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## Human as Capital: An Imperative for Africa

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### Abstract

This study established the imperative for treating the human being in Africa as ‘human capital’ and showing that countries that invested more in human capital development had better economic and human development prospects than the countries that do not. Using comparative analysis, it was found that South Africa had better economic and human development outcomes than Nigeria because it spends more on human capital development as a percentage of Gross Domestic Product (GDP) than Nigeria.

**Key Words: Human Capital, Health, Education**

**JEL Codes: H51, H52, J24, O15**

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### 1.0 Introduction

The concept of investing in human beings arises out of the idea or concept of seeing humans as reproductive assets; which is what physical capital is. The AK model (an endogenous growth model) of economic growth is a theory that argues that long run economic growth is generated from within an economic system through the enhancement of a nation’s human capital or the enhancement of knowledge; this explains the Solow residual<sup>1</sup>. According to Schultz (1972), human capital is strictly an economic concept which pertains to particular attributes of man. It is not intended to serve those who are engaged in analyzing psychological, social, or cultural behavior. It is a form of capital because it is the source of future earnings, or of future satisfactions, or of both of them. It is human because it is an integral part of man. However, earlier economists, both of the Classical and Marxian traditions didn’t treat the human being as capital. Labour, as workers were classified, was capital-free and capital was restricted to physical reproducible materials. Economists have long known that people are an important part of the wealth of nations. Measured by what labour contributes to output, the productive capacity of human beings is now vastly larger than all other forms of wealth taken together. What economists have not stressed is the simple truth that people invest in themselves and that these investments are very large (Schultz, 1961). In many African countries, people are not treated as part of the wealth of nations, which is the reason why more emphasis has for a long time been placed on the wealth generating potentials of natural resources. These natural resources, in recent times have become vulnerable to supply shocks and international pricing fluctuations, thus proving not to be relied upon to generate wealth in the long term; more so, more efficient use of these resources are being generated frequently thus, in the

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<sup>1</sup> Solow attributed long run growth to technical progress while Harrod-Dornar attributed it to savings. What explains the savings rate and technical progress is what the endogenous theory tries to put forward as human capital.

very near future, most African countries will have an abundance of these resources adding very little to their national wealth.

Following from the afore stated, this paper made a case, first for the recognition of human beings as potential capital, called 'human capital' and that it has become imperative for African countries to look the way of their human beings as a source of sustained wealth creation, away from natural resources. Investing in human beings, who eventually become human capital, has become a necessity as a result of the growing population of the continent, most of whom are young (Guengant and May, 2013). The study found that the country with more investment in human capital has better development outcomes.

## **2.0 The Case against Humans as Capital**

On moral and philosophical grounds, the idea of humans being reduced to or classed like things (capital) may seem unsettling. Schultz (1961) recognized the widely held belief that human beings were free and were first and foremost the end to be served by economic endeavor and not property or marketable assets. The mere thought of investment in human beings was offensive to some people. The values and beliefs that humans hold inhibit them from looking upon themselves as capital goods, except in slavery, when men were in bondage. Thus, if men had fought valiantly to pull down the political and legal institutions upon which slavery was built, it meant that treating humans as wealth that can be augmented by investment was akin to returning back to the slavish values of humans as tradable items. Therefore, for man to look upon himself as a capital good, even if it did not impair his freedom, may seem to debase him.

Schultz (1961) further noted that while some economists like Adam Smith, H. Von Thünen and Irvin Fisher at various times and in numerous analysis had argued for the recognition of investment in human beings as a source of economic progress, a vast number maintained that it is neither appropriate nor practical to apply the concept of capital to human beings. However, recent development in the economy has called for a study into the contribution or otherwise of humans as capital in the process of economic transformation and growth.

## **3.0 What is capital?**

According to Rutherford (2002), capital is durable goods capable of producing stream of goods or services over a period of time. Piazza-Georgi (n.d) posited that capital is created and maintained by applying human effort, therefore at a cost. Hence, a better definition of capital is proposed: a productive resource that is the result of investment. This distinguishes it from "land" and "labour". By extension, just as investment can be applied to land for example through irrigation and drainage thereby creating what is normally accepted as a capital good ("improved land"), so investment is routinely applied to labour (education, health). The augmentation to labour makes it human capital. Piazza-Georgi (n.d) further noted that while classical economics emphasized capital - accumulated physical and financial wealth - as the engine of the economy, today, however, it is physical capital that has become the subject of conventional thinking. Yet, there is mounting evidence that it is now as outdated as the land-based thinking of a century ago. Another set is now seen as having as much, if not more, significance for economic growth as physical capital: human and social capital, including individual talents, the accumulated knowledge of society, and society's forms of interaction, organization and culture.

