(RESEARCH ARTICLE)

Effect of government experience on education and health: Implications on economic growth of Nigeria 1981-2021

Akujuobi Chibuzo Anthony [*] and Tony-Okolo Chilezie Ngozi

Department of Social Sciences, Federal Polytechnic Nekede, Nigeria.

Abstract

This study analyzed government expenditure and economic growth of Nigeria for the period 1981-2021. Government expenditure was proxied with expenditure on education, health, social and community services while government total investment and net foreign trade were included as the intervening variables. Economic growth was proxied with gross domestic product. The data were analyzed using econometric procedures particularly the Auto regressive Distributed Lag (ARDL) model. The results showed that in the short run, government health expenditure exerted positive relationship with GDP which was not significant while education expenditure exerted significantly negative effect on the economy. The long run analysis revealed that government education expenditure had negative significant effect on GDP while health expenditure had positive significant effect on GDP. The intervening effects of social and community services expenditure and investment were positive but not significant while net foreign trade exerted negative effect in the model. The study concluded that government expenditure have not been appropriately channeled towards the education sector despite the amount spent on recurrent and capital expenditures to education whereas health expenditure increased growth in the economy significantly. It was recommended that government should increase budget allocations to education sector and also encourage private stake holders to invest in the education sector as well as engaging in foreign partnership in funding the health sector.

Keywords: Economic growth; Education; Government expenditure; Health

1. Introduction

Studies on government expenditure and economic growth has attracted a lot of attention from researchers and policy makers in both developing and developed countries over the years. (Kareem, Samuel, Olusegun and Arogundade, 2017; Onifade, Çevik, Erdoğan et al, 2020; Aluthge, Jibir and Abdu, 2021) .Interest in this area stems from the perceived importance of human capital development in accelerating the rate of growth of economies especially in less developed regions of the world (Obi and Obi 2014; Kareem, Samuel, Olusegun and Arogundade, 2017). This study takes a particular focus on education and health expenditure of government and how it affects growth.

In many developing countries like Nigeria, there is an increasing acceptance of education as a game changer through which the much needed economic growth and development can be actualized. As a result, there has been a push by international organization like UNESCO, World Bank, United Nations and the World health Organization for nations of the developing world to increase funding for education and health as a necessary condition for building the required pool of human capital that will help propel the economy to a level of sustained economic growth. (World Health Organization, 2006; World Bank, 1993) In Nigeria, like in other parts of the world, investment in human capital of which education is one key aspect of it is seen as a crucial component of the economic growth process. Consequently successive government has over time invested heavily in the education and health sector with the hope that this investments will spur long term economic

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[*] Corresponding author: Akujuobi Chibuzo Anthony

Studies have shown that Education and health are critical for economic growth and development because they provide skilled labor and are necessary for achieving other development goals (Amakom, 2012; Obi and Obi 2014; Ojo and Ojo 2022;). As a result, human capital, together with physical capital, are key components of a country's prosperity. Consequently, emerging countries have attempted to build human capital by increasing government expenditures on education, health, and other social services (Akwe, 2014). The idea behind the rise in government expenditure on education and health is that increased investment in human capital is necessary to create a pool of human capital that is necessary to achieve accelerated economic growth and development.

Investment in health is crucial for the economy due to a number of reasons. Healthy workers lose less time from work due to ill health and are more productive when working. Health gains had the economic consequences of widespread economic growth and an escape of ill-health traps in poverty (Amakom, 2012). There has been a growing interest to extend the relationship between health and economic growth, catalyzed in considerable extent by a 1993 World Bank Report on Health (World Bank 1993). Barro (1996) comments that health is a capital productive asset and an engine of economic growth. Fifty percent of economic growth differentials between developed and developing nations is attributable to ill-health and low life expectancy. On the other hand, investment in education is important for the development of skills necessary for survival in contemporary global labor market that is highly competitive and skills driven.

Furthermore, the development of human capital has been recognized by development economists to be an important prerequisite and an invaluable asset for a country's socio-economic development. This can only be achieved through increases knowledge, skills and capabilities acquired through education and training by all the people in the country. Therefore, as the global economy shifts towards a more knowledge-based sector skills and human capital development becomes a central issue for policy-makers and practitioners engaged in economic development both at the national and regional level (OECD, 2002). Yet, the impact education and vocational training activities exert upon changing national and regional economies remains less than thoroughly explained and analyzed. Since the introduction of human capital theory in the 1960s, a number of studies have attempted to address this and related issues.

