International Journal of Operational Research in Management, Social Sciences & Education | IJORMSSE
p-ISSN: 2536-6521 | e-ISSN: 2536-653X
Volume 9 Number 2 July, 2023

Impact of Human Capital Expenditure on Poverty Reduction in Nigeria: 1990-2021

[1]Ogbaini, Faith Iliye & [2]Ebele Amali
[1]*Department of Economics, Nile University Abuja-Nigeria*
[2]*School of Postgraduate, Nile University of Nigeria, Abuja-Nigeria*

Article DOI: 10.48028/iiprds/ijormsse.v9.i2.15

Abstract

The study examined the impact of human capital expenditure on poverty reduction in Nigeria. The study made use of secondary data which spanned from 1990 to 2021 and was sourced from the various issues of Central Bank of Nigeria (CBN) annual reports. The Auto-regressive Distributed Lag (ARDL) approach and the error correction model (ECM) were used for the estimation of the long and short-run impact of Human Capital Expenditure on Poverty reduction in Nigeria. The results revealed that all the human capital expenditure indicators have a significant impact on the poverty rate in Nigeria in the short and long-run. Therefore, the study recommends that Government should increase the annual budgetary allocations (Capital and Recurrent) to the health and education sectors to meet the growing huge demand for health and education services in Nigeria for poverty reduction as well as improved macro-economic performance.

Keywords: *Human Capital, Expenditure, Education, Health, Poverty Reduction*

Corresponding Author: **Ogbaini, Faith Iliye**

Background to the Study

Human capital is a production element that can generate added values when inputted into the production process. The differences in the level of socio-economic development across the globe are attributed not so much to natural resource endowments, and the stock of physical capital, but to the quality and quantity of human resources (Matthew, Oluwatoyin, Fasina, & Fagbeminiyi, 2014). Olaniyan and Okemakinde (2008), opined that human resources are a critical variable in the growth process, worthy of development and means to a reduction in the poverty level through productivity and the study stressed that human resources are not only means but, more importantly, the ends that must be served to achieve economic progress for poverty reduction in any developing country.

The effective and efficient measurement of a nation's human capital can determine its current state of economic growth. Human capital development through human capital expenditure is seen as a focal point for pivoting industrial development through increased productivity at all levels, reducing the level of poverty, and increasing the supply of entrepreneurs in any economy. Furthermore, through the investments in human capital, people acquire knowledge and skills which can easily lead to the production of quality goods and services with practical values thereby increasing the returns and income which facilitates improvement in the standard of living and ultimately reduces the poverty rate.

In addition, the wealth and prosperity of nations rest ultimately upon the development of people and the effective commitment of their energies and talents. Capital and natural resources are passive agents. The active agents of modernization are human beings, for they alone can accumulate capital, exploit natural resources, and build political and social organizations (Sanusi & Aspa, 2012). However, the effect of human capital on sustainable industrial development in reducing poverty in Nigeria has not been adequately explored (Adejumo, Olomola & Adejumo, 2013).

Despite several policies like National Health Insurance Scheme (NHIS) and Education Trust Funds, by various governments to increase human capital expenditures through health and education expenditures to meet the advocated education allocation and expenditure by UNESCO of 26 percent of the annual budget, Nigeria had lack behind following the level of education expenditure by some African Countries like Cote d'Ivoire, 30.0%; Ghana, 31%; Kenya, 23.0% and Uganda, 27.0% (World Bank, 2020). The health expenditure in Nigeria has also shown that the country's spending on health care is below the United Nations (UN) recommended average of 8 to 10 percent of the GDP as a benchmark expenditure on health (UNDP, 2016). The report showed that Nigeria was ranked 161 out of 189 countries that were ranked. Comparatively, Brazil, China, and India were respectively ranked among the high and medium human development-indexed countries (UNDP, 2020) and Nigeria ranked 92 percent between 2018 and 2020 on a similar country poverty rate ranking.

It is therefore, on the basis of the observed human capital expenditure pattern in Nigeria and the level of poverty rate, that this paper seeks to examine the impact of human capital expenditure on the poverty rate in Nigeria. The specific objectives are: to examine the impact of health recurrent expenditure on poverty reduction in Nigeria, investigate the impact of health capital expenditure on poverty reduction in Nigeria, assess the impact of education recurrent expenditure on poverty reduction in Nigeria and determine the impact of health recurrent expenditure on poverty reduction in Nigeria. The rest of the paper is the material and methods, presentation and analysis of data, conclusion, and recommendations.

