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Article

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Provided in Cooperation with:

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Reference: Igboanugo, Ifunanyachukwu N./Dauda, Risikat Oladoyin S. (2019). Education, health expenditure and the quality of life in Nigeria. In: Academic journal of economic studies 5 (4), S. 94 - 102.

This Version is available at:
<http://hdl.handle.net/11159/4121>

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Education, Health Expenditure and the Quality of Life in Nigeria

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Abstract

This paper investigates the direct impact of education and health expenditure on the quality of life in Nigeria for the period of 1980 till 2017. Evidently, empirical studies exist that suggests that government investments on education and health on the long-run, translates to economic growth. In line with the foregoing, this study focuses on the role which effective government expenditures in health and education play on the enhancement of the citizenry quality of life. Meanwhile, the study used a world development indicator (WDI) data and as well employs Autoregressive Distributed Lag Model estimation technique. However, the study discovered that health expenditure is effective in the long-run to stimulate growth on the per capita income; this means more funds should be allocated to the sector. Furthermore, education expenditure has a negative relationship with per capita income and is not significant; this implies that government education expenditure cannot translate into enhanced quality of life. Based on the foregoing, this study's policy implication is that the Nigerian government should restructure and allocate more fund to education and health expenditure in its annual budget.

Key words

Quality of life, Per Capita Income, education expenditure, health expenditure, Autoregressive Distributed Lag Model (ARDL)

JEL Codes: I18, I22, I31

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Received: 14 September 2019

Revised: 30 September 2019

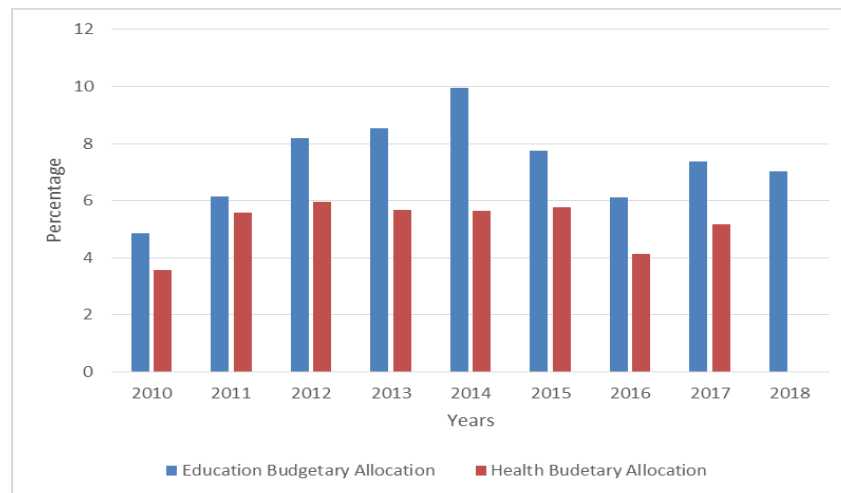
Accepted: 14 October 2019

1. Introduction

The observed quality of life is contrary to the expected, notwithstanding all the government and non-governmental agencies' efforts and spending on education and health facilities in order to improve human capital, development yet is still a tall order in Africa. According to the World Health Organization (WHO), government plays a crucial role in providing quality life for its citizens through good health system. The availability of very good quality and quantity of educational and health facilities that the citizens can conveniently have access to is a prerequisite to development in Africa, which will, in turn, improve their quality of life. Although education and health as components of human capital are connected or linked and helps to improve the quality of life, yet none is more significant when compared with the supplementary (Lawanson, 2009). Therefore, the capability to produce economically and socially is dependent in the health status of the citizen (Anyawu *et al.*, 1997), and as such, if the citizen enjoys good health and are well educated, their quality of life will definitely advances.

