World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

Healthcare Financing and Economic Performance in Nigeria

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World Journal of Advanced Research and Reviews, 2025, 28(03), 1565–1577

Publication history: Received 11 November 2025; revised on 16 December 2025; accepted on 19 December 2025

Article DOI: https://doi.org/10.30574/wjarr.2025.28.3.4199

Abstract

This study provided the relationship between healthcare financing and economic performance from 1986-2023 in Nigeria. Specifically, the study focused on the role of government capital and recurrent expenditure in health on gross domestic product. This study was based on two theoretical concepts, namely, the Human Capital Theory and the Keynesian Theory of Public Expenditure. The research design adopted ex post facto design as it is only applicable in a historical form of research where the researcher is not able to manipulate the variables. Data that were used in this study were obtained from statistical bulletins of Central Bank of Nigeria and World Bank. The data used for the research are secondary time series data. The descriptive method, unit root, Johansen co-integration and parsimonious ECM techniques were used for this study at 5% level of significance. The unit root result indicated that all the variables were stationary at first difference and require the Johansen co-integration that validate the presence of long run form among the variables. The parsimonious ECM result revealed that that Government recurrent spending in health have a statistically insignificant and negative effect on gross domestic product while government capital spending in health have positive and statistical significance influence on gross domestic product. The study concluded that government capital expenditure in health is the significant aspect of healthcare financing that, promotes the gross domestic product of Nigeria. The study recommended the Federal government of Nigeria to implement performance-based budgeting in the healthcare sector, conduct health workforce audit to reduce wastage.

Keywords: Health; Financing; Performance; Significant; Infrastructure

1. Introduction

Healthcare finance refers to the mobilisation, accumulation and distribution of funds to solve the health needs of individuals and populations, together with the methods of paying for health services (World Health Organisation [WHO], 2020). Economic success is measured by such indices as gross domestic product (GDP), productivity, and employment rates, as well as human capital development. The link between the two demonstrates the importance of effective systems of health funding on achieving national productivity, poverty reduction, and economic stability.

The four sources that are largely supporting Nigeria's healthcare finance system are government budget allocations, out of pocket expenses by families, donor contributions, and health insurance programmes. Nonetheless, the country has experienced ongoing challenges in terms of insufficient subsidy of the healthcare sector whereby health expenditure as a percentage of GDP has been constantly shown to be below the 5% threshold recommended by WHO, and 15% target recommended by the Abuja Declaration of 2014 for national budgets (WHO, 2020; Federal Ministry of Health [FMOH], 2021). In 2021, Nigeria allocated only 4.3% of the national budget to healthcare, an amount that is a far cry from what is adequate to meet the health demands of a population of over 200 million people (National Bureau of Statistics [NBS], 2022). Excessive expenditure on out-of-pocket medical expenses projected to be more than 70% of total health expenses have led to catastrophic health payments, particularly among low-income families, threatening their economic and pushing many of them into poverty (World Bank, 2021). These costs mean people cannot afford essential health

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treatments, or affect household productivity and performance in the economy as a whole. Lack of adequate health finance results in poor health infrastructure, manpower shortage and high rate of diseases, the mix of which contributes to low labour force productivity and high dependence ratios (Aregbeshola and Khan, 2018; Ibe & Olulu-Briggs, 2016; Sunday et al., 2019; Olulu-Briggs & Onoh, 2014).

Empirical data supports that better health care finance provides better economic outcomes. Bloom and Canning (2000) showed that better health leads to higher productivity in the labour market, investment in education and demographic dividends. In the case of Nigeria, current challenges in the financing of health care are hindering these potential benefits. Life expectancy in Nigeria is low at 55 years, and the nation is performing badly on the Human Development Index which is indicative of systemic health issues that are having a negative effect on economic productivity [United Nations Development Programme [UNDP], 2023].

1.1. Statement of the Problem

The National Health Insurance Scheme (NHIS), to combat financial barriers to accessing healthcare, has proven to be limited in coverage as well as efficacy. In 2022, fewer than 10 percent of Nigerians were beneficiaries of health insurance of any type (FMOH, 2022). This is a restricted access and highlight the inadequacy of the existing health finance schemes and requires a wide range of changes to attain universal health coverage (UHC), a key catalyst for economic growth. The pandemic Coronavirus (Covid-19) revealed the vulnerability of the health sector in Nigeria, thus, the need for a sound finance system to support the delivery of healthcare systems in times of crises. The pandemic led to massive contractions in GDP levels, indicating the apparent correlation between health crises and economic recessions (International Monetary Fund [IMF], 2021). Therefore, enhancement of health finance methodologies is a social obligation as well as being an economic need.

