IMPACT OF HEALTHCARE FINANCING ON YOUTH EMPLOYMENT IN NIGERIA

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TITLE PAGE

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BY

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PROJECT SUBMITTED TO DEPARTMENT OF ECONOMICS, FACULTY OF MANAGEMENT AND SOCIAL SCIENCES, GODFERY OKOYE UNIVERSITY, UGWUOMU-NIKE, ENUGU

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc) DEGREE IN ECONOMICS

SUPERVISOR: ASSOC. PROF OLUCHUKWU ANOWOR

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DECLARATION

I **EZE KELECHUKWU EMMANUEL**, with the registration number **GOU/U22/ECO/434**, is an undergraduate student in the department of economics under the faculty of management and social sciences in Godfrey Okoye University. I hereby declare that the work entitled **"IMPACT OF HEALTHCARE FINANCING ON YOUTH EMPLOYMENT IN NIGERIA"** was submitted either in partial fulfillment of the requirements for the award of a Bachelor of Science (B.Sc.) degree in economics in my original work and has not been submitted either in part of full for any other degree or diploma either in this or any other tertiary institution.

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EZE KELECHUKWU EMMANUEL **DATE**

CERTIFICATION

This is to certify that this project topic **"IMPACT OF HEALTHCARE FINANCING ON YOUTH EMPLOYMENT IN NIGERIA"** was undertaken by **EZE, KELECHUKWU EMMANUEL** with registration number **GOU/U22/ECO/434** of the Department of Economics, Faculty of Management and Social Science, Godfrey Okoye University, Enugu State has been assessed and approved for defense by the Department of Economics, Godfrey Okoye University, Enugu.

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DEAN OF THE FACULTY **DATE**

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EXTERNAL EXAMINER **DATE**

DEDICATION

This work is dedicated to my one and only Savior, GOD ALMIGHTY, for making everything possible, and also my family members for their support in my life, and I won't forget my amazing lecturers who carried me up to succeed in my academics, and lastly, my friend and coursemate. Thank you very much, everyone.

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ABSTRACT

This study sought to explore the impact of health care financing on youth employment in Nigeria over the period 2000-2024. Nigeria being home to a vast youthful population forms the core of its labour force. The pace at which youth unemployment has soared over the past two decades is quite alarming and represents a critical developmental challenge to the country.One of the structural reasons for this can be attributed to Nigeria's ailing healthcare financing model, driven by low government investment, high out-of-pocket payments, and its significant reliance on external donor funding.The study period for Nigeria's economy is 2000-2024, utilizing data from the World Bank, WHO, CBN, and NBS. The realities are that restricted government investment in health can significantly impede youths' ability to afford care, triggering a negative cycle with reduced investment in education, skills development, employability of youths, and diminishing capacity of policymakers to make data-driven decisions. To address this, this study aimed to investigate the impact of government expenditure in healthcare (GHE), out-of-pocket health care expenditures (OOP), and external healthcare financing (EHF) on youth employment (YEMP), while controlling for factors like literacy, population growth, and life expectancy using the ARDL bounds test approach to cointegration. The results indicated that a long-run relationship among the variables exists, supported by the bounds test results (F-statistic = 10.039).High out-of-pocket healthcare spending demonstrably exacerbated youth unemployment (coefficient = 2.107, p = 0.0353) by a significant margin, whereas government health expenditure showed a marginal positive effect (coeff = 2.389, p = 0.0564). No impact was observed from external financing for short- or long-term effects. Although individual long-run effects were not statistically significant possibly due to multicollinearity and a limited sample size, the models overall explained over 99.79% (R^2) of the variations in youth employment. Policy recommendations include a considerable boost in public spending on healthcare, aligning with the objectives of the 2014 Abuja Declaration on Public Health Spending Target; expanding the coverage of social health insurance to reduce the burden of OOP expenditures; reframing external assistance as Strengthening-Oriented rather than vertical interventions on youth employment; incorporating demographic and family planning into health investments; and integrating education with workforce development to strengthen human capital.

CHAPTER ONE

INTRODUTION

1.1 BACKGROUND OF THE STUDY

Youth employment has emerged as one of the most pressing developmental challenges in Nigeria in the 21st century. With over 70 million youth, representing 35% of the population and more than 60% of the labour force (World Bank, 2025; National Bureau of Statistics, 2020), the effective engagement of this demographic is critical for economic growth, political stability, and sustainable development. Despite being Africa's largest economy, Nigeria's youth unemployment rate rose sharply from 2.3% in 2000 to over 33% in 2020. Concurrently, the proportion of young Nigerians not engaged in employment, education, or training increased from 24.8% in 2011 to 28.1% in 2019. These trends indicate that structural barriers hinder the productive utilisation of Nigeria's youth human resource potential.

A critical yet often overlooked structural obstacle is the state of healthcare financing in Nigeria. Health represents a fundamental component of human capital, and the organisation of healthcare financing directly influences population health, productivity, and labour-market participation (Becker, 1964; Grossman, 1972). In Nigeria, healthcare financing is characterised by inadequate funding, a high prevalence of out-of-pocket payments by households, and increasing dependence on foreign donor funds. These factors have collectively contributed to some of the poorest health indicators globally.

Government expenditure on healthcare in Nigeria consistently falls below the recommended 15% of the total government budget, as stipulated by the Abuja Declaration of 2001. In most years following the declaration, Nigeria allocated less than 5% of its budget to healthcare (WHO, 2021). Since the 1999 democratic transition, the health system has experienced persistent underperformance due to financial underinvestment and inadequate infrastructure. In 2023, healthcare spending was less than 5.75% of the national budget, compared to the 15% commitment outlined in the Abuja Declaration (Stephanie, Tosho, and Idris Olokeogun, 2024). Per capita public spending on health services remains below US$8, significantly lower than the global standard of US$8, resulting in a substantial funding gap that is primarily filled by the private sector, compared with expenses (Lambo, 2015). Out-of-pocket expenditures accounted for approximately 30% of Georgia's health expenditures between 2000 and 2024, one of the highest ratios in sub Saharan Africa, indicating that majority of healthcare funding are borne directly from individuals (World Health Organisation, 2024). This reliance on out-of-pocket spending diverts resources from investments in education, nutrition, and skills training, thereby undermining human capital development.

