike neoclassical models, openly embrace technology and aim to recognize that technological change, like capital accumulation, is dependent on economic decisions. In these endogenous specifications, technical change is most typically linked to the stock of human capital, which is explicitly described in terms of educational investments. Growth frameworks have also incorporated research and development concepts, as well as imperfect competition (Romer, 1986) (Barro & Sala-I-Martin, 1995). Many endogenous growth specifications have been put forward. A typical specification for analysing growth across several countries follows Barro (1997):

$$\Delta y = f(y, y^*) \dots\dots\dots(1)$$

$$y^* = f(Z) \dots\dots\dots(2)$$

where  $\Delta y$  is the growth rate of per capita output,  $y$  is the current level of per capita output and  $y^*$  is the long-term or steady state level of per capita output. For a given value of  $y$ , the growth rate rises with  $y^*$ , which is determined by a wide set of economic, policy and environmental variables. These factors vary per study, but  $Z$  in equation (2) often includes

variables that measure population (fertility and life expectancy), labor supply, government expenditure and investment, terms of trade, inflation.

### 3.2 Model Specification

This study institutes an econometric model to illustrate the relationship between human capital development and different sectors in Nigeria. In analyzing the relationship between the variables by incorporating the Autoregressive distributed lag (ARDL), the following are the linear specifications as adapted from, Okumoko, et al. (2018), James, (2021), Ifunanyachukwu, (2019) are shown .

$$AGRI = f (SSE, MR, GOVEDU, GOVHLT, LFR) \text{ ----- (3.1)}$$

$$SERC = f (SSE, MR, GOVEDU, GOVHLT, LFR) \text{ ----- (3.2)}$$

$$INDL = f (SSE, MR, GOVEDU, GOVHLT, LFR) \text{ ----- (3.3)}$$

From the equation (3.1), (3.2), (3.3) SSE and GOVEDU captures investment in Education while MR and GOVHLT captures investment in health hence the above stated variables capture both arms of human capital, which are the variables of interest.

Specifying in econometric terms and taking logarithm where large variables are expected, avoiding the problem of extremely large variable coefficient, the model is re-specified as thus;

$$LAGRC = \alpha_0 + \alpha_1 SSE + \alpha_2 MR + \alpha_3 LGOVEDU + \alpha_4 LGOVHLT + \alpha_5 LFR + \mu_t \text{ ----- (3.4)}$$

$$LSERC = \alpha_0 + \alpha_1 SSE + \alpha_2 MR + \alpha_3 LGOVEDU + \alpha_4 LGOVHLT + \alpha_5 LFR + \mu_t \text{ ----- (3.5)}$$

$$LINDL = \alpha_0 + \alpha_1 SSE + \alpha_2 MR + \alpha_3 LGOVEDU + \alpha_4 LGOVHLT + \alpha_5 LFR + \mu_t \text{ ----- (3.6)}$$

From the foregoing, the Autoregressive Distributed Lag form of the version of the estimated model study can be estimated as follows;

$$D(LAGRI)_t = \beta_0 + \gamma t + \alpha_0 LAGRC_{t-1} + \alpha_1 SSE_{t-1} + \alpha_2 MR_{t-1} + \alpha_3 LGOVEDU_{t-1} + \alpha_4 LLGOVHLT_{t-1} + \alpha_5 LFR_{t-1} + \sum_{i=0}^p \pi_i D(SSE)_{t-1+i} + \sum_{i=0}^q \pi_i D(MR)_{t-1+i} + \sum_{i=0}^r \nu_i D(LGOVEDU)_{t-1+i} + \sum_{i=0}^s \tau_i D(LGOVHLT)_{t-1+i} + \sum_{i=0}^u \rho_i D(LFR)_{t-1+i} + \kappa t \text{ ----- (3.7)}$$