Despite the huge content of the research work reviewed into the correlation of health care finance on the economic performance, there is an observed deficiency in the type of assessment methodology used within the Nigerian context. Previous studies have more or less defined health care finance in general terms, which usually comprise aggregated metrics such as total health expenditure or out-of-pocket expenses (Aregbeshola & Khan, 2018; World Bank, 2021). Although these indicators present a valuable summary, dis-aggregated elements of government health expenditure are often neglected in them, namely recurrent and capital outlays which may have unique consequences for economic performance. Recurrent health expenditure reflect constant expenditures, consisting of wages, consumables and utilities; while capital expenditure are made in long term investments such as hospital construction, acquisition of new equipment and infrastructure. These two things represent different policy goals and potentially economic outcomes. Capital investment in health infrastructure might have multiplier learning job to create, industry demand, sustainable productivity, while recurrent expenditure helps in the immediate operation of the health system (Abiola and Egbetokun. 2020). However, empirical studies that clearly distinguish between health funding in this two segments and methodically inspect their independent or collective effects on gross domestic product (GDP) in Nigeria, are limited. Consequently, the current research aims at filling this important gap by empirically examining the implication of disaggregated government health care financing with regards to recurring and capital expenditures on economic performance as measured by GDP.

1.2. Aim and Objectives of the Study

This study aims to investigate the relationship between health financing and economic growth in Nigeria. The objectives of the study are to:

- Ascertain how government capital expenditure in health relates to gross domestic product.
- assess the extent to which government recurrent expenditure in health relates to gross domestic product.

1.3. Hypotheses

The following null hypotheses will guide this study.

- H_{01}: There is no significant relationship between government capital expenditure in health and gross domestic product.
- H_{02}: Government recurrent expenditure in health does not significantly impact gross domestic product.

2. Literature Review

2.1. Conceptual Framework

2.1.1. Healthcare Financing

Health care funding refers to methods through which funds are generated, allocated and used to ensure access to health services by individuals and groups. The World Health Organisation (WHO, 2020) describes it as processes of revenue collection (funding sources), collecting money to spread financial risks among the people, and the procurement of health services. These mechanisms have been affecting the accessibility and quality of healthcare services, and the degree to which people are financially protected against costs of disease. Various methods of health care funding are available, such as tax-based system, social health insurance, private health insurance and out-of-pocket expenditures. Nigeria's health finance framework has a combination of approaches characterised mostly by out-of-pocket expenditures which constituted over 70% of total health expenditure in recent years (World Bank, 2021). Government spending on health is separated into recurrent cost (salaries, consumables, maintenance) and capital cost (investment in health facilities and medical equipment). These components play a variety of roles in affecting the efficiency and sustainability of the health system. Recurrent expenditure helps in ensuring the continuity of the operation of health institutions, whereas capital expenditure supports long-lasting capacity building and expansion of health infrastructure. Health finance in Nigeria has been characterised by poor funding, inefficiency and poor implementation of financial protection systems, including National Health Insurance Scheme (NHIS) (Federal Ministry of Health [FMOH], 2022). These deficiencies have resulted in adverse health outcomes that eventually affect productivity and economic performance of the nation.

2.1.2. Economic Performance

Economic performance refers to the whole of the efficiency of an economy in utilising the resources available to it for creating commodities and services to meet the demands of its populace. It is commonly measured through numerous macro economic indicators such as the rate of GDP growth, inflation, unemployment rate, level of investment and trade balance. Tough economic performance refers to growing incomes, improving living standards and sustainable development. In the area of health, economic performance is inextricably linked with the state of health of the population. A healthy workforce is more productive, inventive and able to make a major contribution to economic activities (Bloom & Canning, 2000). Poor health outcomes cause absenteeism, less efficient labour force, increase in healthcare bills and high proportions of population dependency, all of which have negative impacts on economic development. Investment in health care is also a social necessity and an economic imperative aimed at enhancing human capital and promoting long term productivity. Empirical evidence has established that countries with better health outcomes tend to have high rates of economic development. Barro (1996) asserts that improved life expectancy and lower child mortality are linked in a favourable manner with higher levels of productivity and incomes. In low and middle-income countries like Nigeria, efficient health care finance can be the catalyst for better economic performance through reduced illness burden, supplementary labour supply and better educational performance through healthier kids and youths.

2.1.3. Gross Domestic Product

Gross Domestic Product (GDP) is a quantitative measure of the total economic production of a country in a specific time-frame, which typically is a period of one year. It includes the market value of all final products and services produced within the territory of a country (National Bureau of Statistics [NBS], 2022). GDP actually is an important indicator when assessing the size, vitality and direction an economy is heading. Gross Domestic Product can be stated in nominal or real terms. Nominal GDP measures economic production at market prices, whereas real GDP admits for inflation, and is a more accurate measure of economic development through time. Economists and policymakers use GDP to determine national income, compare the performance of various countries, and make fiscal and monetary policies. In relation to healthcare finance, the GDP is a key factor used for determining the adequacy of spending on the healthcare sector. Health spending in relation to GDP is a common measure to assess the level of commitment by a country towards investment in health. The WHO recommends that countries use at least 5% of GDP to spend in the health sector for achieving universal health coverage (WHO, 2020). Nigeria's health expenditure continuously falls short under this criterion, and is often less than 3% - 4% of GDP, an indicator of underinvestment in the sector; "World Bank, 2021. Moreover, the growth of GDP in the country may affect and be affected by the performance of the health sector. Investments in health infrastructure and services may spur job creation, lead to productivity improvements and raise demand for products and services, all of which contribute to GDP growth. A rising GDP may potentially mean that there is the fiscal capacity needed to develop and grow public expenditure on health, education and social services.