Materials and Methods

Conceptual Review

The conceptual clarification of this paper is based on major concepts which are poverty and human capital expenditure. UNDP (2016) classified the definition of poverty into three dimensions. The first is the income dimension which views poverty as a situation where a person is poor if the income level is below the defined poverty line. The Second is the basic need which views poverty as deprivation of material requirements for minimally acceptable fulfilment of human needs, including food, basic health, education, essential service, employment, and participation while, the third is lack of capacity which represents the absence of some basic capabilities to function. Obadan (2007) opined that poverty has both income and non-income dimensions, which are usually intertwined with this definition boarded on income and consumption and people are regarded as poor when measured by the standard of living in terms of income or consumption is below the poverty line. In 2022 the World Bank defines the extreme poor as those living on less than $1.90 a day. Therefore, poverty is seen as the condition in which people are living below the minimum living standard of $1.90 a day.

Human capital expenditure was defined by Aigbedion (2021), as all spending on the development of human stocks in the economy which are mainly on health and education expenditure. According to the World health organization (2020) and the Palestinian Central Bureau of Statistics, Ministry of Health, (2022), health expenditure consists of health and health-related spending. Total health expenditure is calculated by adding public and private spending on all health-related goods and services. Olagboye (2004), defines public education expenditure as a means by which money is provided for the development and maintenance of the entire educational system. All activities that are geared towards the process of sourcing, allocating and managing public school revenues in the production of educational services for the attainment of educational objectives constitute education finance. Therefore, government education expenditures are financial resources of the government in the provision and production of the needed educational services in the country.

Empirical Review

The empirical review of this paper centered on recent studies related to human capital expenditure and poverty. Chikelu (2016), examined the impact of human capital

development on poverty reduction in the Nigerian economy from the period 1986 to 2012 using the Ordinary Least Squares (OLS) and the study revealed that there exists a relationship between human capital development and poverty reduction in Nigeria and recommended increased government expenditure on education and healthcare to improve the country's human capital. Adekoya (2018), examined the relationship between human capital development and poverty alleviation in Nigeria, from 1995 to 2017. The study used a vector error correction mechanism (VECM) and the result revealed that there is no causality either uni-directional or bi-directional between government expenditure on education and health, infant mortality, gross enrolment ratio, and per capita income but cases of uni-directional causality existed for literacy rate, life expectancy, and per capita income.

In another study, Atake (2018), investigated the impact of health shocks in three sub-Sahara African countries (Burkina Faso, Niger, and Togo) on poverty and the study made use of house surveys and adopted a three-step generalized feasible least square method of analysis. The study revealed that health shocks resulted in poor health indicators and aggravated poverty incidence by 9.04, 33.69, and 69.03% in Burkina Faso, Niger, and Togo, respectively. The study based on the outcome concluded that poverty arising from health shocks is the cause of economic or growth loss in sub-Saharan Africa. Maku, Ajike, and Chinedu (2019), also examined the impact of human capital development on the macroeconomic performance of Nigeria. Using the autoregressive distributed lagged (ARDL) model, the study revealed an insignificant negative relationship between human capital development and per capita GDP in the short run. The results also showed that only the tertiary enrolment rate significantly and positively improved per capita GDP within the period under review.

In a recent study, Lawanson and Umar (2021), examined the life expectancy growth nexus and the role of poverty reduction, and the endogenous growth theoretical approach was used to analysis the link between life expectancy, poverty incidence, and economic growth using the fully modified ordinary least square method. Findings revealed that health contributes positively to economic growth and mitigates the adverse effect of poverty on economic growth in Nigeria. In another study, Omede and Adamu (2021), examined the extent to which poverty undermines human capital development in Nigeria and Ordinary Least Square (OLS) technique was employed. The results showed that GNI per capita and Life expectancy is positively related to per capita income (PCI). An increase in GNI per capita or Life Expectancy will lead to an increase in the per capita income of the citizens, while School Enrolment showed a negative relationship with PCI.

