Health Status, Labour Productivity and Economic Growth in Nigeria

ABSTRACT

The quest for rapid economic growth and development has pre-occupied the minds of researchers and policy makers most especially in less developed countries. This has resulted to empirical inquiry into the causes of growth in a sustainable term. This study therefore examines the impact of health status and labour productivity on economic growth in Nigeria. By utilizing annual time series data from 1981 to 2017, the study carried out ADF unit root test to ascertain the stationarity of the series. The result confirms that the series were stationary at levels and t first difference, hence, the adoption of ARDL bound test to Co-integration. The empirical estimates of the parameters of the model show that both health status and labour productivity have positive impacts on economic growth in Nigeria. This follows economic theory as expected. A further analysis of the significance of the estimates reveals that health status plays a significant role in Nigerian growth process. However, labour productivity fails to significantly impact on growth episodes in Nigeria. Other variable which stimulates economic growth in the country is gross fixed capital formation. The study therefore recommends a policy framework towards improvement in the quality of labour through adequate funding of education and re-tooling the educational system to enhance labour productivity for a more robust growth of the economy.

Key Words: **Health status, Labour productivity, growth and ARDL.**

1. INTRODUCTION

Health status is a crucial determinant of the quality of human capital resources, which helps to promote economic growth and development of a nation. Thus, the mechanism is that improved health contributes immensely to productivity level of an economy (Singh and Das, 2015).

To pursue improved health status, poverty reduction and moderate level of inequality globally, it is important that every government and policy makers have a good understanding of the processes and paths that explain the relationship between health and wealth (Husain, 2009) owing to the fact that better health and longevity are no longer negotiable if meaningful growth and development are to be achieved. Health according to the World Health Organisation (1946), is a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Furthermore, health is the condition of being sound in body, mind or spirit especially freedom from physical disease or pain (Webster, 2018). Satorius (2006), identified three types of health; lack of any form of ailment or challenge, condition in which someone is able to stand the dictates of daily needs, and a state of stability that is achieved by an individual for himself, and between himself and his social and physical environment. Therefore, from the foregoing, health is a state that explains the totality of man in terms of his mental, physical and social readiness to relate within himself and between himself and his immediate environment. Also inherent in the understanding the concept of health is adequate and appropriate nutrition. Following Todaro and Smith (2006), Many citizens of developing countries suffer from

malnutrition which promotes ill health. Comparing the health status across nations using life expectancy data, Todaro and Smith, (2006) documented that in the less developed countries, average life expectancy at birth stood at 50years in 2002, as compared to 64 years and 78 years in developing and developed countries respectively.

Over the years, previous studies have reported that improved health status has played a significant role in labour productivity level and consequently impacted on economic growth (Bloom et al., 2004; Dabus, Grandes, & Monterubbianesi, 2017; Sengupta, 2017; Bloom). The studies identified improved life expectancy at birth, lower infant mortality rate, and improved maternal health as the channels of this impact in developing economies. Accordingly, Bloom et al. (2004), asserted that human capital and health outcomes contribute to economic growth through a statistically significant effect on the level of productivity.

One of the measures of determining performance of an economy is the value of Gross Domestic Product (GDP). Thus, economists and Policy makers often pay attention to the factor input that cause the GDP value as well as efficiency of the inputs (NBS, 2016).

Furthermore, the wealth of a nation can be measured by the health status of her citizens, this stems from the fact that Health indicators and economic performance are interlinked. Health improvement enhances the level of education, labour productivity, savings and investment and demography, which are integral determinants of the Gross National Income (GNI) of countries. In addition, improved health brings about broader benefits including enhanced economic development by poverty reduction, inequality gap streamlining and gender equality. This corroborates the popular saying that "Health is Wealth". Wealthier countries have healthier populations, healthier individuals will often have the ability and incentive to work and save more, and this accumulation of capital will stimulate growth through investment. Similarly, companies may be more likely to invest when workforces are healthier or better educated (NBS, 2016).