2.2. Theoretical Framework

The link between health care finance and economic performance may well be effectively explained through a number of theoretical frameworks. This research is based on two relevant theories namely, the Human Capital Theory and the Keynesian Theory of Public Expenditure. These theories give the conceptual framework for understanding the impact of investments in the health sector, specifically through government recurrent and capital expenditures on the economic performance of the nation, as measured by the gross domestic product (GDP).

The Human Capital Theory was originally conceived by the economists Theodore Schultz and Gary Becker in 1961 and 1964 respectively. The concept basically argues that people and populations can supplement their productivity, economic value and earning potential through investments in education, health and other aspects of human development. In this framework, health is regarded as some type of human capital that is crucial to economic progress. This idea involves the idea that health care funding, particularly in preventative health care, hospital infrastructure, training of medical staff, and health insurance is an investment in human capital. Enhanced health outcomes from these expenditures lead to improved life expectancy, reduced absenteeism, increased labour productivity and eventually, to increased economic production (Bloom & Canning, 2000). Healthy persons are more likely to participate in the labour market and increase productive economic activities, thus contributing to the augmentation of GDP.

In Nigeria, recurring and capital government spending on health such as pay for health professionals, medical supplies, infrastructures and equipment amount to investments in the nation's health capital. These investments to enhance the accessibility and quality of healthcare services, reduce mortality and morbidity rates and complement the productive capacity of the workforce. This is consistent with the Human Capital Theory's claim that health expenditure is not only an activity of consumption but also a driver of economic productivity and progress. Furthermore, improved human capital through better health care conditions promotes the achievement of a number of economic indicators such as school attendance (especially for the youngsters), employment retention as well as persistent national competitiveness (Barro, 1996). Consequently, the theory supports this claim that increasing and optimising the health expenditure of government both recurring and capital will improve the economic performance in Nigeria.

The Keynesian Theory of Public Expenditure formulated by John Maynard Keynes in the 1930s provides important underpinning to this analysis. The idea is that government expenditure has significant effect on aggregate demand, especially through economic recessions or underemployment. Keynes said that intelligent public investment may invigorate economic activities and promote output as well as offer employment and augment economic growth in terms of GDP. In the sense of health care fundings, government spending especially capital spending of health infrastructures and continuous spending on wages and operating cost can be considered to perform as fiscal stimulus which can bring positive economic results. Capital investment on hospital building, equipment acquisition and medical research has multiplier effects invigorating local sectors (e.g. construction, pharmaceutical, logistics) and providing job opportunities (Musgrave & Musgrave, 1989).

The keyesian approach emphasises on the significance of counter-cyclical government spending In the absence of the necessary level of private sector investment, the government expenditure on key areas like healthcare acts as a spur towards economic development. In Nigeria where the financing in the health sector is lower than the world, additional financing of public health expenditure in line with Keynesian model may increase the demand for product and services, increase labour productivity and total GDP. Moreover, health-related recurring expenditures such as pay for medical personnel and purchase of pharmaceuticals and consumables, and maintenance of healthcare facilities, provide liquidity to the economy. It increases the family income, increases the consumer expenditure and improves the economic circulation. The Keynesian Theory tends to prove the positive correlation between the public expenditure of the health sector and the national economic success. The approach stresses the role of government in correcting the failings of markets and ensuring fair access to important services, such as healthcare. In emerging countries like Nigeria, where a viable percentage of the population cannot afford to seek private medical care, government spending has a re-distributive dimension that contributes to social welfare and economic stability in the long-term.

The Human Capital Theory and Keynesian Theory of Public Expenditure offer a complimentary framework for analysing the effectiveness of health care funding on economic performance. The Human Capital Theory highlights the long lasting beneficial effects of improved productivity from improved health outcomes and the Keynesian Theory highlights the near to short term economic stimulus effects of government spending. Collectively, they give a detailed framework for understanding the role of recurrent and capital outlay in the Nigerian health sector on the development of GDP. This study which is based on these theories makes it possible to critically appraise the economic rationale for health care finance, as well as the policy consequences of sustainable economic growth in Nigeria.