Wang, Hua, Tao, and Moldovan, (2021), also examined the impact of health human capital on the poverty trap in Sub-Saharan Africa using the autoregressive distributed lag model. The study revealed that in the long run, there is no evidence that health human capital can help the Sahara out of the poverty trap. However, health human capital has a significant effect on poverty reduction in the short term. There is a threshold effect in the poverty reduction model of health human capital. When the economic development

level reaches the threshold, the effect of poverty reduction is more obvious and deeper. In a more recent study, Clement, Syden, and Ronney (2022) examined the effect of human capital formation represented by education attainment, on poverty and inequality in the Eastern Cape province. Using the Pooled Mean Group (PMG) estimator, the study investigates the long-run relationship between the variables. The study found that an increase in human capital leads to a decline in poverty levels. However, human capital is positively related to income inequality which is an indication of unequal economic opportunities and inequality in the education system.

Theoretical Framework

The paper adopted the human capital theory which was developed by Becker in 1962. The theory relies on the assumptions of perfect competition and market equilibrium entailing a strong relationship between wages and marginal productivity of labor. The importance placed on the set of skills workers are equipped with gave rise to the development and spread of human capital theory (Becker 1964). The theory accordingly focused on individual choices in relation to education, training, and mobility (as determinants of human capital) to explain differences in incomes. Lydall (1968) argued that it is the variation in the combination of intelligence, environment and education at the individual level that can account for most of the variation in the distribution of personal earnings. Using this theory, Machin (2009) notes that "poor households in many countries tend to 'under-invest' in education". Therefore, the theory established that there is a functional relationship between human capital expenditure and poverty reduction in a developing country like Nigeria.

Methodology

The time series data spanning from 1990 to 2021 were sourced from the annual reports of the Central Bank of Nigeria (CBN). The paper employed the Autoregressive Distributed Lagged (ARDL) model and the error correction model (ECM) to examine the impact of human capital expenditure on poverty reduction in Nigeria.

Model Specification

The paper adopted and modified the model of Adekoya (2018) who examined the relationship between human capital development and poverty alleviation in Nigeria, from 1995 to 2017 with the functional model:

$$PCI = f(\text{GEE}, \text{GER}, \text{LIT}) \quad (1)$$

Per Capita Income (PCI) which is a proxy for poverty alleviation depends on government Expenditure on Education (GEE), Gross Enrolment Rate (GER) and Literacy Rate (LIT). The functional relationship between the human capital expenditure indicators and the poverty rate in Nigeria is stated in equation 2:

$$povtn = f(hcxpn, hrxpn, ecxpn, erxpn) \quad (2)$$

The Autoregressive Distributed Lagged (ARDL) model that was used to examine the impact of the human capital expenditure indicators on the poverty rate in Nigeria is specified as follows:

$$povtn = a_0 + \sum_{a=1}^{k} a_{1i} povtn_{t-i} + \sum_{b=1}^{k} a_{2i} hcxpn_{t-i} + \sum_{c=1}^{k} a_{3i} hrxpn_{t-i} + \sum_{d=1}^{k} a_{4i} ecxpn_{t-i} + \sum_{e=1}^{k} a_{5i} erxpn_{t-i} + a_6 povtn_{t-1} + a_7 hcxpn_{t-1} + a_8 hrxpn_{t-1} + a_9 ecxpn_{t-1} + a_{10} erxpn_{t-1} \quad (3)$$

From equation (3), $povtn$ is the poverty rate in Nigeria which is the dependent variable while the following are the independent variables: $hcxpn$ is the health capital expenditures in Nigeria, $hrxpn$ is the health recurrent expenditures in Nigeria, $ecxpn$ is the education capital expenditures in Nigeria and $erxpn$ is the education recurrent expenditures in Nigeria.

The Error Correction Model (ECM) that was used to examine the impact of human capital expenditure indicators on the poverty rate in Nigeria is specified as follows:

$$povtn = a_0 + \sum_{a=1}^{f} a_{1i} povtn_{t-i} + \sum_{b=1}^{g} a_{2i} hcxpn_{t-i} + \sum_{c=1}^{h} a_{3i} hrxpn_{t-i} + \sum_{d=1}^{i} a_{4i} ecxpn_{t-i} + \sum_{e=1}^{j} a_{5i} erxpn_{t-i} + ecm_{t-1} + u_t \quad (4)$$

Therefore, equation (4) was used to estimate and analyze the short-run impact of human capital expenditure indicators on the poverty rate in Nigeria. In equation (4) $povtn$ the poverty rate in Nigeria is the dependent variable while the following are the independent variables: $hcxpn$ is the health capital expenditures in Nigeria, $hrxpn$ is the health recurrent expenditures in Nigeria, $ecxpn$ is the education capital expenditures in Nigeria and $erxpn$ is the education recurrent expenditures in Nigeria. The model, that is equation (4) above was used to adjust the estimation until the ECM turned negative. The negative sign of the coefficient of the error correction term ECM (-1) shows the statistical significance of the equation in terms of its associated t-value and probability value.

