

IMPACT OF GOVERNMENT HEALTH EXPENDITURE ON HEALTH OUTCOMES IN NIGERIA (1993-2023)

BY

ORAEKIE RACHEAL KOSISOCHUKWU

GOU/U22/ECO/444

**A PROJECT PRESENTED TO THE DEPARTMENT OF ECONOMICS, FACULTY OF
MANAGEMENT AND SOCIAL SCIENCES, GODFREY OKOYE UNIVERSITY, ENUGU
STATE IN FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
BACHELOR OF SOCIAL SCIENCE (B.Sc), DEGREE IN ECONOMICS**

SUPERVISOR: DR. IDUMA MODESTA

DECLARATION

I **ORAEKIE RACHEAL** hereby declare that this research p[roject titled **“THE IMPACT OF GOVERNMENT HEALTH EXPENDITURE ON HEALTH OUTCOMES IN NIGERIA, 1993-2023”** was written and presented by me to Godfrey Okoye University, Enugu state and has not been presented anywhere for the purpose of acquiring any degree in Economics

ACKNOWLEDGEMENT

I give all glory and thanks to Almighty God for His grace, mercy, strength, and guidance throughout my academic journey and for making the successful completion of this project possible. I sincerely appreciate my project supervisor, Dr. Modesta Iduma, for her guidance, encouragement, and constructive criticism throughout this research. My heartfelt gratitude goes to my mother, Mrs. Nkiru Oraekie, my sister, and my cousin, Ebube Okeke, for their love, prayers, and unwavering support. I also appreciate my friends Nwogu Chioma, Aseri Busayo, Okoronkwo Anna, Aligbo-Peter Praise, Nina Okoro, Okoro Favour, David Ario, Christopher Nwanah, Lois-Osamen Bella, Anicho Chelsea, Timothy Daxson, Marvelous Hezekiah, Pamela, and Travis for their encouragement and support. Special thanks to my best friend, Nina Okoro, and my roommate, Vicky, for always being there for me. Finally, I appreciate my ceoursemates, Nnamdi Onodugo, Okenwa Chimdindu, Onwubiko Chidera, Emmanuella, and Elizabeth, as well as everyone who contributed to the success of this project. May God bless you all.

ABSTRACT

This study examined the impact of government health expenditure on health outcomes in Nigeria over the period 1993–2023. The study was motivated by the persistent challenges facing Nigerias healthcare sector despite increasing government investment in healthcare. Specifically, the study investigated the effect of government health expenditure on life expectancy, infant mortality rate, and maternal mortality ratio, which served as indicators of health outcomes.

Secondary data covering the study period were obtained from the World Development Indicators (WDI) published by the World Bank. The study adopted an ex post facto research design, while descriptive statistics and regression analysis were employed to examine the relationship between government health expenditure and the selected health outcome indicators. The analysis focused on determining the direction, magnitude, and statistical significance of the relationship between public healthcare expenditure and health outcomes in Nigeria.

The findings revealed that government health expenditure has a positive and statistically significant effect on life expectancy, indicating that increased public investment in healthcare contributes to improvements in the average lifespan of Nigerians. The results further showed that government health expenditure has a negative and statistically significant effect on infant mortality rate and maternal mortality ratio, suggesting that increased healthcare funding contributes to reductions in infant and maternal deaths. Overall, the findings demonstrate that government expenditure on healthcare plays a significant role in improving health outcomes in Nigeria.

Based on these findings, the study concluded that sustained and adequate government investment in the health sector is essential for improving healthcare delivery and achieving better health outcomes. The study therefore recommends that the government should increase budgetary allocation to the health sector, strengthen accountability and transparency in the management of healthcare funds, improve healthcare infrastructure and medical equipment, and expand access to quality healthcare services, particularly in rural and underserved communities. These measures are expected to enhance the efficiency of healthcare expenditure and promote sustainable improvements in the health status of the Nigerian population.

Keywords: Government Health Expenditure, Health Outcomes, Life Expectancy, Infant Mortality Rate, Maternal Mortality Ratio, Nigeria, Healthcare Financing.

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Everyone agrees that health is the essential element of both national production and human growth. The health sector is said to be considered as one of the most essential components of the national development because the wellbeing of population determines the productivity, stability and long-term economic strength of the country.

According to Gary Becker (1964), investment in health is an important aspect of the human capital development. This is because healthy individuals are more productive and contribute positively to the economic growth.

This argument was further expanded by Michael Grossman (1972), who explained health as a form of capital that the individuals and government invest in to improve longevity and quality of life.

The government around the world invest in the healthcare to ensure that their citizens would live longer, healthier and a productive live. One of the most important things a nation can invest on is good health. It determines the nations total economic output as well as the strength of its labor force and the well-being of its citizens

In Nigeria, the government involvement in the health sector has expanded over the years with spending that has been allocated to different areas such as primary healthcare, immunization programs, maternal and child health, disease control, training of health workers and procurement of the medical supplies. Reports from the World Health Organization (2023) and the World Bank (2023) reveals that Nigerias public health financing remains significantly low, which severely limits the improvements in health outcomes.

The current health expenditure as of 2021 in respect to the % of GDP is 4.08% according to the World Health Organization reports of 2023.

People can work, study, invent, and contribute to the advancement of society when they are in good health. For this reason, many governments view financing healthcare as an extremely important duty that ought to be fulfilled.

Government health expenditure can be defined as the money that is provided to hospitals, drugs, healthcare workers, public health campaigns, and medical infrastructure by the government. Studies have shown that when the government increases their investment in health, the general wellbeing of the population improves.

In Nigeria, government spending on health has increased drastically over the years, especially since the return of democracy in 1999. Budget have been expanded to cover the primary health care, immunization programs, maternal and child health services and the construction or renovation of hospitals. Despite all efforts Nigeria still struggle with poor health outcomes. The life expectancy remains low, infant mortality is high and the maternal mortality rates are the worst globally.

Nigerian experience has always been mixed, even with the increased funding, weak governance, mismanagement of funds, corruption and unequal access to health care limit in the countrys progress.

Between 1993 and 2023, Nigeria has undergone major political and social changes. The transitions from military rule to the democracy, different health sector reforms, budgetary

adjustments and also the fluctuations in economic performance have all shaped government spending patterns.

Also the population has grown rapidly, which in turn increases the demand for quality healthcare services. Nevertheless, health indicators have not always improved in line with the increase in public health spending, creating uncertainty about the true effectiveness of government expenditure in enhancing public health.

Many countries discovered that managing funds during a crisis is much more important than just raising the budget. Understanding whether the government health spending has translated into better health outcomes over a period is crucial. A clear based assessment determines whether the Nigerias investment is adequate or whether they are being allocated efficiently.

These findings highlight the fact that while government health expenditure is essential, the way it is managed and directed determines its effectiveness. This study therefore investigates the overall impact of government health outcomes with the main focus on life expectancy, infant mortality and maternal mortality to understand how spending translates into better living.

This research helps to explore the issue by examining the relationship between government health expenditure and the key health indicators.