External financing has played a significant role in partially addressing Nigeria's healthcare funding gap. The country has received substantial donor health finance from external agencies like the Global Fund, PEPFAR, GAVI, and the World Bank. The proportion of health finance from external sources increased from approximately 3.2% in 2000 to 8% by 2024. Although external health financing has improved specific health outcomes, such as reductions in HIV/AIDS infection rates, child mortality, and increased immunisation coverage, its emphasis on vertical, disease-specific interventions has not

effectively contributed to the development of infrastructure necessary for broad-based human capital growth and youth employment (Ooms et al., 2010). Empirical studies further suggest that external health financing can reduce domestic government contributions to the health budget, thereby undermining the sustainability of health financing in Nigeria (Lu et al., 2010).

The relationship between healthcare financing and youth employment operates through several mechanisms. At the individual level, inadequate healthcare financing reduces access to health services, resulting in higher morbidity and increased sickness absence among youths, which diminishes cognitive and physical productivity and, consequently, employability. At the household level, high out-of-pocket healthcare costs can impoverish families, compelling youths to withdraw from education and vocational training and restricting their capacity to finance job searches. At the macroeconomic level, insufficient health sector financing reduces the overall health capital of the labour force, thereby limiting the economy's capacity to generate employment opportunities for youths (Wagstaff and van Doorslaer, 2003; Onwujekwe et al., 2019).

Despite robust theoretical and empirical support for this association, few studies have empirically investigated the impact of healthcare financing, in its various forms, on youth employment in Nigeria. Existing research predominantly examines the relationship between healthcare finance and economic outcomes such as health, growth, or poverty, often neglecting employment effects, particularly those disaggregated by age group. Furthermore, limited studies employing Nigerian macroeconomic data utilise the ARDL test model, that is especially appropriate for minor annual datasets with mixed orders of integration, as is characteristic of Nigeria’s macroeconomic time series.

This research span from 2000 till 2024, encompassing the post-Abuja Declaration era marked by healthcare financing reforms, the adoption of the National Health Insurance Scheme (NHIS), increased healthcare aid, and various policy interventions addressing youth unemployment, like N-Power, YouWIN, and the Nigerian Youth Investment Fund. The use of time series data, the study analysis both short and long run interactions among government healthcare expenditure (GHE), out-of-pocket expenditure (OOP), external healthcare financing (EHF), and youth employment (YEMP), alongside control variables including literacy, population growth, and life expectancy. The findings provide empirical evidence to inform Nigeria's policy reforms in these domains.

1.2 STATEMENT OF THE PROBLEM

Youth unemployment in Nigeria remains relatively high, in part due to insufficient government investment in health, resulting in citizens shouldering the majority of healthcare costs.

Existing research on health expenditures and economic growth has often overlooked how youths are vital instrument for economic development. Many studies fail to consider that disruptions affecting youth can have significant negative consequences for overall economic performance.

There is insufficient information to guide the development of effective government strategies to address the relationship between health financing and the employment of youths. Accordingly, the research studies the effects of government, individual, and foreign health financing on the employment of youths in Nigeria. While acknowledging

the influence of additional variables, like life expectancy, literacy rates, and population growth, the analysis focuses on the role of health financing in youth job creation.

1.3 RESEARCH QUESTIONS

1. What is the effect of government health expenditure on youths' employment in Nigeria?

2. What is the role of out-of-pocket health expenditure on the employment of youths in Nigeria?

3. What is the effect of external health expenditure on youths' employment in Nigeria?

1.4 OBJECTIVES OF THE STUDY

To understanding the relationship between health finance and youth employment in Nigeria the major objectives of this study are listed below:

1. To demonstrate the influence of government healthcare expenditures on Nigerian youths employment.

2. To emphasize the impact of out of pocket healthcare spending on the employment status of Nigerian youth.

3. To illustrate the role of external health expenditures on Nigerian youths' employment..

1.5 RESEARCH HYPOTHESES

H0: Government healthcare expenditure has no significant effect on youth employment in Nigeria.

H0: Private (out-of-pocket) healthcare expenditure has no significant effect on youth employment in Nigeria.

H0: External healthcare expenditure has no significant effect on youth employment in Nigeria.

1.6 SIGNIFICANCE OF THE STUDY

The purpose of the study is to provide a universal research on the impact of health expenditure on youth employment in Nigeria. Several policy approaches have been initiated by successive government to address youth unemployment in Nigeria; nevertheless health problems pose a constraint on productivity of human resources development as well as creation of job for young ones. The effectiveness of appropriate and feasible strategies is of immense benefit when it is based on the knowledge on effects of govt funding, private and household expenditure and extern funding. In Nigeria, this work may present a standard approach to determine effect of health finance on youth employment and the impact if the results of this study revealed significance impact of govt funding on youth employment, government may be directed on proper way to fund the health sector of the economy in Nigeria.

This research also makes an contribution to the analysis in Nigeria of link between healthcare finance and labor market outcomes (employment generation, job opportunities,

etc). Existing work has often concentrated on overall development and its issues but this is distinctively focus on youth's unemployment to see whether finance could be seen as a tool to combat youth unemployment. The finding of the research could serve as an useful material for students of Nigerian Universities, Nigerian researches, as well as experts in labor and health economist and Nigerian policymakers.

1.7 SCOPE OF THE STUDY

This study is focused on the impact of funding on youth's unemployment in Nigeria, for the study shall restricted to the Nigerian alone, as necessary documents for research can be obtained from World bank , National bureau of statistics (NBS) , Central bank of Nigeria(CBN) and world Health organization(WHO) and shall be based on available secondary data within the period of 2000 -2024.

CHAPTER TWO

LITERATURE REVIEW

2.1 CONCEPTUAL LITERATURE

The conceptual analysis in this research focuses on the following variables: government healthcare expenditure, private healthcare expenditure, external healthcare financing, literacy rate, population growth rate, and life expectancy.

2.1.1. Healthcare Financing

The study outlines the processes of fund creation and resource distribution in relation to healthcare financing. It considers all possible means of creating and financing health care facilities across different sectors of the country, including government contributions, out-of-pocket expenditures, and external influences. It is recognised that, due to the significance of these financing aspects, their effects are reflected in the effectiveness of the health services provided.

Healthcare financing in Nigeria is characterised by significant flexibility. Given limited government health care funding, private out-of-pocket financing has become the predominant source of health care funding. The implications of this financing approach are evident in its effects on youth employment.

2.1.2. Youth Employment

Youth workforce engagement refers to how young people participate in the workforce. For instance, in Nigeria, the age range for youth is 15 to 35 years. Youth engagement includes both formal employment, which involves structured jobs and some associated perks, and informal employment, through which young people earn money.