Furthermore, some notable interventions in recent years by the CBN include the N200 billion Commercial Agriculture Credit Scheme; N200 billion Restructuring and Refinancing Facility; N200 billion SME Credit Guarantee Scheme; and N300 billion Powers and Airline Intervention Fund, amongst others. For instance, the Bank of Industry (BOI) implemented some intervention funds such as the ₦5billion BOI/Dangote Matching Fund, Cassava bread Fund, N1.1 billion Cottage Fund, ₦5 billion FGN Special Intervention Fund for MSME, N800 million National Programme for Food Security, ₦13.6 billion Rice and Cassava Intervention Fund, Sugar Council Development Fund, National Automotive Council Fund comprising ₦1bn for Automotive Assembly Plants, ₦200 million for automotive component manufacturers, ₦100 million for automotive garage workshop and ₦20 million for artisans, craftsmen and mechanics. Also the banks have disbursed ₦8.4 billion under the Cement Fund. Similarly, the Bank of Agriculture disbursed ₦41 billion to over 600 enterprises across Nigeria in the last ten years, ₦3 billion on-lending facilities to about twelve states of the Federation and ₦4billion to about 30,000 beneficiaries. In addition to these, a total of US$86.56 billion was received as capital inflows into the economy in the form of direct and portfolio investment, trade credits and loans as well as currency and deposits from 2011 to 2015.

It has been stressed that the differences in the level of socio-economic development across nations is attributed not so much to natural resources and endowments and the stock of physical capital but to the quality and quantity of human resources (Dauda, 2010). Oladeji and Adebayo (1996) opined that human resources are a critical variable in the growth process and worthy of development. They are not only means but, more importantly, the ends that must be served to achieve economic progress. 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 (Sankay, Ismail and Shaari, 2010).

The Nigerian government has shown commitment to boosting productivity, as well as, diversifying the domestic economic base, however, the human capital required for the attainment of these objectives have been scarce. This has necessitated the interventions of the governments in the area of health and Education development through the provision of the required huge capital outlay necessary for the development of the health and educational sector to serve as a propeller of economic growth.

Data from the Central Bank of Nigeria statistical bulletin shows that Government recurrent expenditure on health and education has risen rapidly in nominal terms over the years and reached ₦620 billion which represent 5% of total government expenditure in 2021. Capital expenditure on health and education has also risen rapidly over the years

starting at ₦1.3 billion in 1981 which represented 19.7% of total capital expenditure, and reaching ₦306 billion representing 12.1% of total federal government capital expenditure.

The growth in government expenditure on health and education is expected to create the pool of human capital necessary to drive government developmental goals. The overall aim is to drive economic growth through the massive investment in human capital development as represented by the investment in health and education. However, despite the growth in government expenditure, output growth has not followed a commensurate trajectory. Output growth which stood at 5.1% in the year 2000, fell to negative trend in 2018 culminating in economic recession and fell by 2% in the year 2020 before rising to about 3% in the year 2021. The erratic nature of the growth in economic growth despite huge investment in human capital development meant to propel growth has led to renewed interest in the impact of government expenditure on economic growth in Nigeria.

Given the above information, it is clear that expenditure on education and health has not translated to the expected growth in the economy, this has led to several studies attempting to investigate the impact of government expenditure on health and education on economic growth in Nigeria hence the need for this study. Importantly, previous studies have produced conflicting results (Eneisik, 2021; Obiamaka, et al 2016; Obi and Obi 2014; Kareem, Samuel, Olusegun and Arogundade, 2017). This study is an attempt to verify the relationship between the variables in the light of available data. To achieve the broad objective of investigating the effect of government expenditure on economic growth, the following research question guides this study.

- What is the effect of government education expenditure on economic growth in Nigeria?
- Has government expenditure on healthcare significantly affected economic growth in Nigeria?

The hypotheses tested in this study are stated below in their null forms.

- Ho1: Government expenditure on education has no significant effect on economic growth in Nigeria.
- Ho2: There is no significant effect of government health expenditure on economic growth in Nigeria.

This study spans the years 1981 to 2021. Time series data for any period before or after the duration of this analysis is not included because the data used for this study is confined to the period (1981-2021). With regard to the variables' scope, it will be restricted to government expenditure on health, education, social and community services, government investment and net foreign trade (net export).

2. Literature review

This section covers the conceptual, theoretical and empirical reviews. Also, the gap in literature is detected and discussed.

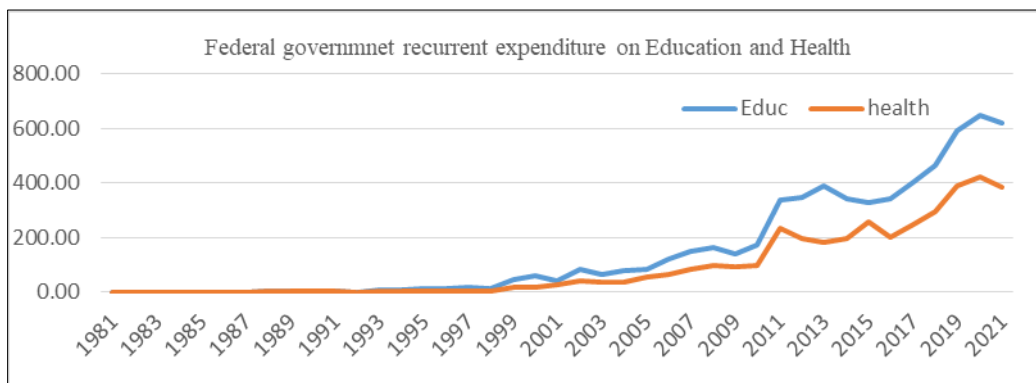### 2.1. Government expenditure on health and education

The importance of health and education in an economy can never be overemphasized. According to UNESCO (2020), health and wellbeing are built on a foundation of high-quality education. People need to know how to prevent illness and disease if they want to live long, and healthy. Children and adolescents must be fed properly and in good health in order to learn. Both health and education are fundamental, universal human rights that are necessary for both social and economic advancement. Seeing the relevance of health and education in achieving economic development, the united nation (UN) encouraged every economy to spend/invest more in education and health. Government spending is a powerful technique for fiscal policy that may be used to control all aspects of the economy, including health and education (Ekpo, Daniel, and Okon, 2022).

