

Analysis of Nigeria's Human Capital Investment and Economic Growth

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ABSTRACT

The most successful technique for turning a nation's development hopes and aspirations into reality is known as human capital accumulation. Scholars and policymakers believe that investing in people's education and health brings enormous advantages to both individuals and society as a whole. Scholars are practically unanimous in their description of the idea, emphasising the need of investing in human capital as a sure way to achieve genuine and sustainable growth.

The research analysed the effect of human capital investment on the nation's economic growth from 1983 to 2017. The statistics bulletin of the central bank and the World Bank provided the bulk of the study's data. Analysis was performed using Ordinary Least Squares (OLS) methods. According to the results, there is a positive association between government spending on education, government spending on health, secondary enrollment, birth rate, Gross capital formation and real gross domestic product. The association between, primary enrollment, and real gross domestic product is negative. Hence, it was suggested that Nigerian government should implement a programme and strategy of education and training that would ensure high standards in primary school education.

The favorable success of an economy in terms of GDP growth may be correlated with secondary enrolment, the rise in birth rate, gross capital formation and government spending in education and health. Consequently, programmes targeted at their enhancement must be encouraged.

Keywords: Gross Fixed Capital Formation, Economic Growth, Human Capital, Health, Education, Primary School Enrolment, Secondary School Enrollment

ÖZ

Bir ulusun kalkınma umutlarını ve özlemlerini gerçeğe dönüştürmenin en başarılı tekniği, insan sermayesi birikimi olarak bilinir. Bilim adamları ve politika yapıcılar, insanların eğitime ve sağlığına yatırım yapmanın hem bireylere hem de bir bütün olarak topluma muazzam avantajlar getirdiğine inanmaktadır. Bilim adamları, fikrin tanımında pratik olarak oybirliğiyle hemfikirdir ve gerçek ve sürdürülebilir bir büyüme elde etmenin kesin bir yolu olarak insan sermayesine yatırım yapma ihtiyacını vurgulamaktadır.

Araştırma, insan sermayesi yatırımının 1983'ten 2017'ye kadar ülkenin ekonomik büyümesi üzerindeki etkisini analiz etti. Merkez bankası ve Dünya Bankası'nın istatistik bülteni, çalışmanın verilerinin büyük kısmını sağladı. Analiz, Sıradan En Küçük Kareler (OLS) yöntemleri kullanılarak gerçekleştirilmiştir. Sonuçlara göre, hükümetin eğitime yaptığı harcamalar, sağlığa yapılan devlet harcamaları, ikincil kayıt, doğum oranı, gayri safi sermaye oluşumu ve reel gayri safi yurtiçi hasıla arasında pozitif bir ilişki var Birincil kayıt ve reel gayri safi yurtiçi hasıla arasındaki ilişki negatiftir. Bu nedenle, Nijerya hükümetinin ilköğretiminde yüksek standartlar sağlayacak bir eğitim ve öğretim programı ve stratejisi uygulaması önerilmiştir.

Bir ekonominin GSYİH büyümesi açısından olumlu başarısı, ikincil kayıt, doğum oranındaki artış, brüt sermaye oluşumu ve eğitim ve sağlıkta devlet harcamaları ile ilişkilendirilebilir. Sonuç olarak, bunların geliştirilmesine yönelik programlar teşvik edilmelidir.

Anahtar Kelimeler: Brüt Sabit Sermaye Oluşumu, Ekonomik Büyüme, Beşeri Sermaye, Sağlık, Eğitim, İlkokula kayıt, Ortaokul Kayıtları

DEDICATION

I dedicate this work to my Dad

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Chapter 1

INTRODUCTION

1.1 Background for the Study

It is approximated that Nigeria is home to 193 million inhabitants, making it the most populated nation on the African continent and the ninth most populous country overall. With such a vast population, the largest African economy ought to be sitting on a gold mine of human capital, which is a major advantage for the development of a developing country. Though, this potential has been largely unrealized due to insufficient investment and policy avoidance. Even the current government economic strategy, the Economic Recovery Growth Plan (ERGP), focuses mainly on infrastructure investment and pays little consideration to the critical needs of the people (education, health, job, skills). Investments in human capital must be given a higher priority if the nation is to fully reap the advantages of its large population.

Human capital consists of a person's talents and competencies, however human capital development in a nation is indeed the act of making more people with the skills, education, and experience needed to grow the economy (Harbison, 1962). There is widespread agreement that expanding a country's human capital aids in economic progress. However, it may not be relevant or true in all empirical settings, since its applicability is dependent on a array of factors, such as the quality and length of schooling, educational policy, and economic structure, to mention a few.

Nigeria's economic development and human capital development are linked, and this is an essential empirical issue or problem that cannot be overstated.

The most essential macroeconomic goal for Nigeria is to attain rapid economic growth and reduction in poverty. Certain factors with the ability to accelerate growth must be found in order to reach this admirable goal. Human capital stands out as one of the most important contributing variables or determinants to economic development and enhanced productivity. As a result, effective human capital investment is a critical component of long-term economic development and productivity improvement.

Nigeria is characterised by a lack of investment in human capital, notably in the two crucial sectors of education and health. Long-term productivity is boosted by consistent and ongoing expenditures or investments in human capital, resulting in faster growth in the economy. The government has attempted to build a number of projects throughout history. The National Health Insurance Scheme (NHIS) was established by the Nigerian government to boost worker productivity by cutting out-of-pocket medical expenditures.

Investment in human capital has become more important for global economic growth and development (Oluwatobi & Ogunrinola, 2011). The Sustainable Development Goals (SDGs) were always the focus of global attention. Each nation has 17 objectives to achieve by 2030. Education and health care are given top priority in the SDG framework, which aims to eliminate poverty and hunger. Education and health, according to the United Nations, are critical for economic success. They might be

called economic development tools since they are components of human capital (Paul and Akindele, 2016).

In comparison to the number of employees in developed nations, developing nations have a significant human capital deficit (USA, UK, France etc). Nigeria's economy is behind because it doesn't spend enough in human capital, employees aren't particularly productive, factors don't move around much, individuals don't specialise in their skills or crafts, there aren't many entrepreneurs, as well as traditional and social institutions make economic transformation difficult. Human capital investment has expanded slowly, making it more difficult to advance. Nigeria's economic progress has been hampered by the country's insufficient investment in its people. Since independence, the government has placed a greater priority on investments in human capital. A shortage of human capital and a decline in the quality of Nigerian employees have hampered the government's ability to expand the economy.

Human capital investment is a long-term choice with enormous future returns. Multiple economists concur that human capital does not depreciate since knowledge and skills improve with time and may be handed on in perpetuity (Awe & Ajayi, 2010). This confirms the claim stated in a 1996 United Nations study that education contributes to country development. According to a study conducted by the United Nations in 1996, education is crucial for improving the living standards and sustaining economic progress. According to studies, education is critical for a developing nation to utilise current technology and generate the capacity for independent growth and development. (Awe and Ajayi, 2010).

The health of an individual is also an important factor in creating human capital after education. Health and education are closely linked to the growth of human capital (Awe & Ajayi, 2010). Human resources must be in good physical and mental health if they are to be effective in meeting the world's development challenges. Economic development can only occur if there is a healthy and vigorous workforce. It encompasses not just the absence of sickness, but also a long lifespan, freedom from disability and suffering, and a long lifespan (Awe & Ajayi, 2010). Increased labour force participation ensures that all people are contributing to the nation's continuing growth and development because of a longer life expectancy. Adults in better health are able to work for longer durations. As a result, individuals save more, and the savings-to-investment ratio increases. When labour productivity grows, "per capita income grows" (Isola & Alani, 2005, p. 817), lowering poverty and raising a country's quality of life, both of which are beneficial to its economic advancement.

Therefore, industrialised countries exert a significant deal of effort to ensure that they have excellent education and health care systems. Residents' quality of life is perceived to have a direct influence on their efficiency, which in turn affects their social and economic growth. In many impoverished nations, like Nigeria, this aim is still a difficult one to attain. The majority of impoverished nations, including Nigeria, are still a difficult task to achieve this objective. This is evident by the lack of effort and investment in education and health. However, contrary to popular belief, neither governmental nor private sector policy improvements have had a significant impact on the success of these nations. This shows that their efforts were ineffective. Investing in human capital may have a significant impact on the difficulties of achieving social and economic progress in developing countries.

1.2 Statement of the Problem

Nigeria is endowed with considerable natural and human resources, the nation has yet to reach its full development potential. This is even the more remarkable considering that it is Africa's largest oil producer and has a population of over 178.5 million people (World Bank, 2014). Despite the enormous sums created by oil and gas exploration and production, investment in Nigeria's human capital, which acts as a catalyst for economic development, continues to be inadequate. As a consequence, Nigeria has a very high incidence of illiteracy, the majority of employees are untrained, and industry is characterized by obsolete equipment and procedures. As a result, marginal productivity is very low, resulting in low real income, insufficient savings, insufficient investment, and a poor rate of capital formation.

Since independence, the government has increased its efforts to stimulate investment in human capital. Insufficiency in human capital and low worker quality has hampered the Nigerian government's attempts to achieve economic progress. These aforementioned difficulties triggered this inquiry.

1.3 Objective of the Study

The main goal of this study is to find out how human capital affects Nigeria's economic growth. There are also specific goals, which include the following:

1. Analyze the connection between public education spending and economic development in Nigeria.
2. Determine the link between Nigeria's public health spending and economic development.
3. To provide practical suggestions for increasing the level of human capital investment.