According to Peykarjou et al. (2011) opined that health often affect production level of a country through various channels. For instance, health improvement in the human resources will be followed by motivation to continue education and obtain more skills by enhancement of learning capability leading to a rise in the productivity level. Additionally, enhancement of health and health indices in the society will encourage individuals towards more savings, through reduction of mortality and increases of life expectancy. Following increased savings in the society, physical capital is enhanced and this will impact directly on Labour force productivity and economic growth (Weil, 2001)**.** Everyone knows importance of health as a basic right for life. Improvement in health is as important as improvement in income when thinking about development and human welfare. Empirically, improved healthcare of the citizens correlates with high levels of national income. This is not unexpected. However, health is not only a consequence but also a cause of high income (NBS, 2017). Buttressing the assertion that healthcare correlates with national income, Bloom and Canning (2000) attributes this to various factors: Firstly, health plays a crucial role in labour productivity.

STATEMENT OF PROBLEM

Nigeria's population is about 190.6 million, it accounts for 47 percent of West Africa's population (World Fact Book, 2018), having 85.1 million of its population representing the labour force (NBS, 2017). Nigeria is endowed with abundant human resources which makes her the 7th most populated country in the world (World Fact Book, 2018). It is expedient for government of any country to cater for the health needs of people. However, it has been observed that the quality of health services and other basic infrastructures provided in Nigeria for welfare of the people is very poor. Unfortunately, the present state of health of Nigerians, especially, the labour force threatens the country's output expansion bid. This is evident from the ranking at the World Economic Forum (2016), on Global Competitive Index, where Nigeria was ranked the lowest (138th) in health and primary education out of 138 countries that were considered (Akingbade, 2016). This is due to the fact that only 63% of children were enrolled in primary schools, while quality and quantity of higher education and training provided for the populace are said to be poor. Similarly, Magarya (2017) confirms that Nigeria was ranked 187 out of 190 countries in world Health Systems, only ahead of Democratic Republic of Congo, Central African Republic and Myanmar with overall level of health, distribution of health in population and responsiveness and distribution of finance as major performance indicators. In the same vein, the joint committee for United Nations AIDS (UNAIDS, 2016), observed that Nigeria as at 2016 had 220,000 new HIV infections and 160,000 AIDS related deaths. Furthermore, 3.2 million people were living with HIV among whom only 30% were accessing antiretroviral therapy. Only 32% of pregnant women with HIV were accessing treatment to prevent their children from being infected. In addition, Nigeria remains one of the countries that faces malaria as one of the most significant health challenges (The Global Fund, 2018), despite significant progress recorded in increasing coverage of long-lasting insecticidal mosquito nets in the last decade. Nigeria contributes more than a quarter of the global burden of malaria and has the world's fourth largest tuberculosis burden. Undoubtedly, this is responsible for the low level of productivity of the labour force. Sadly, the labour force participation rate fell from 55.2% in 2016 to 55.1% in December, 2017, despite the increase in population growth (Census Economic Information Centre, 2018). Given the high rate of disease, infection, and low level of productivity compared to the immeasurable increase in population size, it becomes imperative to examine the effects of health status and labour productivity and economic growth in Nigeria. While previous studies on health status, labour productivity and economic growth (Gill, 2012 and Sengupta, 2017) are largely absent for Nigeria, studies that have considered the Nigerian situation (Abiodun, 2011; Odubunmi et al., 2012; Babatunde, 2012; Eneji et al., 2013; and Onisanwa, 2014) have focused more on health status, health expenditure and economic growth while labour productivity has been neglected. This obvious gap in literature provides the justification for this study.

From the forgoing, this study aimed to examine the impact of health status and labour productivity on Economic growth in Nigeria. To achieve the objectives of this study, the following research questions were answered; does improved health status stimulate and sustain economic growth? Is the Nigerian growth episodes labour driven?

The study is structured into five distinct sections. Following the introductory section is section two which contains reviews of literature while section three discusses the theoretical framework and analytical procedures. Section four presents and analyzes the data and section five spelt out the summary, conclusion and proffers policy options.

