
IMPACT OF HUMAN CAPITAL AND ECONOMIC GROWTH ON POVERTY RATE IN NIGERIA

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Abstract

This study examines the impact of human capital and economic growth on the poverty rate in Nigeria. Theoretical models and several empirical evidences suggest that human capital is an important way to counter the growing poverty rate in Nigeria. Recent studies show increasing positive relationships between human capital and economic growth on poverty reduction levels on the Nigerian economy. The objectives of the study were to examine the impacts of human capital and economic growth on poverty rate in Nigeria. This study is undertaken to examine the impact of relationship between human capital and economic growth on poverty rate in Nigeria using time series data which covered the period of 1985-2018. Adopting the human capital theory, the following econometric tests were carried out; Unit root test, Co-integration test, Correlation and Granger Causality tests, analysis indicated that there was no significant impact of economic growth on poverty rate in the specified period while Real Government Expenditure on Education had uni-directional causality with the dependent variable. Findings from the study showed that human capital had positive impact in areas of education and health but economic growth had no significant contribution to poverty rate in the economy, conclusion was drawn that only Government Expenditure on Education contained information that could be used to explain the changes that occur in the dependent variable poverty. The study then proffered the need for government to continue developing and improving the education and health sectors as it is important for economic development in the economy.

Keywords: Poverty Rate, Human Capital, Economic Growth, Nigeria.

1.0 Introduction

In recent times in Nigeria and from its record in the 80's, Nigeria has had different fluctuating records in her poverty level with its increasing rates being more than its decreasing rates. There is no official poverty line put in place for Nigeria, but for the sake of poverty analysis, the mean per capita household is usually used. There are two poverty lines used to classify the financial stand of citizens i.e. the upper and lower poverty lines. The upper poverty line is N395.41 per person annually which is two thirds of the mean value of consumption while the lower poverty line is N197.71 per person which is one third of the mean value of consumption. Those under the lower poverty line are considered as extremely poor while those under the upper poverty line are considered as moderately poor (Zuhumnan, 2018).

Between 1980 and 2010 there were more people falling into poverty than escaping it. Based on a related study, about 72% to 91% of Nigeria's poor are at risk of spending their whole lives below the poverty line. We also see that those who have never experienced poverty where schooled, lived in urban areas and were found in the top 10% of the income distribution (Zuhumnan, 2018). Between 1980 and 1985, about 0.115 to 9.5% of the population escaped poverty but at the same time 21.94% - 32% moved into poverty (Zuhumnan, 2018).

Nigeria has launched several initiatives in order to fight poverty with most of them aimed at providing education to the less opportune and increasing healthcare and food production but their efforts seem not to be enough as poverty still prevails (Zuhmnan, 2018). In a bid to reduce poverty, human capital is a big consideration used to counter it. Nigeria has a large population of about 193 million and in relation to its human capital index, is ranked 114th, while it was ranked 122nd and 124th in development and know-how sub-indices respectively. This goes to show that the role of human capital in the development process of a nation cannot be overemphasized; however, Nigeria is yet to invest fully in developing a skilled labour pool with technical skills (Proshare Research, 2018).

Despite Nigeria's consistent population growth, 2.5% of the economy is yet to unlock the full potential embedded in such a great asset (Proshare Economy, 2018). This is due to factors such as human capital flight (to greener pastures in other countries), deteriorating quality of the Nigerian education system and mismatch between formal education and industry requirements among other factors. This is why efforts by the government needs to be geared toward reducing brain drain in the country and to achieve this, the government needs to re-vamp the real sector and integrate the informal sector fully into the economy (Proshare Economy, 2018). In all this, the growth of the economy is also a very important tool in poverty rate determination and reduction in Nigeria. Nigeria became the largest economy in Africa in 2014 as GDP per capita grew by nearly 70% between 1992-2009 poverty rates fell by 6% (Kirby, 2017). However, while the proportion of impoverished Nigerians decreased

slightly, the population grew by nearly 54.3% increasing the absolute poverty number of poor citizens below the poverty line (Kirby, 2017).