Hypothesis; to test is therefore,

H₀: there is no relationship between human Capital investment and economic growth

H₁: There is relationship between human capital investment and economic growth

1.4 Significance of the Study

Nigeria's weak economic growth rate, despite the government's considerable contribution, inspires this kind of study. Many researches on the issue have failed to provide the expected findings throughout the years. Human capital investment effect on economic growth has a number of positive effects on our overall economic growth. This research will be valuable to the government and its agencies in developing human capital development policies, directives, and regulations that encourage economic growth.

1.5 Structure of the Thesis

This thesis consists of six chapters. The first chapter is an overview of the study's background. The second chapter talks about the conceptual and theoretical framework. Third chapter talks about literature review. Fourth chapter is about the methodology. The fifth chapter gives the results and how they are interpreted. The sixth chapter consisted of summary of the findings, the conclusion, and policy recommendations.

Chapter 2

CONCEPTUAL AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter looks into multiple studies pertaining to various ideas, concepts, and terminologies utilized by various researchers in relation to the study's aims. It is divided into two sections: conceptual framework and theoretical review.

2.2 Conceptual Framework

The concept of Human capital goes back to 1776, when Fitzsimons suggested it as a scientific theory (1999). Human capital, according to Schultz (1961), is one of the most essential aspects that determines economic progress. Human capital, he said, is the pool of productive knowledge and skills held by employees. Knowledge and skills implanted in a person might be classified as "something like to property," or human capital (Beach, 2009). Human capital is defined by Rastogi (2002) as "knowledge, competence, attitude, and conduct entrenched in a person."

In recent years, the need of investing in human capital to build national prosperity has been widely acknowledged (Folloni and Vittadini, 2010). Human capital is now recognized as a distinct element of production necessary for a country to attain high and sustained economic development rates, alongside physical capital. Furthermore, emerging countries have tried to accelerate the development of human capital by increasing spending on public education and health and associated social services to different degrees of success (Adebisi, 2006).

The most successful technique for turning a nation's development hopes and aspirations into reality is known as human capital accumulation. Scholars and policymakers believe that investing in people's education and health brings enormous advantages to both individuals and society as a whole. Scholars are practically unanimous in their description of the idea, emphasising the need of investing in human capital as a sure way to achieve genuine and sustainable growth.

As shown in a 1998 African Development Bank assessment, human capital development is both a way to keep the economy growing and a way to reduce poverty. "The process of obtaining and growing the numbers of individuals who have the skills, knowledge, and experiences that are necessary for a country's socio-economic growth," writes Harbison (1962, p. 435). Okojie (1995) defines the term as "investments in people and their development as creative and productive resources." According to Ojo (1997, p. 8), The development of human capital entails not just expenditures on education and training but also the cultivation of attitudes toward productive work.

The aforementioned viewpoints emphasise how vital human development is to achieving comprehensive growth and development in any country. The most efficient means of ensuring personal development and wellbeing are alleged investments in education, health, and other social welfare programmes that may raise the quality of the human population. The pace of social and economic growth in every nation is significantly predicted by the health and literacy of its workforce or populace. Awe and Ajayi claim that having a well educated populace is both a goal in and of itself as well as a way to hasten social and economic development (2010, p. 2). In contrast, Yesufu (2010) asserts that "a strong health policy is a method through which

government may ensure that manpower is developed in the proper manner at the right time." Challenges of Human Capital Development 46 To attain the highest level of labour productivity, Solomon Ifeanyichukwu Ifejika mixes, which are distributed in accordance with national objectives (Awe & Ajayi, 2010).

2.3 Human Capital and Nigeria's Economy

2.3.1 Overview of Human capital Development

Many developed countries have done well because they have put resources into developing their human capital. The "Asian Tiger" nations' emphasis on strengthening their human resources has been connected in recent years to the economic success of such nations. Scandinavian nations consistently rank first when it comes to spending in education, according to a United Nations assessment. The Organization for Economic Cooperation and Development (OECD) claims that, the countries that spent the most on public education as a share of their GDP are Sweden, Norway, Finland and Denmark. Additionally, they topped the list in terms of how much was spent on R&D. It should come as no surprise that these nations topped the UNDP's yearly list of the greatest places to live.

The underdeveloped countries are struggling to cope with the many development issues that are impacting their countries, whereas the advanced economies continue to advance in science and technology, making their surroundings a wonderful place to reside in. Those underdeveloped nations continue to struggle with issues including poverty, unemployment, illness, ethnic or religious strife, war, and political upheaval, among others. Their people suffer a great deal as a result of these issues. It is implied that the gap between developed and emerging nations has widened over time.

Both in terms of people and things, Nigeria has a lot to offer. The nation also possesses abundant agricultural grounds that can sustain a broad variety of crops in its savannah and rainforest zones, in addition to its enormous mineral resources, of which oil and gas are now the most significant. It also has the largest population in Africa, with more than 140 million people. Some of the greatest individuals in the world reside there. Despite having access to these resources, more than 70% of inhabitants still live in poverty (UNDP, 2010, World Bank, 2010, NBS, 2010). The number of poor people in the country has grown because they don't have access to basic services like medical services, electricity, drinkable water, and education. Along with other factors, the high percentage of poverty is a result of ongoing political and religious conflicts, widespread corruption, poor governance, high unemployment, inequality, and illiteracy rates.

If human resource development is prioritised, the aforementioned issues or hurdles with development can be resolved. Unfortunately, Nigeria's education system is in a coma. Some of the reasons for this are inconsistent policies, poor policy implementation, a lack of adequate infrastructure, and a lack of funding, among others. Nigeria's governments have also talked a lot about investing in education, but they haven't really done anything about it. The implication is that the growth of the country depends on how good its people are.

Every nation should allocate a 26percent of its yearly budget to education, as stated by UNESCO (United Nations Educational, Scientific, and Cultural Organization). However, there isn't much cause for celebration when you consider how much money the Federal Government has provided the industry over the past 10 years. In 2000, it constituted 8.36% of the budget. The figure dropped to 7% in 2001, but then

climbed to 8% the following year. In 2003, it went back down to 7%, but in 2004, it jumped back up to 12%. In 2005, it dropped to 11 percent after fluctuating all year. In 2006, it was unchanged, but in 2007, it dropped to 8%. For the first time in Nigeria's history, it rose in 2008 reaching 13 percent. In 2009, the figure had reduced to 10%.

When you think about how most of the money given to the education sector goes to things like salaries, allowances and staff welfare, the situation looks even worse. This is because infrastructure development and other projects that need a lot of money are getting less money. For instance, capital expenditures accounted for just 22.7% of the N210 billion planned for the sector in 2008; continuing expenses accounted for the remaining 77.3%.

So it makes sense that the quality of education in those countries is so much better than in Nigeria. The result is that Nigerian college graduates can't find jobs and are now being passed over in favour of a few of their peers who went to school abroad. Nigeria clearly needs to invest by allocating more funds to education when compared to other significant African nations. For instance, Ghana has spent between 28 and 40 percent of its yearly budget on education over the years. This exceeds the UNESCO target of 24 percent. On the other side, South Africa allocates 20 percent of its own annual budget on education.

2.3.2 Nigeria's Human Capital Development Efforts (Education and Health)

Nigeria has long recognized the need of good education and health care for national growth. In 1960, Nigeria achieved its independence; successive administrations have tried various policy frameworks in an effort to build robust and long-lasting schemes

for the delivery of education and health care which would encourage the growth of top-notch human resources for the development of the nation.

2.3.2.1 Educational Policies

- Immediately after its independence, Nigeria embraced the Ashby Commission's 1960 "investment in education" report as the foundation for its initial educational strategy (Gyang, 2007). The 6-3-3-4 educational system that was implemented in Nigeria as a result of this strategy was built on the NPE (National Policy on Education), which was formed in 1977 and amended in 1981, 1998, and 2004. In 1969, the National Curriculum Conference was held in Lagos by the Federal Government and attended by a large number of religious organizations, groups, people, and public officials, produced the Policy (Gyang, 2007). This plan aimed to raise educational standards all around the country.

- 30th September, 1999 marked the beginning of the Universal Basic Education programme in Sokoto. President Olusegun Obasanjo was in control at the time. The UBE strategy aimed to provide children aged 3 to 14 with a basic education that included '3 years of Early Childhood Care Development and Education (ECCDE), 3 years of Primary Education, and 3 years of Junior Secondary Education (Gyang, 2007). The programme primarily intends to assist children from nomadic and migratory households, as well as almajiris and other poor and marginalised populations. The strategy is implemented in accordance with two United Nations global development programmes namely EFA (Education for All) and the MDGs (Millennium Development Goals).

- Nigeria developed National Economic Empowerment and Development Strategy (NEEDs) in 2003 to facilitate the attainment of these goals (Gyang,

2007). NEEDS' five key aims are values reorientation, eradicating poverty, creating jobs, creation of wealth, and mass empowerment via education (Obioma, 2007). This entire initiative is designed to improve the health and quality of life of Nigerians as well as to make them useful players of social and economic change.

2.3.2.2 Health Policies

On the other side, good health is said to boost a country's human resource output. Health is regarded as a valuable resource in development all around the world. It even has a direct impact on the education component of human capital development, affecting overall growth. Better health, according to Barro (1996), tends to lessen the depreciation of education capital, hence boosting the beneficial influence of education on growth (in Jaiyeoba, 2015, p. 34). Lustig (2006) concluded that health is an asset with both intrinsic and instrumental value based on the findings of a study in Mexico on the link between health and growth. As a result, he identified excellent health as a source of happiness that is widely appreciated across the world (Jaiyeoba, 2015).