2. LITERATURE REVIEW

Conceptual Issues

Health is a specific feature of a human being, defining to a considerable extent the possibility of using one's own physical and mental efforts, abilities and experience in the labour market. Similarly, professional development depends on an employee's health condition. Health belongs to rare goods that are difficult to evaluate (Go-linowska, 2015). Apart from education and professional experience, health is one of the three most important factors determining the quality of human capital. According to a universal definition of health recommended by WHO (1946), health is not only a complete absence of diseases or disability but also a condition of full physical, mental and social well-being. What should be highlighted within the context of the above definition is that the state of health is defined most of all with the use of a subjective evaluation of one's well-being rather than with the use of hard quantitative indicators (e.g. blood pressure level). Such a definition of health has certain consequences. Firstly, two hypothetical persons of 'objectively' similar health condition (on the basis of results of medical tests) may evaluate their health in two different ways. The 'burdensomeness' of health problems stem to a great extent from their subjective perception by a given person. The further consequence of the adopted definition of health is the application of conventional ranges in its measurement. People who enjoy good health are not the ones who have no symptoms (it is nowadays difficult to talk about completely healthy people, taking into account the current level of the diagnostics development), but the ones for whom aches and pains or medical indicators are not obstacles to well-being. There is a correlation between health and professional activity. Both the theory of economics and the empirical research indicate that, as a rule, working people are in better health than those unemployed and professionally inactive. There may be a few ways to explain this. One of them is the positive dependence between income and health condition (Grossman, 1972; Ettner, 1996). Higher income of working people allows them to purchase medical services (including, in particular, in the private sector). In the economic sense, it is assumed that health is something normal. Although it is commonly accepted that healthcare has a limited impact on health (Lalonde, 1974), the possibility of using services of higher quality by people who earn more is invaluable. Moreover, work may affect health through non-monetary channels. An important factor that determines the state of health is the broadly understood environment, including work environment. It may have a positive or negative impact on physical health (e.g. noise, harmful chemicals). The health of employees is an important cost factor for firms and a key determinant of the productivity of an economy. Relevant to the concept of health are Life Expectancy, Adult Survival Ratio, and Maternal Mortality. This study adopts Life Expectancy at Birth as the indicator for Nigerians Health Status.

Life Expectancy at birth (LE): Life expectancy at birth is defined as number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth

remains constant throughout the infant's life (UNDP, 2014). Reporting that health status (Life Expectancy) has a positive relationship with economic growth, earlier studies (Dixon, 2001; and Bloom et al, 2004) found that health has a high positive and significant impact on productivity and economic growth.

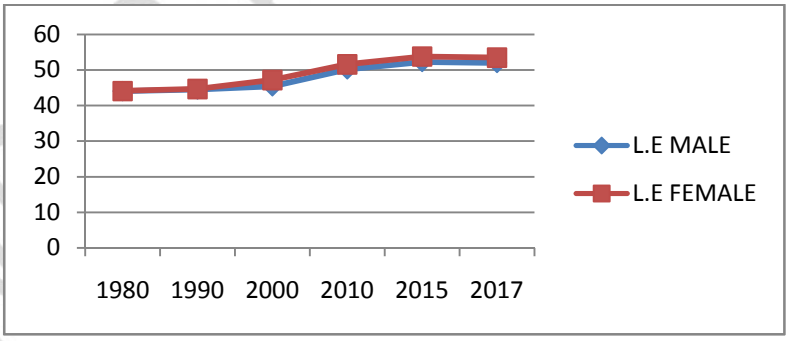
Table 1: Nigeria Health Status Report

Year	Life Expectancy at Birth		Infant Mortality Rate	Total Mortality Rate	Neo natal Mortality Rate
	Male	Female			
1980	44.01	44.09	127	234.74	45.33
1990	44.50	44.66	126.2	231.86	45.89
2000	45.38	47.19	187.9	425.41	49.3
2010	50.15	51.56	133.9	392.54	38.8
2015	52.24	53.76	122.3	374.77	34.7
2017	51.96	53.46	117.2	377.18	34.77

Source: World Development Indicator, 2018.

