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IMPACT OF HEALTH AND EDUCATION EXPENDITURE ON POVERTY ALLEVIATION IN NIGERIA

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Abstract

The significance of government expenditure in the promotion growth and development of every sector in an economy cannot be over-flogged. This study aims to ascertain the impact of government expenditures on health and education on poverty alleviation in Nigeria.

This study used the Ordinary Least Square (OLS) statistical method on obtained from Statistical Bulletin of the Central Bank of Nigeria (CBN) and World Development Index (WDI) over the period of 1988-2018. The Johansen Co-integration result indicates four co-integrating equations at the 0.05 level. Result shows that there exists a long-run relationship between government expenditures on health and education and poverty alleviation in Nigeria.

It was also found out that expenditure on health and education exhibit positive relationship on the dependent variable (Poverty Alleviation), this means that increasing government spending on health and education translates to increases in poverty alleviation.

To alleviate poverty in Nigeria, government should increase expenditure on health and education.

Key words: Poverty Alleviation, Expenditure, Health, Education

JEL Codes: H50, I10, I20, I30, I32

1.0 INTRODUCTION

There is a strong interconnectivity between government expenditure and poverty reduction in the developing nations. Poverty has risen since the resumption of growth in Nigeria. Although there seems to be some decline in relative poverty in recent past, the actual number of people in poverty continues to rise considerably. It is necessary for developing countries like Nigeria where majority are poor to strive towards poverty reduction Available evidence from Olomola, Akande, Ogunwale and Ogundele, (2009); Fajnzylber, (2013); and Kim (2014) suggest that, in most developing countries, although economic growth constitutes a necessary condition for poverty reduction, it is not a sufficient condition as there are possible trades-offs and conflicts between growth and redistribution of wealth in some countries. Since economic growth is not a sufficient condition for poverty reduction, it stands to reason that economic growth would have to be combined with some other socio-economic strategies encompassing social policies and programmes designed to effectively reach the poor and the most vulnerable groups in the society

Policymakers are divided as to whether government expansion helps or hinders economic growth. Advocates of bigger government expenditure argued that government programmes provide valuable “public goods” such as education and infrastructure. They also claim that increase in government spending can improve economic growth and alleviate poverty.

The basic dimension of human development are: long and healthy life, knowledge and decent standard of living (UNDP, 2016). Samuelson (1954) and Musgrave (1956) in their theories viewed poverty reduction as a problem of allocating resources. Resources are to be allocated by the government to produce goods that are required by the poor household and the society at large. In a country like Nigeria, improvement in health and education facilities are necessary goods needed by the poor households.

Vein, Fan, Huong and Long (2004) studied government spending and poverty reduction in Vietnam and concluded that government spending reaches the poor through many different ways, including spending on agriculture, infrastructure and education. The International Labour Organization, ILO (1996-2017) revealed that government spending on infrastructure and education may promote growth through increase in employment and wages thereby contributing to poverty reduction in Indonesia. The studies above affirm that increase in government expenditure on education reduced poverty up to 2003

This work examines the impact of government expenditure on education and health sectors in Nigeria from 1988 to 2018 with a view to determine if it has alleviated poverty or not and to ascertain if there exists a long run relationship between the selected economic variables within the specified period.

Objectives of the Study

The main aim of this study is to investigate the effect of government expenditures on health and education on poverty alleviation in Nigeria between 1988 and 2018. To achieve this aim, the following specific objectives have been identified to guide the study.

The first objective is to examine the trend of Expenditure on Health and Education in Nigeria. The second is to investigate the effect of Health and Education Expenditure on Poverty Alleviation in Nigeria while the last objective is to evaluate the long run relationship between government expenditures on health and education on poverty alleviation in Nigeria.