In the 1990's economic growth reduced poverty by a large magnitude but over the years it has fallen due to economic inequality, overdependence on oil, corruption, unemployment, decreased investment in public education and health programs etc. understanding the relationship between these concepts will help the government better understand whether their policies are having desired effects and where to target resources to improve outcomes (EPAR, 2008). This research is meant to address the identified problem of poverty. Generally, there is a rate of poverty in every country both big and small, but the rate of existence of poverty determines whether it would affect the growth and development of an economy and how the effects are responded to in the economy. For this project, there is a level of poverty that is present in Nigeria which is our case study of the project, after identifying it, we will analyze its effects on the populace and the economy and how it can be resolved to promote growth and development in the country. A lot of researches have been conducted on the poverty in Nigeria in different ways, but the peculiarity of this research is to examine the impact of the selected factors of human capital and economic growth on poverty rate in Nigeria and how they can be worked upon to help develop the economy, We can also see that the research is aimed toward suggesting ways in which the quality of human capital in Nigeria can be improved and determining how human capital and economic growth contribute to poverty rate in Nigeria.

Generally, the objective of this study is to evaluate the rate of poverty existing in the Nation and to what extent it affects the populace and the economy at large. It is also to examine the impact of human capital on the economy. This is because, the reduction of poverty alongside Human capital Development will greatly increase and boost the per capita of Nigerians and also increase the buoyancy of the economy to a large extent.

Meanwhile, the specific objectives of this study include:

1. Examining the impact of economic growth on the poverty rate in Nigeria
2. To also examine the impact of human capital and how its efficiency can be improved to reduce poverty rate in Nigeria.

2.0 Literature Review

According to Obayori Joseph, Udeorah Sylvester and Aborh Bright in (2018) titled "Human Capital Investment and Poverty Reduction in Nigeria", examined the impact of human capital investment on poverty reduction in Nigeria. The study was motivated because of high poverty level that characterized the underdeveloped economy. The objectives of the study were to examine how investment in both education and health

will help to reduce poverty in Nigeria. Therefore, secondary data were collected from CBN statistical bulletin, United Nations and World Bank reports. The econometric methods of unit test and GMM test were used to analyze the collected data on education expenditure, health expenditure and poverty level in Nigeria. Based on empirical results, the KPSS stationarity test showed that all the variables are stationary and the GMM result showed that both government expenditure in education and health were negatively and significantly related with poverty level. The implication of the findings is that a well-educated and healthy society vis-à-vis adequate funding in both education and health sectors will help in poverty reduction in Nigeria. Based on the research findings, the study therefore recommended that adequate attention must be given to the reduction of poverty through increase in the funding or budget to both the education and health sectors in order to increase the intellectual capacity of the people as well as good health which will in turn lead to increase in production capacity of the economy and hence a reduction in poverty level.

Adekoya O.D(2018) wrote on the Impact of Human Capital Development on Poverty Alleviation in Nigeria. The study examines the relationship between some elements of human capital development and poverty alleviation in Nigeria, from 1995-2017. It investigates the causal relationship between the human capital development explicitly measured on health and education and its impact on poverty alleviation measured by per capita income over the period of time stated. The study uses Granger causality test through a vector error correction mechanism (VECM), to determine whether the elements of education and health care of any precedence or effect(s) on per capita income. The result indicates that there is no causality either unidirectional or bidirectional between government expenditure on education and health, infant mortality, gross enrolment ratio and per capita income but cases of unidirectional causality existed for literacy rate, life expectancy, and per capita income. This, therefore, suggests that the federal government should ensure that it invests more in education and health as they are essential factors that can help in alleviating poverty.

Chikelu (2016) carried out a study on the Impact of Human Capital Development on Poverty Reduction in Nigeria. The study examined the impact of human capital development on poverty reduction in Nigeria from 1986 to 2012. Augmented Dickey-Fuller, Johansen Co-integration and Ordinary Least Square (OLS) methods were used to estimate the model of the dependent variable, poverty rate and four explanatory independent variables (primary school enrolment, secondary school enrolment, tertiary school enrolment and per capita income) to represent human capital development. The study revealed that a relationship exists between human capital development and poverty reduction in Nigeria. Recommendations were made to improve the country's human capital.

Sarah, Adam, Ben and Yelwa (2015) carried out a study on Human Capital

Development and economic Growth in Nigeria and examined the impact of human capital development on economic growth in Nigeria from 1981-2010. The endogenous growth model was used within the Autoregressive Distributed Lag (ARDL) framework, the bounds testing analysis indicated existence of co-integration between economic growth and human capital development indicators. Findings from the study also showed that human capital development indicators had positive impact on economic growth in Nigeria within the reviewed periods, and their impacts were largely insignificant. Recommendations were made toward stating the need for the government to invest more in human capital development and prioritize the health and education sectors in the economy.

