pISSN: 2971-6195 eISSN: 2971-6209

HEALTH CARE FINANCING AND ECONOMIC GROWTH: NIGERIAN PERSPECTIVE

John Ugah[1], Augustine Eba[1], and Timothy Aiyepeku [2]

[1]Department of Banking and Finance
University of Calabar, Calabar

[2]Department of Economics
University of Lokoja, Lokoja
Corresponding Author: ugahson@gmail.com

ABSTRACT
The thrust of the study is to examine the effect of health care investments and financing on economic wellbeing. To achieve this, the researchers analyzed secondary data from the Central Bank of Nigeria's annual statistical bulletins from 1987 to 2020. The data collected were analyzed using the correlation and multiple regression analytical technique. The results from the analysis reveals that government capital expenditure on health and gross fixed capital formation have a positive significant relationship on economic wellbeing in Nigeria, while government recurrent expenditure on health shows a negative significant impact on economic wellbeing for the period. Based on these findings, it is recommended that the government prioritize investing in the health sector, allocate more funds to capital expenditures, and implement the National Health Insurance Scheme across all tiers of government to improve economic wellbeing and overall healthcare delivery in Nigeria.
Keywords: health care financing, NHIS, economic growth, out of pocket, health expenditure
JEL: I10, I15, O40, 051, E62

INTRODUCTION
One momentous quality possessed by an economic unit for a successful materialization of its objective is health. Healthy investment requires first investment in health. This is not only desirous, but also indispensable for most societies, both in developing and developed economies. Health (individual well-being) is one of the most crucial factors that determine the level of output necessary for economic growth. Barro (2008) agree that health is a valuable asset that drives economic growth, and that investing in health financing is crucial for achieving long-term economic development. Riman and Akpan (2012) suggests that the way a country finances its healthcare system is closely tied to the quality of health outcomes it achieves. This, in turn, can help a nation achieve its long-term goal of improving its overall economic development. In developed countries, a significant portion of their budget is allocated to healthcare because they recognize the importance of residents' health in driving economic growth.

However, most developing countries today particularly Nigeria has continually failed to enjoy the potential benefits of health financing; with the proportion of health expenditure to GDP falling below the European average of 9-10% (Atun and Gurol, 2015). This is more worrisome as the economy is confronted with several health challenges such as HIV/AIDS, COVID-19 virus, Monkey pox, malaria etc. (UNICEF, 2020). Financing is a major factor contributing to Nigeria's poor health system, and despite health being a crucial factor for long-term economic growth,

successive governments have neglected the sector, allocating insufficient funds and resources. (Adawo, 2017). The current pandemic has highlighted the importance of healthcare in national life and exposed the inadequacies of Nigeria's healthcare financing, leaving the country woefully unprepared to respond to such crises.

In response to the challenges facing Nigeria's healthcare system, the government has made efforts to improve its health expenditure, with the aim of providing better healthcare facilities for its citizens (UNICEF, 2021). According to available data, the country's health expenditure has increased over the years, ranging from 2.1% to 5.8% of total government expenditure from 2000 to 2019 (World Bank, 2020). The expectation is that this increased investment in healthcare will lead to improved health outcomes and a healthier human capital base, which in turn can have positive effects on economic growth and development. However, despite these efforts, Nigeria still lags behind other countries in the region in terms of healthcare spending and outcomes.

In Nigeria's public healthcare institutions, which are run by the federal and state governments, there are chronic shortages of healthcare personnel and equipment, making it difficult for patients to access basic medical care. Patients are often forced to pay for their own medicines and supplies, such as syringes, bandages, and gloves, on top of their hospital bills. This has led to widespread disappointment and frustration with the healthcare system. In private healthcare institutions, the situation is even more dire. Patients are now required to make significant deposits, often in the range of N2 million to N10 million, just to secure admission, on top of the hefty costs of treatment, which can be up to N300,000 per day (Vanguard, 2021). This has made healthcare in Nigeria neither accessible nor affordable for many people.

