

IMPACT OF HEALTH EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA (1990-2021)

Mathias Mathew MADU and Isaac Oluwafemi KEKEREOWO

¹Department of Co-operative Economics, Adamawa State Polytechnic, Yola, Nigeria,
Email: mathiasmathew64@gmail.com

²Department of Economics, Federal College of Education Yola, Adamawa State, Nigeria
Email: kisaaco@fceyola.edu.ng

Corresponding Author: Email: kisaaco@fceyola.edu.ng

Paper presented at the Maiden International Conference on education, Science and Technology (ICEST, 2021)

Abstract: *This study examines the impact of health expenditure on economic growth in Nigeria between 1990 and 2021. Data were obtained from the Central Bank of Nigeria Statistical Bulletin, 2021. Ordinary Least Square Regression was used to analyze the variables used in the Model. The result of the study agreed to the apriori expectations where Gross Capital Formation, Public health expenditure and life expectancy are positively related to Economic Growth and thereby impact positively on the Gross Domestic Product, the variables indicated that they have been stable over the period of the study as shown by the CUSUM and CUSUM Squares which lies within the critical region of 0.05. The study recommends that the Government should increase the budgetary allocation to the sector, also, qualified manpower should be employed to handle the affairs of the health sector in order to boost productivity in the health sector.*

Keywords: Health expenditure, Nigeria, productivity, economic growth, ordinary least square.

INTRODUCTION

It has been consistently and logically asserted that a nation or a country with a healthy people is considered a wealthy nation (World Health Organisation (WHO, 2019)). Thus, no amount of resources spent on health by a nation is considered too much because of its importance to the country's growth (Ilori & Ajiboye, 2015). Conceptually, there is a mutual relationship between a population's health level and its level of economic performance. Maintaining a sustainable level of growth provides people significantly better nutrition and disease treatment opportunities along with wider access to preventive medical technology. A sustainable growth enables better health conditions, increasing the share of population of healthy individuals. In this way, loss of labour or efforts does not emerge in the society and thus the amount of labor supply increases thereby making them more productive. This is because healthy individuals are physically and mentally fit. They contribute to production more than a sick person, increase productivity and have a positive impact on economic performance. The simple transmission mechanism is that when a person is healthy, life expectancy

increases and this promotes individual savings and private investments in education.

In Nigeria, the public has always paid close attention to public health expenditure. Government has the bulk of health expenditure in Nigeria, which comprises budgetary allocations from government at all levels (Federal, States and Local Government). However, a high unemployment rate, soaring prices and particularly more difficult economic situation for the majority of the poor population has severe consequences on the health status of Nigerians (Eneji, Juliana & Onabe, 2013). In spite of the availability of huge number of healthcare facilities and advancement in technology, the health sector in Nigeria has witnessed various turbulent with its attended negative effects on the population. As affirmed by Worldometer elaboration of the latest United Nations Data (2022), the teeming population now estimated to be over 217 million is struggling with the provision of adequate basic health services. According to HERFON (2006), health facilities (health centres, personnel, and medical equipment) are inadequate in the country, particularly in rural areas. This, of course, clearly explains the high mortality rate

in children, maternal and even adults over the years. Nearly fifteen (15) percent of Nigerian children do not survive to their fifth birthday.

The major causes are malnutrition that accounts for fifty-two (52) percent of the deaths, malaria thirty (30) percent and diarrhea twenty (20) percent (Federal Ministry of Health [FMOH, 2004). Maternal mortality reported as being is extremely high. In 2008, between 3million and 3.5million people were estimated to be living with HIV/AIDS. Nigeria has the fourth highest number of TB cases in the world, with an estimate of 293 new cases per 100,000 population and 546 per 100,000 total cases (Obansa & Orimisan, 2013). Another key issue linked with health indicators in Nigeria is the incidence of poverty which is widespread across the nation. From 2003-2004, a household survey was conducted by the government and results revealed that 54.4 percent of the Nigeria population are poor, with a higher poverty rate of 63.3 percent in rural areas. Over half of the population live below the poverty line, on less than \$1 a day and so cannot afford the high cost of health care (HERFON, 2006).