From the table 1 above, it can be deduced that despite several health reforms, life expectancy has remained low. This depicts Nigeria as a high risk nation to both male and female genders alike. However, females have a slightly higher life expectancy than males. This could be related to the fact that most men are exposed to highly unhealthy jobs coupled with the stress involved in daily operations with minimal healthcare demand. The case for females is otherwise as majorities are engaged in the informal sector specifically trading with lesser exposure to hazards.

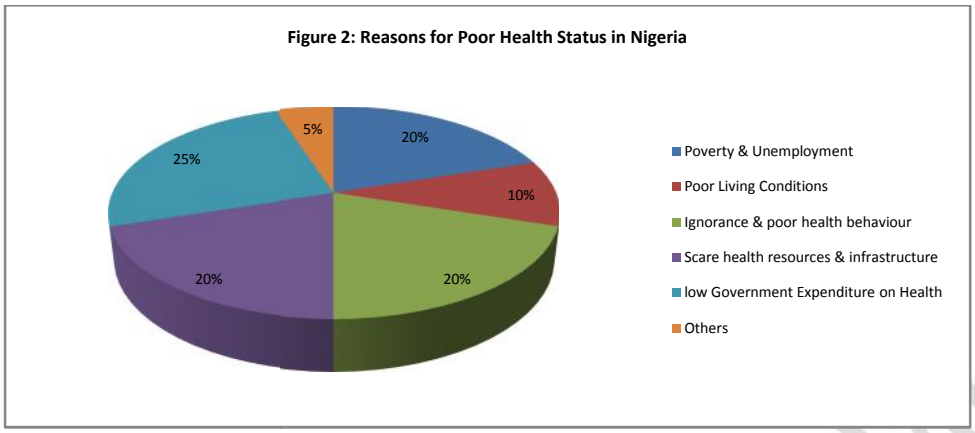
Figure One: Gender comparism of Life Expectancy in Nigeria



Source: Author's Computation

Adult Survival Ratio (ASR): Adult Survival Ratio denotes the probability that a 15-year –old will survive up to age 60 years, expressed per 1,000 people. Bhargava (2001) argued that the effects of ASR are likely to diminish at a relatively low growth level and also a broader view of health necessities focusing on human development, including the formation of human capital. Health Index (HI): This is a composite dimension index which is measured by assigning equal weights to LE index and ASR index.

$$\text{Dimension Index} = \frac{Actual\ Value - Minimum\ Value}{Maximun\ Value - Minimum\ Value} \quad (1)$$