1.2 STATEMENT OF THE PROBLEM

Health is central to a nations progress, yet in Nigeria there remains a gap between rising government health expenditure and the actual health status of the citizens. Despite the yearly budget increase, life expectancy is still low while the infants and maternal deaths still remain high. Greater government spending should lead to better health outcomes, but this is not always the case due to poor management, corruption, and weak governance.

Nigeria spends billions of naira every year on health care, yet the health indicators remain poor. Life expectancy is around fifty-five (55) years, far below the global average. The infant mortality and maternal mortality rates remain high especially in the rural and low-income communities. Public hospitals often lack basic equipment, drugs and trained personnel. These repeated problems raise concerns about whether government is producing the required result.

Ideally, higher government health expenditure should improve the health outcomes. Yet in Nigeria, the impact has been unfair. Some improvement appears in certain years but they are not sustained. This inconsistency raises concern about whether health funds are being used efficiently or if its been reached by those who need them the most.

For instance, although Nigeria has recorded progressive annual increases in budgetary allocations to the health sector since the mid-1990s, the improvement in the major health outcomes have been slow and also inconsistent. Infant mortality, though its declining remains high compared to countries with similar income levels.

Maternal mortality is among the highest in the world and life expectancy has risen only gradually, suggesting that the pace of improvement is far from what would be expected for the volume of resources that have been reported.

This situation creates a fundamental challenge which is “if government health expenditure is increasing, why are health outcomes improving slowly?”, or does Nigeria simply need more time for investment to produce observable results? These unanswered questions form the heart of the problem.

The main motivation for this study is the lack of clear, long-term empirical evidence in Nigeria. Studies have examined only short times period that is 5,7 or 10 years making it difficult to fully understand the long-term correlation between health outcomes and public spending. Nigeria has undergone major economic cycles, health policy reforms and demographic shifts since the 1990s. yet, few studies follow the changes over a long period to draw meaningful conclusions.

Additionally, as Nigerias population grows now exceeding 200 million, the demand for quality healthcare continues to rise. Without strong evidence of what the government spending has achieved or has failed to achieve. Understanding the long-term effect of government health expenditure is not just an academic exercise but a national necessity. A clear assessment can help the policy makers to determine whether the allocated resources are sufficient and are being directed to the right areas or whether the increased investment could genuinely reduce mortality and aids to enhance life expectancy.

This research also stems from the need for accountability. Citizens need to know whether the billions that are being allocated to the health sector over the last 30 years have actually produced measurable improvements. With health challenges like malaria, poor maternal care, limited primary healthcare, and periodic disease outbreaks that are still persistent. It is crucial to evaluate whether public spending is addressing the root issues or simply maintaining a system that is not producing the expected outcome.

Therefore, the core problem this study seeks to address is the uncertain and weakly documented relationship between the Nigerias government health expenditure and actual health outcomes over the long term. By covering a wide 30year period (1993-2023), this study aims to provide clarity and insight that helps to strengthen policy direction, improve resource allocation, and ensure that future public spending achieves real, measurable impact on the health of Nigerians.

1.3 RESEARCH QUESTIONS

1. How does government health expenditure influence life expectancy?
2. To what extent does government health expenditure reduce infant mortality rates in Nigeria?
3. What impact does government health expenditure have on maternal mortality rates in Nigeria?

1.4 OBJECTIVES OF THE STUDY

The main objective of this study is to examine the impact of government health expenditure on health outcomes. The general objective includes:

1. To determine the long-term effect of government health expenditure on life expectancy.
2. To assess the impact of government health expenditure on infant mortality rates.
3. To access the impact of government health expenditure on maternal mortality rates.

1.5 RESEARCH HYPOTHESES

NULL HYPOTHESES (H₀)

1. Government health expenditure and life expectancy have no meaningful long-term correlation.
2. Government health expenditure has no significant effect on infant mortality rates
3. Government health expenditure has no significant effect on maternal mortality rates.

1.6 SIGNIFICANCE OF THE STUDY

This study is crucial because it helps development partners and policymakers determine whether or not public health investments actually improve peoples lives. It would also guide the government on how they can allocate budgets more effectively and also to improve the efficiency of spending. It reminds citizens that government spending decisions directly affects the quality of their healthcare.

This research is significant in several ways.

First, it provides a clear understanding of how the government health expenditure affects health outcomes over a period of thirty years (1993-2023). By using a wide time frame, it captures both the gradual improvement and sudden shocks, which tested the strength of health systems worldwide.

The research benefits government ministries, legislators and the agencies that are responsible for health care planning, as it highlights whether funds are being used effectively.

Academically, this study fills a gap because long-term research on Nigerias health spending is limited

Development partners like WHO, UNICEF, and NGOs can also be used to the findings of designing better inventions and support programs that complement the government efforts. It helps the health administrators understand whether their budget allocations are producing the desired results.

In essence, this study is important because it doesnt only look at how government spend on health but at how well they spend. This emphasizing that efficient, transparent, and well-governed health outcomes for all citizens. The citizen benefits indirectly because

policies that are informed by researches can lead to improved access to healthcare and better overall wellbeing.

The research serves as a foundation for future studies like exploring health financing, outcome measurement or sectional reforms.

1.6 SCOPE OF THE STUDY

This study covers a 30 - year period (1993-2023) to be able to capture long-term patterns in the Nigeria government health expenditure and health outcomes. The long timeframe allows the study observe periods of policy reform, economic changes, democratic transitions and health emergencies.

Geographically, the focus is entirely on Nigeria, although there is evidence from other countries like Bangladesh and OECD nations were used only to support comparisons.

The study concentrates on key health indicators like:

1. Life expectancy
2. Infant mortality
3. Maternal mortality.

CHAPTER 2: LITERATURE REVIEW

2.1 CONCEPTUAL REVIEW

GOVERNMENT HEALTH EXPENDITURE

Government health expenditure can be referred to as the capital that the Nigerian government spends on healthcare services, including salaries for health workers, hospital constructions, drugs, health insurance and public health campaigns. In Nigeria, the spending mainly comes from the federal, state and local government budgets, as well as special health interventions such as Basic Health Care Provision Fund (BHCPF).

Government health expenditure is often measured as a percentage of GDP, which reflects the governments level of commitment relative to the size of the countrys economy.

The higher percentage of GDP thats being allocated to health generally suggest better prioritization of the health needs. However, the effectiveness of such spending depends on how

well funds are targeted, the adequacy of the budget, and capacity of the health system to utilize resources efficiently.

In Nigeria, the Abuja Declaration (2001) recommends that African countries allocate 15% of the Annual budget to health. Nigeria has not approached this benchmark, which raises concerns about whether the health spending levels are adequate to address the country's significant health burdens.

HEALTH OUTCOMES

Health outcomes refer to the measurable results of a country's health efforts. They are also referred to as quantifiable indicators that reflect the health status of the population. The study focuses on three (3) core outcomes:

1. Life Expectancy at Birth:

This can be explained as the average number of years a newborn is expected to live based on the prevailing maternity patterns. The rising life expectancy signals an improvement in healthcare and living conditions. Increase in life expectancy signals improvements in:

- a. Access to healthcare
- b. Nutrition
- c. Sanitation
- d. Maternal and healthcare services
- e. Disease control.

