Innovations

Health Expenditure and Economic Growth: The Nigerian Experience

Dr. T. O. Awogbemi
Department Of Economics, Delta State University, Abraka, Nigeria
Received: 15 June 2022 **Accepted:** 04 July 2022 **Published:** 15 July 2022

Abstract
Expenditure on health is an essential element of total expenditure in any nation which could propel economic growth through expansion of existing structure or through the supply of equipments or other investment opportunities. This study therefore explored the impact of health expenditure on Nigeria's economic growth for the period between 2000 and 2021. Error Correction Model Estimates (ECME) was adopted to empirically examine the impact of repressors on the dependent variable. The descriptive analysis of the data revealed that emphasis is on recurrent expenditure rather than capital expenditure. The empirical results using the Error Correction Model Estimates does not found support for increasing health expenditure as it negatively affect economic growth of Nigeria both in the short-run and the long-run. It is concluded that though government expenditure on health is very vital, emphasis must be placed on capital expenditure to a reasonable extent. Therefore, Nigerian government should intensify efforts towards increasing the Abuja declarations of allocating at least 13-15 percent of annual budget to the health sector for effect funding as well as focus more on health outcomes and its impacts on economic growth in Nigeria.

Keywords: *1.Health Expenditure, 2.economic growth, 3.Nigeria, 4.ECME, 5.health financing*

Introduction

In any nation, there can be no meaningful economic growth without adequate investment on health care of the people. To buttes the foregoing viewpoint, Ojo and Ojo (2022:2) posited that "investing in health and education has recently become critical social priorities, as adequate human capital improves workers' skills, efficiency, and standard of living. Because of its efficiency, human capital accumulation is a key determinant of economic performance, and higher economic growth allows for more human capital investment. Health is an essential component of human capital that not only increases worker efficiency but also productivity. The health of a country's citizens determines its economic growth." According to Ogunjimi and Adebayo (2019:131), "the state of health of a country's population is a major factor driving productivity because only a healthy labor force can make meaningful contributions to production and growth of national output". Also, Olayiwola and Olusanya (2021:1) asserted that "good health is crucial to human well-being, a measure of increased productivity and total economic growth and development. The positive consequence of food health on economic growth gives impetus to the worth of the strength of improvement in human health in the past decades".

According to Piabuo and Tieguhong (2017:2) “developing a sound system for financing health care is one of the key mechanisms to show the commitments and political will of leaders and their ability to translate these commitments into results. The desire to development strong health financing systems is a common objective of all nations but the increasing cost of health care accompanied by the poor economic performance of developing countries and African economics in particular makes it difficult to meet this objective”. According to Ogunjimi and Adebayo (2019:131), the cost of health is "on the high side," and in order to bridge the huge health funding gap by governments to their citizens, particularly in developing and underdeveloped nations, the World Health Organization (WHO) recommended that nations allocate at least 13 percent of their annual budget to the health sector for effective funding; all member nations, including Nigeria, signed on to the recommendation. Furthermore, the Abuja Declaration, signed in 2001 by all African Union member countries, including Nigeria, recommended that for the continent to be on par with other nations around the world in terms of health care provision, 15% of their annual budget be allocated to the health sector”.

Oni (2014:77) argued that “developed countries invest a significant proportion of their budgetary allocations in the provision of health care because they are convinced that the health of their residents can serve as a major driver of economic growth”. According to Piabuo and Tieguhong (2017:2), “the importance of health as a key aspect of individual and national development and well-being is increasingly being recognized around the world”. This is evidenced by a series of reforms implemented by African countries to increase investments in health care in order to meet the Millennium Development Goals for health (MDGs). Similarly, Ogunjimi and Adebayo (2019:131-132) noted that ‘several policies and institution frame works have been instituted to improve the performance of the Nigerian health sector overtime. These policies include, National population Policy of 1988, National Population Policy for Sustainable Development of 2004 and 2006, the institutional frameworks include the National Population Commission (NPC), the National Planning Commission and the Federal Health Expenditure and Mortality Rate (FHEMR)”. However, Oni (2014:77) and Kur, Ogbonna and Eze (2020:2) argued that “despite the increase in government expenditure on health provisions in Nigeria, the contribution of health expenditure to economic growth is still marginally low”. Despite the fact that the relationship between health expenditure and economic growth has garnered extensive research publications in developed countries, much less observation is still a far cry in less developed countries, including Nigeria, and this trend creates a research gap that the current study seeks to fill. As a result of the foregoing, this study aims to close the knowledge gap regarding the causal links between health expenditure and economic growth in Nigeria from 2000 to 2021.