2.0 LITERATURE REVIEW

Poverty is a complex concept. Since colonial days, efforts have been made towards treating or eliminating poverty. Each government era has taken a different approach to solving the problem but, surprisingly the problem still persists. Poverty is a recurrent issue affecting all developing countries, Nigeria, inclusive, because it is closely linked with the concept of underdevelopment. It is a problem

that has economic, political, psychological and social dimension. It is associated with conditions under which people live. It is defined either in absolute or relative term. Absolute poverty denotes condition in which a person or group of persons are unable to satisfy their most basic and elementary requirements of human survival in terms of good nutrition, clothing, shelter, footwear, energy, transport, education, health and recreation. It is believed that absolute poverty can be eradicated. The dominant western definition since world war II has defined poverty in monetary terms, using levels of income or consumption to measure poverty and defining the poor by a headcount of those who fall below a given income/consumption level or ‘poverty line’ (Grusky and Kanbur, 2006). However, this economic definition has been complemented in recent years by other approaches that define poverty in a more multidimensional way (Subramanian, 1997). These approaches include the basic needs approach (UNDP, 1990). Their acceptance is reflected in the widespread use of the united nations development programme (UNDP), human development index (HDI), which is a composite measure of three dimensions of human development: (i) life expectancy, (ii) educational attainment and (iii) standard of living, measured by income in terms of its purchasing power parity (UNDP, 2006)

Chambers (2006) clusters poverty definitions into five groups:

- Income poverty (or its common proxy, consumption poverty).
- Material lack or want: besides income, this includes absence, limited or low quality assets (such as shelter, clothing, furniture, personal means of transport, radio, etc.) It also includes inadequate access to services.
- Capability deprivation, referring to what we can or cannot do, or can or cannot be. This goes well beyond material lack or want to include human capabilities, such as skills and physical abilities, and also self-respect in society.
- Multidimensional deprivation, with material lack or want only one of several mutually reinforcing dimensions.
- The multiplicity of the meanings of poverty identified by the poor themselves.

Despite the numerous poverty reduction programmes which past governments had initiated and implemented since 1999 up to date – a world bank’s report showed that Nigerian human development index (HDI) was only 0.416 and that about 70% of the populations was living on breadline. This alarming indications prompted the government to review the existing poverty reduction schemes with a few to harmonizing them and improving on them.

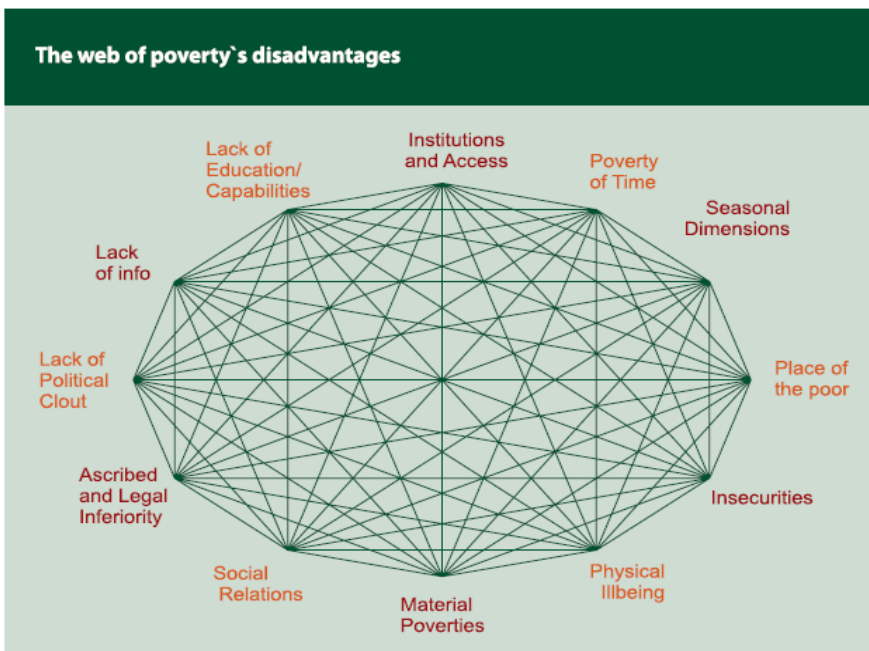
The multidimensionality of poverty has been stressed and succinctly expressed in the Copenhagen Declaration on social development in the following manner: “poverty has a various manifestation, including (as cited in Oladeji, 2011).