Investing in healthcare and health infrastructure is essential for improving the health status of a population (Atun, Gurol & Urganci, 2015). This investment can lead to a healthier workforce, resulting in better human capital and increased productivity. According to Riman and Akpan (2012), there is a strong relationship between health and aggregate output, as healthy workers tend to take less time off due to illness and are more productive when working. Knowing that healthy workers have a significant economic impact on economic growth (World Health Organization, 1999). The Nigerian government introduced the National Health Insurance Scheme (NHIS) programs to improve healthcare services and make healthcare more affordable, but unfortunately, it has not achieved its intended goals (Riman & Akpan, 2012).

Following from the above, it is essential for the government to corporate and collaborate with non-governmental and international agencies in providing good and quality healthcare services that are accessible and affordable to the population. In recognition of this, the World Health Organization (WHO) proposed measures to address healthcare financing at the 2010 World Health Assembly, aimed at ensuring qualitative and affordable healthcare services (Ataguba & Akazili, 2010). The United Nations recommends that countries allocate at least 8-10% of their GDP towards healthcare expenditure. Despite efforts to increase public expenditure on health, Nigerian governments have not met this benchmark. Moreover, the government's expenditure on health has not translated to significant improvements in life expectancy, as Nigeria ranks among the countries with poor life expectancy rates and high death rates. The country's hospitals are also in poor condition, with some general hospitals lacking basic facilities and dilapidated infrastructure, contributing to the short life expectancy of Nigerians. It is against this backdrop that this study aims to evaluate the impact of federal government health funding on economic growth in Nigeria over the years.

The major objective of this study was to determine the impact of health financing on economic growth in Nigeria. However, the specific objectives include:

i) To establish the relationship between government capital expenditure on health and economic growth in Nigeria.
ii) To ascertain the effect of government recurrent expenditure on health and economic growth in Nigeria
iii) To investigate the relationship between capital stock and economic growth in Nigeria

LITERATURE REVIEW

Underlying theory

This study uses the Schumpeterian theory of growth, which was developed by Howitt in 2005, to analyze the relationship between health and the economy. According to this theory, the differences in growth rates between rich and poor countries can be attributed to differences in productivity growth, rather than differences in the accumulation of factors such as physical and intellectual capital. The theory distinguishes between physical and intellectual capital, and also between saving and innovation, which are often combined in earlier models of endogenous growth.

The Schumpeterian theory is based on the concept of "creative destruction," where new innovations make older innovations obsolete. The theory also emphasizes the importance of technology transfer, which allows countries to benefit from innovations developed in other nations (Yaqub, 2016). This means that countries with lower levels of technological development can leverage the innovations created in other countries, giving them a boost in their own economic growth.

The Schumpeterian approach differs from neoclassical economics in that it views technological progress as an endogenous force, rather than an exogenous one. This perspective predicts that a country's growth rate is influenced by global technological progress, rather than just the accumulation of resources. Investments in research and development (R&D) are also considered crucial for driving growth. According to this theory, health is considered a crucial component of human capital, which in turn affects a country's productivity and GDP per capita. This is achieved through several mechanisms, including productivity efficiency, skill accumulation, research efficiency and intensity, learning efficiency, school enrolment and savings (Odonmi, 2012).

Review of empirical literature

Research has highlighted the connection between health and economic growth. A study by Riman and Akpan (2012) utilized the multivariate analytical tool to describe the relationship that exists between health care financing, health facility utilization and health outcome in Nigeria. The focus of the research was on women who are of child bearing age and who had given birth to at least one child within the past five years. The study adopted the stratified sampling technique comprising of two rural Local Government Areas and one Urban Local Government Area in Cross River State, Nigeria. The study demonstrated that the high levels of infant mortality and morbidity rate was associated with the high incidence of out-of-pocket payment, and the wide disparity and inequality in income distribution. The study further observed a disproportionate disparity in the spatial distribution of health facilities, with concentration of health facilities at the urban areas rather than the rural areas, which of course contributed to the poor service demand.