Government expenditure is money spent by governmental agencies at the federal, state, and municipal levels. Government spending is divided into economic and functional (sectoral) components in the majority of nations, including Nigeria. Capital and recurring expenditures are the two categories under which government spending is classified economically. Recurrent expenses are payments for transactions within a year, whereas capital expenditures are payments for non-financial assets utilized in production for more than a year (CBN, 2019). The term "capital expenditures" refers to costs associated with the construction of long-lasting assets, such as buildings, roads, drainage systems, airports, seaports, plants, machinery, and equipment purchases.

Recurrent expenses, often known as consumption expenses, include loan interest payments, transfers, wage payments, and the purchase of goods and services. General services, defense, public order and safety, education, health, social security and welfare, agriculture, manufacturing and communication, and environmental protection are included in the

functional (sectoral) component categorization of public expenditures (Heller and Diamond, 2019). In Nigeria, government spending is broken down into four functional categories: administration, economic services, social and community services, and transfer payments along with two economic component categories: capital and recurrent expenditures (CBN, 2019).

Looking at the figures for Nigeria's government expenditure over the years, starting from a value of ₦17 million in 1981, government expenditure on education rose to about 2.4 billion in 1990 and further to about 57 billion naira in 2000. By the year 2010 it had risen to a whopping 170.80 billion naira before eventually rising to ₦620 billion being 5% of total expenditure as at end of the year 2021. In percentage terms, Nominal expenditure in education rose by about 365 000 % points from 1981 to 2021. Similarly, expenditure on health rose drastically from 1981 to 2021. Standing at 0.08 billion naira or 0.7% of total expenditure in 1981, government recurrent expenditure on health was ₦50 million naira or 0.8% of total expenditure in 1990. By the dawn of the new millennium in the year 2000 it stood at ₦15.22 billion or 2% of total expenditure before rising to about ₦386.24 billion or 3.17% of total government expenditure in 2021.

Figure 1 Trend of government recurrent expenditure on health and education (Source: Authors compilation from CBN statistical bulletin 2021)

Capital expenditure on health and education has also risen rapidly over the years. Standing at ₦1.3 billion in 1981 or 19.7% of total capital expenditure, it stood at ₦2.10 billion or 8.7 per cent of total expenditure in 1990 before rising to about ₦30 billion representing 8.7% of total capital expenditure. By 2021 it had risen to a whopping ₦306 billion representing about 12.1% of total federal government capital expenditure in Nigeria as seen in the figure 2 below
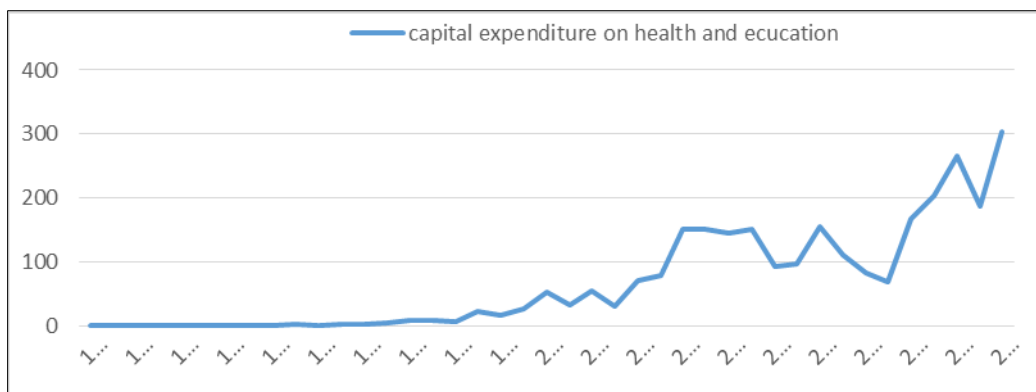
Figure 2 Trend of government capital expenditure on health and education (Source: Authors compilation from CBN statistical bulletin 2021)

According to Olakunde (2012), expenditure on health care stimulates economic growth. Health investment is crucial to a society's development since a healthy population will earn more money through investments than from paying medical costs. A link between health and economic growth was revealed by numerous theories of economic growth. It was made very obvious that the health care financing sector is a major engine of economic expansion. According to Onisanwa (2014), education and health are the main drivers of human capital development, which will afterwards result in economic growth.