Youth employment serves as a key indicator of economic growth. A higher rate of youth labour market engagement is associated with lower overall unemployment, increased productivity, and enhanced social stability. Thus, youth employment reflects both current and future economic prospects.

2.1.3. Government Healthcare Expenditure

This concerns the total amount the government spends on the healthcare industry, including budgets, health insurance, donations and grants, and loans and credits. Its major purpose is to ensure that everyone accesses healthcare facilities at a reduced cost through budgeting for hospital charges, improving the healthcare system, paying health workers, and sponsoring various health activities.

When budgets increase in the healthcare industry, there are more job openings for youth and health benefits for youth. This is vital because it reduces the spread of diseases among the youth and improves their ability to work. Government healthcare expenditure is typically measured as a percentage of the total budget or of GDP.

2.1.4. Private (Out-of-Pocket) Healthcare Expenditure

OOP healthcare costs are the outlays individuals make to pay for their health care needs. Such payments include costs for medications, hospital services, laboratory tests, and visits to health professionals. For example, in Nigeria, there is a significant amount of private or OOP health expenditure because of the lack of insurance coverage and low health budget in the country.

High levels of private or out-of-pocket (OOP) health expenditure can negatively affect youth employment. As healthcare services become increasingly unaffordable, youth may forgo necessary care, resulting in poorer health outcomes and reduced productivity.

Youth may also face opportunity costs when allocating resources to healthcare expenses instead of investing in skills development, education, or employment opportunities. This dynamic can lead to increased impoverishment and decreased productivity among young people. Private or OOP health funding is stated as the proportion of total health expenditure paid directly by individuals.

2.1.5. External Healthcare Financing

Any funding that is not sourced from government or personal funds is considered External Funding. They are mainly sourced from international organisations, agencies, and global health programs, such as the World Bank, UNICEF, and the Global Fund, among others. Such funding is used to support health programs, such as vaccination

programs, malaria control, and other initiatives that may enhance the capabilities and productivity of young people.

The influence of external health financing on youth employment is significant and can be either positive or negative. Donor investments in health projects often generate short-term employment opportunities for youth by creating project-based jobs. Successful health system funding can contribute to a healthier population, thereby enhancing youth capacity for learning and employment.

A key limitation of external health financing is that the employment opportunities it creates are often temporary, ending with the completion of specific projects. Furthermore, reliance on donor funding is problematic because funding levels are unpredictable and may fluctuate over time.

2.1.6. Literacy Rate

Literacy rate refers to the level at which individuals can read, write, and comprehend. While the concept of literacy rate is not linked to health financing, there is certainly a link between youth employment and literacy rates. It becomes extremely difficult to hire an illiterate person who is unable to perform certain tasks. Hence, if youth are well equipped with skills and a high-quality education, they will find it easier to secure employment. This implies that youth unemployment advances with a decline in literacy rate and vice versa.

2.1.7. Population Growth

Population growth refers to the rate at which a nation's population increases. The claim has often been made that population growth results in more labourers who develop innovative ideas, as well as a larger market. However, empirical evidence shows that when population growth continues, it may exceed the number of jobs available in a country. This has already become the case in Nigeria.

2.1.8. Life Expectancy

The term “life expectancy” denotes the average period an individual lives, based on current mortality rates. Higher life expectancy means better health, stability in life, and the possibility of a longer involvement in working activities. The reason the concept of life expectancy is crucial in this research is its link to the overall state of the population’s health and its readiness to work.

2.2 THEORETICAL LITERATURE

2.2.1. HUMAN CAPITAL THEORY

This theory serves as the basic framework for understanding the interaction between health care funding and youth employment. According to the human capital theory, humans should not be regarded simply as production factors since they possess inherent productive abilities in the form of their health status, education, abilities, and knowledge. Investments in human capital, such as health care and education, make individuals more productive and enable them to earn higher salaries in the labour sector.

The main principle of Human Capital Theory is the concept of health as a capital stock. Among the pioneers who acknowledged health as an investment good in economics was Schultz (1961), who noted that spending on medical treatment, nutrition, and sanitation enhances workers' productive efficiency by lowering sickness rates, increasing lifespan, and improving physical abilities. Building on Schultz's work, Becker (1964) demonstrated that people and governments rationally invest in human capital by weighing the benefits of increased future productivity and wages against the costs of present investments. Hence, financing health care services provided by governments, household budgets, and foreign donors can be considered an investment in human capital.

The applicability of the Human Capital Theory to the present study is especially noticeable in the case of youth employment. Youth is the age group most sensitive to investment. The health condition of youth is greatly influenced by the health system funding situation prevailing during their upbringing, impacting the process of cognitive learning and the resulting physical labour productivity, which ultimately determines their ability to get employed. With sufficient government investment in financing health care in Nigeria, youths would be able to access health care, remain healthy, continue attending school, and engage in productive activities. On the other hand, when there is heavy reliance on out-of-pocket payment financing in healthcare, as in Nigeria, where the share of OOP in overall health expenditures has averaged 66.08% during the period 2000 to 2024, households invest less in education, and youth develop poor human capital characteristics.

Human Capital Theory was applied to health explicitly by Grossman (1972) through the formulation of the Health Demand Model, which views health as a capital good subject to

depreciation that can be recovered through investments in the supply of health amenities. According to the theory, individuals with greater health capital have higher productivity levels, engage more in labour force activities, and receive higher wages — an outcome relevant to youth employment dynamics. In this regard, the study finds that government spending on health care augments the health capital endowment of young Nigerians, facilitating their entry into the labour force.

Moreover, the Human Capital Theory provides a foundation for understanding external financing for health care and literacy as factors affecting youth employment. Health programmes supported by donors that enhance the state of the health system and the health status of the population help develop human capital among the youth labour force. Similarly, enhanced literacy, another aspect of human capital, helps the youth labour force use information about their health more effectively, thereby further improving their productivity. The positive delayed effect of literacy on youth employment in this paper also supports Mincer's (1974) earnings function.

To conclude, there is a strong and convincing theoretical relationship between healthcare financing and youth employment, as defined by Human Capital Theory. This is because investments in improving health through government spending, alleviating financial costs, and carefully selected external finance will raise youth productivity, making them more employable and enhancing their ability to engage in gainful employment. Therefore, Human Capital Theory is the principal theory upon which the findings of this research are analysed.

2.2.2. WELFARE ECONOMIC THEORY

The theory of welfare economics, pioneered by Arthur Pigou (1920) and expanded by Amartya Sen (1999) and Nicholas Barr (2004), provides an appropriate basis for analysing the impact of funding health care on employment. The field of welfare economics concerns how society can best allocate its resources to ensure the maximum well-being of its citizens, thereby providing the foundation for state intervention in the market, whether in health care or other markets, where the private sector alone results in inefficiencies and inequities.