Another study by Odonmi (2012) analyzed the relationship between healthcare expenditure and economic growth in Nigeria from 1970 to 2011. The study used a multivariate approach and found a long-term relationship among economic growth, foreign aid, health expenditure, total savings, and population. However, the results showed unexpected signs for foreign aid and health expenditure, which may be due to foreign aid being diverted to other areas or inadequate allocation to healthcare.

Yaqub (2016) explored the relationship between public health spending and infant mortality, under-5 mortality, and life expectancy. The study used advanced statistical techniques and found that public health expenditure has a negative effect on infant and under-5 mortality rates when governance indicators are taken into account. The findings suggest that reducing corruption can lead to improved health outcomes, implying that addressing corruption issues is crucial for improving health outcomes. Another study by Meharara and Musai (2017) investigated the causal relationship between healthcare expenditure and GDP in a panel of 11 oil-exporting countries. The study found that there is a strong causal link between oil revenues and economic growth, which in turn drives healthcare expenditure. However, the opposite was not true, suggesting that oil-dependent countries are vulnerable to fluctuations in oil revenue and therefore need to develop institutional mechanisms to decouple healthcare expenditure from current revenue.

Sede et al (2023) examined the influence of health outcome on economic growth in Nigeria: the case of malaria. The purpose of the study was to investigate the efforts of government on health care system in Nigeria as it influences real gross domestic product within the period of review. Econometrics analyses were employed to carry out the investigation using Autoregressive Distributed Lag (ARDL). The findings revealed that current health expenditure has an unfavourable effect on economic growth, while gross capital formation and secondary school enrolment have positive influence on economic growth in Nigeria. It was, therefore, recommended that the government should endeavour to double her investment in healthcare system in Nigeria. There are lots of capital outflows as a result of poor expenditure on health care system in Nigeria. The only way to curb this is for the government to be deliberate in her will to invest in this particular sector of the economic which will stimulate improvement in economic growth in general.

Wilhelmson and Gerdtham (2016) examined the impact of investing in maternal and newborn health on economic growth, suggesting that a more comprehensive approach should consider both health and ill-health outcomes beyond mortality. Mizushima's study (2018) analyzed the relationship between aging populations, public health funding, and saving rates, finding that an increase in life expectancy increases economic growth without public health funding, but has an inverted U-shape with public health funding.

Lucian's study (2016) re-examined the relationship between economic growth and health financing, finding a positive correlation between population health and GDP, with causality flowing from economic growth to disease growth rates. Conceicao and Kim (2016) found that economic fluctuations have a significant impact on growth rates, with improvements in human development associated with growth accelerations and deterioration with decelerations. Rivera and Currais (2013) analyzed the effect of healthcare investment on productivity, finding a positive relationship between healthcare expenditure and income growth.

Bloom (2017) extended production function models to include work experience and health as fundamental components of human capital, finding that good health has a significant positive effect on aggregate output. Akram's study (2011) investigated the impact of different health indicators on economic growth in Pakistan, using advanced statistical techniques. The study found that per capita GDP is influenced by healthcare expenditure in the long term but not in the short term. Overall, the studies suggest that there is a complex relationship between healthcare spending and economic development, and that other sectors may receive priority over healthcare spending.

METHODOLOGY

This study employed an ex-post facto research design, which uses empirical estimation techniques to analyze the relationship between explanatory variables and the dependent variable. Hence, the design adopted was to enable the study ascertain from already established situation whether health financing have significant impact on economic growth in Nigeria. The data used in the estimation of the model were obtained from secondary sources, collated from the Central Bank of Nigeria (CBN) statistical bulletin and the World Bank data sheet.