Because of the amount of policy reform efforts launched in the health sector since the country's founding, Nigeria appears to have recognised this truth sooner. Since its independence in 1960, Nigeria has established five national health policies in succession and over 24 policies in general (Health Sector Development Team, 2009). Between 1960 and 1985, the first four of these ideas were adopted into a variety of national development programmes. Prior to 1985, health strategies were founded on the notion that the availability of health practitioners and access to health facilities were the most important factors in improving population health. (2006) Nigeria's Health Reform Foundation.

The Federal Government then developed a Primary Health Care (PHC) strategy in 1988, which was later revisited in 2004. For the first time, the policy gives guidance on the notions, ideas, and principles of primary health care (PHC), based on evidence of the nation's health needs and issues, including illness burden. With the exception of a few areas where health is referenced, Nigeria's current 1999 constitution is more silent than assertive on health issues.

2.3.2.3 Other Related Policies

- National poverty eradication programme (NAPEP): Despite the fact that NAPEP is one of the national poverty eradication programmes, no significant progress has been made because no tangible projects have been identified. The majority of the NAPEP's initiatives are still on paper. According to the initial study on the NAPEP's composition, character, and scope, the poor study on the NAPEP's composition, character, and scope, the poor also weren't consulted in the decision-making process, although the government's vow to fully incorporate stakeholders in project development and ownership. Their input was ignored and their opinions were not solicited.
- N-Power Programme; this is a job creation and empowerment initiative of the Nigerian government's National Social Investment Programme. This N-Power initiative is intended for young Nigerians aged 18 to 35. It is a two-year long programme of compensated volunteerism. In accordance with the program's requirements, graduates must perform their principal duties in specified public services within their immediate areas. Each N-Power recipient was provided with a computer with the required information for their particular engagement as well as

information for their ongoing training and growth (N-Power information Guide, 2017).

2.3.3 Investing in People as a way to Solve Nigeria's Economic Problems

No country can achieve sustainable economic development without cultivating the required human resources. Productivity and growth in an economy rely heavily on the enhancement and use of human capital.

Taking this into account, it seems likely that any country that wants to reach the highest levels of development would put a lot of emphasis on developing its human capital. Unfortunately, this is not the case in Nigeria, a country that has rarely invested in its people, which are its most valuable assets.

Despite the importance of education and health to human capital development, Nigeria has continued to underachieve in these areas. A brief analysis of Nigeria's budgets and spending over the last several years reveals the country's misplaced priorities. The country continues to fail to adequately support these essential sectors, instead devoting enormous sums to the payment of public officials and the subsidization of petroleum goods.

It is impossible to overestimate the importance of developing a country's human capital. Every civilization needs competent and healthy human resources to be prosperous, and no country has ever advanced without giving reform to its educational and health institutions first priority.

The challenge of educating those who will make up Nigeria's coming generations is a serious one. There are currently about 10 million children out of school in Nigeria.

Additionally, just thirty five point six percent of children aged thirty-six to fifty-nine month receive early childhood education, compared to 61 percent of children children aged Six to Eleven who regularly attend primary school. With a net attendance rate of fifty three percent, the scenario in Northern Part of Nigeria is far worse. Therefore, the first challenge is to get kids who aren't in school to go back.

Furthermore, it is undeniable that the Nigerian system of education in general requires reform. The educational system in Nigeria is stuck in the past while the rest of the world moves forward. In addition to Nigeria failing to provide an adequate education to a large segment of its future population, but the educated members of that population are not being prepared for success in a competitive global economy. Consequently, it is crucial to establish a progressive educational system that caters to all socioeconomic strata, with an emphasis on equipping the next generation with the soft and technical skills necessary to thrive in a dynamic world.

The health care system is run in the same way as the schooling system. A lot has changed in the previous 60 years in terms of global health policy, but Nigeria's health care system is still poorly run and underfunded. This means that the vast majority of Nigerians are still unable to adequately address their most basic health needs.

According to data from the government, Nigeria's healthcare is substandard. According to the World Health Organization, Nigeria has one of the highest rates of maternal and newborn mortality, and the average life expectancy of a Nigerian is just 54 years (WHO). These dismal statistics on health care delivery in Nigeria provide a snapshot of the country's current healthcare system.

All of these factors demonstrate how difficult it is to enhance Nigeria's human capital. Healthcare and education, two crucial economic sectors, are also experiencing difficulties. Therefore, if the nation wishes to expand in a sustainable manner, these crucial areas must be developed immediately.

Developing Nigeria's human capital is a difficult endeavour that can only be accomplished via teamwork. Effective remedies to the nation's education and healthcare problems may be developed via complementary investments and collaborations that draw on the expertise of both public institutions and private operators. More brave leadership and strategic planning are required at all levels of business and across all sectors, as well as partnerships between public and private organisations. Governments also need to change their policies to support these initiatives.

In particular, a future-oriented educational system must be created with the goal of equipping the next generation with the technical and soft skills they'll need to thrive in a dynamic global economy. As a result, Nigeria's educational system has to be revamped to better prepare students for the demands of today and the future. The nation's healthcare issues, meanwhile, need to be dealt with immediately. For a country's economy to thrive, it needs a labour force that is both strong and fertile. As a result, the Nigerian government should take all of these factors into account in order to improve the country's human capital and accelerate economic progress.

If the country is serious about boosting its economy, it must continue to spend to areas like healthcare and education. If a country doesn't invest into these critical areas, it's doomed to collapse. In order to realise its full potential and compete with

the world's leading countries, Nigeria needs substantial expenditures in education and healthcare.

2.3.4 How Human Capital Investments will Make Impact to Nigeria's Economic Growth

There are many things that affect a country's economic growth, such as its human capital, technological progress, and natural resources, etc. However, the most crucial and significant resource is human capital. Today, the majority of nations prioritize Human capital development in order to raise standards of living globally. But you can never say too much about how important human capital is to Nigeria's economic growth.

Harrison and Myers (1964) say that economists have known for a long time how important it is to develop human capital. The author of "The Wealth of Nations," Adam Smith, was used as an illustration of the value of education. In it, he said things like, "The primary way a person gets these skills is through education, study, or a traineeship. In all of these cases, the person pays a real cost, which is a fixed capital and is reflected in his financial assets. These skills are already a part of his future as well as the future of the society he lives in. Myers and Harrison are both (1964). In this perspective, the significance of human capital for Nigeria is shown in the demand for more trained labourers to transform the economy of the nation and pave the way for the industrial revolution. If employees feel good about the company, they will work harder and be more productive.

Todaro said in 1980 that enhancing human capital might have an equal or bigger influence on the creation of goods and services. In 1975, Lecomber made the claim that people's actions account for a significant chunk of economic development.

Because of his administrative skills and his ability to put his mind and body to work, man is indispensable to the manufacturing process. Earnings, which are also drivers of human capital development, have a considerable effect on people's actions, making them critical to economic growth on both the individual and the social levels.

In a speech in 1999, the former president of Nigeria, His Excellency Olusegun Obasanjo, talked about the human capital importance, especially in a democracy. "The human being is perhaps the means and the goal of all development initiatives," he stated. People are at the heart of both development and democratic governance. Any nation, however in this instance Nigeria, it is very difficult, if not unachievable, to expand and develop in a sustainable manner without complete mobilization and efficient use of its human capital.

The country's manufacturing and marketing sectors are undergoing development, thus human capital is particularly crucial. At every step of the production process, these kinds of high-level managerial and technical skills are needed, as well as high-level skilled manpower. Therefore, in order to improve Nigeria's economic status, the country needs well-thought-out plans and guidelines for the cultivation of its human capital. People are also the most crucial component of innovations and transformation. This is supported by the notion advanced by Harbison in 1973 that humans are the ones who generate and apply ideas. However, the majority of people today concur that Nigeria's economic growth and development depend on its people. Hence, it implies that people's qualities as a labour force must be planned.

2.3.5 Nigeria's Challenge in Human Capital Development

A developing nation like Nigeria has enormous challenges in developing its human capital. This seems to be due to how far the rest of the world is far behind and how much effort and money will be needed to catch up. The task is made even more challenging for us by Nigeria's vast population, diverse socio-cultural makeup, still-evolving political culture, and the tremendous expectations put in her for the emancipation of the black race. Here are a few issues with Nigeria's human capital development.

- Human Development Index: Low Rating: Regrettably, given that Nigeria is a developing nation, that's not the reality. The Measurable Human Development Indices (HDI) show that Nigeria only outperforms 26 other countries in terms of the quality of life of its citizens. The study's main measures include economic performance (Gross domestic product, Gross National product, and per capita income), life expectancy, health consequences, and the diffusion and use of technology.
- Underemployment; One of Nigeria's challenges is the lack of effective human capital development and utilization strategies, that include a stable and productive educational development and the creation of an environment that allows for the full and effective engagement of the education system products. The fact that merely graduating a large number of pupils is insufficient should be emphasised. Graduates must be given the necessary tools and assistance by enabling policies and operational environments in order to be productive service providers, job and wealth producers. Due to a dearth of career prospects and a culture that inhibits career

development and self-employment, graduates from our educational system are underemployed.

- Misalignment between formal education and industrial demands; What is taught in Nigerian schools and what is needed in the business world are two very different things. This is partly because the curriculum is out of date and doesn't adapt to Nigeria's changing economy. Ordinarily, curriculums are not modified to match the dynamism of the business world. In addition, vocational and technical education receives minimal emphasis, despite the fact that the majority of employment in the actual world demand technical abilities. Therefore, the construction of new vocational institutions will assist in equipping individuals with the necessary skills. The training will also increase the quality of services, production, and productivity, helping to the elimination of unemployment, poverty, and crime in the nation.