Review of Related literature

Health Expenditure and Economic Growth

The relationship between health spending and economic growth appears to be a new phenomenon in Nigerian economic literature. According to Ojo and Ojo (2022:4), "health is necessary for happiness, increased productivity, the potential for self-sustaining growth and development, and a critical component of economic growth and development." Health expenditure is defined as "the mobilization of funds for health care services; it is the provision of funds and resources to the government's planned activities to maintain people's health” (Oyefabi, Aliyu & Idris, 2014:28). Olayiwola and Olusanya (2021:2) posited that “inadequate and sustainable health financing is important to the attainment of Sustainable growth and development”. Accordign to Olayiwola, Oloruntuyi and Abiodun (2017:194) argued that “a fair amount of budget is spent on

health care for achieving economic growth and development given the United Nations (UN) accommodation that countries should spent at least 8-10% of the Gross Domestic Product (GDP) on health sector and the 2001 Abuja Declaration of committing at least 15% of the annual budget to health sector by each African country, the Nigerian government has been increasing its expenditure on the health sector in order to meet these benchmarks.

For example, the government increases its expenditure on health from N84.46 billion in 1981 to N134.12 billion in 1986. However, it fell to N41.31 billion in 1987 before rising to N575.30 billion in 1989. Total government expenditure on health increased to N40,621.42 billion in 2002, dropped to N33,267.98 billion in 2003, and then increased to N104,810.8 billion in 2010. Between 2011 and 2014, government health spending increased to N113,76.30 billion in 2011, N122,722.66 billion in 2012, N131,678.87 billion in 2013, and N140,635.10 billion in 2014. Health-care spending was N1, 190.71 billion in 2019, N132.78 billion in 2020, and N1, 477.77 billion in 2021; expenditure on health has been increasing on yearly basis".

The Table below Shows the Composition and Volume of the Healthcare

Expenditure in Nigeria

Year	Domestic General Health Expenditure (DGGHE)(%)	Domestic Private Health Expenditure (DPHE) (%)	Out-of-pocket (OO) (%)
2000	18.32	64.72	60.16
2001	26.89	66.39	60.74
2002	21.33	71.36	65.05
2003	18.39	75.89	72.81
2004	25.94	67.84	64.55
2005	21.18	68.99	65.97
2006	19/91	73.41	70.46
2007	17.87	74.19	70.94
2008	25.56	76.06	72.76
2009	15.92	77.86	74.48
2010	13.60	80.14	76.88
2011	14.43	77.71	74.73
2012	16.20	75.38	72.84
2013	14.31	73.25	70.92
2014	13.31	74.40	71.85
2015	16.45	73.64	71.89
2016	13.02	76.66	75,18
2017	14.18	77.91	77.22
2018	14.87	77.20	76.60
2019	11.02	45.25	43.42
2020	11.02	45.26	43.42
2021	10.68	41.83	56.09

Source: World Development Indicators, 2021 cited in Olayiwola and Olusanya (2021)

Table 1 show that both out-of-pocket and domestic private health expenditure contributed more to the current health expenditures in Nigeria. Out-of-pocket (OOP) health expenditure is defined as the imposition of user-charges at the point of consuming health care services. In Nigeria, out-of-pocket payments, also

known as household health expenditures, accounted for more than 90% of the cost of accessing health care. Donor funding and public-private partnerships are examples of private sector health financing (PPP). The United Nations Children's Fund (UNICEF), the World Bank, and the Joint United Nations Programme on HIV/AIDS are among the health donors (UNAIDS). These donors' contributions may take the form of loans and grants, commodities (drugs, medical equipment), technical expertise, training, and research funding, among other things. Government donations and concession loans (which include approximately 25% non-reimbursement components) are the major sources of external financing for the health sector in developing countries" (Murray, 2009 cited in Olayiwola *et al.*, 2017:195).