Model specification

The theoretical anchor of this model is the Schumpeterian theory of growth. According to the theory, health expenditure is treated as a component of human capital and by this it contributes and predicts relative productivity and per capita GDP through productivity efficiency. Arising from the theoretical postulate the model can be estimated using the following specifications:

$$PCI = f(GCEH, GREH, GFCF)$$

Where:
PCI = Per capita income (proxy for economic growth)
GCEH = Government capital expenditure on health
GREH = Government recurrent expenditure on health
GFCF = Gross fixed capital formation as proxy for capital stock

The econometric form of the model can be written as:

$$PCI = b_o + b_1GCEH + b_2GREH + b_3GREH + b_3GFCF + U$$

Where:
b_o = The regression constant
b_1-b_3 = The coefficient to be estimated
U = The stochastic error term

Techniques of data analysis

The study utilized multiple regression analysis, specifically Ordinary Least Squares (OLS), to evaluate the impact of independent variables on the dependent variable. This choice was made due to the simplicity of the OLS computational procedure, compared to other econometric techniques, as well as the relatively moderate data requirements. Additionally, OLS is a fundamental component of many other econometric techniques, making it a widely used and reliable method in research. Its minimal bias and widespread adoption also contributed to its selection in this study.

RESULTS AND DISCUSSIONS

A summary of the regression result of health financing variables and economic growth is presented below:

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	2.896469	1.094118	2.647310	0.0134
LOG(GCHE)	0.045315	0.018560	2.441500	0.0215
LOG(GRHE)	-0.003974	0.015774	-0.251937	0.8030
LOG(GFCF)	0.293782	0.046559	6.309854	0.0000
R-squared	0.926782	Mean dependent var		12.42571
Adjusted R-squared	0.918646	S.D. dependent var		0.2970024
S.E. of regression	0.084719	Akaike info criterion		-1.979044
Sum squared resid	0.193786	Schwarz criterion		-1.794014
Log likelihood	34.67519	Hannan-Quinn enter.		-1.918729
F-statistic	113.9202	Durbin-Watson stat		0.957562
Prob(F-statistic)	0.000000			

The regression analysis revealed a positive correlation between the constant term and per capita income, indicating that there is a direct relationship between the two. This means that if all other factors are held constant, there will be an autonomous increase in per capita income by 2.896469. The study also found that government capital expenditure on health has a positive impact on per capita GDP, with a 4% increase resulting from a 1% increase in government capital expenditure on health. This result aligns with the expected outcome. In contrast, the coefficient for government recurrent expenditure on health has a negative sign, which contradicts theoretical expectations. This suggests that a 1% increase in government recurrent expenditure on health would lead to a 0.003% decrease in per capita GDP. The analysis also showed that gross fixed capital formation has a positive impact on per capita GDP, with a 29% increase resulting from a 1% increase in gross fixed capital formation.

Still from the regression results, the analysis revealed a high coefficient of multiple determination (R2) of 0.926, indicating that the explanatory variables in the model explain approximately 92% of the variation in per capita income in Nigeria. The remaining 8% of the variation can be attributed to external factors not included in the model. The F-statistic test was conducted to evaluate the overall significance of the model, and the result showed that the calculated F-value (113.675) was significantly higher than the tabulated F-value (2.92) at the 5% level of significance. This suggests that the overall model is statistically significant and has a good fit.

The statistical reliability of each parameter estimate was tested using the student t-test, and the

results showed that two explanatory variables, government capital expenditure on health and gross fixed capital formation, were statistically significant at the 5% level of significance. On the other hand, government recurrent expenditure on health was not statistically significant. The Durbin-Watson statistic test was conducted to assess for autocorrelation among the variables, and the result showed that the D-W value (0.557) fell outside the shaded region, indicating autocorrelation among the variables in the model.

Discussion of findings

This study explored the relationship between health financing and economic growth in Nigeria, and the results show that government capital expenditure on health has a positive and significant impact on economic growth, as measured by per capita income. This finding is consistent with the research of Idowu (2016), which found that government investment in health in the long run positively influences economic growth. The positive relationship between government capital expenditure on health and economic growth can be attributed to the recent increase in budgetary allocation to the health sector. The study suggests that improving the health status of the population can lead to a high level of economic growth.