Vijayakumar (2013) opines that growth alone cannot sufficiently alleviate poverty at the national level; he further explains the importance of a country's growth pattern in eradicating poverty. An inverse relationship was seen to exist between poverty and economic growth, while a high growth rate paves the way for a sustained and stable increase in productive capacity and employment opportunities. Thus, the absorption of more employees into production and allied activities decreases unemployment. He concludes that better remuneration made individuals spend their income on nutritional food, education and health care for their children; they were able to save more and increase investment, which eventually enhanced productivity of the work force in the economy.

Bakare and Ilemobayo (2013) in their empirical findings discover a direct relationship between economic growth and poverty in Nigeria. This implies that an increase in economic growth failed to reduce poverty in Nigeria. Hence, the underlying 'trickle-down' phenomenon that growth reduces poverty is not supported by Nigeria's data. They suggested that policymakers should evaluate the pattern of public expenditures so as to ensure an equitable distribution of the national income. Human Capital Development and Economic Growth in Nigeria.

Adelakun (2011) showed the relevance of human capital development to the growth of the economy. The study evaluated human capital development and economic growth in Nigeria by adopting conceptual analytical framework that employs the theoretical and ordinary least square (OLS) to analyze the relationship using the GDP as proxy for economic growth; total government expenditure on education and health, and the enrolment pattern of tertiary, secondary and primary schools as proxy for human capital. The analysis confirms that there is strong positive relationship between human capital development and economic growth. Following the findings, it was recommended that stakeholders need to evolve a more pragmatic means of developing the human capabilities, since it is seen as an important tool for economic growth in Nigeria. Also proper institutional framework should be put in place to look into the manpower needs of the various sectors and implement policies that will lead to the overall growth of the economy.

In the Solo-Swan and Ramsey models (2003) the equation describing physical capital accumulation is sufficient to determine the dynamic evolution of output. To specify the growth path when human capital is included, it is necessary to consider an additional sector where the growth of human capital has taken place. Given the physical capital still has diminishing returns, the required assumption for the model to exhibit a positive growth rate of output per worker in the steady state is that the technology for generating human capital has constant returns; meaning that the growth of human capital is assumed to be the same for a given effort, whatever the level of human capital attained. With the assumption, the rate of output growth (per worker) is positive and increasing in the productivity of education or on-the-job training in the creation of human capital. However, the empirical implication of these studies is that human capital development, to a large extent affects economic growth positively. In a relatively poor country, higher investment in human capital can enhance growth in the economy. The broad interpretation of these findings in the context of recent growth models is that raising the general level of educational attainments interacts positively with other forces among them, the accumulation of complementary physical capital and the application of new technologies. Higher human capital intensity thus permits countries to accelerate their productivity growth rate and narrow the relative size of per capita real income gaps separating them from the leading economies.

The various researches above have shown the different impacts poverty, human capital and other considered factors have had on the economic growth of various areas. In this project however, we are hoping to establish how human capital formation and economic growth can be developed to reduce the growing rate of poverty in Nigeria and thereby lead to the improvement of the standard of living of its citizens.

3.0 Theoretical Framework

The main theory by which our model specification for this study will be guided is the Human Capital theory. Human Capital theory is a theory of earnings, one of the major determinants of poverty. First developed by Becker and Mincer in (1975), this theory explains both individual's decision to invest in human capital (education and training) and pattern of individual's lifetime earnings. Individual's different levels of investment in education and training are explained in terms of their expected returns from the investment. Investments in education and training entails costs both in direct expenses (e.g tuition) and forgone earnings during the investment period so only those individuals who will be compensated by sufficient higher lifetime earnings will choose to invest.

Human Capital theory also explains the pattern of individual lifetime earnings, in general the pattern of individual earnings are such that they start out low when the individual is young and it increases as age increases i.e. as they get older, although it tends to fall somewhat as individuals near retirement (Becker, 1975). Earnings start

out low when people are young because they are likely to invest in human capital and will have to forgo earnings. As they invest, and they have longer remaining work life, so investment costs are lower. Earnings then increase rapidly with age as new skills are acquired. Older age also makes human capital investment pace to reduce leading to slower earnings growth. To the extent that poverty follows earnings, we might predict a similar relationship between age and poverty with poverty being more likely for the young and elderly. A sizeable portion of all poverty spells begin when a young man or woman moves out of a parents home mostly for further education and training and this occurs within an average duration of 3 years (Bane and Ellwood 1986).