The core issue in Welfare Economics is that of market failure. It is well accepted that the healthcare industry exhibits characteristics such as information asymmetries, negative externalities, and public goods, leading to inefficiencies in competitive markets that hinder the achievement of social efficiency (Arrow, 1963). If left to its own devices, with financing based entirely on private means, as exemplified by the relatively high out-of-pocket payment rate in Nigeria, healthcare would be beyond the reach of economically disadvantaged individuals, resulting in an unequal distribution of healthcare that negatively impacts the poor and young population segment. Pigou (1920) opined that when market failures occur, government intervention through increased public spending and regulations becomes essential in order to achieve social welfare. The government expenditure on healthcare (GHE) in this study refers to this policy action, which aims to overcome market failure in healthcare and ensure that every citizen, including youth, has access to health services for economic participation.

The other contribution that Welfare Economic Theory makes is the concept of the Social Welfare Function, which assesses the welfare of society as a whole rather than relying

solely on individual utility. According to this approach, health care financing choices, including the share of expenditure by the government, the out-of-pocket payment, and foreign assistance, will create broad-based welfare consequences, ranging from labour force participation, income distribution, and economic growth. For instance, high levels of personal expenditure on health care services are welfare losses, not just to the households paying those fees, but also to the national economy in general, because these reduce the potential labour productivity of the country's young population – an inference that this research explicitly confirms through the negative short-run association between OOP and youth employment.

The capability approach of Amartya Sen (1999), which considers welfare economics not just from the perspective of income or expenditure but also the entire spectrum of individual capabilities, including the ability to maintain good health, education, and engagement in social and economic activities, is highly pertinent to this research. Sen posited that actual welfare would not just involve meeting preferences but would rather mean an enhancement of people's capabilities to lead productive and fulfilling lives. From this perspective, health financing is a key determinate that shapes individuals' capabilities; it enables Nigerians to be healthy, educated, and employed, while inadequate health financing limits these capabilities, resulting in poverty and unemployment among youth.

In addition, the theory offers a framework for judging the appropriateness of external funding for health care. From the perspective of welfare economics, external funding for health care is appropriate, as it is one method of addressing the financing deficit for

socially desirable levels of health care in underdeveloped nations where internal capacity to fund such services is inadequate. But welfare economics theory also suggests that dependence on foreign aid might affect domestic priorities in ways that jeopardise the sustainability of health care finance, in line with the negative correlation identified in this study between external health care financing and youth employment in Nigeria.

To conclude, Welfare Economic Theory justifies government involvement in healthcare financing and serves as a standard for assessing the distributional and employment implications of various financing methods. Welfare Economics helps strengthen the analysis throughout this paper on how a shift from regressive out-of-pocket spending to an equitable health financing system in Nigeria will improve youth employment.

2.2.3 SOCIAL DETERMINANTS OF HEALTH THEORY (SDH)

The SDH theory states that apart from the biological peculiarities of a person and the level of healthcare provided, the state of health is also influenced by the social environment in which this person lives. Income, education, employment, housing, social protection, along with the finance and governance of the health system, are among the social determinants of health.

At the core of SDH Theory lies the idea of the social gradient in health, which states that health status tends to deteriorate systematically as one moves down the socioeconomic scale, with the least advantaged population bearing the greatest negative health consequences (Marmot, 2005). When considering the problem addressed by the research, the idea becomes highly relevant since young Nigerians belonging to poor families, and

hence, suffering from poor health because of insufficient health financing, high costs of out-of-pocket expenditures for health care, and poor access to state-supported health care services, end up with low educational qualifications and are unable to find jobs due to poor health. Hence, the theoretical relationship between health financing and youth employment can be described through the SDH approach: health inequalities stemming from unequal health financing lead to a human capital deficit, which in turn results in unemployment.

The rainbow model of health determinants by Dahlgren and Whitehead (1991) depicts a hierarchical structure, from the innermost, individual biological determinants to the outermost, more complex socio-economic, cultural, and environmental determinants. The structural determinants of health care financing play a vital role in shaping the rainbow model, as they facilitate access to health care and determine health inequality across social groups. In circumstances where healthcare is paid for out of pocket, as in Nigeria, the theory predicts that health inequality is likely to be highest, along with a deterioration in youth productive capacity.

Additionally, the Social Determinants of Health framework provides a theoretical foundation for understanding the significance of literacy, population growth, and life expectancy as determinants of youth employment in this research. While literacy is a determinant of health literacy, enabling youth to access health services and make informed choices about their health status to preserve their health capital, which is necessary for productive employment. On the other hand, population growth influences

health and employment by shaping the distribution of resources and the availability of social services. Lastly, while life expectancy is an indicator of overall population health influenced by various social determinants, it reflects the ultimate impact of decisions made by healthcare organisations on the productive longevity of individuals, thereby explaining the long-run positive correlation between life expectancy and youth employment established within this research.

Additionally, the SDH Theory acknowledges the influence of external funding and international health governance on health systems and health outcomes in poor countries. As highlighted by the CSDH (2008) report, international health financing systems need to be built in ways that consider equity, take into account the structural determinants of health inequities, and go beyond addressing disease symptoms to target the root causes of health disparities. The finding of this research, an inverse relationship between external funding for health care and youth unemployment, is consistent with the SDH theory's criticism of disease-oriented aid interventions that ignore the underlying determinants of health and employment in poor countries.

All in all, it is clear that through the Social Determinants of Health Theory, we have gone far beyond the limited scope of analysis of the healthcare-productivity connection proposed by the Human Capital Theory and the limited economic perspective provided by the Welfare Economics Theory. This framework only serves to highlight that any meaningful improvements in youth employment in Nigeria cannot come about solely through greater investments in health care, but must entail an overall change in the socio-

institutional context of health care finance and its impact on health and employment among young people.

2.3 EMPIRICAL LITERATURE

Investing in education and health has a significant impact on productivity, which improves human capital (Soares, 2014). According to Anowor (2023), in a labour market where salaries reflect workers' marginal product, workers with higher levels of education, skill, and health are more employable than their counterparts with lower levels. To achieve sustainable economic growth and transformation, this study suggests that governments at all levels vigorously pursue health policies and programs to create the conditions for raising welfare by increasing the health sector budget (Ismaila, Aliyu, 2022).