2.2. Theoretical Review

2.2.1. Wagner's theory

Wagner (1890) was likely the first systematic theoretical construct to bring up an explanation for the increasing scope of state or government activities in countries, among the countless attempts to explain the development in government expenditure. Despite the fact that Wagner's theory has been interpreted in a variety of ways, Rocktenwald (1978) stated that "...from the standpoint of political economy, this law means absolute and even relative growth" and that "...an ever increasing and increasingly important proportion of aggregate demand of an advancing civilized people is met by the state instead of others..."

According to Wagner, the government has to spend money for numerous purposes in order to fulfill its many responsibilities to society. He continued by claiming that as the size of government grew, so did the amount of money spent on various developmental programs. As a result, public sector expansion and economic growth, as well as public spending, progressed in the same direction.

To put it another way, as the economy grew, the government tended to invest more in the pursuit of industrialization and social development, as Bhatia (1985), Recktenwald (1978), and Ghandi (1971) argued. This was, in fact, the Wagner's law's nexus, as a result, it was hypothesized that spending was positively connected with economic growth and development. As previously stated, Wagner's rule remained unchallenged until 1961, when Peacock and Wiseman (1961) proposed an alternate explanation that government spending increased as a result of societal unrest. They determined from the findings that government expenditure in the United Kingdom moved in a spasmodic and step-like fashion, with the expansion in government expenditure concentrated within the disturbance period and occurring with displacement impact. People appeared to tolerate the increased level of taxes connected with every disturbance, and even after the disturbance, government expenditures did not return to their prior levels, resulting in the displacement effect.

Several studies have been conducted to establish the nature of changes in government expenditure across countries since Wagner's works in 1890 and Peacock and Wiseman's in 1961. These findings contradicted the theory that government spending increased in tandem with economic growth (Beck, 1976 and 1979; and Pluta, 1981 and 1979). The drop in government spending was noted in both rich and developing countries, but it was more noticeable in poor countries.

2.2.2. Keynesian theory

The Keynesian theory viewed government expenditure as regards to economic growth, which has its ideology rooted in saying that public expenditure could be manipulated to affect the level of national income, an increase in public expenditure leading to an increase in national output. In theory, Keynes regards fiscal arrangements of public disbursements as an inspiring element which can be employed to stimulate economic growth. From the Keynesian thought, public spending could be used to affect the growth of an economy positively. Since expansion in the level of government expenditures will probably lead to an upturn in the rate of employment, cost-effectiveness, and venture utilizing multiplier effects on increasing demand. As a result, government disbursement supplements the aggregate demand, which aggravates an increased output depending on disbursement multipliers (Obiamaka et al., 2016).

The essence of economic modeling is to represent the phenomenon under investigation in such a way to enable the researcher to attribute numerical values to the concept (Howard and Gary, 1984). However, Based on the objectives of the study, this research adopted the Keynesian model. The Keynesian model believes that increase in government spending should promote economic growth. In line with the above theoretical framework, the model specification for the study is as stated below:

$$Y = C + I + G + NX(X-M) \qquad \qquad \text{...[1]}$$

Where:
Y= Economic Growth (proxy by GDP)
C = Consumption (which is constant)
I = National Investment = Savings
G = Government Expenditures
NX = Net Export
X = Export
M = Import

2.3. Empirical Review

Okwu, *et al* (2022), examined the effect of government education expenditure and human capital development in Nigeria from 1990 to 2020. The dependent variable in the analysis was gross secondary school enrolment rate, the independent variables were recurrent and capital expenditure on education, and the control variable was recurrent expenditure on health. Using the Autoregressive Distributed Lag Model (ARDL), their study showed that recurrent expenditure on education and capital expenditure on education had negative insignificant effects on gross secondary school enrolment rate while recurrent expenditure on health had a positive but insignificant effect. However, the independent variables had joint effects on the dependent variable. Eneisik (2021), did a study tilted impact of public expenditure on human capital development. Human capital development was proxied by the human development index, while public expenditure was proxied by public education and health expenditure Ordinary Least Square estimation procedure was adopted. According to the findings, public education spending has a considerable impact on the human development index. Evidence suggests that public health spending has a strong positive impact on the human development index.

Keji (2021), examined the nexus between human capital and economic growth in Nigeria. The Vector Auto regression and Johansen techniques were used to estimate the variables. The results disclosed that the estimated coefficients of human capital have long-run significant impact on economic growth in Nigeria. Obi, Obi, and Ejefobihi, (2020) investigated the effectiveness of Nigerian education spending. The outcomes of the study show that education spending has a considerable negative influence on Nigeria's economic growth. In addition, education spending has a major positive impact on Nigeria's human capital development. Finally, education spending has a favorable but minor impact on Nigeria's literacy rate. Utpal and Christopher (2020) conducted a study on government investment on human capital and growth in Namibia. The findings showed that government spending on education has a strong long-run positive association with literacy rates, net primary, and gross tertiary enrolment rates. There was no correlation between government education funding and gross enrolment rate at the primary and secondary levels.