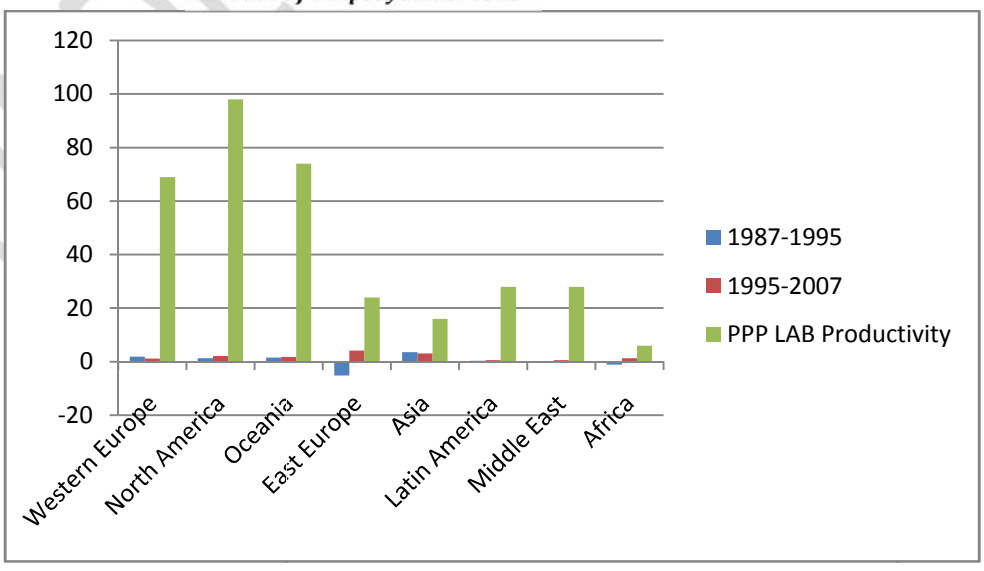


Source: Author's Computation using data from Eneji et al., (2013).

Labour productivity represents the total volume of output measured in terms of GDP produced per unit of labour employed in its production. Labour productivity provides information about the efficiency and quality of human capital in the production process for a given economic and social context, including other complementary inputs and innovations used in production.

Given its usefulness in conveying valuable information on a country's labour market situation, it is one of the indicators used to measure progress towards the achievement of both millennium and Sustainable development goals of respectively eradicating extreme poverty and hunger and promoting sustained, inclusive and sustainable economic growth, full productive employment and decent work for all. Among other productivity measures such as multi-factor productivity or capital productivity, labour productivity is particularly important in the economic and statistical analysis of a country. Labour productivity is a revealing indicator of several economic indicators as it offers a dynamic measure of economic growth, competitiveness, and living standards within an economy. It is the measure of labour productivity (and all that this measure takes into account) which helps explain the principal economic foundations that are necessary for both economic growth and social development (OECD, 2001)

$$\textbf{Labour Productivity} = \frac{GDP\ at\ Constant\ Prices}{Number\ of\ Employed\ Persons} \qquad (2)$$



From the Nigerian perspective, over 33 percent of her population constitutes the labour force (NBS, 2016). The labour force is an asset in its capacity to enhance productivity and growth (Vision, 2020) as cited in Umoru and Yaqub (2013). Moreover, the health capital of an economy plays a significant role in a country's economic prosperity. This is as a result of the fact that health status affects the productivity of labour and economic growth. Healthier people work more, earn more, and by implication contribute more to capital formation through savings. This cannot be said of unhealthy people.

Furthermore, Tompa (2002), opined that at the individual level, health can directly increase general output through enhanced physical energy and mental acuity, reduced morbidity or increased longevity, resulting in longer career. At the aggregate level, these individual increases in output can translate into increases in labour productivity (i.e, output per worker or even per capita income through increase in the size of active labour force relative to the population).

The view of the International Labour Organsiation (ILO, 2017) corroborates that of the OECD (2001). Hence, Following ILO (2017), Labour Productivity is an economic indication that helps to reveal a dynamic measure of economic growth, competitiveness and living standards within an economy, as well as social development.

Theoretical Review on Health and Productivity

GROSSMAN'S THEORY OF HEALTHCARE PRODUCTION (1972)

The study by Grossman (1972) depicts the pioneering effort to discuss to the evolution of Health Economics as an independent discipline. In his analysis, Grossman (1972) posits that an individual's Health Outcome is determined by two major factors: the initial health endowment at birth, and the level of healthcare demands. In furtherance to this analysis, Grossman (1972b) considered educational attainment as a key factor that determines individuals' health status. The position of Grossman was validated by Lleras-Muney (2002) who recognized education as a key input in the production of health outcomes. In review of this theory, health status does not in reality depends only on education, initial health endowment and healthcare demand but also on the quality the environment, nutrition and maternal life style. Had this theory incorporated these factors as determinants of health status, it could have been more encompassing. Irrespective of the efficiencies in this theory, it laid the foundation upon which other theoretical and empirical studies were carried out.