In line with the above, health and education are key to the welfare of Nigerians. The major aim of vision 20:20:20 is to pursue progress inaccessibility to quality education in relation to qualified teachers, subsidized fees, robust curriculum, state of the art facilities, fairness and tactical teaching schedule. For example, the SDGs targeted to be actualized by 2030 stressed on the importance of education and health. Based on this effect, this study is poised to significantly examine the influence of education and health expenditure on the quality of life of Nigerians. Capital deficiency is the key issue in the health and education sector of the economy, and these results in poor welfare of the people. Development cannot be substantial unless the sectors are properly funded by the government as well as non-governmental agencies. The case of the Asian tigers is a distinctive illustration of strident developments through significant investment in education and health (human capital). Despite the United Nations recommendation that at least 26% of the developing countries' annual budget should be allocated to education, Nigerian has not been able to achieve the stalled spot. The Nigerian education budget fluctuates as follows; 7.25%, 4.85%, 6.16%, 8.20%, 8.55%, 9.94%, 7.74%, 6.10%, 7.38% and 7.03% for periods of 2009 to 2018 respectively (Vanguard, 2018).

Meanwhile, the World Health Organization stated that a minimum of 5% and 15% recommendation of Abuja declaration 2001 be allocated to health, yet Nigeria is unable to meet the standard. During the past seven (7) years, health budget varied by percentages fluctuating from 3.58%, 5.58%, 5.95%, 5.66%, 5.78%, 4.13% to 5.17% (2010-2017) respectively (2018 National Budget-Provisional). This will be illustrated in figure 1.



Source: Authors' Construct

Figure 1. Education and Health Annual Budget Allocation

Unfortunately, Nigerians educational and health systems have extensively been ignored and this has resulted in an undesirable index on both sectors. Meanwhile, the three major indicators of HDI are Gross national income per capita (a proxy for the living standard), life expectancy (representing health) and knowledge (representing education). Life expectancy has declined from 54 to 53.43 years (2012 and 2016 respectively) when compared with Sub Saharan Africans average of 56- 62.77 years (WHO, 2015; 2018). WHO's ranking of countries (2011, 2013, and 2018) Nigeria was graded 156 with a value of 0.459 among 187 countries, 153 and 178 with a value of 0.471 among 187 countries, and 178 respectively. Hence the aforementioned depicts that human capacity investment in Nigeria is not given adequate attention.

Consequently, it is of importance to scrutinize education and health expenditure, and then proffer policy recommendations with respects to their inadequacies so as to advance the quality of life of Nigerians. The core objective of this study is to examine whether education and health expenditure by the government improves the quality of life in Nigeria? The broad objective of this study is to evaluate and analyze the impact, health and education expenditure have on Quality of life. Following the broad objective, the precise objective is to determine the relationship between expenditures in education, health and quality of life in Nigeria.

There is much literature on the impact of public health expenditure on health outcomes in Nigeria. The studies by Edeme *et al.* (2017); Ahmed and Hassan (2016); Oluwatoyin *et al.* (2015); Boachie and Ramu (2015) and Odior 2011 discovered that public health expenditure is significantly related to health outcomes. The studies by Yusuf (2016); Barenberg *et al.* (2015) and Akinci *et al.* (2015) on the impact of public health expenditure on the infant mortality rate and found out that infant mortality rate dampens as a result of public health expenditure while Jaiyeoba (2015); Akwe (2014); Oni (2014); Mba *et al.* (2013); Amakom (2012); and Adelakun (2011) have examined the impact of government expenditures in education and health on economic growth while to the best of my knowledge, no study has looked at the impact of government expenditures on education and health on quality of life in Nigeria.