$$D(LSERC)_t = \beta_0 + \gamma t + \alpha_0 LAGRC_{t-1} + \alpha_1 SSE_{t-1} + \alpha_2 MR_{t-1} + \alpha_3 LGOVEDU_{t-1} + \alpha_4 LLGOVHLT_{t-1} + \alpha_5 LFR_{t-1} + \sum_{i=0}^p \pi_i D(SSE)_{t-1+i} + \sum_{i=0}^q \pi_i D(MR)_{t-1+i} + \sum_{i=0}^r \nu_i D(LGOVEDU)_{t-1+i} + \sum_{i=0}^s \tau_i D(LGOVHLT)_{t-1+i} + \sum_{i=0}^u \rho_i D(LFR)_{t-1+i} + \kappa t \text{ ----- (3.8)}$$

$$D(LINDL)_t = \beta_0 + \gamma t + \alpha_0 LAGRC_{t-1} + \alpha_1 SSE_{t-1} + \alpha_2 MR_{t-1} + \alpha_3 LGOVEDU_{t-1} + \alpha_4 LLGOVHLT_{t-1} + \alpha_5 LFR_{t-1} + \sum_{i=0}^p \pi_i D(SSE)_{t-1+i} + \sum_{i=0}^q \pi_i D(MR)_{t-1+i} + \sum_{i=0}^r \nu_i D(LGOVEDU)_{t-1+i} + \sum_{i=0}^s \tau_i D(LGOVHLT)_{t-1+i} + \sum_{i=0}^u \rho_i D(LFR)_{t-1+i} + \kappa t \text{ ----- (3.9)}$$

The D is the first difference operator; t is the years 0; p, q, r, s, and u are the maximum lag orders, and  $\kappa t$  is the error term.

### Presentation and Discussion of Descriptive Statistics results

The summary statistics of all the variable used in this exercise are presented and discussed as indicated in Table 4.1.1 below.

**Table 4.1.1: Descriptive statistics for Agricultural Sector Model**

	AGRI	GOVEDU	GOVHLT	LFR	MR	SSE
Mean	8792.303	92.54093	154.3326	59.34143	101.1514	35.63829
Median	4585.926	34.20000	76.50000	59.99000	100.8000	33.85099
Maximum	37241.61	388.3671	593.4385	62.93626	124.8000	56.20540
Minimum	35.70264	0.041315	0.225005	53.91000	72.20000	23.55180
Std. Dev.	10255.93	115.3454	181.3858	2.450659	19.18792	8.647285
Skewness	1.148908	1.147143	1.054648	-0.894483	-0.032585	0.535027
Kurtosis	3.394761	3.140648	2.892593	2.815400	1.389678	2.303464

Jarque-Bera	7.927195	7.705151	6.505140	4.716943	3.787853	2.377344
Probability	0.018995	0.021225	0.038675	0.094565	0.150480	0.304625
Sum	307730.6	3238.932	5401.641	2076.950	3540.300	1247.340
Sum Sq. Dev.	3.58E+09	452355.4	1118627.	204.1948	12517.99	2542.368
Observations	35	35	35	35	35	35

*Source:* Author's compilation from Eviews version 10.

**Table 4.1.2: Descriptive statistics for Industrial Sector**

	INDL	GOVEDU	GOVHLT	LFR	MR	SSE
Mean	9761.997	92.54093	154.3326	59.34143	101.1514	35.63829
Median	3525.141	34.20000	76.50000	59.99000	100.8000	33.85099
Maximum	43530.78	388.3671	593.4385	62.93626	124.8000	56.20540
Minimum	65.04538	0.041315	0.225005	53.91000	72.20000	23.55180
Std. Dev.	11973.45	115.3454	181.3858	2.450659	19.18792	8.647285
Skewness	1.336526	1.147143	1.054648	-0.894483	-0.032585	0.535027
Kurtosis	3.926676	3.140648	2.892593	2.815400	1.389678	2.303464
Jarque-Bera	11.67241	7.705151	6.505140	4.716943	3.787853	2.377344
Probability	0.002920	0.021225	0.038675	0.094565	0.150480	0.304625
Sum	341669.9	3238.932	5401.641	2076.950	3540.300	1247.340
Sum Sq. Dev.	4.87E+09	452355.4	1118627.	204.1948	12517.99	2542.368
Observations	35	35	35	35	35	35

*Source:* Author's compilation from Eviews version 10.