Also, in recent times, Nigeria's health indicators have either stagnated or worsened despite the federal government's acclaimed efforts to improve healthcare delivery. The World Bank data placed life expectancy at 55 in 2020 which was below the expected African average, while the numbers of child mortality are alarming, partly because of the country's size. Annually, one million Nigerian children die before the age of five; this is mostly due to neonatal causes followed by malaria and pneumonia. Maternal mortality is 630 per 100,000 live births which is comparable to low-income countries such as Lesotho and Cameroon. An estimated 3.3 million Nigerians are infected with HIV and access to prevention, care and treatment is minimal. Even the little prevention, care and treatment services provided have been mostly financed from donor fund from developed nations of the world. Nigeria also continues to combat the double burden of communicable and non-communicable diseases (NCD) (Olatubi, Oyediran, Adubi, & Ogidan (2018)). A cursory look at Nigeria presents an icky realization that what is required to meet up

with this much needed health are either too few or altogether absent.

Statement of Problem

Nigeria has myriads of manpower which could promote higher productivity if healthcare system is attractive. Instead, the health sector is in a state of parlous decay due to low public health expenditure. For example, budgetary allocation to health as proportion of the national budget fluctuates from 5.63% in 2014 to 3.90% in 2018 (Partnership for Advocacy in Child and Family Health,). As such, the country's health system was ranked 187 among 191 countries surveyed by the World Health Organization (WHO) in 2018. This shows Nigeria has a lot to do in improving its health system by making healthcare affordable and accessible to all her citizens.

Today, Nigeria is yet to find some remarkable solutions to most of the health challenges in the country like incessant outbreaks of Lassa fever, high maternal and child deaths, poor primary health facilities, lack of functioning cancer machines, malnutrition, poor health emergency response and of recent the COVID 19 pandemic, among others. This is happening because the Nigerian governments, both at federal and state levels, seemingly place priority on healthcare. The financing on health has often been described as inadequate with budgetary allocations that hardly exceed an average of 4.2% of the nation's total budgetary provisions (budget office, 2022). Evidence from the Nigeria's budget office in year 2022 proves that the healthcare spending in Nigeria is segmented into private and public spending. While public health expenditures in Nigeria account for just 25% of total health expenditures, private expenditures on health account for 75% of total health expenditure thereby dominating the health sector of the country.

The dominant private health expenditure is out-of-pocket expenses. This accounts for more than 90% of private health expenditures. This implies that households bear the highest burden of health expenditure in Nigeria. The \$5 per capita expenditure on health is far below the \$14 recommended by World Bank for Africa and much lower than the \$34 per capita recommended by WHO Macroeconomic Commission for Health for

low income countries to provide basic health care services (WHO, 2022). The comparatively low patronage of public health facilities may be a reflection of the level of poverty in Nigeria. This puts a serious doubt on the government ability to improve accessibility, reliability and affordability of health services in the country. (WHO, 2022).

It is expected that budgetary allocations to health sector would improve health outcomes, reduce all kinds of mortality rate and boost economic growth. Ichoku and Fonta (2006) notice that increased budgetary allocation to health has assisted some heavily-indebted poor countries to fight poverty, and raise the living standard of people in these countries. Remarkably, the federal budgetary component of health expenditure has increased over the years but the budgetary allocation for health is still below the 15% signed by the Nigerian government in the Abuja declaration (WHO, 2009). Given this level of government spending, it will be very difficult to provide the essential health care services with the unpredictable change in oil prices in the world market, low tax base coupled with the recent pandemic, health care will always be at the peril of underfunding by the Nigerian government. This study intends to empirically assess how far public health expenditure has been instrumental in bringing about the progress on economic growth in Nigeria and its stability. Thus, this study specifically wants to examine the