MCKEOWN-FOGEL NUTRITION THEORY OF HEALTH OUTCOMES

In a separate analysis, Mckeown (1976) and Fogel (2004) identified the impact of nutrition on health status. In their opinion, not only does healthcare demand determine health status, but the quality of food intake by the individual. Individuals with low level of income tend to consume a less balanced diet as against the rich who consume balanced diet. In line with this, those that consume balanced diet tend to be healthier that the poor who consume either of carbohydrates with the consequence of kwashiorkor. The strength of this theory lies in it recognition of income inequality amongst households which translates to the nutritional value of the family. However, environmental factors such as access to quality water and sanitation were neglected. In addition, maternal life style was never recognized as a factor that could amplify or deteriorate health status of an individual. The work of Deaton and Paxson (2001) validates the income perspective of health status. This corroborates the study of Mckeown-Fogel.

Rosenzweig and Schultz (1983) recognized the role of maternal life style on the health status of the new born. In their study, the found that the pattern of maternal consumption and related life style like exercises affect the health endowment of the new born. While this study was the first to recognize the role of maternal health in determining the health of the child, the overall thesis agreed with that of Grossman (1972) as it recognizes that at birth, a certain level of health endowment is possessed. It stands tall above the Grossman's theory because it was able to attribute the health status endowment at birth to maternal life style while Grossman found no explanation to it.

Empirical Review

Ulman et al., (2017) attempted to examine if health is a determinant of economic activity for European countries, documented that on a general ground, deterioration in health status increases the risk of remaining economically inactive and that in the analysis of the order of significance of economic activities determinants, health related factors turned out to be more significant.

Bloom et al., (2001) while studying the effects of health on economic growth found that good health has a positive, sizable and significant effect on aggregate output. Other factors considered such as differentials in level of education accounts for a little variation in economic growth, the study therefore concluded that education creates no externality.

Dogrul (2015) examined the effects health on labour force participation in Turkey. The result suggests that health positively and significantly affects the labour force participation for all age-gender groups. The effects is however larger for older men and younger women. The study also revealed that labour force participation has a significant positive effect on health for younger men and significant negative effect on health for older women, this confirms the existence of endogeneity for younger men. The result of this was validated by a recent study by Ulman (2017) as reviewed above.

Analysing the relationship among health care expenditure, health status and national productivity in Nigeria from 1999 to 2012, Eneji et al., (2013) found that public health expenditure is a significant determinant of health status, productivity and poverty reduction in Nigeria.

In another study by Bloom et al., (2003) using macroeconomic data across countries, a positive and significant effect was reported for health on aggregate output. This finding is consistent with their earlier reports using microeconomic and primary data as documented above. This result agrees with reports of earlier study by Tompa (2002) on the empirical evidence and policy implication of the impact of health on labour productivity.

In a survey and overview of the contribution of health to economic development, Husain (2009) result is in tandem with the recent strand of the literature, which reflects changes in perceptions: improvements of health and longevity are no longer viewed as a mere end or by-product of economic development, but as key determinant of development and means to achieve economic development and poverty reduction. Hence, better health does not wait for improved economy, rather, measures to reduce the burden f diseases, to give children healthy childhoods, to increase life expectancy which will contribute to creating richer economy.

Reporting health and its impact on labour productivity and labour market for Indian economy, Sengupta (2017) found that infant mortality rate, child malnutrition, death due to malaria and tuberculosis and diarrheal cases emerged as chief factors which affect the different components

of the labour market such as the output per worker, vulnerable employment and also the work participation rate.

Analysing labour productivity and health capital in Nigeria from an empirical perspective, Umoru and Yaqub (2013) found that health capital investment is a significant determinant of labour productivity. Furthermore, it was reported that education-labour and health capital-labour have significant effects on labour productivity.

The relationship between human capital such as health and education has continued to receive generous enquiries in literature. This is because human capital is significant in achieving sustainable economic growth. In this vain, Onisanwa (2014) examined the impact of health on economic growth in Nigeria using quarterly data from 1995 to 2009. The study found that economic growth is positively influenced by health indicators in the long run, and health indicators cause per capita GDP. This is a validation of the expected long run relationship between health indicators and growth. This result corroborates the findings of Riman and Akpan (2010) that a long run relationship exists between poverty and health status in Nigeria. In a similar analysis using the Cass-Koopmans growth model to investigate health, labour productivity and growth nexus, Muysken (2003) confirms the standard neo-classical postulation that a positive association exist between per capita income and health status.