4.0 Methodology

This section is where our model will be specified by clearly defining our variables for analysis, stating the econometric model to be used and the format in which the model is to be represented.

Using our analytical application, our basic model will be in the form;

$$HPI = f(ECGR, HCF) \dots \dots \dots (i)$$

Where:

HPI = Human Capital Index as a proxy for Poverty rate

ECGR = Economic Growth

HCF = Human Capital Formation

In order to find the responsiveness of the dependent variable to changes in the independent variables, the econometric function of the model is stated thus:

$$HPI = f(RGEE, RGEH, GCF, INF, ECGR) \dots \dots \dots (ii)$$

$$HPI = f(\alpha_0 + \alpha_1 RGEE + \alpha_2 RGEH + \alpha_3 GCF + \alpha_4 INF + \alpha_5 ECGR + \mu) \dots \dots \dots (iii)$$

Where α is a constant,

HPI is a computed value of;

P1: Life expectancy at birth and

P2: Purchasing Power Parity

Using the HPI formula for developing countries (HPI-1)

RGEE is Real Government Expenditure on Education

RGEH is Real Government Expenditure on Health

GCF is Gross Capital Formation

INF is Inflation Rate

ECGR is Economic Growth Rate

and μ is the error term

Estimation of data involves data analysis which is the process of systematically applying statistical and logical techniques to describe and illustrate, condense and recap and evaluate data. This is an essential part of data estimation and the crux is ensuring data integrity is accurate and research findings are original. In the estimation of our sourced data for this research will involve econometric calculations, and using the statistical analytical program E-views in analysing and calculation. This is because this analysis application (E-views) is the one most conversant with the researcher, it is also more convenient looking at the type of data to be handled as it is for time-series oriented econometric analysis and it will help in better presentation of data and results. In this study the use of simple regression analysis which can be used in estimating both stationary and non-stationary time series data will be employed. The importance of using this is in the fact that it takes sufficient numbers of lags to capture the data generating process in a general-to-specific modelling framework.

5.0 Result and Discussion

From the descriptive analysis in this study, we can see from the table below the differences between the mean from the standard deviation of each variable from the highest to the lowest.

Table 1.1 The differences between the mean

Variable	Mean	Standard Deviation
GCF	6.8359	21.9781
RGEH	7.9744	93.7321
HPI	43.6829	15.8086
RGEE	123.9709	148.2769
INFL	19.5815	18.1281
ECG	4.4885	3.8683

Source: Author's Computation on E-views (2021)

We can see from the result that RGEH having the farthest value of mean from its standard deviation. We can also see from the skewness in the descriptive analysis result that this analysis has a normal distribution.

UNIT ROOT TEST

Table 1.2 below: Using the Phillips -Perron test, the unit root test was conducted to check for the stationarity of the variables. The result of the test is shown in

Variable	T-value	Critical Value	Stationarity
HPI	-4.7833	-2.9571	At 1 st differencing
ECGR	-3.8117	-2.9540	At levels
GCF	-5.1383	-2.9540	At levels
INFL	-6.7149	-2.9571	At 1 st differencing
RGEE	-4.6033	-2.9571	At 1 st differencing
RGEH	-6.9901	-2.9571	At 1 st differencing

Source: Author's Computation on E-views (2021)

The table above shows that ECGR and GCF were stationary at levels while all other variables were stationary at 1st differencing. This means econometrically that they were integrated to order one I(1).

Table 1.3 CORRELATION RESULT

	HPI	ECG	RGEE	RGEH	GCF	INFL
HPI	1.000000					
ECG	-0.117045	1.000000				
RGEE	0.981323	-0.021887	1.000000			
RGEH	0.979485	-0.050362	0.983792	1.000000		
GCF	-0.028459	0.333192	0.021388	-0.003801	1.000000	
INFL	-0.310901	-0.360425	-0.357537	-0.339959	-0.240474	1.000000

Source: Author's Computation from E-views (2021)

From the above result, we can deduce the following;

ECG (11.7%) has a negative relationship with the dependent variable HPI,
 RGEE (98%) has a positive relationship with the dependent variable HPI,
 RGEH (97.9%) has a positive relationship with the dependent variable HPI,
 GCF (2.8%) has a negative correlation with the dependent variable HPI,
 INFL (31%) has a negative relationship with the dependent variable HPI.