**Estimated ARDL Results**

**Table 4.6.1.1: Estimated Short-Run Result of Agricultural Sector Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.492094	0.053663	9.170078	0.0000
D(LFR)	0.081921	0.029074	2.817661	0.0100
D(LNGOVEDU)	0.110522	0.081268	1.359978	0.1876
D(LNGOVEDU (-1))	-0.117331	0.037119	-3.160985	0.0045
D(LNGOVHLT)	0.018460	0.072193	0.255699	0.8006
CointEq (-1)*	-0.376379	0.058018	-6.487243	0.0000

*Source:* Author's compilation from Eviews version 10.

**Table 4.6.1.2: Estimated Long-Run Result of Agricultural Sector Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFR	0.012585	0.042028	0.299443	0.7674
LNGOVEDU	1.602922	0.416322	3.850197	0.0009
LNGOVHLT	-0.775315	0.408791	-1.896603	0.0711
MR	0.035656	0.017511	2.036180	0.0539
SSE	0.028596	0.014020	2.039620	0.0536

*Source:* Author's compilation from Eviews version 10.

**Table 4.6.1.3**

**Table 4.6.2.1: Estimated Short-Run Result of Industrial Sector Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (LNINDL (-1))	0.306496	0.100374	3.053549	0.0065
D(LFR)	0.182480	0.031535	5.786674	0.0000
D(LNGOVEDU)	-0.167537	0.079174	-2.116070	0.0478
D(LNGOVEDU (-1))	-0.213829	0.042060	-5.083877	0.0001

D(LNGOVHLT)	0.211135	0.072161	2.925901	0.0087
D(SSE)	0.009404	0.005384	1.746537	0.0969
D(SSE (-1))	-0.016578	0.005665	-2.926423	0.0087
CointEq(-1)*	-0.616834	0.070472	-8.752925	0.0000

**Source:** Author's compilation from Eviews version 10.

**Table 4.6.2.2:** Estimated Long-Run Result of Industrial s Sector Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFR	0.081771	0.038515	2.123093	0.0471
LNGOVEDU	0.813561	0.207541	3.919994	0.0009
LNGOVHLT	-0.148967	0.205556	-0.724704	0.4775
MR	0.010327	0.009595	1.076245	0.2953
SSE	0.057941	0.012715	4.556859	0.0002
C	-1.363216	2.932357	-0.464888	0.6473

**Source:** Author's compilation from Eviews version 10.

### Test of Hypotheses

The study's hypothesis was based on the results of the Agricultural Sector Model, Industrial Sector Model, and Services Sector Model regression analysis.

#### Hypothesis one:

**H1** Human capital development has no significant effect on the agricultural sector in Nigeria.

From the Agricultural sector empirical result, the short-run effect shows that government investment in education negatively and significantly impacted Agricultural sector growth. In the long run, Government investment in Education and Secondary School enrollment rates positively and significantly impacted Agricultural Sector growth. The short-run result negates existing theories; however, the long-run aligns with theoretical postulation. From theory, it was seen that as a country's investment in Education Increases, the human capital and the productivity of its human resource also increases.

#### Hypothesis two:

**H2** Human capital development has no significant effect on the industrial sector in Nigeria.

From the industrial sector empirical result, the short-run effect shows that government investment in education had a negative and significant impact on Industrial sector growth. In the long run, Government investment in Education and Secondary School enrollment rates both positively and significantly impacted Industrial Sector growth. The short-run result was not in line with theoretical postulation; however, the long-run was in line with theoretical postulation. From theory, it was seen that as a country's investment in education increases, the human capital and the productivity of its human resource also increases.