2. Literature review

2.1. Empirical review

Furthermore, there is an increasing trend of literature that studied determinants of public spending on education and health expenditures across countries and some country specific. In line with this, Yusuf (2016); examined the effect of government expenditure on social service in Nigeria with emphasis on health sector performance and the study employed Pearson's moment correlation technique. The study found out that government expenditure is inversely and significantly related to infant mortality, more so, government expenditure and life expectancy shared a weak positive and statistically insignificant relationship. The study, however, concluded that the government should allocate more fund to the health sector as well as create a favourable atmosphere that will encourage private sector investment in the sector. Edeme *et al.* (2017) analyzed the impact of public health expenditure on health outcomes in Nigeria, using Ordinary Least Square technique, and the study revealed that long-run equilibrium relationship exists between health outcomes and health expenditure. The result revealed also, that increased public expenditure in health declines infant mortality and enhances life expectancy. Additionally, in Nigeria, health outcomes are affected significantly by HIV prevalence and urban population. The study, therefore, concluded that public health expenditure is a necessity for improvement in Nigerian health outcomes.

Ahmed and Hasan (2016) evaluated the effect of public health expenditure and governance on health outcomes in Malaysia using Autoregressive Distributed Lag (ARDL) model and the results revealed a stable, long-run relationship between health outcomes and their determinants (public health expenditure, corruption, government stability, and income level). More so, the study discovered that Malaysia's public health expenditure and corruption affect short-run and long-run health outcomes. The study concluded that in order to enhance the quality of life of the citizenries that the government should significantly reduce corruption and increase health programs.

Oluwatoyin *et al.* (2015) examined the impact of public health spending on health outcomes in Nigeria between 1979 to 2012 using Johansen Co-integration and the Vector Error Correction Model (VECM) technique and the result revealed that public health spending is significantly related to Nigerian health outcomes. More so, the study showed the citizen's health was affected by carbon dioxide emission (environmental factor). The study, therefore, suggested that the government should embark on public sensitization/ awareness programmes in order to reduce the health hazards caused by carbon dioxide as well as restructure and increase health allocation. In line with the aforementioned, Boachie and Ramu (2015) analyzed the relationship between public health expenditure and health status in Ghana using Ordinary Least Square techniques and the study identified that infant mortality was falling in Ghana due to increased public expenditure in the health sector. Furthermore, Barenberg *et al.* (2015) also studied the impact of public health expenditure on the infant mortality rate and found out that infant mortality rate dampens as a result of public health expenditure. Hence, the study also discovered that improved /increased level of female education/literacy, as well as urbanization, declined infant disease, in turn; cause a fall in their mortality rate. In the same light, Akinci *et al.* (2015) evaluated the effect of healthcare expenditures on selected health comes for 19 countries in the Middle East and North African region. The study examined private and government healthcare expenditures on an infant, child, and maternal mortalities and discovered that both private and public expenditures in healthcare significantly decline all forms of mortality.

In the same light, a study was conducted by Jaiyeoba (2015), to establish the relationship that exists between education and health investments as well as Nigerian economic growth between 1982 to 2011 using Johansen Cointegration and Ordinary Least Square technique. The study opined that government expenditures on health and education as well as economic growth are related in the long run. However, health and education expenditures variables are statistically significant and with the exclusion of primary enrolment rate. The stud, however, concluded that the government should enforce policies that will enhance massive health and education in order to for Nigerians to elude abject poverty. The study by Oni (2014) also evaluated the impact of health expenditure on economic growth in Nigeria, using Ordinary Least Square Technique and the result from the study discovered that total health expenditures, labour force productivity and gross capital formation are significant determining factors of economic growth, whereas life expectancy negatively related to Nigerian economic growth. Meanwhile, the study suggested that the government should increase its expenditure in the sector and as well boost investments and savings in the economy as a whole. In addition, the conclusion drawn from the study is, however, likely to be faulty because of the wrong technique employed as the study did not conduct any preliminary test (unit root and cointegration test), which will determine the appropriateness of the technique to be used.

Meanwhile, Akwe (2014) studied social public expenditure (education and health) and Nigerian economic growth between 1990 to 2009. The study used the causality-based model of Vector Error Correction (VEC). He opined that Wagner's law was supported due to the unidirectional causality that rallied from economic growth to health expenditure. Consequently, the paper discovered that causality rallied from economic growth aggregate social expenditure as well as education. However, the work was concluded on the grounds that social public expenditure intensifies the level of the aggregate economic growth and that the government should increase its budgetary allocation to both the education and health sectors. Mba *et al.* (2013) on the other hand, estimated the significance of human capital (health and education) development on the Nigerian economic growth. The study assumed that a strong positive relationship exists between economic growth and human capital development. It used panel data from African countries between 1990 to 2002.