It is clear from the above that only real Government Expenditure on Health (RGEH) and Real Government Expenditure on Education (RGEE) have a positive relationship with the dependent variable meaning that as both RGEH and RGEE are increasing by 1 unit, HPI is also increasing by 97.9% and 98% respectively.

Table 1.4 CO-INTEGRATION RESULT Unrestricted
Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.847804	135.7296	103.8473	0.0001
At most 1 *	0.577654	77.36951	76.97277	0.0466
At most 2	0.532537	50.64966	54.07904	0.0977
At most 3	0.380984	27.07619	35.19275	0.2850
At most 4	0.294681	12.20786	20.26184	0.4304
At most 5	0.043713	1.385614	9.164546	0.8934

Authors (2021)

Trace test indicates 2 co integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

From the co-integration result above, we can see that there is no long-run relationship between the independent variables and the dependent variable. This shows that economic shocks can easily be adjusted within the short-run.

GRANGER CAUSALITY TEST

Under our granger causality test, when our probability is less than or equal to 5% significance(0.05) we reject our null and accept our alternative hypothesis and if it is greater than 5%, we accept our null and reject the alternative hypothesis.

Pairwise Granger Causality Tests

Date: 10/30/20 Time: 14:57

Sample: 1985 2018

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
ECG does not Granger Cause HPI	32	0.49074	0.6175
HPI does not Granger Cause ECG		0.44220	0.6472
RGEE does not Granger Cause HPI	32	6.05391	0.0067
HPI does not Granger Cause RGEE		1.14352	0.3337
RGEH does not Granger Cause HPI	32	2.43465	0.1066
HPI does not Granger Cause RGEH		0.43581	0.6512
GCF does not Granger Cause HPI	32	0.36218	0.6995
HPI does not Granger Cause GCF		0.03030	0.9702
INFL does not Granger Cause HPI	32	0.06199	0.9400
HPI does not Granger Cause INFL		0.92760	0.4077

Authors (2021)

From the results shown above we will accept our null hypothesis because it is significant at 5% level of significance. From the granger causality tests between the dependent and independent variables, the tests show that

There is no granger causality between ECG and HPI; this means ECG does not contain any information that can predict the changes in HPI.

There is unidirectional granger causality between RGEE and HPI therefore we reject our null hypothesis which states that RGEE does not granger cause HPI and accept our Alternative hypothesis that states that RGEE granger causes HPI at 5% level of significance with a value of 0.0067. This means that RGEE contains information that can predict the changes that occur in HPI.

There is no granger causality between RGEH and HPI. This means RGEH does not contain any information that can predict the changes in HPI.

There is no granger causality between GCF and HPI. This means GCF does not contain any information that can predict the changes in HPI.

There is no granger causality between INFL and HPI. This means INFL does not contain any information that can predict the changes in HPI.

From the Granger Causality test, it is obvious that only RGEE granger causes the dependent variable HPI, we come to a conclusion that only Real Government Expenditure on Education contains information that can predict the information contained in HPI.

6.0 Conclusion

Due to our findings, we can see that economic growth does not contribute to poverty level in the country meaning that there was no significant relationship between them and human capital can be improved upon by the efficient distribution or allocation of reasonable amount of expenditure and continuous maintenance. The co-integration result showed a long-run relationship between the dependent and independent variables. While the granger causality test showed that only one of the variables granger causes the dependent variable which was RGEE, we come to a conclusion that RGEE contain information that can predict the information contained in HPI.

At the end of this study, from our research questions and hypothesis we arrive at the conclusion that, in line with Vijayakumar (2013), economic growth does not have significant impact on poverty but Real Government Expenditure on Education had significant impact on the poverty rate in Nigeria in the period the study was carried out as it contained information that could explain the changes that occur in Poverty rate.

7.0 Recommendations

Our recommendations based on our findings will be to:

1. Proposing to the government of Nigeria to increase the expenditure allocated to health and education on the budget and its efficient execution of

duties toward improving human capital in the economy. This will go along way as it will also increase economic growth directly and indirectly lead to the improvement in the standard of living of citizens.

2. Encouraging citizens who are educated to participate in further skill acquisition programmes to gain experience and be useful in the economy and those who are not educated can be enlightened on the importance of education and skill set. But for those who do not have the opportunity or material to get education, it is the duty of the government to create such opportunities by providing basic educational background and improving healthcare system.

We believe that even though, it is proved in this study that both economic growth and human capital do not have significant impacts on poverty rate, in line with Adelokun (2011), it is still useful to develop them as they are important factors that aid the development of an economy.

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