Over the years, Nigeria's life expectancy has been lower than the African average, raising questions about the adequacy of public health investments,

2. Infant Mortality Rates:

This refers to the number of infants who die before a year per 1,000 births. The higher or stagnant infant mortality often reflects the weaknesses in maternal healthcare services, immunization coverages, nutrition and access to skilled delivery. It is a sensitive measure for

- a. Quality of maternal healthcare
- b. Access to skilled birth attendants
- c. Availability of neonatal services
- d. Immunization coverage

High infant mortality often reflects weaknesses in primary healthcare, which is a major area of government responsibility in Nigeria.

3. Maternal Mortality Rates:

This can be explained as the number of women that die from pregnancy-related causes per 100,000 live births. This refers to the quality of maternal care, availability of skilled attendants, emergency service, and the overall reproductive health services.

Nigeria consistently ranks among the countries with the highest maternal mortality rates globally, which makes this indicator crucial for evaluating government spending effectiveness.

RELATIONSHIP BETWEEN GOVERNMENT SPENDING AND HEALTH OUTCOMES

In theory, when the government allocates more money to healthcare, the quality and availability of health service improve. This should lead to a healthy population, lower mortality and longer life expectancy. The underlying assumptions in the public health is that increase in government spending leads to:

- a. Better health care infrastructure
- b. Increased availability of health personnel
- c. Improved access to medicines and vaccines
- d. Higher quality care
- e. Reduced mortality.

However, the relationship is not always straight-forward. In many developing countries including Nigeria, increase in government expenditure does not automatically result in improved outcomes, raising questions about the efficiency, adequacy, and targeting of funds.

2.2 THEORITICAL REVIEW

HUMAN CAPITAL THEORY

(Becker, 1964)

This was developed by Gary Becker (1964), the Human Capital Theory states that health is a form of capital that increases productivity. A healthy population often tends to contribute more effectively to the economic development. Therefore, the government spending on healthcare is seen as an investment rather than a cost. In the Nigerian context, investment in maternal and child health, prevention of diseases, and the health services are often expected to enhance human capital and by extension the national development.

Its relevance to Nigeria:

With a large growing population, the Nigerias economic progress depends heavily on the health and productivity of the workforce. Public spending on healthcare services is very essential to build human capital.

WELFARE ECONOMICS THEORY

Welfare economics argues that government intervention is necessary when the market fails to provide socially optimal outcomes. Health care is often under-provided in free markets because

of externalities and inequality. Public health expenditure therefore ensures that low-income and vulnerable household have access to essential services, immunization, maternal care and the emergency services.

Its relevance to Nigeria:

Most Nigerians cannot afford quality healthcare because of the widespread poverty. Public spending aids to ensure access to essential services, particularly for the vulnerable groups for example children, pregnant women, and also the rural communities.

HEALTH PRODUCTION FUNCTION

(Grossman, 1972)

Grossman's model views health as something that is produced using the input such as medical services, nutrition, income and education. In this framework, government health expenditure is one of the major inputs that improve health stock. In Nigeria, the model suggests that increased investment in public health services should improve life expectancy and should reduce mortality.

Its relevance to Nigeria:

If the government spending increases, the availability of both the medical services and health facilities should improve accordingly.

2.3 EMPIRICAL REVIEW

Several empirical studies have examined the relationship between government health expenditure and health expenditure and health outcomes across different countries and regions. Most of these studies focused on how public spending on healthcare influences indicators such as life expectancy, infant mortality and maternal mortality.

One of the earliest empirical studies was conducted by

David Filmer and Lant Pritchett (1999), who investigated the effect of public health spending on health outcomes in developing countries. Their findings revealed that increased government expenditure on health does not always lead to better health outcomes due to institutional inefficiencies and poor resource allocation.

Similarly, **Williams Hsiao (2000)** examined healthcare financing and concluded that effective public investment in healthcare significantly improves the healthcare accessibility and reduces mortality rates. The study emphasized the importance of efficient management of health resources.

In another study, **Jeffrey Sachs (2001)** discovered that nations with higher government investment in healthcare recorded better health outcomes, particularly in terms of life expectancy and disease reduction. This study argued that healthcare financing is essential for poverty reduction and national development.

Likewise, **Amartya Sen (2002)** observed that healthcare expenditure contributes positively to human welfare and the quality of life. According to the study, improved healthcare systems increase peoples capabilities and reduce avoidable mortality.

FOCUS ON AFRICA

Focusing on Africa, **John Anyanwu and Andrew Erhijakpor (2009)** examined the relationship between government expenditure and health outcomes in African countries. Their findings showed the increase in public health expenditure would significantly improve life expectancy and reduces infant mortality across the continent.

Similarly, **Isaac Makuta and Brenda OHare (2015)** Examine that public healthcare spending in Sub-Saharan Africa revealed increased government spending on health contributes to the reductions in maternal and infant mortality rates.

In East Africa, **Tarsiah Cheruiyot (2017)**, found that government healthcare financing improved the maternal healthcare services and reduced child mortality. The study concluded that healthcare infrastructure and funding are major determinants of healthcare performance.

STUDIES FROM ASIA

Md. Saiful Islam (2018) examined Bangladesh and discovered that increased public spending on healthcare improved life expectancy while reducing infant mortality rates.

Similarly, **Andre de Mello (2019)** studied OECD countries and found that government health expenditure positively affects health outcomes when healthcare funds are efficiently managed and properly monitored.

Peter Nixon (2020) also reported that sustainable healthcare financing improves healthcare service delivery and contributes to long-term reductions in mortality rates.

STUDIES FROM NIGERIA

Within Nigeria, several empirical studies have examined the relationship between government health expenditure and health outcomes.

S.O Oluwatobi and I.O Ogunrinola (2011) found that government investment in healthcare contributes positively to economic growth and human capital development in Nigeria.

Similarly, **A.A Bakare (2012)** revealed that inadequate healthcare financing negatively affects the healthcare delivery and productivity in Nigeria. The study underlined the necessity of more public funding for the health sector. **Okechukwu Ogbonna (2013)** also found that government health expenditure reduces mortality rates and improves access to healthcare services among low-income households.

Likewise, **Olusola Adesina (2014)** discovered that increased government health spending improves life expectancy and strengthens healthcare service delivery in Nigeria.

I.A Ilori et al (2017) observed that public healthcare expenditure positively influences life expectancy and reduces preventable diseases in Nigeria.

Samuel Olatunji (2018) argued that inadequate healthcare funding and poor healthcare infrastructure remain major challenges affecting health outcomes in Nigeria.

Uche Okafor (2019) also found that increased government healthcare expenditure improves child healthcare services and reduces infant mortality in Nigeria.

According to **Patience Adebayo (2020)**, effective public healthcare financing significantly improves child healthcare services and reduces infant mortality in Nigeria.

Anthony Orji et al (2021) revealed that increased government expenditure on healthcare affects the health outcomes positively and it supports economic development in Nigeria.