Edame (2014) investigated the trend on public (health and educational) infrastructure expenditure on infrastructures between 1970-2010, using Johansen Co-integration and the Vector Error Correction Model (VECM) and the result revealed that expenditure on infrastructure did not produce a positive result during the period of study. The study concluded that the government should allocate more fund to infrastructure as well as enforce policies that will help fund utilization. In a study carried out in Pakistan, Zaid and Tayaba (2013) examined the relationship among poverty, education expenditure, and education status using Johansen Co-integration and the Vector Error Correction Model (VECM) and observed that education expenditure, education status, and poverty cointegrate in the long run. The study used population percentage below the poverty line of the nation, government education expenditure (% of total expenditures), the rate of Adult Literacy (above 15 years), as well as educational attainment, for the relationship estimation. The study also identified that poverty

rate and education status has strong causal bidirectional in the region. The study concluded thus, that government should increase its education budgetary allocation and as well enhance adult literacy level so as to reduce the level of poverty.

In a study conducted in sub-Saharan African countries, Olaniyan *et al.* (2013) investigated expenditures on health care using panel data. They suggested that GDP share of health spendings, as well as living standards changes, are significant for several reasons. Since it gives an accurate account of outstanding developments in the sector at least for the last half-century, used in health care expenditure forecast and gives an evaluation of the sector development. Their investigation shows that spendings on health care and determinants are linked in the long run and nonstationary. It also revealed that for sub-Saharan African, elasticity is less than unity and necessary good. Half of the surveyed countries were significant while the rest are statistically insignificant. Amakom (2012) investigated public expenditures in education and healthcare in Nigeria, employing the Benefit Incidence Analysis (BIA) model and the study discovered that healthcare and primary education were more severe in absolute terms than healthcare and tertiary education. The result also showed a mixed result for healthcare and Secondary education whereas the results propose that location bias in benefits occur for both healthcare and education from public spending. Thus, the study concluded that for more effective income distribution to take place, the government should subsidize its services rather than income transfer or direct consumption.

Odior (2011) examined the dynamic direct and indirect impacts of government policy on health and its relation to the cyclical economic growth in Nigeria in the long run. The study employed an integrated sequential dynamic computable general equilibrium (CGE) model and found out that government expenditure re-allocated to the health sector is important in the explanation of economic growth in Nigeria. The study concluded that the Nigerian government should increase its public investment portfolio. More so, Adelakun (2011) investigated human capital development and economic growth in Nigeria using OLS technique and the study discovered that the proxies for human capital (primary and secondary school enrolment, health and education expenditures) and economic growth proxy (GDP) are positively related. The study recommended that a solid institutional framework and more practical /realistic means of human development should be put in place by the stakeholders. Meanwhile, Remman, Bassey, and Edu (2011) conducted a study on Nigerian expenditure on health care between the period of 1980 to 2003, using Cobb-Douglas production function as well as analysis method of ordinary least square. They observed that literacy level and life expectancy both in long and short run correlated negatively with expenditure on health care, while expenditure on health care income elasticity is less than a unit in the long and short run. In line with their study, health funding in Nigeria is income inelastic as well as a necessary good. Therefore, for there to be an improvement in Nigerian health status, they suggested that the sector needs to be properly funded and inequality needs to be avoided or reduced to the barest minimum in the cause of the budget distribution of expenditure on health.