Using a test of causation, Anyeneh, Ananwude, Ezu, and Nnoje, (2020) determined the impact of government recurrent and capital expenditure on the level of living in Nigeria. The study used the Autoregressive Distributive Lag (ARDL) and found that government recurrent and capital expenditures have a considerable impact on Nigeria's standard of life. Nnenna (2020) in her study of public expenditure budgetary management and economic growth in Nigeria. Using Multi-regression models and Ordinary least square estimation procedures, the study suggested that federal government should put in place proper budgetary control policies, as well as effective budget monitoring and implementation mechanisms that would ensure an inclusive and balanced sectorial contribution to economic growth and development that is free of unwanted impacts

Edeme and Nkalu (2019) assessed composition and distributional impact of public expenditure on human development in Nigeria from the period of 2007 to 2017. The study revealed that education, health, agriculture and rural development, and water resources are more effective in increasing human development than energy, housing, and environmental protection expenditure. Azuh, Osabohien, Orbih, and Godwin, (2020) looked into effect of government health spending on under-five mortality in Nigeria. The findings revealed that, while public health spending is statistically significant, it has a positive correlation with under-five mortality. Imandojemu, Imonikhe, Akinlosotu, and Babatunde (2020) studied effect of health spending and economic growth in Nigeria From 1985 to 2019. The empirical results revealed that the variables had a long-term association, whereas the ECM revealed that in the case of disequilibrium, the system would return to equilibrium with an adjustment speed of around 85.5 percent.

Several studies have sought to investigate the impact of human capital development on economic growth, with many concluding that there is a significant relationship between human capital development and economic growth (Okwu, *et al*, 2022; Obiamaka et al, 2016; Keji, 2021). While researchers like Okwu, *et al*, (2022), Eneisik (2021), Edeme and Nkalu (2019) reviewed the impact of public expenditure on human capital development, and their works were limited to 2019. In addition, this study focuses on education and health expenditure with the inclusion of social and community services, government investment and net foreign trade as intervening variables in order to modify previous models and fill the variable gap identified in literature. This study extends the time series analysis to 2021, as no other work had done so. The Keynesian theory was used in this study since it met the study's aims. According to Keynesian theory, increase in government expenditure should boost economic growth in any economy.

3. Methodology

This study makes use of the *ex-post facto* or after-the-fact research design. The use of secondary data to test the hypothesis formulated formed the basis for adoption of the *ex-post facto* design. The data are sourced mainly from the

Central Bank of Nigeria Statistical Bulletin (2021) edition and the National Bureau of Statistics (NBS, 2021). The data used in the estimation are time series and annual in nature. They were therefore subjected to econometric tests using e-views 9 statistical software.

3.1. Model Specification

The model construct for this study is therefore fashioned according to the work of Eneisik, (2021) where the followings were captured:

$$HDI = \alpha_0 + \alpha_1 PEE + \alpha_2 PEH + \mu \qquad \qquad ...[2]$$

Where:
HDI = Human Development Index
PEE = Public Expenditure on Education
PEH = Public Expenditure on Health
α_1 to α_2 = Coefficient of independent Variables

To empirically analyze and capture the study's objectives and to address the research questions raised, the ARDL model specification was used because it is preferable when dealing with variables that are integrated in different orders, I(0), I(1), or a combination of the two, and is robust when the underlying variable has a single long run relationship (bounds test).

To modify the model in equation [1], the model is explicitly stated as follows:

$$GDP = a_0 + \alpha_1 EDU + \alpha_2 HEALTH + \alpha_3 OSCS + \alpha_4 INV + \alpha_5 NFT + \varepsilon \; .... \; [3]$$

Where:
GDP = Economic Growth (proxy by GDP)
EDU = Government expenditure on Education
HEA= Government expenditure on Health
OSCS = Government expenditure on Other Social and Community Services
INV = Investment
NFT = Net Foreign Trade (net export)
ε = Stochastic Error Term
α_1 to α_5 = Coefficient of independent Variables

To curtail the effect of a spurious regression the model will be transformed into a log-linear form as:

$$LOG\_GDP= a_0 + \alpha_1 LOG\_EDU + \alpha_2 LOG\_HEALTH + \alpha_3 LOG\_OSCS + \alpha_4 LOG\_INV \; \alpha_5 LOG\_NFT + \varepsilon \; .... \; (4)$$

Where LOG= Logged values of the endogenous and exogenous variables. It is expected that government expenditure variables should all have and direct effect on economic growth in Nigeria.