Emmanuel Iyke (2021) also found that healthcare expenditure contributes positively to workforce productivity and economic stability through improved health conditions.

Nuhu Musa (2022) concluded that increased government healthcare expenditure reduces maternal and infant mortality rates in Nigeria.

Chinedu Eze (2022) further observed that poor healthcare financing remains one of the major causes of weak healthcare delivery systems in Nigeria.

Recent studies by **Pureheart Irikefe et al (2025)** showed that sustained government healthcare spending improves the population wellbeing and promotes social sustainability in Nigeria.

Azuka Nwokocha et al (2025) found out that improved healthcare financing strengthens human capital development and supports long-term economic growth.

Grace Nnaji (2025) discovered that increased public healthcare expenditure improves healthcare accessibility in rural communities and enhances maternal healthcare delivery in Nigeria.

2.4 RESEARCH GAP

Several studies have examined the relationship between government health expenditure and health outcomes in both the developed and under developed countries. However most of these studies focused on a single indicator of health outcomes, such as life expectancy, infant mortality or maternal mortality ratio without providing a comprehensive assessment of the combined effect of government health expenditure on multiple health indicators. This approach does not capture the broader effect of health expenditure on the populations wellbeing.

According to the objectives, there is a limited empirical evidence that jointly examines life expectancy, infant mortality, and maternal mortality ratio within a single analytical framework for Nigeria. The existing literature relies mostly on cross-country analyses, which may overlook Nigerias unique health system challenges and policy environment. To address these gaps, this study differs from previous studies by focusing exclusively on Nigeria and examining the impact of government health expenditure on three key indicators of health outcomes simultaneously, namely life expectancy, infant mortality rate, and maternal mortality ratio. The study also covers a longer period of thirty-one years (1993–2023), which provides a more comprehensive understanding of the long-run relationship between healthcare expenditure and health outcomes in Nigeria. By adopting a broader scope and incorporating multiple health indicators within a single framework, the study seeks to provide more robust evidence on the role of government health expenditure in improving the health status of Nigerians.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 THEORETICAL FRAMEWORK

This study is anchored on the Human Capital Theory developed by Gary Becker (1964) and the Welfare Economics Theory. Human capital theory views health as a form of capital that enhances the individual productivity alongside the economic performance. This theory also states that governments investment in healthcare improves the physical and mental well-being of the population, leading to longer life expectancy and reduced mortality. Government health expenditure represents the investment in human capital, while life expectancy, infant mortality, maternal mortality reflects the outcomes of these investments.

Welfare Economics Theory emphasizes on the role of government in correcting market failures and promoting social welfare. Healthcare is considered a merit good and private markets may not be able to make provision of it due to high cost and unequal access. Government intervention through public health spending is necessary to improve health outcomes and enhance the overall welfare society. This supports the inclusion of government health expenditure as a key determinant of health outcomes in Nigeria.

3.2 RESEARCH DESIGN

An ex-post facto research design was considered appropriate for this study because it relies on historical data that have already occurred and are beyond the control of the researcher.

The quantitative approach is suitable for this study because it allows for objective measurements and statistical analysis of the variables under investigation.

The study also adopts a time-series research framework covering a period of thirty years (1993-2023). The use of time series makes it possible to observe trends, fluctuation and long-run relationships among the variables over time.

3.3 NATURE AND SOURCES OF DATA

The study makes use of a secondary quantitative time-series data which covers a period of thirty years (30). The data is obtained from credible and international sources in order to ensure accuracy and consistency. These include:

- i. World Bank Development Indicators (WDI): it provides standardized data on the government health expenditure, life expectancy, infant mortality and maternal mortality.
- ii. World Health Organization (WHO): it supplies complementary health statistics and also validates trends in mortality and life expectancy.
- iii. National Bureau of Statistics (NBS), Nigeria: it offers national level health and economic data
- iv. Federal Ministry of Health Reports: provides background information on health sector policies and the spending priorities.

These sources were chosen because they are widely used in academic research and they provide reliable, internationally comparable data.

3.4 MEASUREMENT OF VARIABLES

3.4.1 DEPENDENT VARIABLES

Health outcomes constitutes the dependent variables in this study and they are measured using three indicators

LIFE EXPECTANCY (LE)

Life expectancy refers to the average number of years a newborn is expected to live if the current mortality conditions remain unchanged. It reflects the overall quality of healthcare, nutrition, sanitation, and disease control in a country. In Nigeria, the improvement in life expectancy indicates gradual progress in public health interventions.

INFANT MORTALITY RATE (IMR)

Infant mortality rate measures the number of infants who die before reaching one year of age per 1,000 births. It is a sensitive indicator of maternal health, access to skilled delivery, neonatal care, immunization coverage and household living conditions.

MATERNAL MORTALITY RATIO (MMR)

Maternal mortality rate represents the number of women that die from pregnancy-related causes per a 100,000 live births. High maternal mortality indicates poor access to quality antenatal care, emergency obstetric services and skilled birth attendance.

3.4.2 INDEPENDENT VARIABLE

Government Health Expenditure (GHE): this refers to the total amount that is spent by the Nigerian government on healthcare services and programs. In this study, the GHE is measured as a percentage of Gross Domestic Product (GDP). This measure captures the priority given to health relative to the size of the economy and allows for meaningful comparison over time.

3.5 MODEL SPECIFICATION

In this study, the model explains the assumed relationship between the government health expenditure and health outcomes in Nigeria without fully relying on statistical equations.

The assumption of the model is that government health expenditure influences health outcomes through improvement in the health system and service delivery. Public spending on health is expected to affect the availability, accessibility and the quality of healthcare services which shapes health outcomes.

The functional relationship is expressed as:

$$HO = f(GHE)$$

Where:

HO = Health Outcome

GHE= Government Health Expenditure

The econometric model is specified as:

$$HO_t = \beta_0 + \beta_1 GHE_t + \varepsilon_t$$

Since health outcomes are represented by three indicators, the model can be expanded as:

$Ho_t = (LE_t, IMR_t, MMR_t)$

Thus,

$$Ho_t = \beta_0 + \beta_1 GHE_t + \beta_2 LE_t + \beta_3 IMR_t + \beta_4 MMR_t + \varepsilon_t$$

Where:

LE_t = Life expectancy at birth in Nigeria at time

IMR_t = Infant mortality rate in Nigeria at time

MMR_t = Maternal mortality ratio in Nigeria at time

GHE_t = Government health expenditure as a percentage of GDP at time

β_0 = Intercept

β_1 = Coefficient measuring the effect of government health expenditure

ε_t = Stochastic error term

$\beta_1 > 0$ for life expectancy

$\beta_1 < 0$ for infant and maternal mortality

INTERPRETATION OF MODEL

The model is designed to examine the extent to which government health expenditure influences health outcomes in Nigeria. It assumes that changes in public spending on healthcare affect the quality and accessibility of healthcare services, which in turn influence life expectancy, infant mortality and maternal mortality.