3. Methodology of research

In light of the foregoing, the theoretical framework that underpins this research is Human Capital Theory. Consequently, it stresses on how investments in education and health could be transformed into higher productivity. Here, the inputs are the investment in human capital while the expected outcomes are an improvement in the quality of life of the citizenry. Hence, this study seems to modify the theoretical framework as opined by Jaiyeoba (2015). Owing from the above, the initial model specification is represented below as:

$$dK/dt + \Delta K + dH/dt + \Delta H = [s' + s''] Y \quad (1)$$

Where: Δ represents the rate of depreciation, s' is the proportion of output the share of output dedicated to the gross physical capital formation while s'' is the portion dedicated to the human capital formation (both s' and s'' remain positive parameters).

In light of the foregoing, human capital theory lays more weight on humans than in physical capital investment since the human capital works on physical capital via satisfactory skill acquisition in order for the operation of the physical capital. Evidently, the country will be in better productivity in the future since the individual capacity to produce will be increased, thereby transformed into improvement in their quality of life. However, economic productivity is dependent on its labour efficiency level as well as its capital inputs. Therefore, labour efficiency and capital resources are determined by the level of increase in human capital investment. This work adopted a framework that is similar to that of Dauda (2010) and Adelakun (2011). It is built on Solow (1957), Mankiw *et al.* (1992) and Lucas (1988). Here, Solow tries to clarify economic growth by observing capital accumulation, population or labour growth, as well as a rise in productivity, usually denoted as technological progress in the long-run. Arguably, Mankiw, Rome, and Weil (1992) augmented Solow model will be adapted to set up a linear regression of the impact of education and health expenditure (human capital spending) on quality of life. In this vein, modifying the framework of Dauda 2010, Adelakun (2011) and Jaiyeoba (2015); this study seems to introduce the quality of life in place of the real gross domestic product as represented in equation (2).

$$\text{Log GDP} = \beta_0 + \beta_1 \log \text{GEOE} + \beta_2 \log \text{GEOH} + \beta_3 \log \text{GFCF} + \beta_4 \text{PER} + \beta_5 \text{SER} + \beta_6 \text{TER} + \mu_t \quad (2)$$

In line with the above, the model below was used in an effort to determine the effect of expenditure on education and health on quality of life in Nigeria.

$$\text{PCI} = f(\text{GEOE}, \text{GEOH}, \text{GCF}, \text{INF}, \text{UNEM}) \quad (3)$$

$$\text{PCI}_t = \beta_0 + \beta_1 \text{GEOE}_t + \beta_2 \text{GEOH}_t + \beta_3 \text{GFCF}_t + \beta_4 \text{INF}_t + \beta_5 \text{UNEM}_t + \mu_t \quad (4)$$

In line with the linear assumption of the variables, the log of the variables will be taken on both sides of the equation.

$$\text{Log PCI}_t = \beta_0 + \beta_1 \text{GEOE}_t + \beta_2 \text{GEOH}_t + \beta_3 \log \text{GFCF}_t + \beta_4 \text{INF}_t + \beta_5 \text{UNEM}_t + \mu_t \quad (5)$$

However, the relationship between education and health expenditure, inflation rates, unemployment rates, gross fixed capital formation and quality of life in Nigeria is empirically determined for the period of 1980-2017, Autoregressive distributed lag model is used to accomplish the research objective (as well as to estimate equation (5)). Meanwhile, the ARDL estimation technique is ideal in estimating a short run and long run components of the model. More also, in the estimation of models with a different order of variables (I (0) and I (1)) integration, it is appropriate to use ARDL. Once the variables are not stationary at level, the only alternative is to estimate the model by differencing the variables to see if these differences are stationary in order to obtain the short run dynamically. Meanwhile, the method will result in a substantial loss of the data properties in the long run. Alternatively, the economic variables might be combined together in levels as long as they are co-integrated. However, co-integration problems occur when two series are integrated after the first difference I (1), while the linear combination of them is stationary at level I (0); the regression of one on the other is not spurious in this case, rather it informs us about their long-run relationship (Wooldridge, 2004). The data for the empirical analysis were obtained from the World Development Indicator (WDI).