2.3. Empirical Review

Sede et al. (2023) examined the role of health outcomes in economic development in Nigeria with specific reference to malaria. The research wanted to study government initiative impact with regards the healthcare system in Nigeria and its impact on real gross domestic in review period. Econometric studies were utilised to conduct the enquiry and using Autoregressive Distributed Lag (ARDL) model. The results showed that current expenditure on health is negatively affecting economic development, although gross capital creation and secondary school enrolment have positive economic growth impact on Nigeria. It was therefore recommended that the government aim at quadrupling the investment in Nigeria's healthcare sector. Significant financial outflow happens because of poor financial investments on the Nigerian healthcare system. The sole way that this problem can be mitigated is by the government actively investing in this particular sector of the economy, thus providing economic development as well. Ayipe and Tanko (2023) analysed the coefficient between public healthcare expenses and the under-five mortality rate in low-income countries in Sub-Saharan Africa. A balanced panel of data on twenty low-income nations in Sub-Saharan Africa were collected from World Development Indicators dataset from the year 2000 to 2019. The results showed a significant negative relationship between domestic health expenditure (Fixed Effects=[-5.275] ;$p<0.05$) and the rate of under-five mortality in low-income countries of Sub-Saharan Africa. Each percentage increase in domestic health expenditure is expected to be associated with a decrease in the under-five death rate by about 5.3 units. The total fertility rate, female population and rural people using open defecation had a positive correlation whereas immunisation against DPT was negatively correlated ($P<0.01$) with under-5 death rate.

Ugah and Aiyepeku (2023) examined the effect of investments and funding in health care in an economy. The researchers used secondary data from annual statistics bulletins of the Central Bank of Nigeria between 1987 and 2020. The acquired data was analysed by using the correlation and multiple regression analysis analytical methods. The analysis results show that government capital expenditure on the health and gross fixed capital formation have a positive significant relationship with economic well-being in Nigeria, while government recurrent expenditure on the health shows a negative significant impact on economic well being during the period analysed. In view of the findings, it is recommended that the government should put investments in the health sector as a priority, invest more in capital expenditures and implement the National Health Insurance Scheme at all levels of government to improve economic wellbeing and overall healthcare delivery in Nigeria. Faruk et al. (2022) discussed the causal link between healthcare expenditure and GDP in a panel of 11 oil-exporting countries. The research concluded that there was a strong causal link between oil revenues and economic growth and that this later affected healthcare spending. On the other hand, the opposite was also not true which means that oil-dependent countries are vulnerable to change in oil revenues and therefore need to set up institutional arrangements for decoupling health spending from income at the point of time.

Olayiwola and Olusanya (2021) analysed the effect of health funding on economic development in Nigeria used the approach of Auto-regressive Distributed Lag Model (ARDL) model estimates with time series data from 1990 to 2020. The results show that previous productive activities have a positive impact on economic growth, both in the short and in the long run. The current domestic government general health expenditure has negative economic growth impact whereas the spending on health of the previous year's domestic government general expenditure has positive economic growth impact. Current out-of-pocket health expenditures adversely effect economic growth while expenditures from the previous year increase economic development. Domestic private health expenditure plays a significant role with a positive effect on economically development. The result further highlights the importance of private health expenditure as compared to government health expenditures in improving economic development. Onisanwa et al. (2018), who analysed the influence of investments in maternal and newborn health and economic development, suggested that a more holistic approach should incorporate health and adverse health outcomes other than death rates. Mizushima's research (2018) investigated the relationship between ageing populations, public health financing and savings rates to find that increases in life expectancy improved economic growth without public health funding, but show an inverted U-shape when public health funding is taken into account.

Lucian et al. (2016) re-evaluated the relationship between economic growth and health funding and concluded that there is a positive relationship between human population health and GDP and that causation exists from economic growth to the propagation rates of illness. David (2018) investigate the correlation between public health spendings and newborn mortality and under-five mortality and life expectancy. The research employed the use of sophisticated statistical methods, and found that spending on public health has an adverse impact on baby and under 5 death rates when factors in governance are included. The data has shown that addressing corruption may help improve health outcomes, implying that addressing corruption is critical for improving health.

3. Methodology

The positivist philosophy was utilised for the study which emphasises the learning by doing and the construction of knowledge through experience and reflection. The concept assumes that the researcher and the subject of the study are independent of each other and do not influence each other. Positivism might be a persuasive framework for the financial management. The design employed in this research was an ex post facto hypothetico-deductive design. The ex post facto approach to research design is carried out after an event has occurred using data that has already been collected. The quantitative data, which is used in this study is primarily the secondary data since it follows ex-post facto hypothetico-deductive design. This research study is suitable because it uses quantitative data because its hypothesis is to determine the relationship between the amount of funds invested health and gross domestic product using already known variables that have been recorded repeatedly over time. The sources of data will be National Bureau of statistics (NBS), Central Bank of Nigeria (CBN) Statistical Bulletin and International Monetary Fund (IMF). The descriptive statistics, the unit root tests, Johansen cointegration and the parsimonious error correction techniques were employed in the study. The descriptive statistics was used to define the characteristics of each of the variables in the study. The unit root tests to order of stationarity of the variables was performed and Johansen co-integration was used to cheque for the existence of long run form among the variables. The nature of the relationship between health financing and gross domestic product using the parsimonious error correction model were obtained. The criteria used in making the decision concerning the rejection of the null hypothesis is that the probability value of the test should be less than the 5% level of significance otherwise, it is considered accepted.