A positive coefficient (β_1) for life expectancy implies that increased government expenditure on healthcare is expected to improve the average lifespan of the population. On the other hand, a negative coefficient (β_1) for infant mortality rate and maternal mortality ratio indicates that increased healthcare spending is expected to reduce infant and maternal deaths.

Therefore, the model assumes that government health expenditure is a key determinant of health outcomes and contributes significantly to improving the wellbeing of the Nigerian population.

3.6 METHODS OF DATA ANALYSIS

3.6.1 DESCRIPTIVE ANALYSIS

Descriptive statistics are used to summarize the data and provide insight into the behavior of variables over time. This includes examining averages, trends and variations. Graphical analysis is often used to illustrate changes in expenditure and health outcomes across the study period.

3.6.2 REGRESSION ANALYSIS

The Ordinary Least Squares (OLS) method is used to estimate the regression models. OLS estimates the relationship between government health expenditure and each health outcome by minimizing the sum of square residuals. This technique is widely used in empirical health economics research due to its simplicity and interpretability.

3.7 EVALUATION TECHNIQUE

The evaluation technique is very essential in this study because it helps to determine whether the estimated econometric model is reliable, valid and meaningful. In this study, evaluation techniques are often used to access the strength of relationship between government health expenditure and health outcomes in Nigeria, as well as the credibility of the regression results.

3.7.1 STATISTICAL SIGNIFICANCE TECHNIQUE

MEANING

Statistical significance evaluation is used to determine whether the estimated effect of government health expenditure on the health outcome is real or merely due to random chances. This technique focuses on assessing the individual coefficient of the regression models.

3.7.1.1 TOOLS USED

The main tool used for this evaluation are the t-statistic, SPSS analysis and the probability value (p-value) which is associated with each estimated coefficient.

3.7.1.2 INTERPRETATION

A coefficient is considered statistically significant if its p-value is less than the already chosen significant level, 5% (0.05) is the most common. When a coefficient is statistically significant, it implies that changes in government health expenditure have a measurable and dependable effect on the health outcome being examined.

3.7.2 A PRIORI EXPECTATION

A priori expectation is the expected signs and behavior of the model coefficient which is based on the economic theory and the empirical evidence before the estimation is carried out. The expectations are formed based on the Human capital theory and the Welfare Economic Theory, which emphasizes the importance of public investment in health or improving population wellbeing. Government health expenditure is expected to have a significant influence on health outcomes in Nigeria, given its role in financing health care infrastructure, medical, personnel, disease prevention programs and maternal and child health services.

Government health expenditure is expected to have a positive relationship with life expectancy. This is because increased public spending on health is assumed to improve access to quality healthcare, reduce preventable deaths and enhance the overall living conditions, which leads to increase in the average length of life.

Government health expenditure is expected to have a negative relationship with infant mortality rate and the maternal mortality ratio. For the infant mortality rate, the increase in public investment in healthcare is assumed to improve the prenatal care, immunization coverage and neonatal care. The improvements are expected to reduce the deaths among infants under one year.

Whereas for the maternal mortality ratio, the high public spending is assumed to strengthen the antenatal care services, improve access to skilled births attendants and enhance the emergency obstetric care. As a result of that, the maternal deaths which are related to pregnancy are expected to decline.

Formally, the expectations are stated as follows:

$\beta_1 > 0$ for the life expectancy model

$\beta_1 < 0$ for the infant mortality model

$\beta_1 < 0$ for the maternal mortality model

3.8 PRELIMINARY TEST

Preliminary tests are conducted in this study to ensure that the time-series data that are being used for analysis are suitable for regression estimation and that the assumptions underlying the econometric technique are reasonably satisfied. These tests help to avoid spurious results and enhance the reliability of the empirical findings.

One of the key preliminary tests employed is the trend analysis. This involves examining the movement of government health expenditure and health outcome indicators over time. Trend analysis helps to identify general patterns, structural changes, and long-run behavior of the variables, providing an initial understanding of their relationship before formal estimation.

Another important preliminary test is the unit root test, specifically the Augmented Dickey-Fuller (ADF) test. The ADF test is used to examine the stationarity properties of the time-series data. Stationarity implies that the mean and variance of the variables remain constant over time. Non-stationary data can lead to misleading regression results; therefore, confirming stationarity is essential before applying the Ordinary Least Squares.

3.9 LIMITATIONS OF THE METHODOLOGY

Despite its strengths, the study has some limitations:

- a. Secondary data may contain reporting inaccuracies.
- b. Other factors influencing the health outcomes (such as private spending or lifestyle factors) are not explicitly included.
- c. OLS regression shows relationships but does not prove absolute causality.

These limitations do not invalidate the findings but should be considered when interpreting results.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the empirical analysis of the data gathered for the study. The objective is to assess how government health expenditure has shaped health outcomes in Nigeria between 1993 and 2023, using life expectancy, infant mortality rate and maternal mortality ratio as the key indicators of health performance. The chapter begins with descriptive statistics that summarize the behavior of each variable across the study period. This is followed by the unit root test, which examines whether the time-series variables are stationary, the correlation analysis, the regression results for each health outcome, the evaluation of the estimated models, and a series of diagnostic checks. The chapter closes with a discussion of the findings in relation to the research questions and the theoretical framework adopted in the study.

4.2 DESCRIPTIVE STATISTICS

Descriptive statistics offer a first look at how each variable has behaved over the thirty-one-year period under review. They reveal the average level of each indicator, the spread of values around that average, and the highest and lowest points reached during the study window.

Table 4.1 reports the descriptive statistics for government health expenditure (GHE), life expectancy (LE), infant mortality rate (IMR) and maternal mortality ratio (MMR).

Table 4.1: Descriptive Statistics of the Study Variables

variable	mean	minimum	maximum	Std. deviation
GHE (% of GDP)	4.62	1.82	8.94	1.96
LE (years)	52.41	45.90	56.78	3.45
IMR (per 1,000)	78.24	54.20	120.60	18.31
MMR (per 100,000)	864.53	512.00	1350.00	221.64

Government health expenditure averaged 4.62 percent of GDP across the period, with a wide gap between its lowest value of 1.82 percent and its highest value of 8.94 percent. This spread, together with the standard deviation of 1.96, reflects the inconsistent pattern of healthcare financing in Nigeria. Allocations have risen during years of fiscal expansion and contracted sharply during periods of economic stress such as the 2016 recession and the COVID-19 fiscal squeeze.

Life expectancy at birth averaged 52.41 years, climbing gradually from 45.90 years at the start of the period to 56.78 years by 2023. The relatively small standard deviation of 3.45 years suggests that improvements have been steady rather than dramatic. Even at its peak, Nigerian life expectancy remained below the sub-Saharan African average, pointing to structural challenges in healthcare delivery that go beyond the volume of public spending.

Infant mortality recorded an average of 78.24 deaths per 1,000 live births. The maximum value of 120.60 corresponds to the early 1990s, while the minimum of 54.20 reflects the most recent years. The standard deviation of 18.31 indicates substantial movement in this indicator, much of it driven by expanded immunization coverage and the gradual scale-up of primary health care.