Investigating the long run impact of health on economic growth in pakinstan from 1972 to 2006, Akram et al., (2008) found that health indicators stimulate economic growth in the long run and the causal relationship is uni-directional, running from health indicators to economic growth. The study therefore suggests that the impact of health is only a long run phenomenon since in the short run no health indicator had a significant relationship with economic growth.

Singh and Das (2015) in an attempt to examine the status of health among four income group countries: high income, upper middle income, low middle income and low income group countries, and found that health status of high income group countries is better than all other three income group countries followed by lower middle income group countries. However, there is a high variation in terms of health index in upper middle income group countries and also their mean value of health index is comparatively lower than the lower middle income group countries. The study therefore revealed further that economic growth and educational attainment of a country have a positive impact on the health status of the same country.

In a more recent study Monterubbianesi et al., (2017) investigating new evidence of the health status and economic growth relationship reported that the marginal effects of a change in health status in the long run lies between 2.6% in the growth accounting models and 8.3% in the “a la Barro” regressions. This shows that health variables bear a significant impact on economic growth.

From literature, there seems to be a consensus of opinion amongst scholars on the role of health in productivity, growth and development of all nations. Health plays a very vital role in the economic growth of a country. Improved health brings about broader benefits including enhanced economic development. Health is a vital human capital which is one of the main inputs for growth and development. When we have a healthy population, economic benefits will follow.

3. ANALYTICAL FRAMEWORK AND MODEL SPECIFICATION

Model Specification

This study follows the work of Matsashita, Siddique and Giles (2006) in model specification with suitable adjustments.

Functional Model

$Y_t = f(HS, Lab, Inv)$ (3)

Thus, equation (1) is further expanded to include health indicator and labour variables as,

$LnY_t = b_o + b_1 LnLE_t + b_2 Ln(RGDP/L)_t + b_3 LnINV_t + e_t$ (4)

Where;

Y_t = Real GDP Growth rate

LE = Life Expectancy as a proxy for Health status

RGDP/L = Labour productivity per capita

INV = Investment (proxied by Gross Fixed Capital Formation)

b_o = intercept in the model

b_1 to b_3 are the coefficients of each of the explanatory variable

e_t = error term

a-priori expectation

$b_o > 0, b_1 > 0, b_2 > 0, b_3 > 0$

4. Data analysis and Discussion of Results

Table 2: ADF Result of stationarity (unit root) test.

Variable	ADF Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Order of Integration
LNY	-3.7262	-3.6329	-2.9484	-2.6129	I(1)
LNHS	-3.3195	-3.6329	-2.9484	-2.6129	I(1)
LNLABP	-3.6717	-3.6068	-2.8458	-2.7115	I(0)
LNINV	-3.0903	-3.6268	-2.9458	-2.6115	I(1)

Source: Author's Computation using E-Views (July, 2018).

From the Augmented Dicky Fuller unit root test, the result shows that economic growth, health status, and investment are integrated of order one, while labour productivity is stationary at level, that is, integrated of order zero. Since the variables are I(0) and I(1). This paved the way for the adoption of bound test to Co-integration.

Table 3: Bound Co-integration Test

Estimated Model: □□ = □(LnHS , LNLABP , LNINV)		
Optimal Lags: (2, 0, 0, 0)		
F- Statistics: 7.57*		
Level of significance	**Lower Bound**	**Upper Bound**
10%	2.618	3.532
5%	3.164	4.194
1%	4.428	5.816

Source: Author's Computation using EViews 10

From the bound test to co-integration, in table 4 shows that F-statistic 7.15 is greater than the 1%, 5% and 10% lower and upper bound test and we can therefore conclude that there is co-integration among the variables; hence, a long run relationship exists among the variables.