The basic purpose in regard to development of the conceptual model in this research in analysing the impact of government healthcare funding on the economic performance of Nigeria. The dependent variable in the model is Gross Domestic Product (GDP) (which is the total value of the goods and services produced within the country). GDP is often considered an overall measure of economic performance and wellbeing, which encompasses; the outcomes of public sector investments, private sector productivity and household spending. Effective health systems cut illness loads, supplement life expectancy and boost labour productivity in turn which cultivated economic development (Bloom & Canning, 2008). The model has two major, explanatory (independent) variables: Government Recurrent Expenditure on Health (GREH) and Government Capital Expenditure on Health (GCEH). These two dimensions define the different ways on which the government funds the health sector. GREH include expenditures associated with the day-to-day operation of healthcare systems, namely compensation of health staff; purchase of medical supplies; utilities; training and daily consumables. It ensures the immediate operational capacity of the health services and assures continuity in the provision of services. Recurrent expenditure could well theoretically affect GDP by making sure the health staff efficient and keeping the vital services running along with bettering the public access to healthcare. In the short to medium term, such characteristics have the potential to reduce absenteeism, increase labour force participation, and boost working productivity of workers (Barro, 1996). The effectiveness of recurrent spending usually depends on the effectiveness of its allocation and management.

On the other hand Government Capital Expenditure on Health (GCEH) are the expenditures on long term investments such as building of hospitals and clinics, acquisition of medical equipment or the development of infrastructure in the health sector. These expenditures lead to a strengthening of the health system's capacity; this facilitates achieving great treatment; they provide a foundation for lasting public health advancements. Capital spending is expected to have a major effect on the economic performance in the long run through improved efficiency and accessibility of the healthcare system, thus contributing to the augmentation of human capital. Endogenous growth theory, which argues that investments of human capital (such as health and education) are important to sustained economic development (Romer, 1990). By investing in healthcare infrastructure, governments create the basis for a healthier, more productive population, which is the key to improving economic production.

The theoretical framework of the concept holds that both GREH and GCEH are significant - in different ways. GREH provides short-term economic stabilisation by keeping the system working and GCEH supports long-term development through building the structural quality and capacity of health services. The two factors are, thus, not an alternative but complementary elements of an integrated plan for healthcare funding. The relationship between these expenditures and GDP can be affected by a number of variables such as as institutional efficiency, transparency on public spending, governance and the absorptive ability of the health sector. Consequently, the conceptual framework for this research may be encapsulated this way:

$$GDP = f(GCEH, GREH) \quad 3.1$$

$$GDP_t = \delta_0 + \delta_1 GCEH_t + \delta_G GREH_t + \epsilon_t \quad 3.2$$

On apriori δ_1, and $\delta_2 > 0$

Where, GDP = Gross domestic product, GCEH = Government capital expenditure in health, GREH = Government recurrent expenditure in health, t = Annual time series, δ_1, and δ_2 = Constant parameters, δ_0 = Intercept

4. Results

Table 1 Descriptive Statistics

	GDP	GREH	GCEH
Mean	14434987	124.6635	201.6136
Median	8318609.	48.16071	81.66544
Maximum	68890454	468.6388	752.9764
Minimum	14904.20	3.105503	4.411200
Std. Dev.	16827615	144.0064	228.0271
Skewness	1.381694	1.114525	1.056357
Kurtosis	4.576215	2.924199	2.847883
Jarque-Bera	16.02456	7.876146	7.103948
Probability	0.000331	0.019486	0.028668
Sum	5.49E+08	4737.214	7661.316
Sum Sq. Dev.	1.05E+16	767299.7	1923866.
Observations	38	38	38

Source: E-views 10 Output

The descriptive data for Gross Domestic Product (GDP), Government recurrent expenditure on Health (GREH) and Government capital expenditure on Health (GCEH) of Nigeria over 38 observations, give important insights on the economic and health funding trends in the country. The GDP figures show an average of about N14.43 trillion, a median of N8.32 trillion, high of 68.89 trillion, and a bottom of 14.9 billion. The large difference between the mean and median with high standard deviation of N16.83 trillion show much variability in Nigeria's economic performance over the time. A skewness value of 1.38 is an indication of a positively skewed distribution, giving an indication that a small number of high values cause the mean to be high. The value of kurtosis (4.58) shows that there are heavier tails than a normal distribution. The result from the Jarque-Bera test (p = 0.0003) confirms that the data about GDP is not normally distributed. These fluctuations can be attributed to changes in oil prices, the instability of the currency rate, political disturbances or any global economic disturbances which affect the economic performance of Nigeria. The Government Recurrent Expenditure on Health (GREH) includes an average amount of N124.66 billion, median and standard deviation amounting to N48.16 billion and N144.01 billion respectively. The highest reported GREH is N468.64 billion whilst the lowest is N3.11 billion. The positive skewness of 1.11 and Kurtosis of 2.92 indicate that recurrent health spending is unevenly distributed, with a tendency for high spending in some years, possibly in the event of a health emergency, or following a major change in health policy. The test with the Jarque-Bera test (p = 0.0195) shows that GREH is not normally distributed. The large gap between mean and median is an indication that, although average expenditure appeared to be high, recurrent health funding was much lower in a number of years. The irregularity in the recurrent expenditure could have an adverse effect on the quality and accessibility of basic health services such as salaries, pharmaceuticals and routine procedures which are essential to maintain effective healthcare systems.