LITERATURE REVIEW

Conceptualization

Public health and human rights are complementary approaches to promoting and protecting human dignity and wellbeing (Aniekwu, 2006). There is a link between macroeconomics and health status. A very important component of economic development of a country is its people's state of health. In fact, there is the argument as to whether it is health that causes growth or economic growth causes health improvements. Nurudeen and Usman, (2010) argue that rising government expenditure on health results in an increase in economic growth. They among others, suggest that government should raise its expenditure in the growth of the health sector since it enhances productivity and

economic growth. In the same flow, Berger and Messer (2002) view health as a form of capital, such that health care is both a consumption good that yields direct satisfaction and an investment good that yields indirect utility through increased productivity, fewer sick days and higher wages. In the literature, while some authors (Abu & Abdullahi, 2010) established a negative relationship between increased government expenditure and economic growth. Bakare & Olubokun, (2011) argue that the relationship is unidirectional. and government expenditure impacts very little on growth. Growth does not impact on government expenditures. According to WHO (2010), public health expenditure consists of recurrent and capital spending from government budgets, external borrowings and grants (including donations from international agencies and NGOs), as well as compulsory health insurance funds. History is a witness that important breakthrough in public health, diseases control and improved nutritional intake have given rise to great takeoffs in economic growth.

Theoretical Framework

The New Keynesian Framework:

The New Keynesian models argued that an increase in government spending or expenditure increases demand and thus economic activity that is output through crowding in or multiplier effect. It, moreover, produces increases in private consumption by introducing nominal rigidities, increasing returns, countercyclical mark-ups and non-Ricardian consumers. Introducing nominal rigidities into a monopolistic competition implies that price is greater than marginal cost. Given the increase in labour supply due to the standard wealth effect (the rise in tax) discussed in the neo-classical literature, the increased demand for goods will be met by firms since prices are sticky and it is greater than the marginal cost in monopolistic competition. To produce the additional output, firms need to employ more labor units which in turn raise the real wage.

Devereux, Head & Lapham (1996) find another mechanism in which the labor demand curve also shifts and positive consumption response might result. In particular, Devereux et al, (1996), introduced increasing returns where government spending may increase the

equilibrium number of firms in intermediate goods characterized by increasing returns to specialization. The increase in productivity in these firms enables them to demand more labor. Consequently, the labor demand shifts outward thereby increasing the real wage.

Empirical Review

Aluko and Marvelous (2018) examine the impact of public health expenditure on economic growth in Nigeria from 1995-2016 using ordinary Least Squares (OLS) and Error Correction Model (ECM) estimation techniques. The OLS regression result shows that there is a positive relationship between public health expenditure and economic growth in Nigeria at the long run. Similarly, the Error Correction Model (ECM) result shows that public health expenditure has short run impact on economic growth in Nigeria. This implies that public health expenditure has that potency to faster economic growth in Nigeria but government health expenditure and Corruption Perception Index have little or no significant impact on economic growth in Nigeria this may be due to inequitable availability of health care services, poor public and private partnership, poor physical infrastructure and equipment; poor human resources availability and management, inadequate drug supplies, high level of political interference, financial constraints and funds mismanagement, resource allocation and lack of effective regulation or legislation to mention few. Therefore, government should put in place monitoring and evaluation mechanism to ensure that the money released is fully utilized for the right projects in the health sector for effective health service delivery and for sustainable economic growth in Nigeria.

Ibe and Olulu-Briggs (2015) investigate the impact of public health expenditure on economic growth in Nigeria between 1981 and 2013 using ordinary least square (OLS) multiple regression. Results indicate a significant and positive long run relationship between public health expenditures and economic growth. The major policy recommendation that emerged from the study is the need for Nigerian policy makers to pay more attention to the health sector and increase its budgetary allocation. Nevertheless the key to good results lies in establishing a strong

institutional system that, to the extent possible, links specific expenditure and revenue decisions so as to ensure the usage of the allocated fund as transparently as possible.

Oni (2014) evaluates the impact of health expenditure on economic growth in Nigeria using multiple regression analysis between the periods of 1970 to 2010. The result shows that gross capital formation, total health expenditures and the labor force productivity are important determinants of economic growth in Nigeria while life expectancy rate has negative impact on growth for the period covered by the study. As a result, the following policy measures are suggested among others that government should encourage savings and investments in the economy, increase expenditures on health provisions, induce the level of labor productivity and place priority on the issues of security to lives and properties in Nigeria.