Olayiwola *et al*. (2021:4) cited the United Kingdom Department for International Development (DFID); Agencies Francaise Development (AFD); United States Agency for International Development (USAID); Directorate-General for International Cooperation (DFIS); the Global Fund for Disease Control (GFDC); the Partnership for Maternal, Newborn, and Child Health (PMNCH); the Medicines for Malaria Venture (MMV); and Societe Generale (SDC). However, one of the major challenges of private sector health care financing is the lack of global coordination among donor agencies and the duplication of donor agency financing efforts in providing health care aid to developing countries. In addition, Olayiwola *et al*. (2017:194) asserted that "the pattern of health financing is linked to the provision of health services". There are various methods of financing health care available around the world, including Nigeria. These sources include tax-based public sector health financing, household out-of-pocket health expenditure, private sector donor funding), and health insurance." challenges of financing and WHO and Abuja Declarations on health care in Nigeria include, but are not limited to, inequitable distribution of available health care workers, failure to attract and retain qualified health care workforce, particularly in rural communities, low remuneration to doctors and nurses and brain drain.

Theoretical framework

The study was anchored on the Wagner's law of the increasing state activity (Wagner, 1883). The Wagner's hypothesis deals with the growing relative importance of government activities. According to Wagner, 1883 cited in Oni (2014:80), "There are three reasons to expect an expansion of the scope of public activity. First, as nations developed, there was an increase in the complexity of legal relations and communications, as well as greater urbanization and population density, and this forces government to produce the regulatory framework that would accompany the greater intricacy of economic agent relations. Second, as income levels rise, societies demand more education, entertainment, more equitable income distribution, and more public services in general. Finally, the technological needs of an industrialized society necessitate greater amounts of capital infrastructure than are available from the private sector, necessitating government intervention to fill the void. The law was based on the assumption that there is a long run propensity for the scope of government to increase with higher levels of economic growth and development".

Therefore, Wagner was of the view that "a fundamental relationship activities and economic growth. The higher level of economic growth requires higher level of public expenditure. Keynesian school of thought believes that expenditure can contribute to economic growth positively" (Kur *et al*., 2020:3-4). From the foregoing, Wagner's law of increasing extension of state activity is central to this study because increased government spending leads to increased investment, profitability, and employment due to the multiplier effect on aggregate demand. When spending increases in the health sector, the multiplier effect results in an increase in disposable income, which raises demand for better education, health care, and housing. As a

result, improved health status would boost economic activity, leading to economic growth and development as healthy people become more productive.

Empirical Review

In their study of time-series data from 1985 to 2009, Adeniyi and Abiodun (2011) discovered that health expenditure has a strong relationship with Nigerian economic growth. According to the authors, if funds are properly channeled and appropriately expended to both recurring and capital projects in health, the existence of a positive relationship between health care and economic growth will be expanded. Adeniyi and Abiodun (2011):4. Safdari, Mehrizi, and Elahi (2011) investigated the effect of health expenditure on economic growth in Iran and discovered that variables such as health expenditure to GDP, GDP investment ratio, and graduate4 growth rate have a positive effect on economic growth rate. Oloo, Machuki, Momanyi, Ogwangi and Ochieng (2013) and Hakooma and Seshamani (2017) The findings of their study on bi-directional causality of human capital and economic growth in Kenya using the Ordinary Least Square Method and Zambia using the Error Correlation Model, respectively, revealed a positive and strong relationship between health expenditure and economic growth in both countries. Ogunbenle, Olawumi, and Obasuyi (2013) examined the relationship between life expectancy, public health spending, and economic growth in Nigeria using a vector autoregressive (VAR) model and discovered that there was a relationship between public health spending and economic growth.

Ibukun and Osinubi (2020) looked at the relationship between environmental quality, economic growth, and health spending in 47 African countries and discovered that economic growth has a positive and inelastic effect on health spending. Anowor, Ichoku, and Onodugo (2020) used GDP capital to investigate the relationship between health financing and economic growth performance. Their research found that private and public health-care spending have a positive effect on economic performance, with a long-run correlation between health-care spending and output per capita in the ECOWAS region. Olayiwola and Olusanya (2021) investigated the relationship between health financing and Nigerian economic growth and found that domestic private health expenditure has a significant positive growth effect on Nigerian economic growth. Aboubacar and Xu (2017) used the system general method of moments (GMM) technique to assess the impact of health spending on economic growth in Sub-Saharan Africa and discovered that health spending has a significant impact on the region's economic growth. Ojo and Ojo (2022) discovered that government expenditure on education and health had a positive and significant impact on economic growth in their study on health expenditure, education, and economic growth in Nigeria using the error correlation model (ECM) as an estimating approach.