## **3.1 The Promptings of Human Capital Investment Revolution**

Schultz (1972) explained five motivations that led economists into researching on investment in human beings and its relationship to economic progress. Three are highlighted as follows:

### **3.1.1 Changes that have been occurring in the state of economics.**

The sophistication in computing power that has enabled economists test economic theories with greater accuracy and precision led to the discovery that the skilled (or even the so-called "unskilled") worker, and the academically or professionally trained executive, who had hitherto not occupied any significant space in research are now envisaged as particular types of capital equipment employed in the production process, in the sense that their capacity to make a contribution to the productive process is developed by a process of investment (which means simply the sacrifice of current resources for future returns) incurred in the formal education system and through on-the-job training, and that this investment yields its returns over the life-time of the individual concerned.

### **3.1.2 The role that economic puzzles play in what economists do in their research.**

According to Goldin (2014) Robert Solow's pioneering work on economic growth in the 1950s led to the formulation of growth accounting and the discovery (or uncovering) of the "residual." As a puzzle, it led to a lot of empirical work to explain it. Solow (1957) demonstrated that the residual was 87.5 percent of total growth in per capita terms. The residual is that portion of economic growth that is not explained by the increase in physical capital stock, the number of workers and their hours and weeks of work.

Physical capital in the twentieth century didn't explain much of the changes in the economy that was due to the size of the Solow residual. Much of it, it was discovered, came by way of knowledge creation and the augmentation of the labor input through education and training; that is, growth in human capital accumulation. To test this hypothesis, some researchers added human capital growth to the Solow model (Mankiw, Romer and Weil, 1992, as cited in Goldin, 2014). Others demonstrated that the growth of knowledge and other "non-rival" goods meant that some of the implications of the Solow model were violated (Jones and Romer, 2010, as cited in Goldin, 2014). Long-run economic growth has been found to have more to do with growth in human capital than physical capital.

### **3.1.2 The response of economists to the demand for their product.**

University duties have been redefined not only to provide time for research but, more than that, to give it a high priority as a university activity. Meanwhile, many governmental agencies have established economic research units mainly to undertake program analyses appropriate to their area of activity. Large business corporations have evolved a similar pattern in establishing economic research units to serve them in making program decisions.

## **4.0 The start of the revolution in human investment**

The concept of human capital as a component and determinant of economic growth became popular after the Second World War (WWII). Studies made after the WWII associated the concept of human capital with the concept of economic growth. Schultz (1961) attributed the major explanation of national output differences among countries to investment in human capital. He emphasized that the main reason for wage differentials between workers is the human capital differentials which are gained by means of education and health. Investment in human capital is profitable like a physical capital investment according to him. Becker (1964) stated that the investments aiming to improve physical and mental health of labor force were significant human capital investments. Furthermore, the root cause of welfare differences between nations is the differences of human capital formation among countries rather than physical capital ones.

### **4.1 Investment in human beings results in economic growth.**

A staunch proponent of the argument that investment in human beings, like investment in physical capital, results in positive economic outcome is Schultz (1961). He proposes that this investment in human beings predominantly accounts for the productive superiority of the technically advanced countries and that it will be wrong to omit them in studying economic growth.

Furthermore, investment in education filled the gap in growth accounting that increases in land, labour (man-hours) and physical capital could not account for. Still in line with the thoughts of Schultz (1961), human capital theory proposes that the skills that people acquire are a form of capital, that is, human capital; and they are acquired through deliberate investments in education; that skills are the capacities that contribute to economic production; and that earnings in the labour market are the means by which a person's productivity is rewarded. This form of capital had grown in Western societies at a rate faster than "conventional" (nonhuman) capital and that its growth has been the most distinctive feature of the economic system of the mid-20<sup>th</sup> century

The argument for investment in human beings to become human capital, especially as an imperative for Africa will be hinged on two critical variables of human capital investment- investment in health and education.