4. Analysis of results

The expected result of the analysis is presented in this section, with the data that is pulled from the world development indicator. It started with the variable's descriptive statistics. Evidently, table 1 revealed that per capita income within the study period between 1980-2017 on averaged was 1748.906, as it hovers between 2563.092 and 1323.501. The table also showed that government expenditure on education on the average was 0.198%, it increased the minimum of 0.001% to 0.157%, while government expenditure on health increased from 2.14% to 4.45% and maintained the average of 3.42%. In the same light, gross fixed capital formation moved from the minimum of 5.67trillion to the maximum of 15.8trillion while it averaged 8.44trillion. However, inflation, life expectancy, and unemployment increased from 5.38% to 72.83%, 45.33 years to 53.43 years, and 3.70% to 7.06%, while they averaged 19.26%, 47.68 years, and 4.53% respectively. The Notwithstanding, the value of the probability will give a better interpretation for the Jarque-Berra statistics test, as it can be concluded from the table that asides from gross fixed capital formation, inflation, life expectancy and unemployment that are not normally distributed as they exhibit probabilities that are less than 5% level of significances, which led to the rejection of the normality null hypothesis. Meanwhile, from the table, it did not reject the null hypothesis of per capita income, government expenditures on education and health, as they exhibit probability values that are more than 5% level of significance.

Table 1. Descriptive Statistics

	PCI	GEOE (%)	GEOH (%)	GFCF	INFL (%)	LE (yrs)	UNEM (%)
Mean	1748.906	0.198022	3.425129	8.44 trillions	19.26792	47.68527	4.530111
Median	1547.367	0.157841	3.460758	8.06 trillions	12.54718	46.10400	4.399000
Maximum	2563.092	0.617578	4.453137	15.8 trillions	72.83550	53.42800	7.060000
Minimum	1323.501	0.001084	2.143268	5.67 trillions	5.382224	45.33100	3.700000
Std. Dev.	429.9799	0.207314	0.571663	1.98 trillions	17.28262	2.515924	0.810084
Skewness	0.685018	0.717262	-0.567102	1.598241	1.741461	1.059653	2.272368
Kurtosis	1.933177	2.169812	3.163043	6.703726	4.830811	2.603589	7.685435
Jarque-Bera	4.773926	4.235072	0.875334	36.89992	24.51415	7.166596	47.93391
Probability	0.091908	0.120328	0.645541	0.000000	0.000005	0.027784	0.000000
Sum	66458.43	7.326801	54.80206	312 trillions	732.1809	1764.355	122.3130
Observations	38	37	16	37	38	37	27

Source: Author's Computation using World Development Indicator

Similarly, it is pertinent that the study conducts a correlation test to examine the magnitude of the relationship between the variables. Meanwhile, the core of the examination is to make sure that a perfect relationship does not exist between them;

as this will result in multicollinearity econometric problem. Evidently, from table 2, the results from per capita income, inflation, life expectancy, unemployment, gross fixed capital formation, government expenditures on health and education showed that the variables are not near perfect or perfectly related (not more than 0.9); hence it is safe to run the model estimation.

Table 2. Correlation Test Result

	PCI	GEOE	GEOH	GFCF	INFL	LE	UNEM
PCI	1.00	0.83	0.24	0.57	-0.37	0.99	-0.53
GEOE		1.00	-0.03	0.44	-0.50	0.85	-0.60
GEOH			1.00	0.24	-0.02	0.19	-0.07
GFCF				1.00	-0.64	0.59	-0.03
INFL					1.00	-0.40	0.15
LE						1.00	-0.53
UNEM							1.00

Source: Author's Computation using World Development Indicator

Unarguably, it is of importance to estimate the unit root test. This is to avoid the problem of spurious regression. However, the Augmented Dickey-Fuller unit root technique follows the null hypothesis that the series has a unit root against the alternative hypothesis of no unit root. In line with the above, table 3 revealed that inflation is stationary at a level out of the seven variables used, while per capita income, gross fixed capital formation, government expenditures on health and education are stationary at first difference.