- Planned strategy implementation; Even though Nigeria had programmes for building human capital, the planned strategies were not always carried out with the right amount of discipline. For example, the Universal Basic Education (UBE) programme was started without having enough school buildings and teachers ready (the federal ministry of education 2003). It is without a shadow of a doubt that the country's present workforce development plans fall short of what is required. This is due to ineffective and inconsistent workforce planning and design, inadequate policy implementation, and so on. The following are some of the outcomes: Nigeria has a shortage of competent labour, leaving school leavers and college graduates unemployed.

- Inadequate funding; Human capital's primary issue is a lack of financing, which has led to a scarcity of trained workers, unemployment, and most importantly, poverty. No nation can achieve considerable development without appropriate investments in human capital. The Asian tigers (Taiwan and Singapore), whose economies benefited from considerable investments in human capital, serve as a prime example.

2.4 Theoretical Review

2.4.1 Human Capital Theory

The idea of human capital explains how education makes employees smarter, which increases their efficiency and productivity. Education is an investment in people's potential, according to Theodore Schultz, Gory Buckner, and Jacob Mincer (Babalola, 2000). These costs could include but are not restricted to, a person's education, training, health care, and food. No matter how often or how much human capital is used, the gross investment must be more than the depreciation for it to grow. People who support this idea say that human capital is as valuable as or more valuable than money.

Human capital theorists say that people who can read and write well are more productive in low-skilled jobs. Human resource development with the goal of making people more logical and analytical was also talked about. A book has been made by the United Kingdom's Department for International Trade. The marginal productivity of highly skilled people and jobs goes up when they can think analytically and have technical and specialized information at their fingertips. Creative Commons Attribution 3.0 Unported, Page 365 of 365 The level of education

provided by the public sector is also linked to a country's economic performance and productivity.

2.4.2 Modernization Theory

This theory says that a person's education affects his or her values, beliefs, and actions. Institutions like schools, businesses, and the media teach kids how to think and act in the modern world. Modernization theory says that these attitudes include being open to new ideas, being able to predict and calculate future needs, and feeling more useful to oneself and to society as a whole. Over the span of a person's life, normative and attitudinal changes take place, and these changes have a long-term impact as to how that person interacts with the social system. As more and more people go to modernization institutions, more and more of the community's people become modern. When a large part of a society's population goes through this change, modernization and economic growth happen faster. More education results in a more productive workforce and long-term economic development due to the favorable impacts on person benefits and values.

2.4.3 Neoclassical/Exogenous Growth Model

Robert Solow and Trevor Swan came up with the exogenous neoclassical growth model in 1950(Dimand & Spencer 2011). The long-term goals of the Solow development model are to get more money, hire more skilled workers, grow the population, and improve technology (Solow, 1956). Production is shown by the letter Y, capital by the letter K, labour by the letter L, and investment or savings by the letter I. (S). Solow's growth theory is made up of four parts: capital, labour, investment, and technology. Solow's theory is based on four important assumptions. He thought that technological progress and the growth of the workforce had nothing to do with each other. Solow growth says that there is a constant rate of return to

scale for both capital and labour. In this case, the return on GDP per person is expected to go down.

2.4.4 The Classical Theory of Growth

The classical theory of growth emphasises investment rate as a crucial growth factor. Investment possibilities are identified using the profit proportion of national revenue (Anyanwu and Oaikhenan, 1995). As a result, increasing profits result in more investment, which stimulates economic expansion. According to classical economists, population increase would cause the real GDP to decline below the subsistence level if it grew over that threshold. A segment of the population would die and real income will increase to the sustainable level if real GDP fell below this level. This hypothesis has a significant flaw in that it disregards the significance of technological progress in the growth process. Neoclassical theory is an attempt to rectify this basic flaw.

Chapter 3

LITERATURE REVIEW

Government investment in human capital has been hotly debated in academic circles whether this can stimulate economic development or not. This is due to the conflicting results of empirical research examining the connection between spending on human capital and GDP growth.

Keji, S. A. (2021). The research studies human capital and economic development in Nigeria from 1981 to 2017. This is due to weak policy effect in critical economic areas like education and health, which would have boosted Nigeria's productivity. The research used vector autoregressive and Johansen approaches to address this. Human capital estimates have a long-term influence on Nigeria's economic development. Diagnostic tests were employed to verify the study's methods. Normality, VEC residual serial correlation LM, and VEC residual heteroskedasticity tests confirm the estimated findings in this study. This report advises increasing budgetary allocations to education and health to develop human capital capabilities required to fuel a knowledge-based economy. Government should also develop specific agencies to improve human capital across all educational levels of the federation to support long-term growth.

Saka, J., & Olanipekun, D. B. (2021) investigates the significance of human capital in Nigeria's industrialisation and development from 1980 to 2016. The framework relies

upon one of Lucas's (1988) new growth theories that emphasises human capital's role in development. Through various adjustments, we have two simultaneous equation models, one with growth and another with industrialization. Human capital is divided into male and female literacy rates, life expectancies, as well as other control factors to explain growth and industrialisation. In most circumstances, Two-Stage Least Squares provides the two model estimates the predicted result. The industrialization process is important for economic progress, and male literacy may complement it to boost growth. Stable growth aids industrialisation, and human capital characteristics are also important. Identifying the workings of the Nigerian state would serve as a useful starting point for addressing the difficulties of capacity development and industrialisation in Nigeria.

Emeghara et. al (2021) examined how human capital investment affects growth and development. 1981-2018. NBS and CBN data contain household human capital investment, which was disregarded in prior research. Augmented Dickey-Fuller, Phillips-Perron, Johansen cointegration, and Vector Error Correction Mechanism evaluated the data. The findings show that (1) public spending on education greatly boosted economic growth in the near term but had no effect on growth in the long run; (2) public spending on health had no effect on growth; (3) private spending on education had a negative effect on growth; and (4) private spending on health had a large effect on growth. Public investments in education and health did not boost growth and development, whereas household spending on health did. The study proposed, among other things, that governments at all levels invest heavily in human capital to attain the necessary growth and development pace.

Krokeyi & Niyekpemi (2021). This research investigates human capital development's influence on Nigeria's economic growth from 1981 to 2018. The research employed the Ordinary Least Square (OLS) approach to examine government spending on education, health, and economic development in Nigeria, as well as the direction of causation between human capital factors and economic growth. The results demonstrate that public spending on education statistically and substantially influences real GDP. The effect of government health spending on real GDP, however, was both positive and insignificant. Additionally, it was shown that although FDI had a negative and insignificant effect on real GDP, gross fixed capital formation and population increase positively and statistically significantly affected real GDP. Also, government spending on education and health significantly affects real GDP. The report suggests increasing healthcare spending and maintaining education spending. These proposals would undoubtedly improve Nigeria's development and economic growth.

Ogunniyi, M.B. (2018). This research uses 34-year time series data to examine the influence of human capital accumulation on Nigeria's economic growth from 1981 to 2014. The empirical analysis starts with a stationarity test of the model's variables. The research employed ARDL bound estimation to evaluate the link between human capital formation and economic growth in Nigeria. Our findings indicate that there is a long-term dynamic link between human capital accumulation and economic expansion in Nigeria. To promote economic development, authorities should boost both the quantity and proportion of overall spending on education. Improving health care staff development and maintaining sufficient health facility distribution are vital.

Jaiyeoba(2016) uses time series data from 1982 to 2011 to conduct an empirical analysis of the connection between investment in education, health, and economic development in Nigeria. This study makes use of trend analysis, Johansen cointegration, and the ordinary least squares method. However, empirical evidence suggests that public investment in areas such as education and healthcare may lead to sustained economic expansion. Except for government spending on education and primary enrollment rate, all of the variables tested (health and education expenditure, secondary and tertiary enrolment rate, and gross fixed capital creation) show the anticipated positive indications and are statistically significant. Given that it examines delicate subjects, this study will have a substantial influence on health and education policy in Nigeria. This research recommends that the government adopt policies that make significant investments in health and education if it wishes to promote development and help Nigerians rise out of poverty.

Amassoma and Ikechukwu (2016) examined the relationship between human capital investments and long-term economic development in Nigeria from 1970 to 2009 using VEC and Pairwise Granger Causality. The VAR model and pairwise estimate show there's no association between an increase in human capital and an increase in economic growth.

Innocent et al. (2017) looked into how government spending affects the growth of human capital in the real world. From 1990 to 2014, information was collected. The estimate used the impulse response function and also the Augmented Regressive Distributed Lag. Because of the Bound Test, the HDI and government spending have been linked for a long time (GOVEXP). Even though the government has spent a lot

over the long and medium term, the results show that this investment in human capital in Nigeria has not been very satisfactory.

Between 1986 and 2014, Osoba and Tella [25] looked at how the different parts of investing in human capital affected Nigeria's economic growth. Based on yearly secondary data about expenditures on education, health care, real GDP, and gross capital formation, the study was conducted. Their findings revealed that human capital and development in Nigeria are inextricably connected in a variety of positive and significant ways.

The connection with both Nigerian investments in its people and economic development was examined by Oluwatoyin et.al (2013). Using Augmented Dickey Fuller (ADF) tests, the study discovered that government spending on health care has a detrimental effect on economic growth, whereas spending on education had a positive impact. In light of this, the report suggests that the government raise spending on health care and education, as well as the share of overall government spending that is allocated to these two sectors.