4. Result

4.1. Unit Root Test

A unit root test (ADF) was conducted to ascertain whether the variables in the model are stationary. This is necessary as it helps to avoid spurious regression results. The null and alternate hypothesis for the unit root test is stated thus:

- H_0: The variables have unit root (i.e. it is stationary)
- H_1: The variables have no unit root

We summarize the test as shown below:

Table 1 Unit Root Test

Variable	ADF test statistics	Critical value 5%	Order of integration	Decision Rule
LOG_GDP	-3.6689	-2.9411	I~ (1)	Reject Ho
LOG_EDU	-7.8854	-2.9411	I~ (1)	Reject Ho
LOG_HEALTH	-10.2330	-2.9411	I~ (1)	Reject Ho
LOG_OSCS	-5.0518	-2.9604	I~ (1)	Reject Ho
LOG_INV	-5.9028	-2.9411	I~ (1)	Reject Ho
LOG_NFT	-3.8489	-2.9677	I~ (0)	Reject Ho

From table 4.1, observe that the log values of variables gross domestic product (LOG_GDP), government expenditure on education (LOG_EDU), government expenditure on health (LOG_HEALTH), government expenditure on social and community services(LOG_OSCS) and investment were integrated of order one (I ~ (1)) as it was stationary at first difference form; while and Net foreign trade (LOG_NFT), was stationary at level form which implies that it was integrated of order zero (I ~ (0)). The decision is based on the fact the ADF statistics that is greater than the ADF critical values at 5%, we reject H_0 and conclude that the variable is stationary.

4.2. ARDL Bounds Test

Co-Integration analysis helps to clarify the long-run relationship between integrated variables. A necessary condition for testing for ARDL bound co-Integrating test is that each of the variables be Integrated of either of order one or zero or both (Pesaran, Shin and Smith, 2001). Since all the variables are integrated of order one and zero, we proceeded to estimate the ARDL bound test. The null hypothesis of ARDL bound co-Integration is that the variables are not co-integrated as against the alternative that they are co-Integrated. The decision rule is to reject the null hypothesis if the F-statistics is greater than the upper bound critical values at chosen level of significance. The result of the ARDL co-Integration test for the first and second objectives is shown in table 4.2 below.

Table 2 ARDL bound co-integration (5% critical value) test result for the model

F-Statistics	K	Significance level	Critical Bound Value	
			I0 (Lower Bound)	I1 (Upper Bound)
18.182	5	5%	2.39	3.38

Source: Author's computation with E-views 10

From table 2 the F-statistics for the model is 18.182 and is greater than the upper (I1) bound of 3.38 at 5% level of significance. Thus, we reject the null hypothesis and conclude that there is presence of co-integration in the model. This implies that there is a long run relationship between government expenditure on education and health and economic performance in Nigeria. Since there is a long run relationship we therefore estimate the short run and long run ARDL regression models and the results are presented in tables 4.3 and 4.4 respectively.

4.3. Short run ARDL model estimation

In table 3; the coefficient of the error correction term (ECM) is statistically significant and carries the expected negative sign at 5% level of significance. The speed of adjustment is -0.1759 that is 17.59% of the adjustment to equilibrium of gross domestic product is expected to occur in the long run. This result indicates that ignoring error correction in non-stationary time series analysis would lead to misspecification of the underlying process to achieve strong economic performance.

The short run dynamics shows that; government expenditure on education, shares a negative significant relationship with economic performance (gross domestic product) in Nigeria on the short run. The current and past year value indicates that government expenditure on education will yield significant negative returns on economic performance in Nigeria. As government expenditure on education at current and past period changes by a unit, it causes her gross domestic product to fall by 0.02900 and 0.01669 units respectively.

Table 3 Summary of parsimonious short run relationship result between government expenditure and economic growth in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG_EDU)	-0.029000	0.011419	-2.539767	0.0236
D(LOG_EDU(-1))	-0.016689	0.005519	-3.024239	0.0091
D(LOG_HEALTH)	0.019378	0.011517	1.682543	0.1146
D(LOG_OSCS)	0.021614	0.002770	7.802473	0.0000
D(LOG_OSCS(-1))	0.009342	0.002353	3.970620	0.0014
D(LOG_INV)	-0.002877	0.003269	-0.880191	0.3936
D(LOG_INV(-1))	-0.002966	0.003477	-0.852946	0.4080
D(LOG_NFT)	-0.002999	0.005553	-0.540040	0.5977
ECM(-1)*	-0.175942	0.013048	-13.48402	0.0000

Government expenditure on health had a positive short run coefficient, indicating that, it shares a positive insignificant short run relationship with gross domestic product. Hence if government expenditure on health at current period were to change by a unit, it causes Nigeria's gross domestic product to change by 0.01938 units.

Government expenditure on other social and community services shares a positive significant relationship with economic performance (gross domestic product) in Nigeria on the short run. The current and past year values indicates that government expenditure on other education and health will yield significant positive returns on economic performance in Nigeria, such that a unit change in current and past period of government spending on health will cause gross domestic product to increase by 0.0216 and 0.00934 units respectively.

Investment at current and past period of one lag had an insignificant negative coefficient. This signifies that investment shares an insignificant negative relationship with Nigeria's economic performance on the short run. Hence as investment at current and past period changes by a unit, it causes gross domestic product to fall by 0.00934 and 0.0028 units respectively.

Finally, the study found that NFT has a negative but statistically insignificant impact on economic growth in the period under review. Insignificant impact of NFT on economic growth implies that NFT is not a major determinant of economic growth in the period under consideration

4.4. Long run ARDL model estimation

It's imperative to examine the implications of the long run coefficient of the exogenous variable on the endogenous variable. The ARDL long run coefficient test is as shown in the table below.