Ilori and Ajiboye (2015) examine the impact of health expenditure on economic growth in Nigeria, using time series data spanning from 1981 to 2013. Ordinary least square regression analysis, Auto-regressive Distributed Lag (ARDL) Model approach and Error Correction Mechanism (ECM) were employed as the estimating techniques to test the existence of long-run relationship among the variables and the result shows positive impact that gross capital formation, and total health expenditure determine in part the level of economic growth in Nigeria while life expectancy rate indicates statistical negative impact on the growth contrary to theoretical economic expectation for the period covered by the study. As a result, the following policy measures are suggested among others that government should encourage savings and investments in the economy, increase expenditures on health provisions, induce the level of labor productivity and place priority on the issues of security to lives and properties so as to pave way for growth and development of the Nigerian economy.

Olatubi et al. (2018) assesses the health care expenditure of Nigeria and resultant effects on the national productivity. An overview of literature shows that health care expenditure in Nigeria is very poor and low compared to other developing nations even in Africa. The

little money that is made available is invested majorly in the curative aspect of health care as against preventive health care that promotes national productivity. The study further suggests that to achieve the much needed improvement in national productivity, special attention must be paid to increasing national investment in health sector.

Osinanwa (2014) examines the impacts of health on Economic growth in Nigeria using Cointegration, and Granger Causality techniques between the periods of 1995-2009. The study finds that Gross Domestic Product is positively influenced by health indicators in the long run and health indicators cause the per capita GDP. It reveals that health indicators have a long run impact on economic growth. Thus, the impact of health is a long run phenomenon. The major policy implication of the study is that, a high level of economic growth can be achieved by improving the health status of the populace, especially if the current status is at low ebb.

Karim (2016) analyzes the link between health expenditure and economic growth in Nigeria between 1985 and 2009. Using ARDL bounds testing approach to cointegration long-run relationships between real GDP, health expenditure, capital stock, oil production and labor force are identified. The findings revealed that health expenditure explains just a lesser part of the economic growth. The results indicate that while health care expenditures are among the most important factors in the improvement of human capital and the lowering of infant mortality. They do not make a significant major contribution to the economic growth in Nigeria. This finding call for a more robust health care programmes capable of fostering Nigerian growth.

Bakare and Sanmi (2011) investigate the relationship between health care expenditures and economic growth in Nigeria between the periods of 1970 to 2008. The ordinary least square multiple regression analytical method was used to examine this relationship. The data analysis showed a significant and positive relationship between health care expenditures and economic, which means that increase in health expenditure increase growth performance. The study thus recommended that Nigerian policy makers should pay closer

attention to the health sector by increasing its yearly budgetary allocation to the sector. Nevertheless, the key to good results lies not in ordinarily increasing particular budgetary allocation but rather in implementing a public finance system that, to the extent possible, links specific expenditure and revenue decisions and ensure the usage of the allocated fund as transparently as possible.

Ercelik (2018) investigates the association between healthcare expenditure, Gross Domestic Product (GDP) and GDP per capita by using (ARDL) autoregressive distributed lag bounds testing approach of co-integration developed by Pesaran, Shin and Smith (2001). The results of bounding test to co-integration represent that the variables are cointegrated, indicating a significant relationship between them in the long-run and this agrees with the study of Bakare and Sanmi (2011) and Karim (2016).

Babatunde (2012) examines the relationship between growth and health in Nigeria using annual time series data between 1970 and 2008. The findings reveal that there is a reverse causation between health and economic growth in Nigeria and a channel through which this linkage occurs is human capital. Also, economic growth appears to lead to large health gains, particularly at low levels of economic development.

METHODOLOGY

This study aimed to examine the impact of public health expenditure on economic growth in Nigeria. Quantitative data were used in the study to answer the research questions. The data used was for the period 1990 to 2021 for public health expenditure, Life expectancy rate, Gross capital formation and economic growth which were obtained from the Central Bank Statistical Bulletin (various issues). The data collected were analysed using Ordinary Least Square (OLS) estimation technique and this technique was chosen because of its BLUE (Best, linear, unbiased estimator) properties.