Table 3. Unit Root Test Result

Variables	Unit Roots at Level		Unit Roots at first difference	
	Statistical value	Probability	Statistical value	Probability
LOG(PCI)	-1.314940	0.6116	-4.149955*	0.0025
GEOE	-0.283301	0.9177	-6.317033*	0.0000
GEOH	-2.790331	0.0831	-5.061037*	0.0016
LOG(GFCF)	-2.613425	0.1002	-4.777258*	0.0005
INFL	-2.948076*	0.0495		
LE	-0.364561	0.9040	-0.611930	0.8546
UNEM	0.313183	0.9738	4.159860	1.0000

*Implies Statistically significant at 5%

Source: Author's Computation using World Development Indicator

Equally, Autoregression Distributed Lag Model (ARDL) bound test is adapted in estimating the model's cointegration for integrated variables at different orders. However, this made the study to estimate bounds cointegration test for the models specified earlier. Additionally, table 4 is in line with Pesaran and Shin (2001) recommendation that if ARDL F-statistic is greater than the I(1) critical, the equation(s) is/are cointegrated, while if the F-statistic value falls in between the lower and upper bounds the cointegration status of the model(s) is/are inconclusive. However, if the F-statistics is below the I(0) critical value, then there is no cointegration associated with the model(s). Based on the above recommendation, evidently, the variables are cointegrated. This finding is in tandem with the study of Jaiyeoba (2015).

Table 4. ARDL Bound Co-integration Test Result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	12.52130	10%	1.99	2.94
K	6	5%	2.27	3.28
		2.5%	2.55	3.61
		1%	2.88	3.99

Source: Author's Computation using World Development Indicat

4.1. Summary of Regression Result

Method: Autoregressive Distributed Lag Model (ARDL)

Dependent Variable: Δ PCI

Table 5. ARDL Regression Result

Short Run				Long Run			
Variable	Coefficient	t-Statistic	Prob.	Variable	Coefficient	t-Statistic	Prob.
Δ (GEOE)	-0.097216	-2.268433	0.0859	GEOE	-0.201416	-2.083546	0.1056
Δ LOG(GFCF)	-0.202818**	-7.443416	0.0017	GEOH	0.040965*	4.019072	0.0159
Δ (INFL)	-0.003350*	-3.681200	0.0212	LOG(GFCF)	-0.262554	-1.788044	0.1483
Δ (UNEM)	0.035416*	2.884988	0.0448	INFL	0.001732	0.727698	0.5071
CointEq(-1)*	-1.096135**	-16.59725	0.0001	LE	0.103107**	15.04043	0.0001
				UNEM	-0.019931	-0.653438	0.5491
				C	10.30139	2.492009	0.0673
R-squared				0.874585			
Adjusted R-squared				0.828980			
F-statistic				179.2578			
Prob(F-statistic)				0.000073			
Durbin-Watson stat				2.744057			
Post Diagnostic Test							
Ramsey RESET f-stat				1.524374			
Ramsey RESET Prob				0.3048			
Breusch-Pagan-Godfrey Chi-sq stat				14.26105			
Breusch-Pagan-Godfrey Chi-sq Prob				0.2189			
Breusch-Godfrey f-stat				1.048345			
Breusch Godfrey Prob				0.4882			
J-B Stat				0.888			
AIC (1, 1, 0, 1, 1, 0, 1)				-5.020071			

* Implies Statistically significant at 1% and ** implies statistically significant at 5%

Source: Author's Computation using World Development Indicator.