Likewise, Government Capital Expenditure on Health (GCEH) indicates huge fluctuation during the time. However, GCEH has greater discrepancy than GREH with a mean of N201.61 billion and a median of N81.67 billion. The standard deviation is 228.03 billion, the maximum capital expenditure of 752.98 billion and the minimum 4.41 billion. The skewness (1.06) and kurtosis (2.85) suggest a moderately skewed and leptokurtic distribution when characterised by numerous years of disproportionate investments. The Jarque-Bera statistic p = 0.0287 further confirms it is not normal. The findings present scattered investments in health infrastructure, equipment and facilities, and thus show the uneven focus on attaining health over the long term. This irregularity threatens continuous developments in the health sector, which are needed to advance population health and productivity. On average, capital investment on health exceeds

recurrent expenditure, however both show signs of volatility. This means that though expansion of infrastructure has been in focus, the regular financing of routine functioning of healthcare institutions has been inconsistent. The huge fluctuation in capital and reoccurring expenses could indicate unstable budgetary allocation, policy changes, or implementation failures in the Nigerian health system. Furthermore, all three variables (GDP, GREH and GCEH) are positively skewed with non-normal distribution, meaning the existence of outliers which could be the result of economic shocks or large one-time investments.

From a policy perspective, the faultiness in the way health care funding is structured in Nigeria may impede the country's ability to utilise the investment made in health to achieve sustained economic development. The detected spins in capital and recurrent health expenses threaten the continuity of healthcare service delivery, infrastructure development and staffing. This could reduce the positive effects of investment in health on economic outcomes as envisaged by both the Human Capital Theory and the Keynesian Theory of Public investment. To ensure that health finance contributes to significant growth in the GDP, more stable, transparent and evidence-based budgeting mechanisms and priorities for health financing which account for urgent health needs and long-term system improvement goals must be adopted by the Nigerian government. The consonant research found that GDP and health expenditure of Nigeria demonstrates significant variability in terms of incidence of large disparity between mean and median values and non-normality. These trends point to macroeconomic instability and volatility of state investment in health on a large scale. To strengthen the relationship between finance and health outcomes and industrial development depends on upholding the equivalent and sustained investment on capital and recurring health spending, guided by overt policies and responsible governance frameworks.

Table 2 Result of Unit Root Test

Variables	T-Stat @ 1st Diff.	T-Critical @ 1st Diff.	P-value @ 1st Diff.	Order of Integration
GDP	-7.028718	-2.945842	0.0000	I(1)
GCEH	-10.02681	-2.945842	0.0151	I(1)
GREH	-6.095324	-2.948404	0.0000	I(1)

Source: E-views 10 Output

Based on the result of table 4.2, it can be seen that all the variables were integrated at first difference. This is because their respective level of integrations had their ADF t-stat values that were above their t-critical values at the 5% significance level. Also, their respective p-value was below the 5%-significance level. Thus co-integration of this study employs Johansen co-integration test to verify the presence of long run form among the variables.

Table 3 Johansen Co-integration Result

Trend assumption: Linear deterministic trend				
Series: GDP GREH GCEH				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.469427	35.80470	29.79707	0.0090
At most 1	0.264689	12.98798	15.49471	0.1153
At most 2	0.051920	1.919383	3.841466	0.1659
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**

None *	0.469427	22.81671	21.13162	0.0287
At most 1	0.264689	11.06860	14.26460	0.1508
At most 2	0.051920	1.919383	3.841466	0.1659

Source: E-views 10 Output

The result of the trace and max-eigen statistics revealed the existence of 1 cointegrating equations. This entails that there is the presence of long run form among the variables. As a result, we take a further step to investigate the parsimonious error correction model to establish the nature of the long run relationship among the variables.