- i. Lack of income and productive resources sufficient to ensure sustainable livelihoods

- ii. Hunger and malnutrition
- iii. Ill health
- iv. Limited or lack of access to education and other basic services
- v. Increased morbidity and mortality from illness
- vi. Homelessness and inadequate housing
- vii. Unsafe environments and social discrimination and exclusion
- viii. Lack of participation and exclusion
- ix. Lack of participation in decision-making and in civil, social and cultural life (world summit for social development, Copenhagen, 1995).

This is best represented by Fig 1 which shows the poverty web experienced by all developing economies. Lack of education and physical well-being (unhealthy condition) are among the web of poverty disadvantages in Nigeria. Expenditure on these two areas is looked into in this work.

Fig 1 **Poverty web**



Source; Chambers (2006) institute of Development Studies, Sussex, United Kingdom

Until recently, development efforts concentrated mostly on increasing the growth rate of Gross Domestic Product (GDP). However, there is a consensus among development economist that growth alone is not enough to alleviate poverty. It is argued that some factors that could affect social wellbeing of individuals apart from income will definitely contribute to poverty. These among others include:

illiteracy and poor health condition (World Bank, 1995). There is therefore a paradigm shift towards studying the non-income factors affecting poverty in the developing countries. This work assembled evidence to show the effect of government expenditure on poverty alleviation while focusing mainly on government spending on two key areas, namely: education and health.

Theoretical Framework

The following theories of public spending were used in this study

- (i) Wagner's law of increasing Public Expenditure
- (ii) Musgrave and Rostow theory of public expenditure
- (iii) Pure Theory of public Expenditure

The Theory of Increasing State Activity by Wagner (1911) states that "As the economy develops overtime, the activities and functions of the government increases" Wagner, (1911) argued that for any country, the public expenditure rises constantly following

an upward sloping trend. The law predicts that the development of an economy is accompanied by an increased share of public expenditure in Gross National Product, and that the increase in state expenditure is needed because of three main reasons:

- (i) Social activities of the state
- (ii) Administrative functions and protective actions
- (iii) Welfare functions of the state

Wagner cited education and culture as areas in which collective producers are more efficient than private producers because some economic activities require a large scale capital that the only way these capital projects could be financed was if the state participates in the activity

Musgrave Theory of Public Expenditure

Musgrave (1956) put forward a development model under the causes for growth in public expenditure. They argued that public expenditure is a pre-requisite for economic growth. The public sector initially provides economic infrastructure such as roads, railways, water supply and sanitation. As economic growth takes place, the balance of public investment shifts towards human capital development through increased spending on education, health and welfare services.

They assumed that the state grows like an organism making decision on behalf of the citizens. Society demand for infrastructure facilities such as education, health, electricity, transport etc., grows faster than per capital income.

Pure Theory of public Expenditure

The pure theory of public expenditure was first expounded in a consistent form in the 1950s by Samuelson (1955) The pure theory of public expenditure fully preserves the category of government services but emphasizes the specific forms of the consumption of these services (Samuelson, 1955).

According to Samuelson (1995), public expenditure will grow in sympathy to achieve growth in labor (L) and this will involve increase in education expenses, growth in capital (K) all these will come with through savings or borrowings and technological innovation (Tn), therefore $Q=F(K,L,Tn)$.

Poverty is a stumbling block in the way of achieving economic development. Hence, all countries should be ready to alleviate poverty in all its forms. Poverty alleviation is best achieved through increased public expenditure on the social sectors in the economy, particularly health and education. Education and health endowment of the individuals are the necessary and important components of human capital which make them productive and raise their standard of living. Human capital is required for the effective utilization of physical and natural capitals and technology and skills. The other notable thing regarding the education's significant role in poverty reduction is the direct linear relationship between education and earnings.

3.0 Methodology

Secondary data was used for this study. The data were obtained from Statistical Bulletin of the Central Bank of Nigeria (CBN) and World Development Index (WDI) over the period of 1988-2018

The study employed per capita income (Proxy for Poverty Alleviation) as a function of Expenditure on Health, Expenditure on Education and Total Recurrent Expenditure in its model. The study Used the Ordinary Least Square (OLS) technique to determine the long-run relationship between identified variables. The Augmented Dickey Fuller (ADF) technique was used for the unit root test. The Johansen co-integration model used was to identify the co-integrating variables.