Nigeria believes that the health of its people may be a major driver of economic growth; hence, it allocates a large share of its financial resources to health care. No amount of money spent by a nation on health is deemed excessive because health is a function of wealth. As a benchmark, the United Nations (UN) recommended that a nation allocate 8 to 10 per cent of its GDP to health care. (Ismaila , Aliyu , 2022). Moreover, investing in health care can increase worker productivity, raise incomes, and improve people's quality of life. An active agent is more motivated to acquire new knowledge and skills when they are healthy, as they anticipate long-term benefits from their labour. Contrarily, sick workers have a detrimental effect on output, which explains why many Nigerian states are developing unevenly. Half of the economic development gap between industrialised

and developing nations can be attributed to illness and a shorter life expectancy (WHO 2019). A study by Wang and Lee (2018) examined this association in 24 different nations. Regression analysis shows that health care spending significantly contributes to economic expansion.

Compared with other developing countries in the same category, Nigeria's health status is rated as poor (World Bank 2012). A key political weapon for resolving issues of fairness in health care utilisation, guaranteeing equitable income (re)distribution, cutting catastrophic health spending, and hastening the transition to universal health coverage is public health spending (World Bank, 2021). In addition, Olayiwola (2020) stated that by raising its health spending, the Nigerian government assumed responsibility for providing high-quality healthcare facilities. According to available data from 2000 and 2019, the health sector received, on average, between 2.1% and 5.8% of all government spending. The proportion of government spending on public health in Nigeria has fluctuated throughout time. From 2008 to 2019, it varied from 5.72% to 9.19%. From 2010 to 2019, its percentage of GDP was 0.91%, 1.15%, 1.03%, 0.88%, and 0.92%, respectively (Olayiwola, 2020).

Additionally, a nation's overall health performance serves as a conduit for this transfer process. In 2017, the World Health Organisation (WHO) continued to rank Nigeria's overall health performance at 187th out of 191 Member States (Olayiwola, 2020). Moreover, Out-of-pocket (OOP) costs account for 70% of Nigerians' medical expenses (Adeniran, 2023). According to Ipinnimo, Ibirongbe, and Obiagwu (2021), when a household must forgo spending on other necessities of life in order to cover the medical costs of one or more household members, this is known as catastrophic health

expenditure. In Nigeria, household catastrophic health expenditures are common, especially in rural areas. Therefore, it's critical to establish social and financial intervention systems that can shield households from unaffordable medical bills. The first technique showed a significant increase in rural regions of 18.5% compared to urban areas of 12.8% ($p=0.015$); the second method showed a significant increase in rural areas of 8.3% compared to urban areas of 2.5% ($p<0.001$).

From Onwujekwe, Uzochukwu, and Onoka (2011), as well as Adisa (2015), out-of-pocket expenditure constitutes around 90 to 96% of private healthcare spending in Nigeria, accounting for about 70% of all healthcare expenditure. Contrary to the Abuja Declaration (WHO, 2011), most of the governments in poor countries could not allocate adequate resources to health, which amounts to less than 9% of the budget to the sector. Therefore, this makes people spend their money more on healthcare (Brinda et al., 2014). The members of the households suffering from any illness or disease may be at risk of facing CHE, and even poverty and impoverishment due to the absence of a proper prepayment or health insurance scheme in many developing countries (Rashad and Sharaf, 2015).

Every year, more than 150 million people, or 44 million households, experience financial ruin, mostly due to out-of-pocket medical expenses (World Health Organisation, 2016; Bennett, Ozawa, Rao, 2010). Because they must take medication and receive treatment for the rest of their lives, people with HIV and AIDS are not exempt, which makes paying for healthcare even more difficult. People living with HIV/AIDS are unable to obtain treatment in many areas due to high healthcare expenditures (Adeniran and colleagues, 2023). However, according to Adeniran (2023), over 150 million people are

experiencing catastrophic health expenditures (CHE), with over 100 million falling into poverty as a result of out-of-pocket medical expenses.

The National Health Insurance Authority Act, 2022, was enacted in 2022 to provide oversight and regulatory authority for Nigerian health insurance schemes. The Nigerian Federal Government introduced the National Health Insurance Scheme in 2005 to protect Nigerians seeking medical care from financial risk (Adeniran, 2023). The majority of Nigerians lack health insurance and face significant financial obstacles to receiving high-quality treatment because the majority of healthcare spending (75%) is paid for out of pocket.

President Bola Ahmed Tinubu submitted the "Renewed Hope budget" to the National Assembly for approval on November 29, 2023, but it needs careful examination to determine how it might affect current health policies and programs, including family planning, routine vaccinations, brain drain, nutrition, and primary healthcare. “The World Bank announced on Wednesday that it has approved a total of $1.08 billion in concessional loans to Nigeria to improve the quality of education, resilience of households and communities, and nutrition for disadvantaged populations (Reuters, 2025).”

Also, there is an agreement between the World Bank and Global Fund (2025) to Fight AIDS, Tuberculosis, and Malaria to help the developing nations create more resilient health systems as well as secure funding for primary healthcare and combating HIV, TB, and malaria. “Healthy populations power prosperous economies,” said President of World Bank Group Ajay Banga. “Through this collaboration with the Global Fund, we

can work together for maximum impact, building stronger primary healthcare systems that generate jobs, boost growth and build resilience.”

According to Peter Sands, Executive Director of the Global Fund, "Sustained investment, effective financing and genuine partnership will be essential to support health systems scaling up." "It is the strength of the World Bank Group's sustainable financing approach and the track record of the Global Fund in achieving results on the ground that is captured in this new partnership. Working together with countries, we can pool the resources, expertise, and innovation needed to protect the health of their populations and foster sustainable development. The NHIS of Nigeria was established in 1999 as a means of protecting its population from the cost of health care. This system was put in place in 2005 to ensure financial risk protection through reduced out-of-pocket expenditure (Wright, 2025)."

2.4 RESEARCH GAP

Several efforts have been undertaken in an attempt to establish the link between health care expenditures, economic growth, and health. However, there has been a lack of sufficient data concerning the relationship between youth employment and health expenditure in particular in developing nations like Nigeria. The current literature on health expenditure does not differentiate between health care expenditures by the government, out-of-pocket expenditures, and foreign health expenditure; rather, the study uses aggregate figures for health expenditures.

Moreover, while studying youth employment in Nigeria, the current literature has primarily concentrated on economic growth, educational levels, and skill deficits, and health financing has not been considered. There is a shortage of studies on health finance in Nigeria. Hence, this study seeks to fill this gap through investigating the effect of health care finance sources on youth employment in Nigeria.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

The discussion in this chapter revolves around the research methodology used to solve the posed research problems. This chapter includes the list of variables, the research model and sources and types of data.