Table 4 Summary of long run coefficient of government expenditure on education and health and economic performance in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_EDU	-0.333011	0.132064	-2.521589	0.0244
LOG_HEALTH	0.493105	0.131524	3.749153	0.0022
LOG_OSCS	0.038650	0.030275	1.276630	0.2225
LOG_INV	0.057767	0.034125	1.692799	0.1126
LOG_NFT	-0.071208	0.055754	-1.277184	0.2223
C	4.566268	0.172698	26.44077	0.0000

Source: Author's computation with E-views 9

The long run coefficient from table 4 shows that the joint impact of all exogenous variables (GDP, HEALTH, OSCS, INV, and NFT) on the endogenous variable will amount to 4.5663 units; this is on the basis that they are all held at constant. In other word if government expenditure on education and health are held at constant, Nigeria's gross domestic product will amount to 4.5663 unit.

Government expenditure on education (LOG_EDU) had a negative long run coefficient value, suggesting that it shares a negative long run relationship with gross domestic product in Nigeria. This entails that as Nigeria's government expenditure on the education sector increases by a unit, it causes her gross domestic product to fall by -0.3330 units. The significant test, revealed that government expenditure on education has a statistically significant impact on Nigeria's economic performance.

Government expenditure on health had a positive long run coefficient, suggesting that there exist a positive long run relationship between government expenditure on health and gross domestic product in Nigeria. Therefore if government spending on the health sector were to increase by a unit it will cause an increase in Nigeria's gross domestic product by 0.4931 units. The significance test shows that government expenditure on health had significantly impacted on economic performance in Nigeria and will continue to do so on the long run.

Government expenditure on other education and health has a positive long run coefficient value of 0.03865, implying that government expenditure on other education and health shares a positive long run relationship with gross domestic product in Nigeria. This suggests that a unit increase in government spending on other social and community services, it will cause a decrease in economic performance in Nigeria. The significant test showed that government expenditure on other education and health (LOG_OSCS) has insignificantly impacted on economic performance in Nigeria.

Investment has a positive long run coefficient value of 0.0578, implying that investment shares a positive long run relationship with gross domestic product in Nigeria. This suggests that a unit increase in investment, will cause an increase in Nigeria's gross domestic product up to the tune of 0.0578 units. The significant test showed that investment (LOG_INV) has insignificantly impacted on economic performance in Nigeria.

Net foreign trade, which looks at the difference between export receipt and import payment, had a negative long run coefficient, indicative of an inverse relationship with gross domestic product in Nigeria. Hence, as net foreign trade changes by a unit, it results to 0.0712fall in Nigeria's gross domestic product. The significance test showed that net foreign trade has had an insignificant impact on economic performance in Nigeria.

Adjusted R-squared in the model is 0.9981. This shows that the explanatory variable could explain up to 99.81% of the total variation in the model. In other words, government expenditure on education and health variables (government expenditure on education, government expenditure on health, and government expenditure on other social and community services, investment and net foreign trade) explains up to 99.81% of the total variations in Gross domestic product in Nigeria.

4.5. Test of Hypotheses

4.5.1. Hypothesis 1

Ho$_1$: government expenditure on education has no significant impact on economic performance in Nigeria

Decision: From table 4.4 (ARDL long run coefficient result), the probability of t-stat of parameter (LOG_EDU) was 0.0244, and less than 0.05 critical values. Thus we reject the null hypothesis and conclude that government expenditure on education have a significant impact on economic performance in Nigeria.

4.5.2. Hypothesis 2

Ho$_2$: government expenditure on health has no significant impact on economic performance in Nigeria

Decision: From table 4.4 (ARDL long run coefficient result), the probability of t-stat of parameter (LOG_HEALTH) was 0.0022, and less than 0.05 critical values. Thus we reject the null hypothesis and conclude that government expenditure on health has a significant impact on economic performance in Nigeria.

5. Discussion of Findings

This study seeks to investigate the impact of government expenditure on education and health implication on economic growth in Nigeria for 40 year period from 1981-2021, the findings from this research are as follows;

The Stationarity of the time series data was ascertained by using the Augmented Dickey fuller Unit root test at 5% critical value, the result showed that gross domestic product, government expenditure on education, government expenditure on health , government expenditure on other education and health and investment were integrated of order one (I~(1)) as it was stationary at first difference form; while and Net foreign trade was stationary at level form which implies that it was integrated of order zero (I~(0)).

Subsequently the ARDL test was conducted to test the dynamics of the model. The ARDL co-Integration bound test result showed that F-stat was 18.182 and exceeded the lower and upper bound test which were 2.39 and 3.38 respectively, entailing at 5% critical value, that there was presence of co-integration implying that there is a long run relationship between government expenditure on education and health and economic growth in Nigeria.