Model Specifications

The economic growth model used in this study is based on the neo-classical Solow production function but with little modification.

According to Solow’s formulation, economic growth is a function of capital accumulation, an expansion of labor force and “exogenous” factor, technological progress which makes physical capital and labour more productive.

A = Efficiency factor

t = Time dimension

L = Labor

That is:

However, Bakare and Sanmi (2011) argue that ‘human capital influences economic growth and hence the model can be modified by adding human capital ($H_{t-1}^{1-L-\beta}$), such that

$$Y_t = (K_t, A_t, L_t)$$

$$Y_t = K_t \alpha t H_t$$

Where

$$\beta(A_t L_t) \tag{2}$$

Y_t = Aggregate real output.

The reduced equation for the above will appear as:

K = Capital stock

$$\log Y_t = \alpha \log K_t + \beta \log H_t + \beta \log(A_t, L_t) \tag{3}$$

Where

Log H_t = log of human capital proxied as Log of Public Health Expenditure (LPHE)

Log Y_t = log of real output proxied as Log of Gross Domestic Product (LGDP)

Log L_t = Log of labor proxied as Log of Life expectancy rate (LER)

Log K_t = log of capital stock proxied as Log of Gross Capital Formation (LGCF)

Based on the above formulations, the model can be re-written as:

$$LGDP = \alpha_0 + \alpha_1 LGCF + \alpha_2 LPHE + \alpha_3 LER \tag{4}$$

The *a priori* economic expectations are:

$$\alpha_0 > 0, \alpha_1 > 0, \alpha_2 > 0, \alpha_3 > 0$$

Equation (3.4) will be estimated in the course of this study.

RESULTS AND DISCUSSION

This section presents the results of the OLS as estimated from the data spanning from 1990 to 2021.

Table 1: Health Expenditure and Economic Growth

Dependent Variable: LGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGCF	1.514035	0.181743	-2.828369	0.0001
LPHE	0.037950	0.066533	-0.570383	0.0005
LER	1.213533	0.559476	-2.169051	0.0003
C	49.29860	8.588505	5.740068	0.0000
R-squared	0.883580			
Adjusted R-squared	0.864249			
F-statistic	4.090242	Durbin-Watson stat		1.865171
Prob(F-statistic)	0.000000			

Source: Author’s Computation

The result indicated that gross capital formation is positively related to gross domestic product and it impacts positively on

the GDP with a value of 1.51 and a p-value of 0.0001. It means that 1% increase in gross capital formation leads to 151% change in the GDP. Public health expenditure also impacts