Data Presentation

Descriptive statistics of data used for the study are shown on Table 1.

Table 1: Annual data for study variables: 1988-2018.

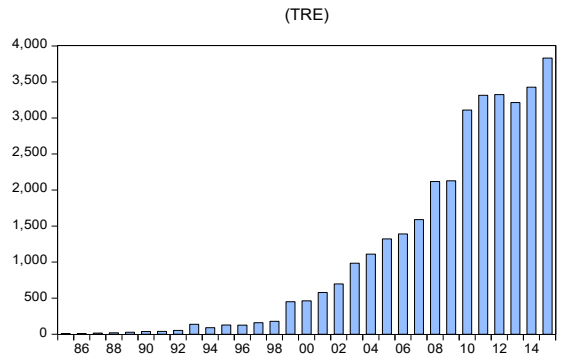
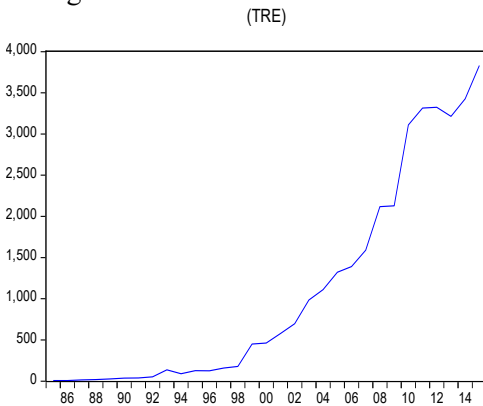
Years	GDP per capita (current LCU)	Total Recurrent Expenditure (TRE)	Expenditure on Health (HEXP)	Expenditure on Education (EEXP)
1988	210527.5	19.41	0.42	1.46
1989	209035.2	25.99	0.58	3.01
1990	227703.5	36.22	0.50	2.40
1991	222774.9	38.24	0.62	1.26
1992	227287.9	53.03	0.15	0.29
1993	217157.5	136.73	3.87	8.88
1994	207965.6	89.97	2.09	7.38
1995	202704	127.63	3.32	9.75
1996	206017.4	124.29	3.02	11.50
1997	206855.5	158.56	3.89	14.85
1998	206973.8	178.10	4.74	13.59
1999	203050.2	449.66	16.64	43.61
2000	207962.2	461.60	15.22	57.96
2001	214805.4	579.30	24.52	39.88
2002	241564.7	696.80	40.62	80.53
2003	252816.3	984.30	33.27	64.78
2004	269223	1,032.70	34.20	76.53
2005	279242.5	1,223.70	55.66	82.80
2006	288530.7	1,290.20	62.25	119.02
2007	299558.6	1,589.27	81.91	150.78
2008	311458.6	2,117.36	98.22	163.98
2009	327648	2,127.97	90.20	137.12
2010	344549.9	3,109.38	99.10	170.80
2011	353250.9	3,314.51	231.80	335.80
2012	358453.8	3,325.16	197.90	348.40
2013	372267.7	3,689.06	179.99	390.42
2014	385349	3,426.90	195.98	343.75
2015	385236.1	3,831.95	257.70	325.19
2016	369177.9	4,160.11	200.82	339.28
2017	362574	4,779.99	245.19	403.96
2018	360160.7	5,675.19	296.44	465.30

Source: CBN Statistical Bulletin (2018), World Development Index (2019)