Dauda (2010) examined the connection between Nigerian education spending and economic development using annual data spanning the years 1977 to 2007. In this work, the Johansen cointegration approach and error correction techniques are applied. The results suggest a long-term link between economic growth and investment on education. The major interest variable, the rate of increase in educational spending, had a positive and significant influence on Nigeria's economic development. This shows that investing in education is important for building an economy and helps a country's income go up. The economy of Nigeria is positively

impacted, to a degree that can be shown to be statistically significant, by the rate of increase of gross fixed capital formation.

Adeyemi and Ogunsola (2016) assessed the effect of investment on the Nigerian economy spanning 1980 to 2013 using data on the number of secondary school student's enrollment, gross capital formation, government expenditure on education, economic growth, and life expectancy. The ARDL co-integration approach was used in the 2016 research by Adeyemi and Ogunsola to discover a favourable long-term relationship between secondary school enrollment and life expectancy as well as between public education expenditure, gross capital formation, and economic growth. According to the writers, health care should not take precedence over education.

Olalekan (2014) used annual data of health and education from 1980 to 2011 to analyse the effect of human capital development on Nigeria's economic growth. Olalekan (2014) used the Generalized Method of Moments (GMM) to perform the analysis, and the outcomes showed a strong correlation between economic growth and human capital in Nigeria. He thinks Nigeria should concentrate on both the health and education sectors at the same time as a consequence. For instance, he suggested that the budgets for these two sectors should be increased and that the programmes in these two sectors should be managed well to attract additional funding.

Amassoma and Nwosa (2011) used pairwise Granger causality and vector error correction to look at the relationship among human capital investment and growth in Nigeria from 1970 to 2009. (VEC). They acted in this way to help Africa progress in

the long run. The findings suggest no causal relationship between increases in human capital and growth in the economy. According to the report, a good, efficient vocational institution should be established, and the budgets for education and health should be enhanced. This is required to achieve the increase in human capital that will enable the economy to expand. The report also concluded that if the government wants to hasten and maintain economic growth and development, it must address the mismatch between jobs and labour.

Oluwatobi and Ogunrinola (2011) looked at how government programmes to improve people's skills affected the growth of Nigeria's economy. They are interested in learning the effects of capital investment on health and education expenditure, as well as how these two factors impact economic growth. The study combined data from many sources with a modified version of the Solow model. Real RGDP has a strong positive association with routine government investment on labour and human capital development, but a negative association with capital expenditures.

Jaiyeola (2015) utilised OLS and cointegration to analyse the influence of Nigerian economic development on human capital investment. According to the statistics, growth in the economy is correlated positively with secondary and tertiary school enrollment, but negatively with primary school enrolment and education expenditure.

Adawo (2011) looked at how primary education, secondary education, and tertiary education all affect Nigeria's economic growth. School enrollments at different levels stood in for these variables. Two additional elements are considered "physical capital formation and health" as defined by total healthcare spending. In all, it was found

that going to primary school and being healthy were both important for growth. It was found that secondary school input and tertiary institutions slow down growth.

Panel unit root tests & panel cointegration techniques were employed by Mehrara and Musai (2013) to examine the connection between GDP and education in one hundred and one emerging economies between 1970 and 2010. The results showed that investment, economic growth, and education all have a strong link in these countries.

The researchers also discovered no substantial short-term or long-term benefits of schooling on GDP or investment. As the number of pupils grows, so does the quality of education, according to the findings. Ndiyo (2007) also utilised education spending as an indicator for human capital investment. Base on his findings, human capital investment and economic growth have a slight but statistically significant negative association.

Aminu (2011) His research examines the effect of public expenditure on "education and health" on Nigeria's economic growth from 1977 to 2007 using Augmented Dickey-Fuller techniques to examine the unit root characteristic of the series and the Johansen test of cointegration to establish whether or not the series are cointegrated. The findings from the cointegration test support the favorable impact that government spending on healthcare and education had on economic growth and development across the research period. Increased public spending on the development of human capital, mostly education and health is advocated in this paper as a means to promote economic expansion and development.

Lawanson(2017) investigated education and health spending on Nigeria's economic development. The study centered on human investment and growth and its impact on the economy. GDP per capita has been the dependent variable, whilst explanatory variables comprised "government capital and recurrent expenditures on education and health, primary, secondary, and tertiary enrollment rates, and gross fixed capital formation". ADF test determined the order of variable integration. Analyses employed cointegration and ECM. Persistent public investment on development of human capital is positively related with real production, whereas capital spending is negatively correlated. The report advocated investing in education and health to boost economic development.

Chijioke (2019) looked into how investing in human capital can help Nigeria's economy grow and stay stable. From 1986 to 2017, the research examines the effect of investing in human capital on the Nigerian economy. Data from the central bank and the NBS were utilized for the study. Data analysis utilised OLS. According to the analysis, government health spending increases real GDP. The report advises Nigerian officials enhance funding for the health sector.

Ifionu & Nteegah (2013).examine the influence of government spending in education on Nigeria's economic development from 1981-2012. GDP growth rate is the dependent variable, whereas public spending on “social services, education, primary school enrollment, and pupil-teacher ratio” are explanatory factors. The study used OLS to demonstrate that public spending on education and other social services (such as healthcare) had a significant impact on the growth of the economy. Total primary school enrollment and pupil-teacher enrollment have mixed effects on economic development. It was speculated that the high dropout rate, poor service

conditions, the large number of students not enrolled, and the low pupil to teacher ratios in Nigeria were to blame for the country's woes.

Using time series data from 1980 to 2013, Adeyemi, P. A., and Ogunsola, A. J. (2016) looked at the impact of development of human capital on Nigeria's economic growth. In particular, it looked at how different measures of human capital (such as levels of education and health) correlate with economic growth. The correlation between the study's variables was analysed using an ARDL co-integration test. Long-run cointegration was discovered in the study. Persistent investigation of the correlations between secondary school enrolment, public education expenditure, life expectancy rate, gross capital formation, and economic growth showed a statistically significant positive relationship. An adverse long-term relationship was shown to exist between levels of education at both the elementary and secondary levels, government expenditure on health care, and economic growth. To guarantee high-quality elementary, secondary, and tertiary education, the study recommended that the government adopt an education and training policy. Human capital might benefit from increased government spending on healthcare.

Chapter 4

METHODOLOGY AND DATA

4.1 Introduction

This chapter offers a recap of the data and analytic techniques used to analyse the effect of Nigeria's human capital investment on the country's economic development from 1983 to 2017. This research uses the time series econometrics model to examine the predicted findings. World Bank and Central Bank are the source of the data used in the study. The RGDP (real gross domestic product) is regarded as dependent variables and the explanatory variables include “Government Expenditure on education, Government Expenditure on Health, Primary enrolment, secondary enrollment, birth rate and gross fixed capital formation”.

4.2 Explanation of the Variables

- Real Gross Domestic Product: Real gross domestic product (inflation-corrected GDP, or constant prices GDP) is a metric that accounts for inflation and captures the value of all goods and services generated by an economy in a particular year.
- Public expenditure on health: Public expenditure on health is the spending of money on healthcare for the benefit of a nation's population, which is supported and subsidised by monies from the public sector. This kind of spending is known as "public expenditure on health."

- **Total Government Expenditure on Education:** • **Total Government Expenditure on Education:** This term describes the amount of money that is spent on education for the purpose of bettering the lives of inhabitants of a country. This kind of spending is backed and sponsored by taxpayer funds.
- **Primary School Enrollment:** This refers to the total students enrolled in primary education, regardless of age, as a percentage of the population that is legitimately entitled to enroll in primary school.
- **Secondary School Enrolment:** This refers to the total students enrolled in primary education, regardless of age, as a percentage of the population that is legitimately entitled to enroll in primary school.
- **The birth rate:** A period's birth rate may be determined by taking the aggregate number of births per one thousand population and then divide the figure by the number of years that make up the period in question. In order to accurately establish the percentage of births, it is common practise to make use of a standardised birth registration system, population counts obtained from a census, and estimates derived from particular demographic research methods.
- **Gross Fixed capital Formation:** comprises fixed assets acquisitions minus disposals by resident producers. The use (depreciation) of fixed capital is not considered.

4.3 Model Specification

The following are the model's specifications:

$$RGDP = f (RED, PE, SEC, HLT, BRATE, GFCF) \quad 3.1$$

$$RGDP = \alpha_0 + \alpha_1 RED + \alpha_2 PE + \alpha_3 SEC + \alpha_4 HLT + \alpha_5 BRATE + \alpha_6 GFCF + U_t \quad 3.2$$

The function is expanded as shown below:

$$LN RGDP = \alpha_0 + \alpha_1 LN RED + \alpha_2 LN PE + \alpha_3 LN SEC + \alpha_4 LN HLT + \alpha_5 LN BRATE + \alpha_6 LN GFCF + U_t \quad 3.3$$

where;

RGDP = (Real Gross Domestic Product)

RED = Government Expenditure on education

HLT = Government expenditure on health

PE = Primary School Enrolment

SE = Secondary school enrolment

BRATE = Birth rate

GFCF = Gross Fixed Capital Formation

4.4 Testing for Stationary

If a time series is not stationary, then its variance, mean, and covariance will not be constant over time. Gujarati (2009). A time series is considered stable if its mean and variance remain constant over time and if the only thing changing the covariance between two periods is the length of time between them, rather than the passage of time itself, which is the case when doing a regression on such data. When investigating non-stationary series, researchers and econometricians risk the possibility of the regression results turning out to be false. Hence, stationarity was examined using Augmented Dickey-Fuller and Philip-Perron tests.