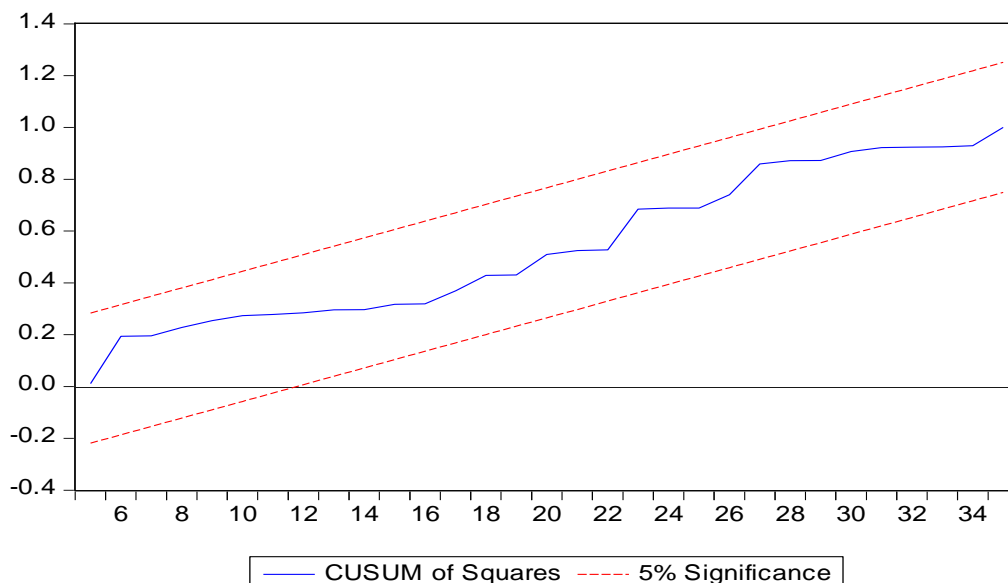
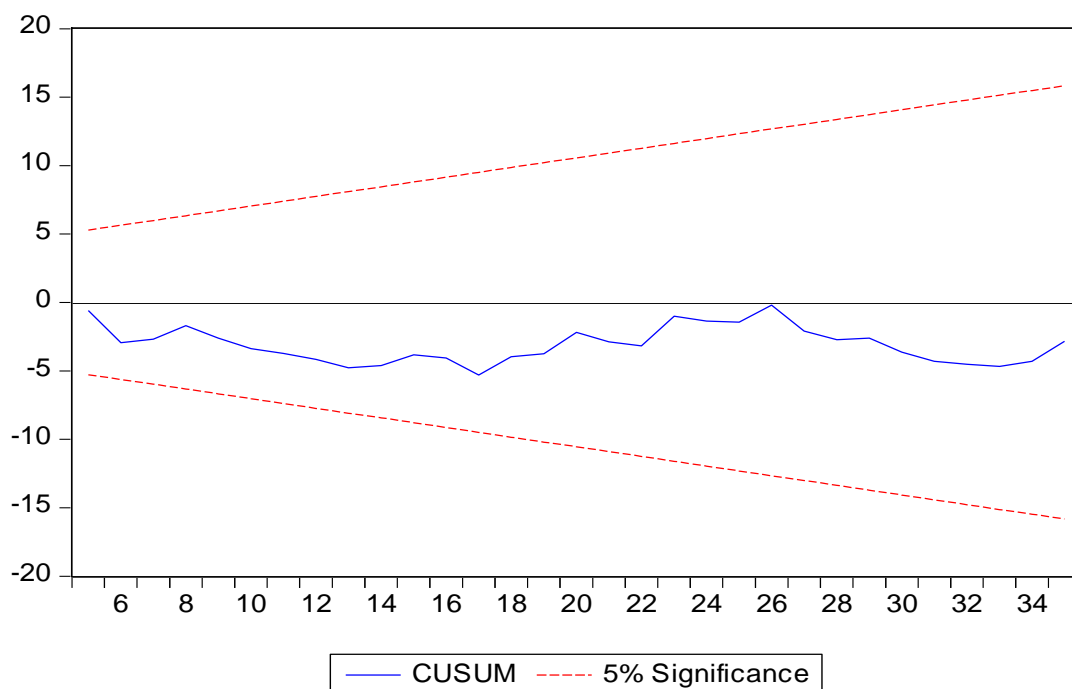
positively on the GDP with a value of 0.03795 and a P-value of 0.0003, 1% change in health expenditure leads to 3% increase in the GDP. Life expectancy also impacts positively on the GDP with a value of 1.21 and a P-value of 0.0003 it means that 1% increase in life expectancy leads to 121% increase in the GDP. All the variables in the model is in line

with the theoretical underpinning. The model is a good fit since all the explanatory variables in the model account for 88% explanations of the model with an R-squared of 0.88358 and adjusted R-squared of 0.86424 which is 86%. The model has no autocorrelation as shown by the Durbin-Watson test of 1.86.

Table 2: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.531585	Prob. F(2,29)	0.5933
Obs*R-squared	1.237759	Prob. Chi-Square(2)	0.5385

Source: Author's Computation



The CUSUM and CUSUM of squares indicated that the variables have been stabled over time as shown in the diagrams above as it all lies within the 5% critical region,

CONCLUSION

This study investigates the relationship between health expenditure and economic growth in Nigeria. Thus, health expenditure in Nigeria has always formed part of the budgetary allocation by the government in order to improve the health sector and thereby increase the wellbeing of the masses as well as producing a healthy labour force. The trickle-down effect is improvement in the Economic growth of the Nation. Despite this, the government at all level should increase their health budgetary allocation to make the health sector better than what it is through proper funding and employing well qualified personnel at the top, middle and lower cadre in order to utilize the resources channeled to the sector for the overall best to the economy.