Table 2: Presentation of Result

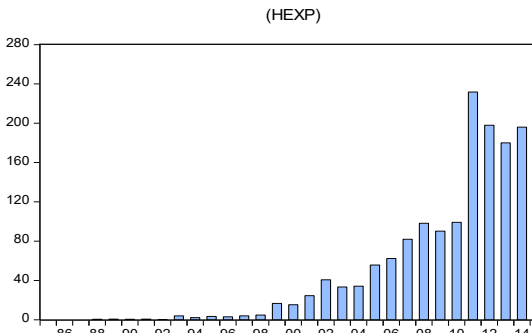
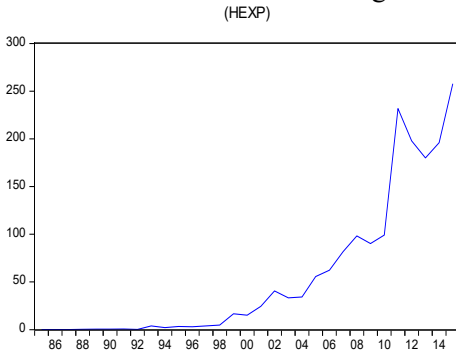
	Per Capita Income (PCI)	Total Recurrent Expenditure (TRE)	Expenditure on Health (HEXP)	Expenditure on Education (EEXP)
Mean	2624.6907	136.03100	56.08710	96.982900
Median	2626.9241	19.410000	16.64000	43.610000
Std. Deviation	1.37479E3	241.80576	77.24466	124.05687
Skewness	-0.6990000	2.2660000	1.459000	1.3310000
Kurtosis	0.1990000	4.7910000	0.985000	0.4870000
Minimum	2368.6316	7.5800000	0.040000	0.2300000
Maximum	4882.7900	984.30000	257.7200	390.42000
Sum	81365.410	4216.9600	1738.70	3006.4700
Observation	31	31	31	31

Total Recurrent Expenditure (TRE) The mean of total recurrent expenditure (TRE) is N136.031 Billion, while the maximum value is N984.300 Billion, minimum value is N7.580 Billion and the median is N19.410. The Standard Deviation is N241.806, skewness 2.266 and kurtosis 4.791. The data reveals that the mean is greater than the median while the median is greater than the mode. This means that the data is positively skewed. The standard deviation has a high divergence from the mean.



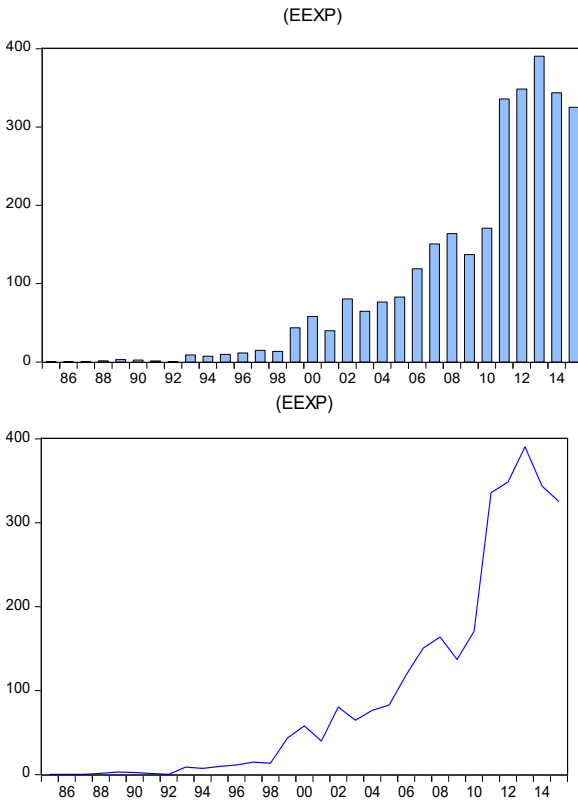
Expenditure on Health (HEXP)

The mean of expenditure on health (HEXP) is N56.087 Billion, while the maximum value is N257.720 Billion, minimum value is N0.040 Billion and the median is N16.640. The Standard Deviation is N77.245, Skewness 1.459 and Kurtosis 0.985. The data reveals that the mean is greater than the median while the median is greater than the mode. This means that the data is positively skewed. The standard deviation has a high divergence from the mean.



Expenditure on Education (EEXP)

The mean of expenditure on education (EEXP) is #96.983 Billion, while the maximum value is N390.420 Billion, minimum value is 0.230 Billion and the median is N43.610. The Standard Deviation is N124.057, Skewness 1.331 and Kurtosis 0.487. The data reveals that the mean is greater than the median while the median is greater than the mode. This means that the data is positively skewed. The standard deviation has a high divergence from the mean.