### 4.8 Policy Implication of Finding

From the estimation result of the Agricultural Sector Growth, the variable (Government recurrent Investment in Education and Secondary School enrolment rate; shows government expenditures on education) in the short-run, a negative impact on Agricultural sector growth was seen while in the long-run there was a positive impact on agricultural development. The implication of this on the Industrial sector is that for the desired level of Industrial sector growth to be achieved, investment in education should be increased because more than the current investment in education is needed to bring about the desired growth level in the

Industrial sector in the short run. However, in the long run, investment in education impacted Industrial sector growth positively.

### **Summary of Findings**

This study has exposed several findings on the growth analysis of the impact of human capital development in Nigeria during the period under review. However, the significant findings of this study are enumerated as follows. The Agricultural sector growth model showed that education investment had both short and long runs. government recurrent expenditure on education and secondary school rated positive and significant impact on Agricultural sector growth. In contrast, investment in both infant mortality rate and government recurrent expenditure in health was seen to have no positive effect on Agricultural sector growth. The coefficient of the error correction term in the short run was signed correctly and indicated that about 38% of the previous shocks in Agricultural sector growth are offset every 12 months. Also, the Industrial Sector model showed that investment in education says government recurrent expenditure on education and secondary school enrolment rate negatively and significantly impacted industrial sector growth in the short run.

### **5.3 Recommendations**

Considering the significant relationship between the Agricultural sector, Industrial sector, Service Sector, and observed variables in the study and to enhance the impact of leadership on human capital development, the study recommends the following for the Agricultural sector.

1. The government should encourage the participation of the populace in the agricultural sector through its policies, as the labour force participation rate in the agricultural sector leads to the growth of the agricultural industry.
2. Since the current level of Investment in Education negates short-run growth of the Agricultural sector, Budgetary allocations to education should be increased to erode the negative effect of current investment in education has on the Agricultural sector, thereby paving the way for an immediate impact on the increasing the output of the Agricultural sector both in the short-run and long-run for more sustainable agricultural sector growth.
3. Effective leadership must be accompanied by strong accountability mechanisms to ensure that policies and resources allocated for human capital development are utilized optimally.
4. Prioritizing education and skills development, especially in the fields of science, technology, engineering, and mathematics (STEM), is crucial for human capital growth.
5. Leadership should encourage innovation and entrepreneurship through policies that foster a conducive environment for business growth and development.

### **5.5 Conclusion**

The study investigated sectorial growth analysis of the impact of human capital development in Nigeria. The Autoregressive distributed lag (ARDL) model was estimated to distinguish the short-run of the long-run effects of human capital development on the major sectors, say (Agricultural and Industrial) of the Nigerian Economy. The Agricultural Growth model shows

that investment in education in the short run did not follow its apriori sign expectation, while investment in health did not follow its apriori sign expectation in the long run.

The Industrial sector model shows that investment in education in the short-run negatively impacts Industrial Sector growth, as it doesn't conform with its prior sign expectations. The labour force participation rate was significant both in the short run and long run; the investment in health, which was found to be positive and significant in the short run, was seen to have a negative and insignificant impact in the long run. On the whole, the human development need of the industrial sector is yet met with the current level of investment in health and education. The coefficient of the error correction term is negative (correctly signed) and shows that 38% percent of the previous year's shocks in the Industrial sector are offset every 12 months in the short run.

The link between leadership, human capital development, and economic growth in Nigeria is indisputable. This paper has explored the historical context of leadership styles in the country, identifying their impacts on human capital development and, consequently, economic outcomes. Nigeria's future hinges on the ability of its leaders to adopt transformational and charismatic styles that prioritize inclusive human capital development, thus paving the way for sustainable and equitable economic growth.

In conclusion, leadership styles in Nigeria have a profound impact on human capital development, which, in turn, significantly influences the nation's economic growth. Transformational and democratic leadership styles hold promise for fostering a culture of continuous learning, innovation, and inclusive development. However, addressing challenges such as corruption and youth unemployment is paramount. With the right leadership and policy initiatives, Nigeria's potential for growth through enhanced human capital development can be realized.

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