#### **4.1.1 Investment in Health**

Goldin (2014) wrote about Thomas Hobbes who in 1650 famously wrote in the Leviathan that life was "solitary, nasty, brutish, and short." He meant that without strong government, civil society would disintegrate into war of every man against every man. But in 1650 life was "nasty, brutish, and short," with or without strong government.

It was filled with infectious disease and pestilential maladies. And people really were “short.” They were five inches shorter in Great Britain and France than today and seven inches shorter in Denmark than currently. People eventually became healthier and taller. They live a lot longer now and have less nasty lives with less pain and suffering. People now die mainly of chronic diseases, far less from infectious maladies. During the period from the 1600s to the present, the human body changed in a multitude of ways and in a time frame that defies the usual rules of Darwinian evolution.

Increased resources allow people to invest more in their health human capital. But, in addition, more health human capital allows people to be more productive. However the causal effect is looked at, there is a relationship between health human capital and economic outcome yet; Gouldin (2014) insists that improvements in health is the result of increased wealth and not the cause of it.

Numerous research projects have been carried out to find the effect of investment in health and economic growth. For example, Suhrcke, Rocco and Mckee (2007) found that health can have a direct effect on total TFP (Total Factor Productivity). The aggregate productivity of an economy depends on the business and research activities that citizens undertake, among other factors.

#### **4.1.2 Investment in Education**

According to Goldin, (2014), Knowledge is still being transmitted both formally and informally. For instance, Socrates taught Plato; Plato taught Aristotle; private tutors taught the Confucian classics to hundreds of thousands of Chinese from the Sung to the Qing so they could take part in the “exam system.” On the other hand, apprentices were taught skills by their masters; parents have always taught their children. But only with schools, in which training begins with young children could the system reach large numbers of ordinary people. In the thirty years after WW II, Europe grew faster than the U.S. even though it invested mainly in primary and secondary education. Similarly, the “Asian miracle” (high productivity growth in Asian countries like South Korea) is associated more with investments in primary and secondary education than with investments in higher education.

Investigations into the growth propelling potential of investment in education have been carried out by various authors like Krueger and Lindahl (2001), Omojimite (2010), and Aghion, Boustan, Hoxby and Vandembussche, (2009).

There have been arguments about the extent to which investment in educating human beings can affect economic outcomes and development, apart from the wage enhancing effect it has on those who are educated. However, researchers from the International Institute for Applied Systems Analysis (IIASA) and the Vienna Institute of Demography (VID) of the Austrian Academy of Sciences in a unique study unraveled the puzzle. In the research, a new dataset on educational attainment by age and sex, was used to solve the old puzzle. The outcome showed evidence of consistently positive, statistically significant effects of education on a country’s economic development. Rigorous analysis of the data provided policymakers with proof that education is the necessary (although not always sufficient) precondition for long-term economic growth (IIASA, 2008).

#### **4.2 Human Capital Investment and Human Development Outcomes in Africa: South Africa and Nigeria as Case Studies**

The study of human capital development, its determinants, implications and lessons in Africa has attracted studies such as Gamede (2017), Shuaibu and Oladayo (2016), Msweli (2015), Aluko and Aluko (2012), Iyoboyi and Mufutau (2014) and Ogunleye, Owolabi, Sanyaolu and Lawal (2017) with varying findings.

Despite the positive impact some of these studies have inferred as running from human capital to economic development, policy makers in most parts of Africa are still not focused on it. As a continent, Africa is awash with liquid resources and littered with solid minerals. Over the years, most economies on the continent have relied on these as sources of development neglecting the important role human capital investment can bring to the growth story of Africa.

Most parts of Africa have not put sufficient premium on its human beings which is projected to increase to 1.5 billion by 2025 and 2.4 billion by 2050, with an active working age population (25-64 years) growing from 123.7 million in 1980 to 425.7 million in 2015 (United Nations, 2016). Unfortunately, only four African countries in the

index are in the High Human Development while thirteen are in the Medium Human Development (UNDP, 2016). This poor placement in human development is reflected in the percentage of GDP spent on health and education. Table 1 and 2 contains the human development index of South Africa and Nigeria respectively, including the percentage of GDP spent on health and education. The analysis that follows confirms that human capital development may not be a function of the size of the economy, but amount of resources devoted to it.