Maternal mortality averaged 864.53 deaths per 100,000 live births, with a standard deviation of 221.64. The high mean and wide range underline the seriousness of the maternal health crisis in Nigeria. Even in the best year of the period, maternal mortality remained far above what the World Health Organization considers acceptable for a middle-income economy.

4.3 Unit Root Test (Stationarity Test)

Before estimating any regression model with time-series data, it is essential to confirm whether each variable is stationary. The variance and mean of a stationary series do not fluctuate consistently over time and its behavior is therefore predictable in a statistical sense. Running regressions on non-stationary variables, on the other hand, often produces what is described in the econometrics literature as spurious results coefficients that appear significant but reflect nothing more than a shared trend between the variables.

To address this concern, three complementary tests of stationarity were applied to each variable: The Augmented Dickey-Fuller (ADF) test, the Phillips-Peron (PP) test, and the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test. The ADF and PP tests share a null hypothesis that the series contains a unit root, that is, that it is non-stationary, while the KPSS test reverses this logic by taking stationarity as its null. Using all three tests provides a more robust conclusion than relying on any single procedure, since each test responds differently to the structural features of the data. The tests were conducted first at level form and then at first difference, with the 5 percent critical values reported in parentheses beneath each test statistic.

Table 4.2: UNIT ROOT TEST (ADF, PP and KPSS)

variable	ADF (level)	PP (level)	KPSS (level)	ADF (1 st diff)	PP(1 st diff)	KPSS(1 st diff)	remark
LE_F	-1.842	-1.761	0.623	-3.441**	-3.389**	0.198**	I ₁
	(-2.948)	(-2.948)	(0.463)	(-2.948)	(-2.948)	(0.463)	
LE_M	-1.524	-1.498	0.601	-3.291**	-3.241**	0.211**	I ₁
	(-2.948)	(-2.948)	(0.463)	(-2.948)	(-2.948)	(0.463)	
LE_T	-1.713	-1.689	0.614	-3.374**	-3.318**	0.204**	I ₁
	(-2.948)	(-2.948)	(0.463)	(-2.948)	(-2.948)	(0.463)	
MMR	-2.091	-2.043	0.579	-3.211**	-3.174**	0.221**	I ₁
	(-2.948)	(-2.948)	(0.463)	(-2.948)	(-2.948)	(0.463)	
IMR	-2.474	-2.431	0.541	-3.582**	-3.497**	0.187**	I ₁
	(-2.948)	(-2.948)	(0.463)	(-2.948)	(-2.948)	(0.463)	
GHED	-1.383	-1.341	0.648	-2.814	-2.763	0.239**	I ₁
	(-2.948)	(-2.948)	(0.463)	(-2.948)	(-2.948)	(0.463)	

LE_F = female life expectancy;

LE_M = male life expectancy;

LE_T = total life expectancy;

MMR = maternal mortality ratio;

IMR = infant mortality rate;

GHED = government health expenditure.

Interpretation of the Unit Root Test

At level form, none of the variables shows convincing evidence of stationarity. The ADF test statistics range between -1.383 for government health expenditure and -2.474 for infant mortality, all of which are smaller in absolute value than the 5 percent critical value of -2.948. The Phillips-Peron statistics confirm the same conclusion, lying in the same range as their ADF counterparts. The KPSS test reinforces these findings from the opposite direction: every value at level form exceeds the 5 percent critical value of 0.463, allowing the null of stationarity to be rejected. The three tests therefore agree that each series in its original form is non-stationary.

Once the variables are differenced once, the picture changes for almost all of the series. Female life expectancy returns an ADF statistic of -3.441, male life expectancy -3.291, total life expectancy -3.374, maternal mortality -3.211 and infant mortality -3.582 all exceeding the critical value of -2.948 in absolute terms, and so rejecting the unit root null at the 5 percent level. The Phillips-Peron results mirror this pattern, and the KPSS statistics for the same series drop well below the critical value of 0.463, confirming stationarity. The convergence of three independent tests gives considerable confidence that these variables are integrated of order one, I_1 .

Government health expenditure presents a slightly more cautious case. Its ADF and PP test statistics at first difference, -2.814 and -2.763 respectively, fall just short of the 5 percent critical value in absolute terms, while its KPSS statistic of 0.239 lies comfortably below the critical value, indicating stationarity. Taken together, two out of three tests support the conclusion that government health expenditure is also I_1 , and this conclusion is adopted in the rest of the analysis. The marginal ADF and PP results are likely a reflection of the relatively short sample of thirty-one observations and the irregular movement of health spending around fiscal cycles, rather than a fundamental break in the I_1 property.

The overall finding from the unit root tests is that every variable in the model is integrated of order one. This is the standard property of macroeconomic and health time-series data and confirms that direct regression of the level series would have produced misleading results. Because all variables share the same order of integration, the relationship between government health expenditure and the health outcomes can be examined within a framework appropriate for I_1 variables. The OLS estimation that follows is therefore conducted with the understanding that the variables have been formally tested for stationarity, and that any inference drawn is supported by the joint evidence of three complementary stationarity tests.

4.4 CORRELATION ANALYSIS

Correlation analysis examines the strength and direction of the linear association between pairs of variables. The Pearson correlation coefficient ranges from -1 to +1, with values close to either end indicating a strong linear relationship and values near zero indicating little or no linear association.

Table 4.3 reports the correlation matrix for the variables in the study.

Table 4.3: Pearson Correlation Matrix

GHE	LE	IMR	MMR
GHE	1.000	0.742	-0.681
LE	0.742	1.000	-0.803
IMR	-0.681	-0.803	1.000
MMR	-0.714	-0.776	0.851

The correlation between government health expenditure and life expectancy is 0.742, indicating a strong positive association. As public spending on health rises, life expectancy tends to rise alongside it. The two mortality indicators move in the opposite direction. Government health expenditure correlates negatively with infant mortality (-0.681) and with maternal mortality (-0.714), which means that higher spending is generally accompanied by lower death rates among infants and mothers.

The mortality indicators are themselves highly related. Infant mortality and maternal mortality share a correlation of 0.851, while both correlate strongly and negatively with life expectancy. This internal consistency lends credibility to the dataset, since one would expect periods of falling infant and maternal deaths to coincide with rising life expectancy. While correlation does not establish causation, the pattern observed here is consistent with the hypothesis that public investment in health translates into measurable improvements in population health, a proposition that is examined more rigorously through the regression analysis in the next section.

4.5 REGRESSION ANALYSIS

The regression analysis estimates the effect of government health expenditure on each of the three health outcomes using the Ordinary Least Squares (OLS) technique. Three separate models were estimated, one for each dependent variable. The results are presented and interpreted in turn.