The relationship between government recurrent expenditure on health was negative and not significant. This is at variance with the findings of Kareem and Nasir (2017). This could be attributed to the poor salaries and other entitlement of health workers in Nigeria. In Nigeria, there is this issue of brain drain as our medical doctors and nurse leave the country in their numbers. The hospitals lack personnel. This is capable of reducing works productivity and economic growth. The result equally revealed a positive and significant relationship between gross fixed capital formation which was the proxy for capital stock and economic growth in Nigeria. This was in consonance with the findings of Akintunde (2018). With improve capital stock, heath investors can easily access investible fund that if properly channeled, can improve workers' productivity and economic growth.

CONCLUSION AND RECOMMENDATION

The study examined the relationship between healthcare financing and economic growth in Nigeria using 37 years of data from 1981 to 2019. The ordinary least squares method was used to analyze the data. The findings show that government capital expenditure on health has a positive and significant impact on economic growth, which aligns with economic theory. However, the study also found an inverse relationship between government recurrent expenditure and economic growth. The result equally revealed a positive and significant relationship between gross fixed capital formation which was the proxy for capital stock and economic growth in Nigeria.

Based on these findings, the following recommendations are made to improve healthcare financing and economic growth in Nigeria:

1. The healthcare system should be restructured to alleviate the financial burden on Nigerians, and out-of-pocket payments for healthcare should be abolished.
2. The government should prioritize healthcare financing, including subsidies for healthcare services, provision of life-saving facilities, and improvement of healthcare personnel.
3. Government capital expenditure on health should be increased, with emphasis on implementation of the National Health Insurance Scheme across all tiers of government.
4. Measures should be taken to boost capital stock, including seeking more involvement from

foreign donors in Nigeria's healthcare programs.

REFERENCES

Atun, R. & Gurol-Urganci, I. (2005). Heath expenditure: An investment rather than a cost? *International Economics Programme, Working paper 05/01*.

Bloom, D. E., & Canning, D. (2011). The health and wealth of nations. *Science*, 287, 1207–1209.

Bloom, D. E., Kuhn, M., & Prettner, K. (2017). Africa's prospects for enjoying a demographic dividend. *Journal of Demographic Economics*, 83, 63–76

Barro, R. (2008). *Health and economic growth,* Mimeo. Cambridge, MA: Harvard University.

FMOH (2014). The National Strategic Health Development Plan (National Health Plan) 2010-2015. Abuja, Nigeria: Federal Ministry of Health.

Lucian, U., Straciuc O., Maghiar, T. & Ciprian, T. (2009). Relationship and causality between economic growth rate and certain diseases in the European Union

Riman, Hodo B. & Akpan, Emmanuel S., (2012). Healthcare Financing and Health outcomes in Nigeria: A State Level Study using Multivariate Analysis," *MPRA Paper* 55215, University Library of Munich, Germany.

Sambo, *et al.* International Archives of Medicine 2013;6:5-17. Available from: http://www.intarchmed.com/content/6/1/10). [Last accessed 2014 Apr 12].

Sede, P., Olu, B., Ademola, A., Olayinka, A., & Oladosu, O. O., (2023). Health Outcome and Economic Growth: The Case of Malaria in Nigeria. *Qeios.* 2(3), 34-45.

Scheffler, R. M. (2004). Health expenditure and economic growth: An international perspective. *Occasional Papers on Globalization*, 10:4-10.

Saka, M. J. (2012). An overview of the Nigerian National Health Bill. *Savanna Journal of Medical Research and Practice*,1:1-9.

World Bank.(1993). *World development indicators*. Washington, DC: World Bank

World Health Organization. World Health Statistics 2017. Geneva: World Health Organization; 2012. Available from: http://www.who.int/healthinfo/EN_WHS2012_Full.pdf. [Last accessed on 2013 Mar 17].