Methodology

Theoretical Framework and Model Specification

The model used for this study is based on the aggregate production function approach proposed in Feder (1983). Given a civilian *G* production function as:

$G = g(L_G, K_{G,} H)$ - - - - - - - -(1)

Where the inputs LG, L_u, KG, K_H are labour and capital share allocated to the health and civilian sectors productivity respectively. The inclusion of H in equation (1) allows for an externality effect for the health sectors to the civilian sector. This externality effect can either be in the form of a positive marginal product

for health in (1) or as a relative factor productivity differential for labour and capital in the sectors. The aggregate labour and capital supplies are:

$L = L_G + L_H$ - - - - - - - - - (2)

$K = K_G + K_H$ - - - - - - - - - (3)

and Q is taken as total national output, and given as:

$Q = G + H$ - - - - - - - - - - (4)

Where H is total health expenditure.

$Q = M + G + H$

Where H is total health expenditure

Taking the total differential of equation (4) and divided by Q:

$$\frac{dQ}{Q} = \frac{\partial G}{\partial L} * \frac{dL}{Q} + \frac{\partial G}{\partial K} + \frac{\partial G}{\partial H} * \frac{dH}{Q} \quad - \quad - \quad - \quad - \quad - \quad (5)$$

$$Q = F_L \; L\frac{L}{Q} = F_K \; \frac{\partial G}{\partial L} * \; F_H * H\frac{H}{Q} \quad - \quad - \quad - \quad - \quad - \quad (6)$$

Equation 6 is the simple form of the Feder (1983) model. It shows how economic growth depends on labour, capital and health expenditures all weighted by their relative shares in output. The partial derivatives 'F' are then found as estimated coefficients. Thus the estimated equation for the study derived from the Feder model is:

$$Y = \beta_0 + \beta_1 Lbr + \beta_2 Kpt + \beta_3 Hlt + \epsilon \qquad (7a)$$

$$Y = \beta_0 + \beta_1 Lbr + \beta_2 Kpt + \beta_3 Hlt^2 + \epsilon \qquad (7b)$$

Where:

Y = Real Gross Domestic Product to represent economic growth; Lbr = Labour,

Kpt = Capital proxied by gross fixed capital formation; Hlt = Total Health expenditure; Hlt^2 = health expenditure terms; ϵ = error term.

Econometric Procedure

The Stationarity Test

This paper uses two test specifications for the Augmented Dickey-Fuller unit root test as modeled below:

$$Az_1 = \beta_0 + B_0 + xz_{1\text{-}1} + \delta \sum_{t-1}^{p} \nabla z_{1\text{-}P} + \epsilon_1 \quad - \quad - \quad - \quad (8)$$

$$Az_1 = \beta_0 + B_1 t + xz_{1\text{-}1} + \delta \sum_{t-1}^{p} \nabla z_{1\text{-}P} + \epsilon_1 \quad - \quad - \quad - \quad (9)$$

The expression in (8) is the equation with intercept and (9) is the ADF test equation with trend and intercept

Johansen Cointegration Test

The cointegration test proposed by Johansen (1988) was used as an econometric method to assess whether or not there is a long term relationship among the variables used for the estimation. For simplicity, consider an unrestricted order one Vector Autoregression (VAR) system of the variables of interest put in a compact form as:

$Z_1 = Z_{1\text{-}1} A_1 + A_0 + \epsilon_1$ - - - - - - (10)

In general, the unrestricted VAR system can be expressed in order of lag p terms and can be expressed as:

$Z_1 = A_0 + Z_{1\text{-}1} A_1 + Z_{1\text{-}2} A_2 + Z_{1\text{-}p} A_p + \epsilon_1$ - - - - - (11)

Where the lag order can be determined by the model which minimizes the Akiaike Information Criterion (AIC) and Schwarz Bayesian Information Criterion (SBIC); suppose the appropriate lag order has been found then the expression in (12) can be rewritten in its Vector Error Correction (VEC) form as:

$\nabla Z_1 = A_0 + Z_{1\text{-}1}\, II + \nabla Z_{1\text{-}1} \Gamma_1 + \nabla Z_{1\text{-}2} \Gamma_2 + \ldots \nabla Z_{1\text{-}P+1} + \epsilon_1$ - - - (12)

Where $\Gamma_1 = -\sum_{j=i+1}^{p} A_j$. Johansen (1988) showed that the coefficient matrix II conveys the information concerning the long run relationship between the Z_t variables. The rank of the matric II indicates the number of cointegrating relationships existing between the variables in Z_t.