There was also affirmation of a short run relationship between government expenditure on education and health and economic growth in Nigeria, with the result revealing any disequilibrium in economic performance will be corrected at an adjustment speed of 17.59% within a year. Government expenditure on education shared a negative significant relationship with economic performance (gross domestic product) in Nigeria on the short run. This findings is line with the study of Obi and Ejefobihi, (2020) who found a negative relationship between government expenditure on education and economic growth but contradicts the study by Edeme and Nkalu (2019) who found a positive relationship between government health expenditure and economic growth. The current and past year values indicate that government expenditure on education will yield significant negative returns on economic performance in Nigeria. As government expenditure on education at current and past period changes by a unit, it causes her gross domestic product to fall by 0.02900 and 0.01669 units respectively.

Government expenditure on health shared a positive insignificant short run relationship with gross domestic product. Hence if government expenditure at current period were to change by a unit, it causes Nigeria's gross domestic product to change by 0.01938 units. The finding of a positive relationship between government expenditure on health and economic growth in Nigeria is in line with the result obtained from a study by Oserei and Uddin (2019) as well as the study by Eneisik (2021) both of which found a positive relationship between expenditure on health and economic growth in Nigeria. Similar positive relationship was found by Utpal and Christopher (2020).

Government expenditure on social and community services shared a positive significant relationship with economic performance (gross domestic product) in Nigeria on the short run. The current and past year values indicates that government expenditure on other education and health will yield significant positive returns on economic performance in Nigeria, such that a unit change in current and past period of government spending on health will cause gross domestic product to increase by 0.0216 and 0.00934 units respectively.

Investment at current and past period of one lag shared an insignificant negative relationship with Nigeria's economic performance on the short run. Hence as investment at current and past period changes by a unit, it causes gross domestic product to fall by 0.00934 and 0.0028 units respectively.

The long run findings showed that; Government expenditure on education had a negative significant long run relationship with gross domestic product in Nigeria. This entails that as Nigeria's government expenditure on the education sector increases by a unit, it causes her gross domestic product to fall by -0.3330 units. This is in line with the short run scenario and conforms to similar findings by

Government expenditure on health had a positive significant long run relationship between government expenditure on health and gross domestic product in Nigeria. Therefore if government spending on the health sector were to increase by a unit it will cause an increase in Nigeria's gross domestic product by 0.4931 units. This finding in in line with a similar findings by Imandojemu, Imonikhe, Akinlosotu, and Babatunde (2020) who documented a positive long run relationship between government expenditure on health and Economic growth in Nigeria.

Government expenditure on social and community services has a positive insignificant long run relationship with gross domestic product in Nigeria. This suggests that a unit increase in government spending on other social and community services, it will cause a decrease in economic performance in Nigeria.

Investment has a positive insignificant long run coefficient value of 0.0578, implying that investment shares a positive long run relationship with gross domestic product in Nigeria. This suggests that a unit increase in investment, it will cause an increase in Nigeria's gross domestic product up to the tune of 0.0578 units. The significant test showed that investment has insignificantly impacted on economic performance in Nigeria.

Net foreign trade, which looks at the difference between export receipt and import payment, had a negative long run coefficient, indicative of an inverse and insignificant relationship with gross domestic product in Nigeria. Hence, as net foreign trade changes by a unit, it results to 0.0712fall in Nigeria's gross domestic product. The reason for this weak impact on economic performance is the import dependent dominance of our international trade, and accumulated years of negative balance of trade.

Diagnostic test were employed, and it showed that variations in government expenditure education and health and other control variables could confidently explain up to 99.81% of variations in Nigeria's Gross domestic product (economic performance). The F-stat was 886.401 and its probability was 0.0000 showing that government expenditure on social education and health have had significant impact on economic performance in Nigeria.

6. Conclusion

This study examined the effects of government expenditure on education and health implication on economic growth in Nigeria for a 40 year period from 1981-2021, the findings from the research led to the conclusion that government expenditure have not been appropriately channeled towards the education sector because the sector has increasingly decreased the pace of economic growth despite the amount spent on recurrent and capital expenditures to education. Government expenditure on health exhibited the expected sign increasing GDP significantly. Thus, while education expenditure retards growth, health expenditure increased growth in the economy.

Recommendations

The following recommendations becomes necessary at this point:

- Since government expenditure on education contribute negatively to economic growth both in short and long run, this evidently conform to the inadequate budget allocation to educational sector; in this case government should increase budget allocations to educational sector and also stake holders and private individuals should be encourage to invest on education in the country.
- Since government expenditure on health contribute positively to economic growth both in short and long run though was not significant in the short run, government are encouraged also to invest adequately on health sector especially through foreign partnership which will be beneficial to the citizens both in the short run and the long run
- Given that government fiscal position was positively influenced by economic activity, a symbiotic relationship might be exploited by policy makers to accelerate growth. For planning, the results are very crucial. This is because, as economy expands, public sector financial commitment increases, which may be sustainable if the revenue side is concomitantly strengthened. It is, therefore, possible to plan and implement improvement in taxation as the economy grows to avoid fiscal indiscipline.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

'The present research work does not contain any studies performed on animals/humans subjects by any of the authors'.

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