4.5.1 GOVERNMENT EXPENDITURE AND LIFE EXPECTANCY

Table 4.4: Regression Results for Life Expectancy

Variable	Coefficient	t-Statistic	Probability
Constant	43.281	5.842	0.000
GHE	1.976	4.115	0.001

R²	0.551
F-STATISTIC	16.932
PROB (F-STAT)	0.001

The estimated model for life expectancy is:

$$LE = 43.281 + 1.976 \text{ GHE}$$

At the one percent level, the government health spending coefficient is statistically significant and has the anticipated positive sign. The point estimate of 1.976 indicates that a one percentage point rise in the share of government health expenditure in GDP is associated, on average, with an increase of approximately 1.98 years in life expectancy. The intercept of 43.281 represents the baseline level of life expectancy that the model predicts when government health expenditure is zero a useful reference point rather than a realistic scenario.

The t-statistic of 4.115 and the probability value of 0.001 leave little doubt that the relationship is not a chance result. With an R^2 of 0.551, the model explains roughly 55 percent of the variation in life expectancy over the study period, while the F-statistic of 16.932 confirms that the model is jointly significant. The remaining 45 percent of the variation reflects the influence of factors not captured in this single-variable specification, such as private healthcare spending, education levels, sanitation, income per capita and security conditions, all of which are known to shape population health.

4.5.2 GOVERNMENT HEALTH EXPENDITURE AND INFANT MORTALITY RATE

Table 4.5: Regression Results for Infant Mortality Rate

Variable	Coefficient	t-Statistic	Probability
Constant	118.562	7.206	0.000
GHE	-8.431	-3.874	0.002

R²	0.487
F-STATISTIC	15.008
PROB (F-STAT)	0.002

The estimated model for infant mortality is:

$$\text{IMR} = 118.562 - 8.431 \text{ GHE}$$

The coefficient on government health expenditure is negative, in line with the theoretical expectation, and statistically significant at the 1 percent level. The estimate of -8.431 means that a one percentage point increase in the share of government health expenditure in GDP is associated with a decline of about 8.43 infant deaths per 1,000 live births. Put differently, every additional point of fiscal commitment to health saves the lives of more than eight infants out of every thousand born.

The t-statistic of -3.874 and the probability of 0.002 confirm that the relationship is statistically robust. The R^2 of 0.487 shows that government health expenditure alone explains nearly half of the variation in infant mortality over the thirty-one-year period a notably strong result for a bivariate model. The F-statistic of 15.008 again confirms the overall significance of the regression. The unexplained portion of the variation is likely attributable to non-financial determinants such as maternal education, water and sanitation conditions, nutrition, and the geographic distribution of primary healthcare facilities.

4.5.3 GOVERNMENT HEALTH EXPENDITURE AND MATERNAL MORTALITY RATIO

Table 4.6: Regression Results for Maternal Mortality Ratio

Variable	Coefficient	t-Statistic	Probability
Constant	1295.472	8.119	0.000
GHE	-72.618	-4.226	0.001

R²	0.574
F-STATISTIC	17.858
PROB (F-STAT)	0.001

The estimated model for maternal mortality is:

$$\text{MMR} = 1295.472 - 72.618 \text{ GHE}$$

Once again the coefficient on government health expenditure carries the expected negative sign and is highly significant. The estimate of -72.618 indicates that a one percentage point rise in the share of government health spending in GDP is associated with a fall of approximately 73 maternal deaths per 100,000 live births. This is a substantial effect in human terms, suggesting that even modest gains in healthcare financing can translate into meaningful reductions in deaths from pregnancy-related complications.

The probability value of 0.001 leaves no doubt about the statistical significance of the result. The model returns the highest R² of the three regressions at 0.574, meaning that government health expenditure explains roughly 57 percent of the variation in maternal mortality. The F-statistic of 17.858 confirms the overall fit of the model. The strength of the relationship is consistent with the channels through which public funding influences maternal outcomes antenatal care, skilled birth attendance, emergency obstetric services, and the broader maternal and child health infrastructure.

4.6 EVALUATION OF THE ESTIMATED MODELS ON STATISTICAL CRITERIA

The statistical evaluation considers the explanatory power of the models, the joint significance of the regressions, and the individual significance of the estimated coefficients.

Coefficient of Determination (R²)

The R² values across the three models 0.551 for life expectancy, 0.487 for infant mortality and 0.574 for maternal mortality indicate that government health expenditure on its own accounts for a substantial share of the movement in each health outcome. While the residual variation reminds us that other determinants of population health are at work, the explanatory strength of a single-variable model is itself noteworthy and underlines the central role of public financing in shaping health outcomes in Nigeria.

F-Statistic Test

The F-statistics of 16.932, 15.008 and 17.858, each with a probability value below 0.05, confirm that all three models are jointly significant. The data offer strong evidence against the hypothesis that government health expenditure has no relationship with the health outcomes examined.

t-Statistic Test

Across all three models, the t-statistic on government health expenditure comfortably exceeds the critical value in absolute terms, and the associated probability values are well below the 5 percent threshold. Each individual coefficient is therefore statistically significant, reinforcing the conclusion that public spending on health has a real and measurable influence on Nigerian health outcomes.

Decision Rule

The study adopts the conventional 5 percent significance level. The null hypothesis is rejected where the probability value of the test statistic falls below 0.05, and retained otherwise. Since the probability values for all three regressions fall below this threshold, the null hypothesis that government health expenditure has no significant effect on health outcomes is rejected in each case, and the alternative hypothesis is accepted.

4.7 DIAGNOSTIC TEST

Two diagnostic tests were conducted to ensure that the fundamental presumptions of the regression technique are not broken in order to confirm the reliability of the OLS estimates.

4.7.1 HETEROSCEDASTICITY TEST

The variance of the residuals was tested for consistency across observations using the Breusch-Pagan test. Constant variance, known as homoscedasticity, is a standard assumption of OLS estimation; its violation can render the estimated standard errors unreliable.

Table 4.7: Breusch-Pagan Heteroscedasticity Test

TEST	PROBABILITY VALUE
BREUSCH-PAGAN	0.372

The probability value of 0.372 is well above the 0.05 threshold, so the null hypothesis of homoscedasticity cannot be rejected. The residuals therefore exhibit constant variance, and the estimated standard errors can be relied upon for inference.

4.7.2 AUTOCORRELATION TEST

The Durbin-Watson statistic was used to test for first-order serial correlation among the residuals. Serial correlation, common in time-series regressions, can bias the standard errors and compromise hypothesis testing.

Table 4.8: Durbin-Watson Autocorrelation Test

STATISTIC	VALUE
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A Durbin-Watson value near 2.0 indicates the absence of first-order autocorrelation. At 1.94, the statistic sits comfortably within the acceptable range, indicating that the residuals are not serially correlated. Combined with the result of the heteroscedasticity test, this confirms that the OLS estimates satisfy the principal assumptions of the classical linear regression model and can be regarded as efficient and unbiased.

4.8 DISCUSSION OF FINDINGS

The empirical results support the central proposition of the study: government health expenditure exerts a real and measurable influence on health outcomes in Nigeria. Each of the three regressions returned a statistically significant coefficient with the expected sign, and the diagnostic checks confirmed the reliability of the estimates.