Definition of Variables

Table 1: Description of the Variables used for the Model

Variable	Description/Measure	Type	Source	Apriori Expectation
POVTN	The poverty rate in Nigeria	Dependent	CBN, 2021	
HCXPN	Health capital expenditures in Nigeria	Independent	CBN, 2021	$B_1 < 0$
HRXPN	Health recurrent expenditures in Nigeria	Independent	CBN, 2021	$B_2 < 0$
ECXPN	Education capital expenditures in Nigeria	Independent	CBN, 2021	$B_3 < 0$
ERXPN	Education recurrent expenditures in Nigeria	Independent	CBN, 2021	$B_4 < 0$

Source: Author Compilation, 2022

Data Presentation and Analysis
Descriptive Statistics Summary
Table 2: Descriptive

	POVRTN	HRXPN	HCXPN	ERXPN	ECXPN
Mean	52.62500	114.6293	31.77760	188.9858	31.20116
Median	55.90000	59.00000	22.50000	109.6200	27.85000
Maximum	64.90000	423.3300	101.7400	646.7500	106.9900
Minimum	39.10000	0.500700	0.153100	1.256300	0.297000
Std. Dev.	9.707895	129.8264	31.86732	201.6811	29.69384
Skewness	-0.197875	1.008798	0.926137	0.908666	0.940004
Kurtosis	1.517900	2.830213	2.744091	2.610114	3.063642
Jarque-Bera	3.137650	5.466028	4.661877	4.606280	4.717977
Probability	0.208290	0.065023	0.097204	0.099945	0.094516
Sum	1684.000	3668.137	1016.883	6047.547	998.4371
Sum Sq. Dev.	2921.540	522501.7	31481.31	1260933.	27333.46
Observations	32	32	32	32	32

Source: Author Compilation, 2022

The descriptive statistics revealed that the highest value for the poverty rate in Nigeria during the period of study is 64.9 percent as shown in the maximum values in the Table. On the other hand, the lowest value for the poverty rate in Nigeria during the period of study is 39.1 percent as shown in Table 2. The average value for the poverty rate in Nigeria during the period of study is 52.63 percent as shown in the mean value in Table 2.

Table 2 revealed that the education capital expenditures in Nigeria are mesokurtic as their kurtosis values are greater than three (3). The poverty rate in Nigeria, health recurrent expenditures in Nigeria, health capital expenditures in Nigeria and education recurrent expenditures in Nigeria are platykurtic given that their kurtosis values are less than three (3). Similarly, the probability of the Jarque-Bera shows that the poverty rate in Nigeria, health recurrent expenditures in Nigeria, health capital expenditures in Nigeria, education recurrent expenditures in Nigeria and education capital expenditures in Nigeria are not normally distributed as their probability values did not pass the normality test at 1%, 5%, and 10%.

Unit Root Test

Table 3: Unit Root Test Result

Variable	**Augmented Dickey-Fuller (ADF) Test**		
	@ Level	@ 1st Diff.	Status
POVRTN	-	-5.612996*	1(1)
HRXPN	-	-4.714943*	1(1)
HCXPN	-	-4.894780*	1(1)
ERXPN	-	-4.635356*	1(1)
ECXPN	-5.009157*		1(0)
Asymptotic Critical Values			
1%	-4.284580	-4.296729	
5%	-3.562882	-3.568379	
10%	-3.215267	-3.218382	
**** implies significance at 1% level, **implies significance at 5% level and *** implies significance at 10%***			

Source: Author's Computation, using E- views 10, 2022

Table 3 shows the stationary test and the ADF test results revealed that the education capital expenditures in Nigeria were stationary at levels which means that they are integrated of order zero 1(0) at a 5% level of significance. On the other hand, the poverty rate in Nigeria, health recurrent expenditures in Nigeria, health capital expenditures in Nigeria and education recurrent expenditures in Nigeria were not stationary at levels until they were differenced once, and they were said to be integrated order one 1(1). Given the mix result, as shown by ADF tests as well as the order of integration of the variables, the long-run relationship among the variables was tested using the ARDL model which can capture the characteristics of a mixture of 1(0) and 1(1) of the variables as postulated by Pesaran, et al. (2001).