4.0 DATA ANALYSIS

Regression Analysis

To model the impact of government expenditure on poverty alleviation with respect to education and health, this study uses ordinary least square Regression equation. The equation used to estimate the extent to which poverty in Nigeria Is affected by government expenditure on education and Is affected by health is given as follows:

$$PCI = f (HEXP, EEXP, TRE.) \dots\dots\dots(1)$$

Equation 1 is transformed to econometric equation:

$$PCI = \alpha_0 + \alpha_1 HEXP + \alpha_2 EEXP + \alpha_3 TRE + e \dots\dots\dots(2)$$

Where,

PCI = per capital income as a proxy for poverty alleviation

TRE = total recurrent expenditure

H EXP = government expenditure on health

E EXP = government expenditure on education

LPCI = per capital income lag by a year

TRE = total recurrent expenditure lag by a year

H EXP = government expenditure on health lag by a year

E EXP = government expenditure on education lag by a year

e = the residual error term

Table 2: Regression Results of Variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-990.2396	340.7387	-2.906156	0.0076
LPCI	1.432099	0.128791	11.11952	0.0000
LHEXP	9.440551	3.889699	2.427064	0.0228
LEEXP	4.687135	2.136573	2.193763	0.0378
LTRE	-1.221522	0.239595	-5.098269	0.0000

R-squared	0.926219
Adjusted R-squared	0.914415
F-statistic	78.46063
Durbin-Watson stat	1.816919

Statistical Tests

The co-efficient of determination is 0.93, which implies that the model explains 93% of the variations in poverty alleviation. This shows that 93% of the variations in poverty alleviation are accounted for by changes in HEXP, and E EXP and TRE. This implies a very good fit, as only about 1% variation in PCI is left unaccounted for by the model. In essence, the model is perfectly explained by the data used.

The adjusted $R^2 = 0.914415$. This implies that even if all the missing explanatory variables are excluded, about 89% of the variation in poverty alleviation was accounted for by HEXP, EEXP and TRE,

Unit Root Test

Non-stationarity is usually associated with time series data. Hence, it is necessary to perform a pre-test to ensure that all variables are stationary either at level or difference before Co-integration test is performed.

Augmented Dickey Fuller Test on all the variables was carried out and the results are shown in the tables below:

Table 3: Summary of augmented Dickey Fuller Test on all the variables

Variable	Coefficient	p-value
PCI	-5.239335	0.0002
TRE	-4.751671	0.0007
HEXP	-5.764534	0.0000
EEXP	-4.518666	0.0070

Table 4: Johansen and Joselius Co- integration test on variables

Unrestricted Co -integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.953910	259.1336	95.75366	0.0000
At most 1 *	0.901216	169.8959	69.81889	0.0000
At most 2 *	0.861488	102.7660	47.85613	0.0000
At most 3 *	0.663917	45.43892	29.79707	0.0004
At most 4	0.378515	13.81743	15.49471	0.0881
At most 5	0.000820	0.023777	3.841466	0.8774

Trace test indicates 4 co-integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Co-integration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.953910	89.23767	40.07757	0.0000
At most 1 *	0.901216	67.12988	33.87687	0.0000
At most 2 *	0.861488	57.32710	27.58434	0.0000
At most 3 *	0.663917	31.62149	21.13162	0.0012
At most 4	0.378515	13.79365	14.26460	0.0592
At most 5	0.000820	0.023777	3.841466	0.8774

Max-eigenvalue test indicates 4 co-integrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Co-Integration Test (Hypotheses One and Two)

The results show that both traces statistics and max-eigen statistics test indicates 4 cointegrating equation at the 0.05 level. Consequently, the null hypotheses of $r=0$ is rejected and the alternate hypothesis is upheld. This implies that there is a relationship among poverty alleviation, total recurrent expenditure, expenditure on health, and expenditure on education, in Nigeria. Secondly, the nature of the relationship is uniquely long run.

4.1 Discussion of findings

Overtime, government expenditure on education and health sectors in Nigeria has been grossly inadequate to meet the pressing need of these crucial sectors. The level of government expenditure on health and education in any country determines the level of human capital development which will lead to better; skillful, efficient and productive labour force. The poor funding of these sectors have posed a serious constraint to the Nigeria economy overtime.