REFERENCES

- Aluko, O.O. & Marvelous, A.I. (2018). Public Health Expenditure and Economic Growth in Nigeria: An Error Correction Model. *Journal of Economics, Management and Trade* 21(6): 1-11,
- Aniekwu, N.I. (2006). Health Sector Reforms in Nigeria: A Perspective on Human Rights and Gender Issues. *Int. J. Justice Sustain.* 11(1):128-140.
- Bakare, A.S. & Sanmi, O. (2011). Health Care Expenditure and Economic Growth in Nigeria: An Empirical Study. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)* 2 (2): 83-87.
- Berger, M.C. & Messer, J. (2002). Public Financing of Health Expenditures, Insurance and Health Outcomes. *Appl. Econ*, 34, 2105-2113.
- Devereux, M., Head, A. & Lapham, B. (1996). Monopolistic Competition, Increasing Returns, and the Effects of Government Spending. *Journal of Money, Credit, and Banking.* 28(2), 233-354
- Eneji, M.A; Juliana, D.V. & Onabe, B.J. (2013). Health care expenditure, health status and national productivity in Nigeria (1999-2012). *Journal of Economics and International Finance*, 5(7), 258-272 Retrieved from <https://academicjournals.org/JEIF>.
- Ercelik, G. (2018). The Relationship between Health Expenditure and Economic Growth in Turkey from 1980 to 2015. *Journal of Politics, Economy and Management (JOPEM)* 1(1), 1-8.
- Federal Ministry of Health, [FMoH] (2004). Inventory of Health Facilities in Nigeria Abuja: Federal Ministry of Health.
- Health Reform Foundation of Nigeria, (HERFON) (2006). Nigeria Health Review. *Kenbim press* 10-12,130,191.
- Ibe,C.R.& Olulu-Briggs O. V.. (2015). Any Nexus between Public Health Expenditure and Economic Growth in Nigeria? *International Journal of Banking and Finance.* 1(6), 1-8.
- Ichoku, H. E. & Fonta, W. M. (2006). *The distributional impact of health care financing in Nigeria: A case study of Enugu State.* PMMA Working Paper, 17, 3-22.
- Ilori, I.A. & Ajiboye, M.O. (2015). The impact of health expenditure on the growth of the Nigerian economy: the ARDL approach. *International Journal of Economics, Commerce and Management United Kingdom* 3(12),
- Nurudeen, A. & Usman, A. (2010). Government Expenditure and Economic Growth in Nigeria, (1970-2008): A Disaggregated Analysis. *Business and Economics. Journal*, 4(1), 1-11. Retrieved from: <http://astonjournals.com/bej>.
- Olatubi, M. I., Oyediran, O. O., Adubi, I. O., & Ogidan, O. C. (2018). Health Care Expenditure in Nigeria and National Productivity: A Review. *Social Asian Journal of Social Studies and Economics.* 1(1), 1-7,
- Oni, L.B.. (2014). Analysis of the Growth Impact of Health Expenditure in

- Nigeria. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 3(1), 77-84
- Osinanwa, I.D. (2014). The Impact of Health on Economic Growth in Nigeria. *Journal of Economics and Sustainable Development*. 5(19), 159-166 Retrieved from www.iiste.org
- WHO (2022). Global Health Expenditure Database.
- WHO (2009). WHO Country Cooperation Strategy: Nigeria 2008-2013. Brazzaville: WHO Regional office for Africa.
- WHO (2010). National Health Account Database, Supplemented by Country Data. Retrieved from <http://www.who.int/nha/en>

This article should be cited as:

Madu, M.M. & Kekereowo, I.O.(2022). Impact of Health Expenditure on Economic Growth in Nigeria (1990-2021) *Journal of Economic, Social and Educational Issues*, 2(2), 141-149.