3.2 RESEARCH DESIGN

The research was designed as an ex post facto research design in view of the fact that the research made use of historical data of previous years to examine and establish the relationship between health care financing and youth employment in Nigeria. Ex post facto research design does not manipulate any variables it simply establishes the relationship of event that have already occurred in the past. Health care expenditure of Government on health care, Out of pocket Health care expenditure by private sector and external source Health Care Financing on youth employment will be modeled using econometrics techniques as the data are contained in official records. The use of Ex Post Facto Design in research is appopriate because the researcher can effectively trace the cause in an examination of the relationship between health care financing and youth employment using existing and historical data

3.3 THEORETICAL FRAMEWORK

This study is supported by three main theories which are mentioned in chapter two as follows: Human Capital Theory, Welfare Economics Theory and SDH theory. The model explained in this chapter is developed on the basis of these theories.

According to the Human Capital theory (Schultz 1961, Becker 1964, Grossman 1972 and Mincer 1974), health is important because it is a form of capital that can be invested in by investment in the form of government, private or external funding for health services, which in turn increases the productivity, employability and earning capacity of youths. This theory is the basis for the explanatory variables GHE, OOP, and EHF, as well as the proxies for human capital accumulation, LIT and LEXP. Improved health and education should lead to greater labour-market participation among young people.

Through the Welfare Economics Theory (Pigou, 1920; Arrow, 1963; Sen, 1999; Barr, 2004), the need for government intervention in healthcare financing is justified based on the concept of market failure, and the impacts of the distribution of the healthcare costs (whether government, OOP or external donors) on social welfare and consequently on youth outcomes in employment are examined.

The Social Determinants of Health Theory (SDHT) (Dahlgren & Whitehead, 1991; Marmot, 2005; CSDH, 2008) places financial resources for health care in a wider structural context, partly because other socioeconomic factors, like the literacy rate, the population growth and life expectancy, are included in the model and represent other determinants of health that are structurally embedded and that mediate the relationship between financial resources for health care and youth employment.

These theories give the rationale for the functional form of the dependent variable, YEMP, as a function of the independent variables, GHE, OOP, EHF, LIT, POPG, and LEXP, as used in this chapter, and for the a priori economic test of significance (Section 3.4.5) applied to the signs of the coefficients.

3.4 MODEL SPECIFICATION

The model for this study can be specified as: Youth employment = f (healthcare financing, control variables). The main explanatory variables are government healthcare expenditure, private (out-of-pocket) healthcare expenditure, and external healthcare financing, and the control variables are literacy rate, population growth rate, and life expectancy. The relation is expressed as a functional

YEMP = f (GHE, OOP, EHF, LIT, POPG, LEXP)………………..(1)

YEMPt = β1 + β2GHEt + β3OOPt + β4EHFt + β5LITt + β6POPGt + β7LEXPt + Ut…….(2)

The Autoregressive Distributed model of equation 2 can be expressed as:

$$\Delta YEMP_t = \alpha_0 + \sum_{i=1}^{n} \beta_1 \Delta YEMP_{t-i} + \sum_{i=1}^{n} \beta_2 \Delta GHE_{t-i} + \sum_{i=1}^{n} \beta_3 \Delta OOP_{t-i} + \sum_{i=1}^{n} \beta_4 \Delta EHF_{t-I} + \sum_{i=1}^{n} \beta_5 \Delta LIT_{t-i} + \sum_{i=1}^{n} \beta_6 \Delta POPG_{t-i} + \sum_{i=1}^{n} \beta_6 \Delta LEXP_{t-i} + \phi ECM1_{t-1} + \varepsilon_t \ldots\ldots (3)$$

Where:

YEMP = Youth Employment

GHE = Government Healthcare Expenditure

OOP = Private (Out of Pocket) Healthcare Expenditure

EHF = External Healthcare Financing

LIT = Literacy Rate

POPG = Population Growth Rate

LEXP = Life Expectancy

3.5 METHOD OF EVALUATION

3.5.1 PRELIMINARY TEST

In this study, preliminary tests are carried out to assess the data properties before performing regression analysis. These tests are necessary to ensure the quality of the data to be analysed and prevent errors in the results.

The preliminary test used here is the unit root test. The unit root test determines if the time-series data is stable. These tests help to ensure that the estimated model is sound and valid.

3.5.2 UNIT ROOT TEST

Through the test on unit root, the researcher can be aware of whether the series is stationary or not. Stationarity represents the circumstances where the average values of time dependent series and other statistical parameters do not alter with respect to time. These variables play vital role as non-stationary variables can result into spurious regression.

In this thesis will utilize Augmented Dickey Fuller test for determining whether unit root exists in data since the result of ADF test can indicate whether null hypothesis of non

stationary data could be rejected or not at favour of alternate hypothesis which is data are stationary. It can implement if test value is small compared with critical value (in the direction of negative sides).

3.5.2.1 ARDL JUSTIFICATION

After looking at the unit root test for the variables, it can be confirmed that the variables comprises of both I(0) and I(1). Therefore we are capable of utilising the Autoregressive Distributed Lag technique. In addition to that it will provide us with the answers to analyse the impact of one variable on another in both long run and short run run.

3.5.3 CO-INTEGRATION TEST

This section of cointegration analysis is aimed at testing for the existence of a long-run equilibrium between the variables. If such relationship is estimated by using ARDL, then cointegration will be found using Bounds test. Bounds test relies on the estimation of the F statistic and comparing it against the bounds critical values, such that, when theF-statistic >bounds critical values, then long-run relationship holds true between the variables.

3.5.4 ERROR CORRECTION MECHANISM (ECM)

To determine the speed at which convergence takes place toward the steady state, the authors opted for the Error correction model. A negative sign for the error correction

coefficient is expected. The size of error correction term indicates the speed at which variables tend to converge toward equilibrium.

3.5.5 ECONOMIC TEST OF SIGNIFICANCE (A PRIORI TEST)

The economic a priori test is used to verify whether the estimated coefficients are consistent with theoretical predictions about their signs and sizes. Economic theory suggests that government spending on health care and external financing of health care should be positively correlated with youth employment, whereas out-of-pocket spending on health care should be negatively correlated. Likewise, literacy rates and life expectancy are expected to positively affect youth employment, while population growth is expected to negatively affect it.