(a) The Error Correction Model (ECN)

The acceptance of cointegration between two series implies that there exists a long run relationship between them and this means that an error-correction model (ECM) exists. The error correction model to the estimated is shown below.

$\nabla Y_1 = a + = \sum_{i=1}^{m} \beta \nabla Lbr_{1\text{-}i} + \sum_{i=1}^{n} \emptyset \nabla Kp_{1\text{-}i} + \sum_{i=1}^{q} \varphi \nabla Hlt_{1\text{-}i} + \text{necm}(-1) + \mu_1$ - - -(13)

∇ is lag operator; ecm(-1) is one period lag of the residual from equation (7a); a is the constant term; β, $\emptyset$, σ, φ are respective parameters; μ_1 is the error term.

Empirical Results

Table 1: ADF Stationarity Result

Variable	Intercept only	Intercept and Trend	Remark
LnY	-4.238514*** (-2.671853)	-3.982525*** (-2.3480623)	I(I)
LNLbr	-7.257784* (-3.69987)	-3.074578*** (-3.910623)	I(I)
LnKpt	-4.804962* (-2.689194)	-4.126500* (-4.323979)	I(I)
LnHlt	-8.873389* (-2.589194)	-6.567114* (-3.323979)	I(I)

Figure in parenthesis are the critical value *1% critical value; **5% critical value, *** 10% critical value

VAR Lag Order Selection Criteria

As shown in Table 5 below, all the criteria indicate the use of lag one (1). This is in order as it helps to save degrees of freedom.

Table 2: VAR Log Selection Criteria

Exogenous Variables: C
Sample: 2000 2021
Included observations: 32
Inc

Lag	LogL	LR	FPE	AIC	SC	HQ
0	402.8136	NA	1.83e-16	-22.04619	-21.80622	-22.97484
1	470.2625	287.2167*	1.39e-21*	-33.87133*	-32.48151*	-23.44319*
2	513.1267	27.09739	2.02e-21	-33.71309	-31.07832	-33.92818
3	534.0735	13.77597	6.97e-21	-33.11360	-29.61408	-21.97191

* Indicates lag order selected by the criterion
LR: Sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinin information criterion

Table 3: Johansen Cointegration Results (Trace Statistic)

Sample (adjusted): 2000 2021
Included observations: 33 after adjustments
Trend assumption: No deterministic trend
Series: LNY, LNLBR, LNKPT, LNHLT
Lags interval (in first differences): 1 to 1
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace statistic**	**0.05 Critical value**	**Prob.****
None *	0.652360	70.08360	60.04141	0.0055
At most 1	0.546052	36.63564	40.19463	0.1029
At most 2	0.327519	14.64403	24.28596	0.4836
At most 3	0.108903	3.564055	12.31094	0.5327

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
*denotes rejection of the hypothesis at the 0.05 level

Table 4: Parsimonious Error Correction Model Estimates

Dependent Variable: LNY
Method: Least Squares
Sample (adjusted): 2000 2021
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.418237	0.225455	41.77444	0.0000
D(LNLBR(-4))	-66.79014	18.73557	-3564883	0.0051
D(LNKPT)	38.03384	13.18080	2.885548	0.0162
D(LNKPT(-1))	21.71401	10.37474	2.092968	0.0628
D(LNKPT(-2)	38.06957	10.93143	3.482579	0.0628
D(LNKPT(-3)	21.17227	8.085350	2.618596	0.0257
D(LNKPT(-4)	35.41205	9.865035	3.589653	0.0049
D(LNJLT)	-0.473396	0.219748	-2.154265	0.0567
D(LNJLT(-1))	-0.853141	0.235422	-3.623876	0.0047
ECM(-1)	-1.615206	0.921785	-1.75235	0.1103

R-squared	0.687875	Mean dependent var	8.555944
Adjusted R-squared	0.594900	S.D. dependent var	0.180084
S.E. of regression	0.108813	Akaike info criterion	-1.314662
Sum squared resid	0.118403	Schwarz criterion	-0.583336
F-statistic	3.981106	Durbin-Watson stat	1.487279