Obviously, table 5 above showed that government expenditure on education is negatively related to per capita income both in the long and short run, as well as statistically insignificant. The above result gives credence to the work of Zaid and Tayaba (2013). Evidently, this implies that government education expenditure cannot translate into enhanced quality of life, as it has -0.097 and -0.201 impacts in the short and in the long run respectively. However, this can be attributed to insufficient fund allocation as the proportion of fund that is needed to translate government expenditure on education into an asset that will positively impact and increase per capita income, in the long run, is yet to be attained by the country. On the hand, it is due to the fact that; the funds were not effectively mainstreamed into productive activities all due to corruption. Meanwhile, it can as well be attributed to the fact that; large portion of government expenditure on education is recurrent expenditures used often in payment of staff salary and other running costs; this does not translate to improvement in infrastructure leading to educational sector distortion, government general deficiencies, brain drain, strikes, and ineffectiveness. In line with the ongoing, this translates to a high level of unemployment without people losing their jobs, as universities keep on graduating thousands of graduates on yearly bases without new job creation, thereby the sky rating unemployment rate.

Additionally, gross fixed capital formation has a negative and statistically significant effect on per capita income both in the short and in the long run, despite being statistically significant at 1% in the short run and statistically insignificant in the long run. The finding of this study conforms to that of Oni (2014), which said that gross fixed capital formation is significant. This implies that gross fixed capital formation contribution has an indirect impact on per capita income as its impact factors are - 0.202 in the short run and -0.262 in the long run. Meanwhile, the result also shows that inflation has a negative impact on per capita income in the short, while it impacted positively to per capita income in the long run. Although is statistically significant at 5% in the short and insignificant in the long run. In line with the above, government expenditure on health is positively related to per capita income, and it has the impact factor of 0.040 in the long run although statistically significant at 5%. The finding of this study lend credence to the studies of Edeme *et al.* (2017); Yusuf (2016); Boachie and Ramu (2015); Oluwatoyin *et al.* (2015); Jaiyeoba (2015); Oni (2014); and Mba *et al.* (2013), who said that public health expenditure statistically significant as well as positively related to health comes and economic growth. Notwithstanding, the

positive impact and significance of the sector, the contribution of the sector to per capita income is low when compared to all developing economy. It is evident from the study that; more fund needs to be allocated to the sector, brain drain, corruption as well as frequency of strike actions by health officials need to be drastically minimized. In the same light, unemployment has both positive and negative relationship with per capita income in the short and long run respectively, though is statistically significant at 5% in the short run and insignificant in the long run. Life expectancy on the order hand impacted 0.103 and it has a positive long-run relationship with per capita income and as well statistically significant at 1%.

Furthermore, based on the post-diagnostic analysis, the result shows or reveals that the variation in the dependent variables are well explained by the variations in the independent variable for the model as 87.5% is explained. Meanwhile, the result reveals that the model best fits the regression line as the F-statistics is statistically significant at 1% for the equation. Evidently, the result in table 5 reveals that there is no serial correlation of Autoregressive of order one AR (1) associated with the regression result for the model using Durbin Watson statistics. However, it is of great importance that the model is subjected to serial correction test of a higher order, as the B.G. test which is of the assumption that null hypothesis of no serial correlation of higher order associated with the regression result is used. Owing from the above, it can now be concluded that the serial correlation of higher order associated with regression result is not present as it fails to reject the null hypothesis. The Ramsey RESET tests for the stability of the model against the alternative hypothesis that the model is not stable. From the result of the Ramsey RESET, it can be concluded that the model is stable.

5. Conclusions and policy implication

This paper investigated the effect of education and health expenditure on the quality of life in Nigeria. Meanwhile, the result concludes that investments in education are negatively related to per capita income as well as insignificant. Furthermore, the result also concluded that government health investments are significant and as well as positively related to per capita income. Unarguably, from the result, the impact of health expenditure on per capita income is low when compared to all other developing economies. In line with the above, this study concludes that a well-structured, effective, improved institutional management as well as increased government long term investments on health and education will not only enhance the citizenry quality of life but as well improve their life expectancy. Based on the foregoing, this study's policy implication is that the Nigerian government should allocate more funds to education and health expenditure in its annual budget for both short- term and long-term returns. Consequently, all these need to be put in place for citizenries to have an improvement in their quality of life in Nigeria.

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