Dickey-fuller test tests the null hypothesis that a unit root is present in an autoregressive time series model. The alternative hypothesis is different depending on which the version of the test is used but is usually stationarity or trend stationarity.

The test is named after the statisticians David Dickey and Wayne Fuller. In addition, the Dickey-Fuller test is regarded as one of the least reliable methods for determining whether a series has a unit root, since it provides just the average rate of change (AR 1) for the series. This is a difficult and difficult-to-prove hypothesis.

The Dickey-Fuller test assessing stationarity has been improved with a new technique known as Augmented Dickey-Fuller (ADF). To address issues with the capture of higher-order autocorrelation functions, the ADF test was developed. The fact that the ADF makes up for said unit root measure in the absence of white noise suggests that the error expression could be biased toward similarity. However, white noise is very rare due to the error term. They widened their test by including more lagged dependent variables to circumvent the problem of autocorrelation. In most cases, we use the modified Dickey-Fuller test instead of the original one. By continuously updating the model to include the lagged values of the dependent variable until autocorrelation is no longer present.

There is a unit root test known as the Phillips-Perron test. Specifically, it is applied in time-series analysis to check whether a given time series is stationary or not. However, distinct from Dickey-Fuller test, which expands the Dickey-Fuller test by integrating extra lagged variables as regression coefficients in the model on which the test is built, the Phillips-Perron test applies a non-parametric modification to the t-test statistic to reflect the influence of autocorrelation when the main autocorrelation mechanism is not AR(1) and the error terms really aren't homoscedastic.

The ADF and PP tests were utilised to properly characterise a model, comprehend the trends of all model variables, and establish the existence of a unit root. When doing a unit root test, one can either assume (the null hypothesis) that a unit root exists (indicating non-stationarity) or one can assume (the alternative hypothesis) that no unit root exists (stationary). Assuming we are unable to rule out Null hypotheses at the levels, then must pick the initial difference in order to stabilise the series. A stationary series is one in which the null hypothesis (H_0) is accepted (Maddala, 1998).

4.5 Autoregressive Distributed Lag Model (ARDL) Bounds Testing

ARDL is a potent statistical technique for assessing how time series with different integrated orders, such as “ $I(0)$ and $I(1)$ ” stationarity or mixed stationarity, connect with one another. Bound testing is an application of ARDL modelling that employs F and t-statistics to examine the relevance of lagged degrees of variables in a univariate equilibrium correction framework when it is uncertain if a time series is trend or first difference stationary.

The relevance of the short- and long-term relationships between the variables is evaluated using the method stated above. It evaluates the likelihood that the variables will interact in the long run. When the observed F-statistic rises above the critical levels of the lower and upper limits ($I(0)$ & $I(1)$), co-integration is detected, and then the null hypothesis will be rejected.

4.6 Error Correction Model (ECM)

The error correction model is a statistical model used to assess the impact of prior errors on the current value of the dependent variables. The model posit that if the dependent variable's present value will be corrected in the following periods to

become closer to its “true” value. It can also be use to study how quickly a dependent variables approaches its value at the point of long term equilibrium. If the error correction is significant and has a negative sign, the value of the dependent variables will typically approach its long-run equilibrium value.

Chapter 5

DATA ANALYSIS AND EMPIRICAL RESULTS

5.1 Introduction

The chapter gives the study's empirical findings. Several techniques are used in this chapter. For the purpose of establishing the stationarity of the series and the sequence of integration, ADF (Augmented Dickey-Fuller) and PP (Phillips-Perron) test were used throughout the course of the unit root testing procedure. Using an Autoregressive distributed lag (ARDL) test, the validity of the variables' long-term link was assessed. Other techniques include the heteroskedasticity test, the cusum test, the serial correlation approach, and the error correction method.

Table 5.1: ADF Test

UNIT ROOT TEST RESULTS TABLE (ADF)								
Null Hypothesis: the variable has a unit root								
	<u>At Level</u>	LNRGDP	LNRED	LNPE	LNSEC	LNHLT	LNBRATE	LNGFCF
With Constant	t-Statistic	-0.3353	-3.2960	-3.9892	-0.5558	-3.6424	1.6693	-0.6193
	Prob.	0.9088	0.0241	0.0042	0.8675	0.0107	0.9993	0.8525
		n0	**	***	n0	**	n0	n0
With Constant & Trend	t-Statistic	-2.3459	-3.1724	-3.8551	-1.6206	0.5901	-4.0613	-5.7522
	Prob.	0.3990	0.1069	0.0259	0.7635	0.9991	0.0172	0.0002
		n0	n0	**	n0	n0	**	***
Without Constant & Trend	t-Statistic	1.8650	0.3076	-0.9525	1.1574	0.5937	-2.3157	1.1548
	Prob.	0.9830	0.7689	0.2974	0.9330	0.8396	0.0222	0.9325
		n0	n0	n0	n0	n0	**	n0
	<u>At First Difference</u>							
		d(LNRGDP)	d(LNRED)	d(LNPE)	d(LNSEC)	d(LNHLT)	d(LNBRATE)	d(LNGFCF)
With Constant	t-Statistic	-4.1907	-5.2365	-3.8830	-5.6546	-9.5704	-2.2829	-7.7101
	Prob.	0.0025	0.0002	0.0055	0.0000	0.0000	0.1839	0.0000
		***	***	***	***	***	n0	***
With Constant & Trend	t-Statistic	-4.0776	-6.6065	-3.8882	-5.7110	-8.1374	-2.9210	-7.5534
	Prob.	0.0155	0.0000	0.0240	0.0002	0.0000	0.1709	0.0000
		**	***	**	***	***	n0	***
Without Constant & Trend	t-Statistic	-3.6071	-1.6240	-3.8859	-5.6158	-1.1733	-0.2540	-7.5931
	Prob.	0.0007	0.0973	0.0003	0.0000	0.2138	0.5859	0.0000
		***	*	***	***	n0	n0	***

Variables	Order of Integration
RGDP	I(1)
HLT	I(1)
RED	I(1)
PE	I(1)
SEC	I(1)
GFCF	I(1)
BRATE	I(0)

Interpretation

The table above displays the outcomes of the Augmented Dickey-Fuller test across all time series variables used for estimate. According to the unit root test, all the variables (LNRGDP, LNPE, LNSEC LNRED, LNHLT and LNGFCF) stationary at level I (1) except BRATE, it is 1(0).

- To verify the results of the ADF test, PP test is also conducted

Table 5.2: Phillips and Perron (PP Test)

UNIT ROOT TEST RESULTS TABLE (PP)								
Null Hypothesis: the variable has a unit root								
	<u>At Level</u>							
		LNRGDP	LNRED	LNPE	LNSEC	LNHLT	LNBRATE	LNGFCF
With Constant	t-Statistic	-0.0168	-1.7549	-2.8336	-0.6701	-1.2847	1.5549	-2.5256
	Prob.	0.9505	0.3956	0.0642	0.8410	0.6252	0.9991	0.1185
		n0	n0	*	n0	n0	n0	n0
With Constant & Trend	t-Statistic	-1.7990	-3.0409	-2.6908	-1.6483	-3.7700	0.3160	-6.7410
	Prob.	0.6831	0.1365	0.2464	0.7519	0.0309	0.9979	0.0000
		n0	n0	n0	n0	**	n0	***
Without Constant & Trend	t-Statistic	1.9028	0.4627	-0.7992	1.1424	0.3431	-4.7218	-0.0053
	Prob.	0.9844	0.8093	0.3624	0.9313	0.7786	0.0000	0.6739
		n0	n0	n0	n0	n0	***	n0
	<u>At First Difference</u>							
		d(LNRGDP)	d(LNRED)	d(LNPE)	d(LNSEC)	d(LNHLT)	d(LNBRATE)	d(LNGFCF)
With Constant	t-Statistic	-4.1506	-9.4951	-3.6471	-5.6626	-14.4494	0.3097	-8.6324
	Prob.	0.0028	0.0000	0.0100	0.0000	0.0000	0.9753	0.0000
		***	***	***	***	***	n0	***
With Constant & Trend	t-Statistic	-4.0356	-15.0821	-3.6643	-5.7147	-16.9853	-0.1971	-8.3245
	Prob.	0.0171	0.0000	0.0394	0.0002	0.0000	0.9904	0.0000
		**	***	**	***	***	n0	***
Without Constant & Trend	t-Statistic	-3.6623	-6.8375	-3.6590	-5.6228	-8.4370	1.0263	-8.5288
	Prob.	0.0006	0.0000	0.0006	0.0000	0.0000	0.9163	0.0000
		***	***	***	***	***	n0	***

Variables	Order of Integration
RGDP	I(1)
HLT	I(1)
RED	I(1)
PE	I(1)
SEC	I(1)
GFCF	I(1)
BRATE	I(0)

Interpretation

The table above displays the outcomes of the Augmented Dickey-Fuller test across all time series variables used for estimate. According to the unit root test, all the variables (LNRGDP, LNPE, LNSEC LNRED, LNHLT and LNGFCF) stationary at first difference I (1) except BRATE, it is stationary at I(0)(levels).