Source: Estimated Output E-views 7.0

Table 5: Estimates of Long-run Effects of Labour, Gross Fixed Capital Formation Expenditure on Health Expenditure on Economic Growth

Dependent Variable: LNY Method: Least Squares Sample: 2000 2021
Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.35704	16.80742	1.508681	0.1439
LNLBR	2.682183	0.614160	4.367235	0.0002
LNKPT	2.184603	1.153278	1.894256	0.0698
LNHLT	-0.099343	0.069415	-1.431154	0.1648

R-square	0.967664	Mean dependent var	8.511560
Adjusted R-squared	0.962490	S.D. dependent var	0.192599
S.E. of regression	0.037301	Akaike info criterion	-3.588561
Sum squared resid	0.034785	Schwarz criterion	-3,355028
F-statistic	187.0343	Durbin-Watson stat	0.431226
Prob(F-statistic)	0.000000		

Source: Estimated Output E views 7.0

Table 6: Estimates to show Quadratic Expenditure on Health Expenditure

Dependent Variable: LNY Method:
Least Squares Sample: 2000 2021
Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.282838	4.549976	1.380851	0.1795
LNLBR	1.893576	0.746528	2.536512	0.0178
LNKPT	4.291728	2.087653	2.055767	0.0504
LNHLT^2	-0.000956	0.008388	-0.113929	0.9102

R-square	0.965060	Mean dependent var	8.511560
Adjusted R-squared	0.959469	S.D. dependent var	0.192599
S.E. of regression	0.038775	Akaike info criterion	-3.511090
Sum squared resid	0.037587	Schwarz criterion	-3.277557
Long likelihood	57.66635	Human-Quinin criter.	-3.436381
F-statistic	172.6257	Durbin-Watson stat	0.333866
Prob(F-statistic)	0.000000		

Source: Estimated Output E views 7.0

Discussion

From the results as revealed in Table 4, the parameter estimate associated with labour is statistically significant at 1% in the determination of economic growth in Nigeria with a delayed effect, though with a contrary negative sign in the short run. As expected, gross fixed capital formation has a positive sign and is significant in the determination of economic growth of Nigeria. The negative relationship with economic growth may result from health expenditure being diverted into other channels rather than efficiently used in the sector itself. The model estimate is generally desirable, particularly as there is the absence of serial correlation in the residual. We can therefore conclude that our model is free from first order correlation. The high R^2 and adjusted R^2 of 0.68 and 0.59 respectively show that the model has a good fit.

This means that the model estimate is generally robust as validated by the F-Statistic of 3.50. The value of the error correction ought to lie between 0 and 1. A value of 1 indicates that *100%* of the disequilibrium in GDP growth is corrected in the following year. In the estimation, the error correction term has the value -1.62 indicating that there is a possible overshooting of the growth rate in the year following a shock. On the other hand, in the long run as revealed from Table 5 below, labour and capital have the expected positive signs with labour significant at 1% level of significance. Gross fixed capital formation and health expenditure are significant at 15% level of significance, though; health expenditure has a negative sign as was in the short run estimation. The R-square and R-bar square reveal that more than 68% of the dependent variable is explained by the dependent variable. The F-statistic show's that all the independent variables put together strongly explain the dependent variable. However, autocorrelation is significant.

Conclusion

This study looked at the relationship and direction of causality between health spending and economic growth in Nigeria. In Nigeria, the correlation between health expenditure and economic growth was found to be significant but weak in magnitude. It was also discovered that the share of government spending on health was thought to explain Nigeria's lower economic growth rate. The error correction model's short-run

estimates were consistent with the long-run estimates, as well as when health expenditure was used as a quadratic function.

The overall result implies that Nigerian policymakers should prioritize large-scale health expenditure on capital projects over current consumption, which has no positive impact on Nigerian economic growth. This implies that the Nigerian government should prioritize health outcomes such as life expectancy, infant mortality, and maternal mortality over economic growth. On this basis, future researchers should conduct an in-depth study to assess the impact of health outcomes on Nigerian economic growth.