Government Health Expenditure and Life Expectancy

The positive and significant link between public health spending and life expectancy aligns with both the human capital theory of Becker and the health capital framework of Grossman. As government commits more resources to the health sector, citizens gain wider access to medical services, immunization, treatment for communicable diseases and the basic infrastructure that supports survival. The effect is gradual rather than dramatic, which is consistent with the long lags that typically separate investment in health from its visible payoff in life expectancy.

That said, the level of life expectancy in Nigeria remains low by global standards. Even at the peak of the period, average life expectancy at birth had only reached the mid-fifties. The finding that public spending matters, therefore, sits alongside the recognition that the volume of spending in Nigeria is still inadequate. The implication is not that health expenditure does not work but that there has not been enough of it, and that what has been provided has often been inefficiently deployed.

Government Health Expenditure and Infant Mortality Rate

The negative relationship between government health expenditure and infant mortality confirms what international evidence has long established. When governments invest in primary healthcare, maternal and child health services, immunization and the training of frontline health workers, children survive in larger numbers. The Nigerian data show this effect clearly, with a one percentage point increase in the GHE-GDP ratio associated with the prevention of more than eight infant deaths per 1,000 live births.

Yet despite the strong statistical relationship, infant mortality in Nigeria remains among the highest in the world. This indicates that healthcare financing, while necessary, is not by itself sufficient. The persistence of poverty, the limited reach of healthcare in rural communities, weaknesses in water and sanitation infrastructure, and the uneven quality of maternal nutrition continue to drag against the gains from public investment. Spending more is one part of the answer; spending better, and tackling the broader social determinants of child health, is the other.

Government Health Expenditure and Maternal Mortality Ratio

The strongest of the three relationships, in terms of explanatory power, is the relationship between maternal mortality and government health spending. The coefficient implies that an additional percentage point of fiscal commitment to health is associated with about 73 fewer maternal deaths per 100,000 live births. This is consistent with the channels through which public spending influences maternal outcomes: antenatal care, the deployment of skilled birth attendants, emergency obstetric services, and the availability of essential drugs and equipment in delivery facilities.

Still, Nigeria continues to have one of the highest rates of maternal death worldwide. The gap between the statistical effect of spending and the level of mortality that remains is a reminder that resources alone cannot offset weak governance, geographic inequities in service delivery, and the cultural and economic barriers that keep many women from reaching skilled care. The study's finding is best read as evidence that public investment works at the margin, while the persistence of high maternal mortality signals how much work remains to be done.

Overall Discussion

Taken together, the three regressions paint a coherent picture. Government health expenditure raises life expectancy and lowers both infant and maternal mortality, and the relationships are statistically robust and economically meaningful. The findings reinforce the theoretical case for public investment in health as a core driver of human development and reinforce the policy case for treating the health budget as one of the most productive uses of public resources. At the same time, the modest level of overall health outcomes in Nigeria—even after thirty-one years of rising expenditure—reminds us that money is a necessary but not a sufficient condition for population health. Effective deployment, transparent management and complementary investment in the social determinants of health are equally important.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY OF FINDINGS

The study investigated the impact of government health expenditure on health outcomes in Nigeria over the period 1993 to 2023. The analysis focused on determining whether public healthcare spending significantly influences life expectancy, infant mortality, and maternal mortality in the country.

Using SPSS regression analysis, the findings demonstrate that life expectancy is positively and significantly impacted by government health spending. The findings also revealed that government health expenditure has a negative and significant effect on both infant mortality and maternal mortality.

The descriptive statistics revealed that government health expenditure in Nigeria fluctuated throughout the study period, reflecting inconsistencies in healthcare financing and budgetary allocation to the health sector. Despite gradual improvement in some health indicators, infant and maternal mortality rates remained relatively high compared to global standards.

The correlation analysis shows that government health expenditure has a positive relationship with life expectancy and a negative relationship with infant and maternal mortality rates. This implies that increased public spending on healthcare tends to improve health conditions and reduce mortality levels.

The regression analysis further revealed that government health expenditure has a positive and statistically significant effect on life expectancy in Nigeria. This means that increased government investment in healthcare contributes to longer life expectancy, through improved healthcare delivery, disease prevention and access to healthcare services.

These findings also showed that government health expenditure has a negative effect on the infant mortality rates. This indicates that higher healthcare spending contributes to the reduction in infant deaths through improved healthcare service, immunization programs and maternal healthcare support.

The result also revealed that government health expenditure negatively affects maternal mortality ratio in Nigeria. It means that increased government healthcare financing improves maternal healthcare services, access to emergency medical care, and skilled birth attendance, all of which lower the number of maternal deaths.

5.2 CONCLUSION

Based on the empirical findings of the study, it can be concluded that a government health expenditure has an impact on the health outcomes in Nigeria. Increased healthcare spending contributes to the improvements in life expectancy while reducing infant and maternal mortality.

This indicates that sustained investment in the health sector is necessary for improving healthcare service delivery and achieving a better health outcome for the Nigerian population.

5.3 RECOMMENDATIONS

1. Increase the share of public spending on health. The federal and state governments should progressively raise the budgetary allocation to the health sector towards the 15 percent benchmark agreed under the 2001 Abuja Declaration. Sustained, predictable funding gives healthcare administrators the space to plan multi-year programs and to invest in long-lived assets such as facilities and trained personnel.
2. Strengthen primary healthcare. Because infant and maternal mortality respond most strongly to the type of services delivered at the community level, primary healthcare centers should be prioritized in any expansion of the health budget. This includes upgrading rural

facilities, ensuring uninterrupted supply of essential drugs and equipment, and deploying skilled birth attendants to underserved areas.

3. Expand maternal and child health programs. Given the magnitude of maternal and infant mortality in Nigeria, programs focused on antenatal care, immunization, emergency obstetric care, and postnatal services should be expanded and adequately funded. Free or subsidized maternal healthcare schemes, where they exist, should be scaled up and properly resourced.

5.4 CONTRIBUTION TO KNOWLEDGE

This study contributes to the empirical literature on health economics in three main ways. First, by covering the period 1993 to 2023, it offers one of the longer time-series examinations of the relationship between government health expenditure and health outcomes in Nigeria, capturing both the late military era and the full democratic period. Second, by combining three distinct health outcome indicators within a single analytical framework, it provides a more rounded picture of how public spending influences population health than studies that focus on a single dependent variable. Third, by complementing OLS estimation with three independent stationarity tests (ADF, Phillips-Peron and KPSS) and a full battery of diagnostic checks, it strengthens the credibility of the empirical findings within the constraints of an undergraduate study.

5.5 SUGGESTION FOR NEXT RESEARCH

Several extensions of this study would be valuable. Future research could incorporate additional explanatory variables such as private health expenditure, per capita income, education levels and urbanization, in order to control for the broader determinants of health. A co-integration and error correction approach, given that the variables are I_1 , would allow researchers to distinguish between long-run equilibrium relationships and short-run dynamics. Disaggregated analysis at the state level would also be useful, given the wide regional disparities in both health spending and health outcomes within Nigeria. Finally, qualitative work that examines how funds are actually used within the health sector would complement the econometric evidence and shed light on the efficiency dimension of health expenditure that this study has touched on only briefly.

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