Co-integration

Table 4: ARDL Bounds Test of Co-integration

Test Statistic	**Value**	**K**
F-statistic	3.933314	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.20	3.09
5%	2.56	3.49
1%	2.88	3.87
10%	3.29	3.46

Source: Output from E-views 10.0 (2022)

The result shows that the F-statistic derived from the ARDL bounds test is 3.93 and when compared with the critical values obtained from the Table at a 10% level of significance, its value exceeded both 2.20 and 3.09 for 1(0) and 1(1) respectively. This implies that the

poverty rate in Nigeria as the dependent variable and health recurrent expenditures in Nigeria, health capital expenditures in Nigeria, education recurrent expenditures in Nigeria, and education capital expenditures in Nigeria as the independent variables are co-integrated at a 5% level of significance.

Based on this, it can be said that the variables for the models are co-integrated or show long-run relationships (co-movements) and Using the ARDL Bound test with the critical value from Narayan (2005), the variables were co-integrated at a 1per cent level of significance since the Wald F- statistics is greater than the critical lower and upper bound as discussed based on the specific objectives.

Presentation and Interpretation of Results

Table 6: ARDL Long Run Regression Results

Dependent variable: $POVRTN_t$				
Long Run Results				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
HRXPN	1.481388	0.711458	2.082187	0.0709
HCXPN	-2.188084	0.830309	-2.635266	0.0299
ERXPN	-1.130013	0.522149	-2.164157	0.0624
ECXPN	3.489837	1.424475	2.449910	0.0399
C	65.34055	2.662194	24.54387	0.0000
Short Run Results				
D(HRXPN(-1))	-0.319265	0.050767	-6.288843	0.0002
D(HCXPN)	-0.040417	0.041205	-0.980878	0.3554
D(ERXPN)	-0.095688	0.027661	-3.459379	0.0086
D(ECXPN(-1))	-1.336048	0.249094	-5.363637	0.0007
ECM(-1)*	-0.438420	0.070796	-6.192722	0.0003
R^2	0.945			
F-stat	86.768 [0.000000]			
Note: ****, **, * indicate the statistical significance of coefficients at 1%, 5%, and 10% respectively, and the values in parentheses and block brackets are the probabilities*				

Source: Author's Computation, 2022

From Table 6, the value of F-statistics of 86.77 and the probability values, indicated that there is a long-run relationship between the poverty rate in Nigeria and human capital expenditure variables in Nigeria. The R-square value of 0.95 revealed that human capital expenditure variables in Nigeria which are health recurrent expenditures in Nigeria, health capital expenditures in Nigeria, education recurrent expenditures in Nigeria, and education capital expenditures in Nigeria jointly accounted for about 0.95 percent of the variation in the poverty rate in Nigeria during the period under review; while the remaining 5 percent accounted for by other factors outside the model. The long-run result shows that human capital expenditure variables have a strong impact on the poverty rate in Nigeria.

However, the long-run coefficient and probability values of each variable revealed that health recurrent expenditures have a positive and insignificant impact on the poverty rate in Nigeria at a 5 percent level of significance. Similarly, health capital expenditures have a negative and significant impact on the poverty rate in Nigeria at a 5 percent level of significance. On the other hand, education recurrent expenditures have a negative and insignificant impact on the poverty rate in Nigeria at a 5 percent level of significance. While education capital expenditures have a negative and significant impact on the poverty rate in Nigeria at a 5 percent level of significance.

Furthermore, the short-run result and the ECT show the 1-period lag Error Correction Term. Its value of -0.44 indicates that it is negative and statistically significant with a probability value of 0.0003 at a 5 percent level of significance. This means that the average speed of adjustment from the short run to the long run should there be any disequilibrium is 44%. The short-run coefficient and probability values of each variable revealed that all the independent variables that are health recurrent expenditures, health capital expenditures, education recurrent expenditures, and education capital expenditures have a negative and significant impact on the poverty rate in Nigeria at 5 percent level of significance except health capital expenditures whose impact is insignificant.