Table 5.3: Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	157.6931	NA	1.92e-13	-9.418317	-9.097687	-9.312037
1	373.6719	323.9683	6.07e-18	-19.85450	-17.28946	-19.00426
2	502.7131	137.1063	6.59e-20	-24.85707	-20.04762	-23.26288
3	685.9013	114.4926*	7.62e-23*	-33.24383*	-26.18998*	-30.90568*

From the result above, the appropriate lag option for optimal model performance is found to be as lag (3)

- After the stationarity test, ARDL model is estimated

Table 5.4: ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LNRGDP(-1)	0.149680	0.239140	0.625911	0.5402
LNRGDP(-2)	0.898746	0.256189	3.508134	0.0029
LNRGDP(-3)	-0.717055	0.184126	-3.894367	0.0013
LNRED	-0.022571	0.022269	-1.013570	0.3259
LNRED(-1)	0.005025	0.006835	0.735248	0.4728
LNRED(-2)	0.018902	0.007383	2.560236	0.0210
LNPE	-0.250830	0.109423	-2.292289	0.0358
LNSEC	0.219091	0.087402	2.506708	0.0234
LNSEC(-1)	0.135712	0.094990	1.428689	0.1723
LNSEC(-2)	-0.088583	0.086172	-1.027981	0.3192
LNHLT	0.051347	0.025902	1.982337	0.0649
LNBRATE	27.65049	36.32023	0.761297	0.4576
LNBRATE(-1)	-75.12609	73.06057	-1.028271	0.3191
LNBRATE(-2)	49.83444	37.10404	1.343100	0.1980
LNGFCF	0.110682	0.060375	1.833230	0.0854
C	-6.637135	3.294976	-2.014320	0.0611
R-squared	0.995998	Mean dependent var	7.451494	
Adjusted R-squared	0.992246	S.D. dependent var	0.241816	
S.E. of regression	0.021294	Akaike info criterion	-4.553933	
Sum squared resid	0.007255	Schwarz criterion	-3.821065	
Log likelihood	88.86293	Hannan-Quinn criter.	-4.311008	
F-statistic	265.4523	Durbin-Watson stat	2.433367	
Prob(F-statistic)	0.000000			

Interpretation

This is the result of ARDL model, by looking at the R-square which is 0.995998 and Durbin Watson which is 2.433367. The model is good

- After estimating ARDL model, the diagnostic tests and stability tests are done.

Table 5.5: Serial correlation

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.420720	Prob. F(2,14)	0.2743
Obs*R-squared	5.398950	Prob. Chi-Square(2)	0.0672

Interpretation

As indicated in the table above, the probability of F-statistics is 0.2743 and hence the null hypothesis can't be rejected. There is no evidence of a serial correlation.

Table 5.6: Heteroscedasticity Test ARCH

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.539964	Prob. F(14,17)	0.1972
Obs*R-squared	17.89193	Prob. Chi-Square(14)	0.2117
Scaled explained SS	3.280414	Prob. Chi-Square(14)	0.9985

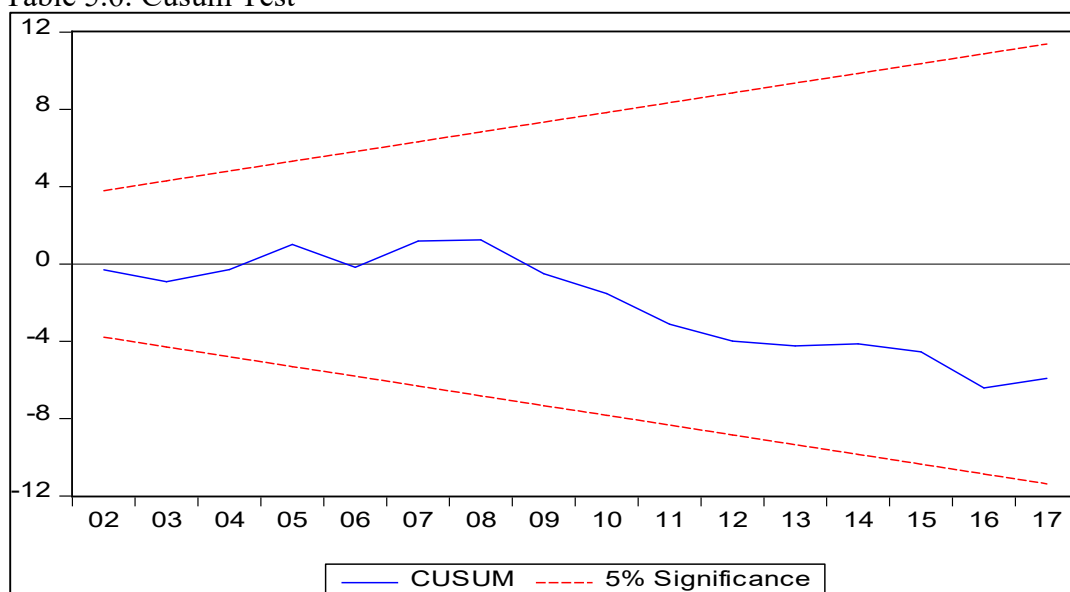
Interpretation

The result showed that the P-value of F-statistics is 0.1972, so the null hypothesis is rejected. This means the model does not have heteroskedasticity.

- Stability Diagnostic Test

To check the stability of the model, Cusum test and Cusum square test are done.

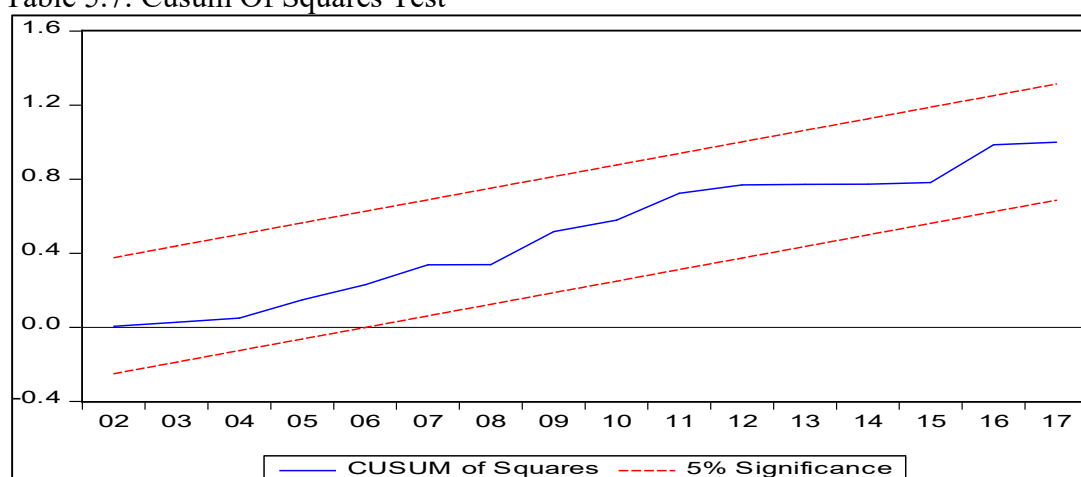
Table 5.6: Cusum Test



Interpretation

The stability of the data can be seen in the above graph, whether or not the models regression coefficient changes in a predictable way. As shown above, the blue line is the cusum test graph, and the red line shows the significance level of 5%. The parallel line shows the negative signs, while the upper line shows the positive ones. But no matter what the results are, we can say that the model is stable because the cusum test is in between the two red lines.

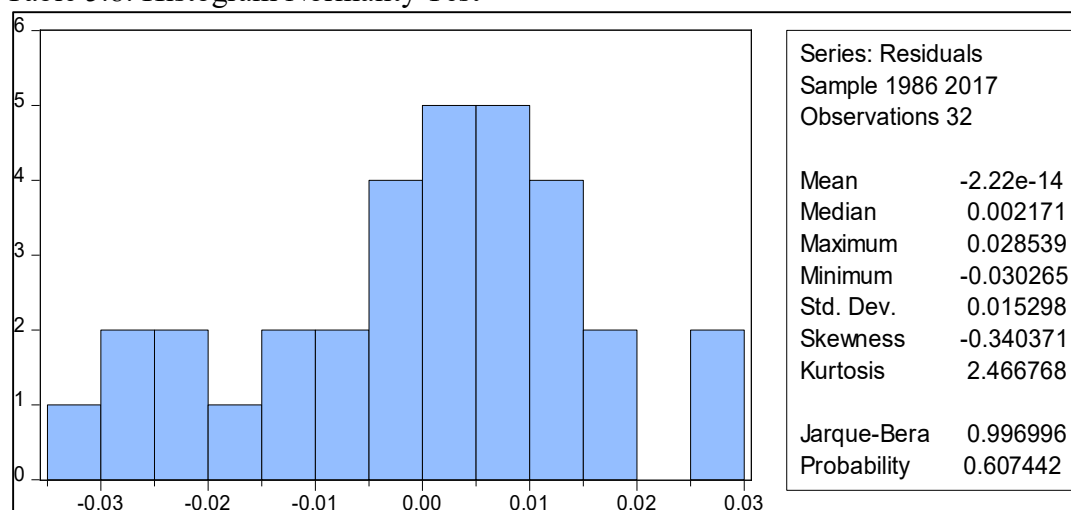
Table 5.7: Cusum Of Squares Test



Interpretation

The stability of the data can be seen in the above graph, whether or not the models regression coefficient changes in a predictable way. As shown above, the blue line is the cusum test graph, and the red line shows the significance level of 5%. The parallel line shows the negative signs, while the upper line shows the positive ones. Since the cusum test falls within the two red lines, we may conclude that the model was stable.

Table 5.8: Histogram Normality Test



Interpretation

The outcome indicated that jarque-Bere is 99.7 % and its probability is 60.7442. So residuals have a normal distribution.