Measuring development outcomes by the Human Development Index (HDI), and Investment in human capital by percentage of government expenditure on health and education, evidence in Table (1) and (2) shows that different development outcomes accrue to different countries in Africa, depending on the level of investment in their human capital.

Table 1: Investment in Human Capital and Development Outcome in South Africa

Year	1990	2000	2010	2011	2012	2013	2014	2015
HDI	0.621	0.629	0.638	0.644	0.652	0.660	0.665	0.666
Govt. Exp. on Health (% of GDP)	NA	3.3	3.99	4.1	4.3	4.2	4.2	NA
Govt. Exp. on Education (% of GDP)	5.3	5.44	5.7	5.96	6.4	6.00	6.1	NA

Source: World Development Indicators, 2016 and UNDP, Human Development Report, various editions

South Africa was described by Scerri (2014) as one of the diversified economies on the continent of Africa. By HDI measures, it is ranked in the Medium Human Development range whereas Nigeria, which is Africa's largest economy by GDP, much as a result of crude oil sale (Scerri, 2014) than the productive capacity of its human capital, is ranked in the Low Human Development range. From Table 1 and 2, it will be observed that South Africa's HDI ranking has, since 1990 been over 0.6, moving by about 0.045 from 1990 to 2015. On the other hand, Nigeria's ranking has been around 0.5 and moved by only about 0.027 from 2010 to 2015. The two countries may have had these different human development outcomes as a result of how much each invests in the human capital indices of health and education. A look at Table 2 indicates that the percentage of GDP spent on health and education in Nigeria from 2010 to 2014, combined, is not up to what was spent in South Africa in 2010 alone. This may explain why the growth in Nigeria is predicated more on primary product extraction than on human capital enhancement which could have enhanced the productivity of its physical capital.

Table 2: Investment in Human Capital and Development Outcome in Nigeria

Year	1990	2000	2010	2011	2012	2013	2014	2015
HDI	NA	NA	0.500	0.507	0.514	0.521	0.525	0.527
Govt. Exp. on Health (% of GDP)	NA	0.95	0.91	1.2	1.03	0.88	0.92	NA
Govt. Exp. on Education (% of GDP)	NA	0.86	0.31	0.53	0.49	0.49	0.39	0.35

Source: World Development Indicators, 2016 and UNDP, Human Development Report, various editions; additional data on education from Omodaro and Azubuike (2016)

On the other hand, measuring development by country competitiveness and retaining the measures for investment in human capital, Table 3 demonstrates that countries that pay attention to the development of their human beings into

human capital have the chance of being more economically competitive, through the improvement in productivity that comes with enhanced human capital.

The World Economic Forum defines competitiveness as the set of institutions, policies and factors that determine the level of productivity in an economy. These indices indicate the long term growth and prosperity prospects of an economy. The pillars of global competitiveness considered here are in line with the education and health components of human capital development being considered in this study.

Table (3) presents the ranks of Nigeria and South Africa in the fourth and fifth pillars of the Global Competitiveness Report.

Table 3: Global Competitiveness Ranking of Nigeria and South Africa

Global Competitiveness Pillar	Health and Primary Education	Higher Education and Training	Overall Rank
Country			
South Africa	121	85	61
Nigeria	136	116	127

Source: World Economic Forum, Global Competitiveness Report, 2017-2018

Table 3 shows that South Africa, ranked 61<sup>st</sup> out of 137 countries in the Global Competitiveness report also has a better ranking than Nigeria in two of the twelve pillars of the competitiveness report. This goes to show that countries that invest more in human capital development have better economic outcomes than those that do not.

## 5.0 Conclusion

Investment in human beings was not popular amongst some earlier economists because of the appendage to humans called “capital”. Much of the economic progress the world made particularly after the Second World War came as a result of the productive power of the human being, into whom investment was made to become human capital. It has been shown that a country in Africa can make developmental progress by the conscious effort of investing in their human beings, who become human capital as exemplified by South Africa. Furthermore, this study has shown that on the same continent, a country that pays less attention to human capital improvement, reduces its chances of better economic prospects, this is the case of Nigeria.

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