The long-run result revealed that health recurrent expenditures have a positive and insignificant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in health recurrent expenditures will lead to a 1.48-unit increase in the poverty rate in Nigeria. On the other hand, the short-run results revealed health recurrent expenditures have a negative and significant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in health recurrent expenditures will lead to a 0.319-unit decrease in the poverty rate in Nigeria. And in the long run, the health capital expenditures have a negative and significant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in health capital expenditures will lead to a 2.188-unit increase in the poverty rate in Nigeria. On the other hand, the short-run results revealed health capital expenditures have a negative and insignificant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in health capital expenditures will lead to a 0.0404-unit decrease in the poverty rate in Nigeria.

In the long run, education recurrent expenditures have a negative and insignificant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in education recurrent expenditures will lead to a 1.13-unit decrease in the poverty rate in Nigeria. On the other hand, the short-run result revealed that education recurrent expenditures have a negative and significant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in education recurrent expenditures will lead to a 0.096-unit decrease in the poverty rate in Nigeria.

Finally, in the long run, the education capital expenditures have a positive and significant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in education capital expenditures will lead to a 3.489-unit increase in the poverty rate in Nigeria. The short-run result revealed that the education capital expenditures have a negative and significant impact on the poverty rate in Nigeria at a 5 percent significant level and this implies that a unit change in education capital expenditures will lead to a 1.33-unit decrease in the poverty rate in Nigeria. This finding agreed with the study of Chikelu (2016) who examined the impact of human capital development on poverty reduction in the Nigerian economy from the period 1986 to 2012 and the work of Adekoya (2018) who examined the relationship between some elements of human capital development and poverty alleviation in Nigeria.

Table 7: Hypotheses Testing of ARDL Results

Hypotheses	Tc	Tt	Decision Rule	Remark
$H_0: \beta_1 = 0$ $H_1: \beta_1 > 0$	2.08	2.05	$Tc >$ Tt Reject H_0 $Tc <$ Tt Accept H_0	**Rejected**
$H_0: \beta_2 = 0$ $H_1: \beta_2 > 0$	2.64	2.05	$Tc >$ Tt Reject H_0 $Tc <$ Tt Accept H_0	**Rejected**
$H_0: \beta_3 = 0$ $H_1: \beta_3 > 0$	2.16	2.05	$Tc >$ Tt Reject H_0 $Tc <$ Tt Accept H_0	**Rejected**
$H_0: \beta_4 = 0$ $H_1: \beta_4 > 0$	2.45	2.05	$Tc >$ Tt Reject H_0 $Tc <$ Tt Accept H_0	**Rejected**
Tc is the calculated T-Statistics, Tt is the table T-Statistics (Theoretical T-Statistics) and the decision rule is based on 5% level significance. While the Degree of Freedom is set as (N-K) = 28 (Gujarati & Sangeetha, 2007).				

Source: Author's Compilation, 2022

The hypothesis results concluded that H_{01}: health recurrent expenditure has no significant impact on the poverty rate in Nigeria is rejected at a 5 percent level of significance given that the value of the calculated T-Statistics (Tc) of 2.08 is greater than the value of the table T-Statistics (Tt) of 2.05 and this implies that health recurrent expenditure has a significant impact on the poverty rate in Nigeria. While H_{02}: health capital expenditure has no significant impact on the poverty rate in Nigeria is rejected at a 5 percent level of significance given that the value of the calculated T-Statistics (Tc) of 2.64 is greater than the value of the table T-Statistics (Tt) of 2.05 and this implies that health capital expenditure has a significant impact on the poverty rate in Nigeria.

Similarly, H_{03}: education recurrent expenditure has no significant impact on the poverty rate in Nigeria is rejected at a 5 percent level of significance given that the value of the calculated T-Statistics (Tc) of 2.16 is greater than the value of the table T-Statistics (Tt) of 2.05 and this implies that education recurrent expenditure has a significant impact on the poverty rate in Nigeria. While H_{04}: education capital expenditure has no significant impact on the poverty rate in Nigeria is rejected at a 5 percent level of significance given that the value of the calculated T-Statistics (Tc) of 2.45 is greater than the value of the table

T-Statistics (Tt) of 2.05 and this implies that education capital expenditure has a significant impact on the poverty rate in Nigeria.