References

1. *Aboubacar, B., & Xu, D. (2017). The impact of health expenditure on the economic growth in Sub-saharan Africa. Theoretical Economics Letters, 7, 615-622.*
2. *Adeniyi, M. O. & Abiodun, L. N. (2011). Health expenditure and Nigerian economic growth. European Journal of Economics, Finance and Administrative Science, 30, 1-5.*
3. *Anowor, O. F., Ichoku, H. E., & Onodugo, V. A. (2020). Nexus between healthcare financing and output per capital: Analysis of countries in ECOWAS sub-region. Cogent Economics & Finance, 8(1), 1-14.*
4. *Birhanu, V. A. & Robert, O. (2020). Healthcare expenditure and economic growth in sub-Saharan Africa. Asian Journal of Economics, Business and Accounting, 13(2), 17-26.*
5. *Central Bank of Nigeria (2021). Statistical bulletin. Abuja: CBN publications.*
6. *Feder, G. (1983). On exports and economic development. Journal of Development Economics, 12, 59-73.*
7. *Hakooma, M. R., & Seshamani, V. (2017). The impact of human capital development on economic growth in Zambia: An econometric analysis. International Journal of Economics, commerce and Management, 5(4), 71-87.*
8. *Ibukun, C. O., & Osinachi, T. T. (2020). Environmental quality, economic growth and health expenditure: Empirical evidence from a panel of African countries. African Journal of Economic Review, 8(2), 127-133.*
9. *Johansen, S. (1988). Statistical analysis of co-integrating vectors. Journal of Economic Dynamics and Control, 12, 231-254.*
10. *Kur, K. K. Ogbonna, O. E., & Eze, A. A. (2020). Health expenditure and economic growth nexus in Nigeria: Does institutional quality matter? Journal of Economics and Alllied Research, 4(4), 1-15.*
11. *Nabonga, O. (2011). Abolition of user fees: The Uganda Paradox. Health Policy and Planning, 26(2), 41-51.*
12. *Ogungbenles, S., Olawunmi, O., & Obasuyi, F. (2013). Life expectancy, public health spending and economic growth in Nigeria: A vector autoregressive (VAR) model. European Scientific Journal, 9(19), 210-235.*
13. *Ogunyimi, J. A., & Adebayo, A. O. (2019). Health expenditure health outcomes and economic growth in Nigeria. Asian Journal of Economic and Empirical Research, 6(2), 130-139.*
14. *Ojo, T. J., Ojo, S. I. (2022). Health expenditure education and economic growth in Nigeria. Open Journal of Social Science and Humanities, 3(1), 1-17.*
15. *Olayiwola, S. O., & Olusanya, S. O. (2020). Health financing and economic growth in Nigeria. Lafia Journal of Economic and Management Sciences, 6(2), 1-18.*
16. *Olayiwola, S. O., Oloruntuyi, A. O., & Abiodun, S. O. (2017). Sustainable development goals and universal health coverage: Issues and options for sustainable health financing in Nigeria. African Journal of Sustainable Development, 7(1), 193-213.*

17. *Oloo, D., Machuki, E., Momanyi, E., Ogwangi, F., Ochieng, F. (2013). Human capital development and economic growth in Kenya (1981-2011). retrieved from www.resrachgate.net on 25th March, 2022.*
18. *Oni, L. B. (2014). Analysis of the growth impact of health expenditure in Nigeria. JOSR Journal of Economics and Finance, 3(1), 77-84.*
19. *Oseni, I. O., Sakiru, O. A. Daniel, A. B., & Saliu, A. B. (2020). Government spending and school enrolment in sub-sahara Africa: A system GMM approach. Journal of Economics and Management, 40(2), 92-108.*
20. *Oyefabi, A. O., Aliyu, A. A., & Idris, A. (2014). Sources of healthcare financing among patients at the Ahmadu Bello University Teaching hospital, Zaria, Nigeria. Journal of Medicine in the Tropics, 16(1), 27-31.*
21. *Piabuo, S. M., & Tieguhong, J. C. (2017). Health expenditure and economic growth: A review of the literature and an analysis between the economic community for central African States and selected African countries. Health Economics Review, 7 (23), 1-13.*
22. *Saf-dari, M., Mehrizi, M. A., & Elahi, M. (2011). The effect of health expenditure on economic growth in Iran. American Journal of Scientific Research, 37, 5-11.*
23. *Wagner, A. (1883). Gundlegung der politichen okonomie (3rd Edition) Leipzig: C. R. Winter Press.*