Table 3.1 A PRIORI TEST EXPECTATION

Variables	Expected Signs and Magnitude
GHE	POSITIVE RELATIONSHIP
OOP	NEGATIVE RELATIONSHIP
EHF	POSITIVE RELATIONSHIP
LIT	POSITIVE RELATIONSHIP
POPG	NEGATIVE RELATIONSHIP
LEXP	POSITIVE RELATIONSHIP

3.5.6STATISTICAL TEST OF SIGNIFICANCE (FIRST ORDER TEST)

3.5.6.1 T-TEST OF SIGNIFICANCE

We used the first series of the test of significance, the t-test is selected to measure the significance of each independent variables on the dependent variable since it is testing whether the coefficient associated with any independent variable is significantly different from zero. In other words, in the t-test it could be possible to determine the significance of each variable on Youth Employment individually.

3.5.6.2 F-TEST OF SIGNIFICANCE

Another importance test in determining the significance level of the model as a whole will be F test which is being applied to see how each factors' influence on the dependent variable factors simultaneously. It is determining whether the overall model is statistical significance (less than or greater than 0.05). It's significant if it less than 0.05

3.5.6.2 COEFFICIENT OF DETERMINATION OR R^2

The amount of variation in a dependent variable that is accounted for by your regression equation is represented by this percent, it could range from 0-1 and the highest percents explains better relationship. There is yet another value called the adjusted R, that helps estimate how well the model as whole fits with your data.

3.5.7 ECONOMETRIC TEST OF SIGNIFICANCE (SECOND ORDER TEST)

3.5.7.1 AUTOCORRELATION TEST

The autocorrelation test done in to check out for if any correlations do in fact do exist among error terms across the time. Durbin Watson statistic value is employed in executing this particular test. The Durbin Watson test could be the statistic for testing the current presence of autocorrelation. While having DW value nearby to 2 means no autocorrelation is contained in error, DW below 2 shows positive autocorrelation, as well as DW above 2 displays negative correlation.

3.5.7.2 NORMALITY TEST

It is also needed to make normality test on the residuals, to know whether they have a normal distribution which is vital when making statistical inference. There are a couple ways of checking that the residuals have a normal distribution. One type of test is Jarque Bera test. If the value $p > 0.05$ then the assumption of normality is accepted on the residuals, otherise it must be rejected.

3.5.7.3 HETEROSKEDASTICITY TEST

The presence of heteroskedasticity is test to be the spread for of the error terms are the same or nope. Since a large variance out error terms in linear backward analysis sack output unreliable regress. On average, p-value is and is equal toward the $p > 0.05$ implies that on is not presence of the heteroskedasticity, which average ensure the variance is that

the error terms will are homogeneous and otherwise on which other end the presence of the p-value is equal to the $p < 0.05$ denotes the presense of the heteroskedasticity.

3.6 DATA SOURCES

In this research, the source of information will be secondary which will be based on trustworthy and credibly recognized and acceptable source of data. Government health spending and other variable factors like youth employment rate, literacy rate, growth rate of the population, life expectation of Nigerian citizen and the amount expended on the provision of medical care, will come from the World Bank Development Indicators (WDI), October 2023. Also, governmental health financing data will be obtained from statistical bulletin of Central Bank of Nigeria, as well as foreign health spending data will be collected from World Health Organization (WHO) data base. The timeframe will be from 2000-2024.

3.7 ECONOMETRIC SOFTWARE

E-views 9.0 version was the econometric software used in this study

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF RESULT

4.1 INTRODUCTION

Empirical results of the study will be provided together with the examination of the association between the health care financing and youth unemployment in Nigeria in this chapter. The ARDL approach to estimate the relationship will be used in the chapter.

The chapter will start with the provision of the results of the unit root tests performed on the variables for the purpose of establishing their stationary nature. In addition to that, the ARDL model estimation and the cointegration bounds test will be conducted.

4.2 DESCRIPTIVE STATISTICS

Table 4.1: Presentation of the descriptive statistics

	YEMP	GHE	OOP	EHF	LIT	POPG	LEXP
Mean	52.64000	2.688000	66.08400	5.448000	64.95200	2.638000	51.97600
Median	53.00000	2.700000	66.30000	5.200000	65.10000	2.640000	52.00000
Maximum	55.30000	3.500000	71.50000	8.000000	74.20000	2.690000	57.30000
Minimum	48.00000	1.800000	60.00000	3.200000	55.00000	2.550000	46.50000
Std. Dev.	2.165256	0.500267	3.656692	1.557006	6.041186	0.038730	3.401627
Skewness	-0.756736	-0.125243	-0.120824	0.208483	-0.065719	-0.534952	-0.035456
Kurtosis	2.474051	1.884319	1.718852	1.709249	1.742076	2.428611	1.726444
Jarque-Bera	2.674185	1.361966	1.770557	1.916562	1.666301	1.532479	1.694763
Probability	0.262608	0.506119	0.412599	0.383552	0.434678	0.464758	0.428536
Sum	1316.000	67.20000	1652.100	136.2000	1623.800	65.95000	1299.400
Sum Sq. Dev.	112.5200	6.006400	320.9136	58.18240	875.9024	0.036000	277.7056
Observations	25	25	25	25	25	25	25

Source: Author's computation (2026) using Eview 9

The descriptive statistics for all seven variables over the 25-year period (2000–2024) are presented in Table 4.1. The average Youth Employment (YEMP) was 52.64%, with a range from 55.30% to 48.00%, indicating a slow rate of decline in youth employment during the study period. The skewness is negative (−0.757) and shows a slight left tail, and the kurtosis (2.474) is less than the normal value (3),, indicating a platykurtic (flat-topped) distribution.

The average Government Healthcare Expenditure (GHE) was 2.69% with a standard deviation of 0.500, indicating a slow but steady increase in public health spending. Out-of-Pocket Expenditure (OOP) had the highest mean of 66.08%, indicating a significant burden of private health costs on Nigerian households. External Healthcare Financing (EHF) increased from 3.20% to 8.00% with an average of 5.45% over the period and positive skewness (0.209), indicating an accumulation of values in the earlier, lower-range years.

The Literacy Rate (LIT) had an average of 64.95% and the greatest sum of squared deviations (875.90), consistent with the largest spread of the variables. The most stable variable was Population Growth Rate (POPG), with an average of 2.638%, a standard deviation of only 0.039, and a rather narrow range of 2.55% to 2.69%. Life Expectancy (LEXP) improved consistently over the period, rising from 46.5 to 57.3 years, with an average of 51.98 years.