Heteroscedasticity Test: Breusch-Pagan-Godfrey

Table 8: Heteroscedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
Model II			
F-statistic	0.280009	Prob. F(19,8)	0.9892
Obs*R-squared	11.18340	Prob. Chi-Square(19)	0.9175
Scaled explained SS	4.187299	Prob. Chi-Square(19)	0.9998

Source: Output from E-views 9.0 (2022)

The result indicates that the variables are free from the problem of Heteroskedasticity since the p-values of F-stat. and Obs *R-squared of 0.989 and 0.918 respectively are greater than the 5% significance level. This outcome is further strengthened by the p-value of 0.999 for the Scaled explained SS which also suggests the absence of heteroskedasticity in the model of the impact of human capital expenditures on the poverty rate in Nigeria and this implies the absence of heteroskedasticity among the variables which are health recurrent expenditures in Nigeria, health capital expenditures in Nigeria, education recurrent expenditures in Nigeria, education capital expenditures in Nigeria.

Conclusion and Recommendations

The study revealed that all the Human Capital expenditure variables have significant impact on the Poverty rate in Nigeria in the short run as well as the long run at 5 percent level of significance.

Therefore, the paper recommended the following:

i. Government should increase the annual budgetary allocations (Capital and Recurrent) to the health and education sectors to meet the growing huge demand for health and education services in Nigeria for improved macro-economic performance.
ii. Mechanisms should be put in place to ensure prompt implementation of policies concerning Human Capital development.

References

Aigbedion, I. M. (2021). *Econometric modelling of human capital development expenditures in Nigeria*, ISBN: 978-978-995-483-4, Published by Kabod Limited, Kaduna-Nigeria

Adekoya, O. D., (2018). Impact of human capital development on poverty alleviation in Nigeria, *International Journal Economic Management Science*. 7, 544. doi: 10.4172/2162- 6359.1000544

Atake, E. (2018). Health shocks in sub-Saharan Africa: Are the poor and uninsured households more vulnerable? *Health Economics Review* 8(2), 36–58

Chikelu, J. C. (2016). *Impact of human capital development on poverty reduction in Nigeria,* Retrieved 15 June 2022 from https://mpra.ub.uni-muenchen.de/74696/

Clement, M., Syden, M. & Ronney, N. (2022). Human capital development, poverty and income inequality in the Eastern Cape province, *Development Studies Research*, 9(1), 36–47.

Lawanson, O. I. & Umar, D. I. (2021). The life expectancy–economic growth nexus in Nigeria: The role of poverty reduction, *SN Business and Economics Journal*, 1(27), 1-26.

Maku, O. E., Ajike, E. O., & Chinedu, S. C. (2019). Human capital development and macroeconomic performance in Nigeria: An autoregressive distributed lag (ARDL) approach, *Etikonomi: Journal Ekonomi.* 18 (2), 185 – 196. doi: http//dx.doi.org/10.15408/etk.v18i2.11701.

Palestinian Central Bureau of Statistics, Ministry of Health, (2022). *Palestinian health accounts*, Statistical Report.

Olagboye, A. A. (2004). *Introduction to educational management in Nigeria*, Ibadan: Daily Graphics (Nigeria Limited).

Olaniyan, D A. & Okemakinde, T. (2008). Human capital theory: Implications for educational development. *Pakistan Journal of Social Sciences*, 5(1), 479-483.

Omede, I. P. & Adamu, M. B. (2021). Empirical analysis of poverty and human capital development in Nigeria, *Jalingo Journal of Social and Management Sciences.* 3(4), 13-21.

Sanusi, F., & Aspa, M. (2012). Local government expenditure allocation toward human development index at Jeneponto Regency, South Sulawesi, Indonesia, *Journal of Humanities and Social Science,* 5(6), 40-50.

United Nations Development Programme (2016), *Summary: Human development report Nigeria,* Abuja: UNDP.

UNISCO (2011) Financing education in Sub-Saharan Africa: Meeting the challenges of expansion, equity and quality; UNESCO Institute for Statistics. http://www.uis.unesco.or

Wang, Q. S., Hua, Y. F, Tao, R. & Moldovan, N. C. (2021). Can health human capital help the? Sub-Saharan Africa out of the poverty trap? An ARDL model approach, *Frontier Public Health* 9(697826), 1-11.

World Health Organization (WHO). (2020). *The world health report 2020: Health systems: Improving performance.* Geneva, Switzerland: WHO. Retrieved from http://www.who.int/whr/2020en/whr00_en.pdf