Table 4 Parsimonious Error Correction Model Result

Dependent Variable: GDP				
Method: Least Squares				
Included observations: 37 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GREH(-1))	-0.291025	0.183722	-1.584053	0.1227
D(GCEH(-1))	1.512087	0.163252	9.262292	0.0000
ECM(-1)	-0.308877	0.141737	-2.179225	0.0366
C	4.240397	0.114848	36.92172	0.0000
R-squared	0.946798	Mean dependent var		6.650095
Adjusted R-squared	0.941961	S.D. dependent var		0.908283
S.E. of regression	0.218817	Akaike info criterion		-0.099358
Sum squared resid	1.580066	Schwarz criterion		0.074795
Log likelihood	5.838126	Hannan-Quinn criter.		-0.037961
F-statistic	195.7579	Durbin-Watson stat		1.851267
Prob(F-statistic)	0.000000			

Source: E-views 10 Output

The coefficient of D(GREH(-1)) is -0.2910, and the corresponding standard error is 0.1837 and the t-statistic is -1.5841. The negative connexion seen is accompanied with a probability value of 0.1227 that is above the standard level of significance (0.05), which shows the level of significance, thus it indicates that the variation of government recurrent spending on health through the lagged relationship does not have a statistically significant short-term effect on GDP. This conclusion implies that recurrent expenditures such as wages and consumables and administrative expenditures may not be directly conducive to economic development in a short term, perhaps because they cannot fast enough identify productive capacity and economic output. On the other hand, D(GCEH(-1)) has a positive and significant coefficient equal to 1.5121, t-statistic equal to 9.2623 and p-value equal to 0.0000. This result shows a strong and statistically significant short-term correlation between the variation in lags of government health capital spending and GDP. The magnitude of the coefficient shows that, for every unit increase of GCEH in the previous period, there is an increase in GDP of 1.51 units in the current period. This discovery underscores the importance of capital expenditures in health such as the construction of infrastructure for health, acquisitions of equipment and expansion of service facilities as being important catalysts for economic productivity and sustained development. It corresponds with economic theories which focus on capital production as a source of sustainable growth. The constant one (C) is 4.2404 and is statistically significant, indicating if other variables are zero then GDP would continue to increase at a baseline level. This intercept likely includes other determinants of GDP that we do not consider other than the variables related to health spending.

The error correction term ECM(-1) has a negative coefficient of -0.3089 which is statistically significantly at the 5% level (p = 0.0366). This validates the existence of a long-term equilibrium link in between healthcare financing and GDP. The negative sign shows that it is any short-term imbalance between the variables that are rectified in the long run, with

approximately 31% of the divergence from long-run equilibrium being made in each period. This implies moderately paced adjustment and verifies the stability of the system over a long period of time. From the point of view of a diagnosis, the model is very in line with data. The R-squared score is 0.9468, showing that nearly 95% of the variation in the data's dependent variable (GDP) is explained by the included explanatory factors in the model. The adjusted R-squared of 0.9420 justifies the robustness of the model, taking into consideration the number of predictors. The F-statistic of 195.76 with p-value of 0.0000 means that the entire model is statistically significant. The Durbin-Watson value is 1.85, which shows little autocorrelation between the residuals, thus providing further evidence of the validity of the results of the regression.

The result shows that government capital investment on health has a statistically significant impact on the improvement of economic performance in Nigeria while recurrent expenditure, however, has no statistically significant short-run benefit. The relevance of health financing elements to the long-term economic stability was indicated by the substantial ECM phrase. These results induce the need of capital expenditure prioritisation in the healthcare industry to complement the outcome such as productivity and GDP development. Therefore, government needs to allocate more resources to the development of health infrastructure and systems to improve health outcomes and economic performance.

5. Discussion of Findings

The results of the regression study about the influences of health care funding on the economic performance of Nigeria indicate significant patterns as to the efficacy of different forms of government health spending. The research proves that the government capital expenditure on health (GCEH) deteriorates that the impact on the economic performance is positive and statistically significant, as indicated by Gross Domestic Product (GDP). On the contrary, government recurrent spending on health (GREH) does not have a significant effect on GDP in the medium run. These results have serious implications in terms of fiscal policy, particularly for the organisation and prioritisation of public spending in the healthcare sector.

The strong and statistically significant correlation between GCEH and GDP shows that capital investments in the health sector such as building of healthcare infrastructure and the attainment of modern medical equipment and development of technology systems contribute significantly to economic production. This supports the claims of the fact that the capital investment in health leads to long-lasting improvement in the healthcare delivery capacity and contributes to the productivity by promoting the health and well-being of the workforce (Bloom et al., 2019). This relates to the Keynesian theory which argues that public expenditure especially in vital sectors such as health can boost the aggregate demand and stimulate economic development (Barro & Sala-i-Martin, 2004). In Nigeria, where there has been chronic underfunding of the health system and an inadequate provision of facilities in place, capital spending is very essential in meeting the infrastructure gap and improving service delivery.