The human capital is still underdeveloped. It is the human capital that represents the value and worth of each employee which in turn is a factor of employees acquired knowledge, capabilities and skills. It is only education that can fill the gap. The significance of health and education in nation building cannot be overstated, since their economic contribution benefits both the individual directly and the society at large.

The information on government spending at times are incomplete due to the fact that only a fraction of the expenditure is usually undertaken while the remainder disappears as a result of corruption in most developing countries.

The main aim of this study is to investigate the effect of government expenditure on poverty alleviation in Nigeria between 1988 and 2018. To achieve this aim, a number of objectives were identified to guide the study.

Objective one which is “to examine the trend of government expenditure on health and education in Nigeria from 1988-2018” was answered by the descriptive statistics. Government expenditure on health was falling and rising throughout the period. It does not show a steady increase with increasing population. The result shows a steady increase in the amount spent on education on yearly basis, though not appreciably most times. When Compared to the level of population, government spending on education is not adequate enough.

Objective two which is “to investigate the effect of government expenditure on poverty alleviation in Nigeria from 1988-2018” was answered by Co-integration result discussed above. This study reveals that a relationship exists between Government expenditure and poverty alleviation in Nigeria. This agrees with the findings of Baghebo and Emmanuel (2015) that continuous improvement and restructuring of programmes targeted at alleviating poverty through increase in capital expenditure on economic, social and community services and qualitative governance would alleviate poverty in Nigeria.

Objective Three: which is “to evaluate the long run relationship between government expenditure and poverty alleviation in Nigeria” was answered by Co-integration result discussed above. The result also shows a stable and long run pattern of relationship between government expenditure and poverty alleviation. This agrees with Ogun T.P (2010) that massive investment in social infrastructure in cities would drastically reduce poverty in nation of the world.

This study revealed that a relationship exists between Government expenditure on Health and Education with poverty alleviation in Nigeria

1. The result also shows a stable and long run pattern of relationship between Government expenditure on these two sectors and poverty alleviation
2. The expenditure on Health was at its minimum (N 0.15Billion) in 1992 and at its maximum (N 296.44Billion) in 2018. The mean expenditure on health for 31 years is 56.08710 Billion. The expenditure on health was

falling and rising throughout the period. It does not show a steady increase with increasing population.

3. The expenditure on education was at its minimum in 1992 (N 0.29 Billion) while it reaches its maximum in 2018 (N 465.30Billion). The result shows a steady increase in the amount spent on education on yearly basis, though not appreciably most times.
4. When compared with education, the expenditure on health was relatively small most times. This means that the government spends more on education than on health.
5. When Compared to the level of population, government spending on education is not adequate enough.

5.0 CONCLUSION

This work was designed to examine the extent to which Government Expenditure has alleviated poverty in Nigeria. Research results shows that that both expenditure on health and education exhibit positive relationship on the dependent variable (Poverty Alleviation), This means that, increasing government spending on health and education translates to increase in poverty alleviation. This study concluded that the human capital development in Nigeria depends largely on the development of these sectors.

5.1 Recommendations

Based on these findings the following recommendations were made:

- (i) The Federal government of Nigeria should increase funds allocation to the education sector. This will improve human capital development and reduce poverty.
- (ii) The government should increase their expenditure on the health sector as this will lead to improvement in the sector. Good health will lead to increase in productivity which in turn will increase the standard of living of the people and their life expectancy rate.
- (iii) The federal government should also put in place a policy that is pro-poor in nature to combat poverty alleviation in Nigeria.
- (iv) Educational expansion should go along with management and service delivery reform. Proper resource planning and commitment on the side of the government will improve system efficiency and effectiveness within the educational sector.
- (v) Performance management measures should also be undertaken to reduce waste and excess costs, and to increase the internal efficiency of school systems; Improvement in educational quality, with proper attention given to the deployment and motivation of trained teachers and the provision of learning materials will also be an added advantage.
- (vi) Reducing the private costs of sending children to school for poor people is another way of alleviating poverty.

- (vii) The essential role of the state in health is to provide quality health facilities. Government should take health as public goods, in order to regulate health care, and health insurance, and to offer both curative and preventive cure for the poor. Good health itself, and many preventive and curative interventions, have public goods characteristics and strong positive externalities.

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