ARDL Estimation of Result

Table 4: ARDL Long and Short Run Result

Dependent Variable: LNY

Long Run Estimates				**Short Run Estimates**			
Variable	**Coefficient**	**t-stat**	**Prob**	**Variable**	**Coefficient**	**t-stat**	**Prob**
				LnY_{t-1}	0.7723**	4.5280	0.0001
LNHS	5.2764**	10.882	0.0000				
LNLABP	0.0031	0.1921	0.8490	LNHS	3.2645	4.0558	0.0003
LNINV	0.0741**	5.4167	0.0000	LNLABP	0.0019	0.1933	0.8480
				LNINV	0.0458	4.6122	0.0001
C	-12.0630	-7.854	0.000	C	-7.4634	-3.7675	0.0007
Statistical Properties of Results							
R^2	0.9911			ECM(-1)	-0.6187	-0.65636	0.0000
Adj R^2	0.9903						

F-statistic	1229.606
Prob(F-statistic)	0.0000
Durbin-Watson Stat	0.9572
Akaike Info Criterion	-3.0432
Schwarz Criterion	-2.8691

Source: Author's Computation using E-views (July, 2018)

The long run estimates result show all the explanatory variables are conform to theory, that is, met a priori expectation. Furthermore, the estimated parameters indicate a strong positive relation between economic growth and health status in Nigeria. Labour productivity has a positive relationship with growth but the impact is not significant in both short run and long run. The insignificant impact of LABP on growth in Nigeria shows the poor quality of manpower in the country and faulty educational system as well as unmerited employment considered mediocrity over meritocracy. Furthermore, the empirical finding indicates that the effect of gross fixed capital formation on growth is positive and significant. Numerically, a percent rise in health status (life expectancy) stimulates growth by 5.28%; this effect is significant at 0.01 as confirmed by the probability value of 0.0000. It is also evident that gross fixed capital formation (investment) has a positively significant impact on Nigerian growth episodes. Here, a percent increase in investment causes a 0.07 percent rise in economic growth. However, another key variable of interest under consideration is labour productivity. From the empirics, a percent increase in labour productivity contributes 0.003 percent to the growth of the economy; this is insignificant with the probability figure of 0.8490.

The coefficient of determination (R^2) result shows that over 99 percent of the variation in economic growth is accounted for by the changes in health status, labour productivity and investment level in Nigeria. This shows that the model has a good fit.

The F statistic shows the overall significance of the model with a calculated value of 1226.606 which is higher that the tabulated value at 0.01 level of significance. This is also obvious in the probability value (F-statistic = 0.0000). The Error Correction Mechanism whose coefficient value is -0.6187 shows conformity to theoretical expectation. The value indicates that when there is a distortion in the model, it would take approximately annual adjustment speed of about 62 percent. This speed of adjustment of the economy to equilibrium is high and reasonable. This also portrays the model estimates to viable for policy suggestions.

5. CONCLUSION

On the basis of empirics, this study concludes thus; higher health status promotes economic growth in Nigeria. This is because the healthier the population of a nation, the higher the number of hours they can work and the higher their productivity. Labour is not a critical factor that determines growth in Nigeria. This position disagrees with the neo classical growth model. The obvious depth in quality of manpower, and low quality of education in the country provide the basis for this finding and conclusion, that thus far, the Nigerian growth episode has not been propelled by labour productivity. Investment in physical capital promotes growth in Nigeria. It is hereby strongly concluded that policies aiming at economic growth in Nigeria should focus more

on manpower development through improving the quality of education and continual raining and re-training of the labour force in diverse skills.

Policy Options

To achieve higher output expansion, attention must be given to manpower development. Labour as a factor of production though abundant in the country, but lack the basic quality required to contribute significantly to economic growth. It will make sense for both private and public sectors to spend more on the education sector as to re-tool Nigerians in line with the current trends in skills internationally for better productivity.

Furthermore, the present improvement in healthcare services resulting from a more robust national health policy should be sustained.

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