The general grievance regression results show a negative although statistically negligible correlation of ժɯմrevege with GDP. This means that the regular expenditures for for example wages, consumables, maintenance and other existential costs of operations do not have an impact that can be quantified as an effect in the short period in economic production. This conclusion might be attributed to the challenge experienced by recurrent expenditure in Nigeria as it is often hampered by inefficiencies, leakages, and poor institutional capacity, hindering its effectiveness in changing economic outcomes (World Bank, 2021). Moreover, recurrent spending often serves continuous service needs as opposed to enabling structural improvements and thus may explain its weak link with GDP growth. This aligns with the findings of Anyanwu and Erhijakpor (2009) who noted that while the health expenditure is important, its efficiency and structure and not the accumulated sum that are important in terms of its developmental effect.

The significance of the error correction term (ECM) in the model thus reiterates the existence of long-term equilibrium relationship between healthcare funding and economic performance in Nigeria. The negative coefficient of the ECM represents the presence of a steady adjustment mechanism, that is, that divergences from the long-run trajectory are corrected over time. This research suggests that even though the consequences of recurrent expenditure are not readily visible, both modes of healthcare investments improve economic performance in the long run, provided that capital investments are sustained and properly administered (Ogunleye, 2017). The identification of a stable and long-term relationship provides the agreed and necessary justification for consideration of health finance in macroeconomic planning frameworks.

These results have important implication for policy makers in Nigeria. Due to the limited nature of fiscal resources, and conflicting budgetary goals, making the strategic allocation of public health expenditures is crucial. Empirical research shows that capital expenditure needs to be a priority, especially for expenditures that enhance access to excellent

healthcare, as well as reduce the burden of illness and enhance labour productivity. Nevertheless, capital expenditure is not sufficient if governance, procurement efficiency, and maintenance of infrastructure and human resources are not also improved. Consequently, changing recurrent spending to get better value for money and more effective service delivery outcomes is a significant complementary priority.

This research reveals the specific impact of recurrent and capital expenditures on health in Nigeria on the economy's influence on the nation's economy. Capital expenditure enhances GDP growth tremendously but recurring expenditure does not have statistically significant impact in the near run. These findings bear importance to evidence-based budgeting and strategic long-term planning in the healthcare industry. For Nigeria to achieve the economic gains of better health outcomes, transitioning to a shift in strategic capital investment, with the concomitant changes in institutions for optimising efficiency of recurrent expenditure is opportune and necessary too.

6. Conclusion

The development of healthcare financing and relationship to the economic performance in Nigeria was studied. Specifically, the investigation reflected on the government capital and recurrent expenditure in health and how this contributes to the gross domestic product. Using the descriptive, unit root, Johansen co-integration and parsimonious ECM techniques with the 5% level of significance, the result of the study concluded that government capital expenditure in health is the significant aspect of healthcare financing that promotes the gross domestic product of Nigeria.

The basic result of this study is on the Keynesian theory whereby the public expenditure, especially in crucial areas such as health, may boost the spending and lead to economic development (Barro & Sala-i-Martin, 2004). In Nigeria, where the health system has been chronically underfunded and a sufficient amount of facilities are lacking, capital spending is very critical to the gap of infrastructure and service provisions. For the human capita theory, we are of the view that health care funding, more so in the area of preventative care, hospital infrastructure, medical staff's training and health insurance, represent an investment in human capital. Enhanced health outcomes from these expenditures lead to enhanced life expectancy, reduced absenteeism, labour productivity and ultimately, larger economic production (Bloom & Canning, 2000). Healthy people are more tempted to seek activity in the labour market and taking part in productive economic activities, and thus contributing to GDP.

Limitations of the Study

Notwithstanding the contributions, there are no limitations to this study. First, it focused on just aspect of the government funding of healthcare in Nigeria, due to the availability of data. Any other possible healthcare funding such as from private institutions and non-governmental organisations were left out. Second, the research was based on secondary information of government reports and financial institutions which could be inconsistent or report errors.

Recommendations

In the wake of the findings in this study concerning the correlation between healthcare funding and economic success in Nigeria, two recommendations are targeted at this issue as follows:

Considering the huge and statistically significant influences of government capital expenditure on health (GCEH) on the performance of the economy, the Federal government of Nigeria should allocate a larger portion of the health spending budget to the capital expenditure. This cites the building and upgrading of hospitals, supply of modern medical technology to health institutions and increased access to rural health infrastructure. These expenditures will improve healthcare delivery, boost labour productivity, alleviate the burden of healthcare and create for long-term economic development. The government need to undertake multi-year capital projects with transparent monitoring systems in order to ensure successful implementation and sustainability. Given that recurring health expenditure (GREH) does not have a statistically significant influence on GDP, it is imperative to concentrate on enhancing the efficiency and efficacy of such expenditures. The Federal government of Nigeria should use performance-based budget on healthcare sector, in which personnel remuneration, supplies and operational expenditures are correlated with quantifiable health results. Furthermore, rolled out anti-corruption procedures, digital procurement platforms and health staff audits are required to reduce waste and ensure recurrent spending goes directly to enhanced service delivery. Improved management of recurring resources will help supplement capital investment and result in a stronger health system that will support economic growth.

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