Table 5.9: ARDL Model Bounds Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic k	5.463492 6	Asymptotic: n=1000		
		10%	2.12	3.23
		5%	2.45	3.61
		2.5%	2.75	3.99
		1%	3.15	4.43
Actual Sample Size	32	Finite Sample: n=35		
		10%	2.387	3.671
		5%	2.864	4.324
		1%	4.016	5.797
		Finite Sample: n=30		
		10%	2.457	3.797
		5%	2.97	4.499
		1%	4.27	6.211
t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-3.469957	10%	-2.57	-4.04
		5%	-2.86	-4.38
		2.5%	-3.13	-4.66
		1%	-3.43	-4.99

Interpretation

As shown in the table above, we reject the null hypothesis that there is long-term connection as F statistic (5.463492) is higher than the I(0) and I(1) (critical values). The bound test checks to see if there is a long connection. After that, The ARDL method is employed to determine the long-term and short-term parameters.

Table 5.10: Long run Relationship

Levels Equation Case 3: Unrestricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRED	0.002028	0.038161	0.053142	0.9583
LNPE	-0.375141	0.166458	-2.253675	0.0386
LNSEC	0.398157	0.168020	2.369700	0.0307
LNHLT	0.076794	0.029343	2.617121	0.0187
LNBRATE	3.527877	1.415153	2.492930	0.0240
LNGFCF	0.165536	0.089456	1.850479	0.0828
EC = LNREGDP - (0.0020*LNRED - 0.3751*LNPE + 0.3982*LNSEC + 0.0768 *LNHLT + 3.5279*LNBRATE + 0.1655*LNGFCF)				

Interpretation

The findings portrays that the variables “ recurrent expenditure on education” has positive impact on RGDP but is not significant while (Secondary school enrolment, Government expenditure on health, Birth rate and Gross fixed capital formation and enrolment in primary school) positively affect RGDP and are significant. However, primary school enrolment has negative effect on RGDP and is significant.

- ERROR CORRECTION MODEL; Error correction model was undertaken to test if the variable has a long-run common stochastic trend and to estimate the rate at which the dependent variable changes in response to changes in other variables.

Table 5.11: Error Correction Model

ECM Regression Case 3: Unrestricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.637135	0.918898	-7.222928	0.0000
D(LNRGDP(-1))	-0.181691	0.110782	-1.640069	0.1205
D(LNRGDP(-2))	0.717055	0.126887	5.651125	0.0000
D(LNRED)	-0.022571	0.005280	-4.275161	0.0006
D(LNRED(-1))	-0.018902	0.004793	-3.943728	0.0012
D(LNSEC)	0.219090	0.053509	4.094484	0.0008
D(LNSEC(-1))	0.088583	0.054688	1.619798	0.1248
D(LNBRATE)	27.65049	10.48306	2.637636	0.0179
D(LNBRATE(-1))	-49.83443	13.45334	-3.704243	0.0019
CointEq(-1)*	-0.668629	0.092204	-7.251628	0.0000
R-squared	0.833329	Mean dependent var		0.017747
Adjusted R-squared	0.765145	S.D. dependent var		0.037472
S.E. of regression	0.018160	Akaike info criterion		-4.928933
Sum squared resid	0.007255	Schwarz criterion		-4.470891
Log likelihood	88.86293	Hannan-Quinn criter.		-4.777105
F-statistic	12.22183	Durbin-Watson stat		2.433367
Prob(F-statistic)	0.000001			
* p-value incompatible with t-Bounds distribution.				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	5.463492	10%	2.12	3.23
k	6	5%	2.45	3.61
		2.5%	2.75	3.99
		1%	3.15	4.43
t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-7.251628	10%	-2.57	-4.04
		5%	-2.86	-4.38
		2.5%	-3.13	-4.66
		1%	-3.43	-4.99

Interpretation

The ECM is statistically significant as coefficient have a negative sign (-0.668629), according to short-run dynamic data. This states that if a shock disrupts the economy, it will return to normal at 66.8629 percent of the time the following year. We find that there is a short run association that corresponds to the rate of adjustment to the long-run association.

Chapter 6

CONCLUSION AND RECOMMENDATION

6.1 Summary

The primary objective of this research was to look at how Nigeria's investments in human capital helped the country's economy grow from 1983 to 2017. ADF (Augmented Dickey–Fuller) and ECM (Error Correction Model) techniques have been employed in this work to reach the main goal of the study.

From the empirical results, the following conclusions can be drawn:

- The unit root test was done to find out the model's variables stationarity. The ADF and PP unit root test indicates that all the variables (LNRGDP, LNPE, LNSEC LNRED, LNHLT and LNGFCF) stationary at level I (1) except BRATE, it is 1(0).
- A serial correlation test was performed to see whether the data are serially associated. As indicated, the probability of F-statistics is 0.2743 and hence the null hypothesis can't be rejected. There is no evidence of a serial correlation.
- Heteroscedasticity ARCH test also was conducted to test whether the data is free from heteroskedascity and the result showed that the P-value of F-statistics is 0.1972, so the null hypothesis can't be rejected. This means the model does not have heteroskedasticity.

- A test to determine if the histogram is normal was carried out, as did a test to determine whether the model is normal. The outcome indicated that jarque-Bere is 99.7 % and its probability is 60.7442.. So residuals have a normal distribution.
- In order to determine whether or not the data are stable, a Cusum and Cusum Square test was carried out. The conclusion that can be drawn from the findings is that the model is reliable and stable.
- ARDL Model Bounds Test was conducted to check whether the long-run connection exist between dependent and independent variables. The F statistic (5.463492) is higher than the critical values, I(0) and I(1), thus we reject the null hypothesis of no long run connection at the 5% significance level, as indicated in the table in previous chapter. The bound test verifies the existence of a long connection.
- The findings of the long run portrays that the variables “ recurrent expenditure on education” has positive impact on RGDP but is not significant while (Secondary school enrolment, Government expenditure on health, Birth rate and Gross fixed capital formation) positively affect RGDP and are significant. However, primary school enrolment has negative effect on RGDP and is significant.
- Error correction model was undertaken to test if the variable has a long-run common stochastic trend and to estimate the rate at which the dependent variable changes in response to changes in other variables. The ECM is statistically significant as coefficient have a negative sign (-0.668629), according to short-run dynamic data. This states that if a shock disrupts the economy, it will return to normal at 66.8629 percent of the time the following year. We find that there is a

short run association that corresponds to the rate of adjustment to the long-run association.

From the findings, bound cointegration test clearly shows that there is co-integration between human capital investment and economic development. Investing in Nigeria's human capital has a direct positive effect on economic development. According to the data, there is a positive association between government spending on education and health which are the component of human capital investment, secondary enrollment, birth rate, gross fixed capital formation and real gross domestic product. The association between primary enrolment, and real gross domestic product is negative. The favourable success of an economy in terms of GDP growth may be correlated with the increase in secondary enrolment, birth rate, gross fixed capital formation and government spending in education and health. Consequently, programmes targeted at their enhancement must be encouraged.

However, in accordance with the study's outcomes, primary enrolment negatively affects RGDP. Hence, it was suggested that Nigerian government should implement a programme and strategy of education and training that would ensure high standards in primary school education.

Investing in education and health in the right way is a key part of any significant economic development plan, especially for developing countries like ours. It takes into consideration all chances, methods, and obstacles that the process of human growth may confront. Nigeria can only become a strong force again if her primary, secondary, and tertiary school systems produce a lot of high-quality graduates and if her people are useful in a highly competitive and globalised economy. This can be

done by making smart investments in health and education and making sure they are well-funded and make money. The health and education systems in Nigeria also need to make plans.

6.2 Conclusion

Consequently, according to the findings study of the study, we can deduce that the quality of human capital in Nigeria can be increased if the standard of education and health is not merely maintained, but also enhanced, in order to compete with the modern economies of the world, which are at their current peak due to an increase in the quality of human capital and research. The funds allocated to education and health must comply with United Nations (UN) recommendations; thus, this would boost Nigeria's economic development rate.

6.3 Recommendations

The study's results led to the following suggestions:

1. Human capital development should be prioritised in Nigeria's national development strategy, and the country should reevaluate its educational and healthcare policies and enhance funding for these areas so that they adhere to UNESCO and WHO standards. In order to satisfy the recommendation of the UNDP, the government needs allocate approximately 25% of its budget to the education sector, up from the current less than 15% allocation.
2. Nigerian authorities must pay greater focus on the health sector and enhance its annual budget allocation. Nonetheless, the key to excellent outcomes rests not in raising specific budgetary allocations but in developing a public finance system that,

to the degree practicable, connects specific spending and income choices and ensures the most transparent use of the given funds.

3. Research and development must be extensively supported and promoted by both the government and the private sectors. The funding allotment for this should be released promptly. This would allow research institutes and organisations to conduct regular research operations, the results of which should be published and distributed as quickly as possible.

4. Government should improve its fundamental duties by building strong policies to fight unscrupulous top officials and politicians who misappropriate funds for jumbo projects, white elephant projects, and infrastructure development that cannot lead to economic growth in Nigeria.

5. Ensure that people who work in the fields of health and education have better working conditions. In addition to attracting more competent professionals who will increase the productivity of the sector and the overall performance of the nation's economy, this will assist in preventing the current brain drain in the health and educational sectors.

6. To ensure that the vast majority of people can have access to high-quality medical treatment, government funding should be prioritised for health infrastructures including the construction of health facilities, the distribution of medical equipment, and the introduction of new and better incentives for medical professionals.

7. Nigeria's government should prioritise health and education spending since it leads to more positive outcomes, the potential for better employment, more revenue that can be reinvested in health and education, a higher quality and larger prospective labour force, more productivity, and greater economic development.

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