Most importantly, the probability values derived from the Jarque-Bera test statistics for all 7variables lie above 0.05 (0.2626 for YEMP to 0.5061 for GHE). This means that, for all the series, the null assumption of the data being distributed normally cannot be

rejected at the 5 per cent level of significance. This therefore is satisfactory for further work using regression and time-series techniques.

4.3 UNIT ROOT TEST RESULT

Table 4.2: Presentation of the Unit Root Test Result

Table 4.2 PRESENTATION OF THE UNIT ROOT TEST RESULT

	LEVEL FORM			**1ST DIFFERENCE**			
Variables	**ADF**	**Critical Value (5%)**	**Prob**	**ADF**	**Critical Value (5%)**	**Prob**	**Intergration**
YEMP	-1.328933	-2.998064	0.5981	-1.024382	-2.998064	0.7267	I(1)
GHE	-2.127749	-3.808546	0.2367	-7.325754	-2.998064	0.0000	I(1)
OOP	0.162464	-3.004861	0.9633	-2.846375	-3.004861	0.0682	I(1)
EHF	1.546716	-2.991878	0.9989	-3.041085	-2.998064	0.0458	I(1)
LIT	-2.171784	-3.012363	0.2213	1.349975	-3.004861	0.9980	I(0)
POPG	-1.773582	-3.004861	0.3828	-0.676117	-3.004861	0.8330	I(1)
LEXP	-1.105169	-2.991878	0.6966	-1.826227	-3.004861	0.3587	I(1)

Source: Author's computation (2026) using Eview 9 output.

ADF Unit Root Tests In order to check that the variables have stationarity, the ADF Unit Root Test was applied to all the variables. It should be noted here that a unit root test is a

test where there is no unit root in time series. The ADF unit root test works by rejecting the null hypothesis if the test statistic value is below the critical values or if the p value is lower than 0.05. In table, it has been found out that in all the 7 variables, YEMP, GHE, OOP, EHF, LIT, POPG, and LEXP, the null hypothesis of no unit root cannot be rejected, as the ADF statistics all are less than the critical values at 5 percent and corresponding p-values are larger than 0.05.

In this case, GHE reached stationarity at the 1% significance level by taking first difference and ADF statistic is -7.325754 and its probability is 0.0000 and EHF reached stationarity at 5% significance level and ADF statistic is -3.041085 with the probability value 0.0458. In addition, OOP is almost stationary at 10% level of significance with prob. 0.0682. However, the remaining variables, namely, YEMP, LIT, POPG and LEXP are considered as I(1), consistent with the trending behavior of macroeconomic and demographic series.

Note that there is no variable I(2) for order two in sequence. Main assumptions about cointegration test when the study uses ARDL bound testing approach which suggest pesaran et al. (2001), assume I(0) and or I(1). They also highlight advantages of ARDL approach over other cointegration tests such as those developed by Engel and Granger (1987), and Johansen (1991).

4.4 RESULT FOR THE ARDL MODEL

Table 4.3: Presentation of the ARDL MODEL RESULT

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
YEMP(-1)	1.086358	0.195455	5.558100	0.0001
GHE	2.388595	1.131536	2.110931	0.0564
GHE(-1)	1.094725	1.058111	1.034603	0.3213
OOP	-2.106756	0.888435	-2.371310	0.0353
EHF	-0.802022	0.676151	-1.186159	0.2585
EHF(-1)	1.307689	0.785680	1.664403	0.1219
LIT	-1.711667	0.867642	-1.972779	0.0720
LIT(-1)	2.708835	0.866415	3.126488	0.0087
POPG	8.755720	7.102989	1.232681	0.2413
LEXP	-1.403940	1.110675	-1.264042	0.2302
LEXP(-1)	-3.525256	1.291918	-2.728699	0.0183
C	291.6529	107.2398	2.719634	0.0186

R-squared: 0.997899 || Adjusted R-squared: 0.995973

F-statistic: 518.1503 || Prob (F-statistic): 0.000000

Source: Author's computation (2026) using Eview 9

The output of the ARDL(1,0,1,0,1,1,0,1) regression estimation is reported in Table 4.3. The estimated parameter for the lagged dependent variable YEMP(-1) is positive and statistically significant (coeff. = 1.087, prob. = 0.0001), which shows there is persistency in the evolution of the youthful unemployment dynamics of Nigeria, such that the current value of youthful unemployment is significantly determined by its value in the previous period.

Government healthcare expenditure (GHE) has a positive and marginal significance at 10% (coeff. = 2.389, prob. = 0.0564), implying that an increase in the amount of

government healthcare expenditure increases the value of youth employment, and this is supported by the human capital development hypothesis. The lagged value of government healthcare expenditure (GHE(-1)) has a positive value and is not statistically significant (prob. = 0.3213).

The Out-of-Pocket Expenditure (OOP) is statistically significant and negative (coeff. = −2.107, prob. = 0.0353), implying that higher out-of-pocket health costs decrease youth employment. This is consistent with the theory that excessive private health expenditure crowds out productive investment and diminishes households' ability to support youth labour market participation.

EHF turns out to be negative and statistically insignificant for the current period (prob. = 0.2585), while its lagged term, EHF(−1), is positive (coeff. = 1.308) but close to being statistically significant at the 15% level (prob. = 0.1219), implying that the benefits accruing from external health care spending could have a delayed impact on the employment situation. LIT is found to be negative in the current period (prob. = 0.0720), whereas LIT(−1) is positive and highly statistically significant (coeff. = 2.709, prob. = 0.0087).

POPG coefficient is positive but insignificant (probability value = 0.2413). LEXP and LEXP(−1) coefficients are negative. LEXP(−1) is significant (probability value = 0.0183). This might be attributed to structural factors in the Nigerian labour market, given that the population consists of ageing workers who are not very productive. Constant coefficient is positive and significant (probability value = 0.0186).

To conclude, the fitness of the model is excellent. Having an R-squared of 0.9979 implies that almost 99.8 percent of the variation in youth employment is explained by the model. Given that the Adjusted R-squared value of 0.9960, this tells us that the fitness of the model is independent of the number of regressors in the models. An F-statistic value of 518.15 with a 0.000000 significance level, suggests that all of the regressors as a whole are significant. The model has an adequate Durbin-Watson statistic value of 2.071 which indicates a value that is approximately close to 2. Therefore, there is no first-order serial correlation present in the models. This is confirmed by the AIC value of 0.785 which shows that among the sixty four choices available this model performs best

.4.5 BOUNDS TEST (CO-INTEGRATION) USING THE ARDL MODEL

Table 4.4: Presentation of the Bounds Test

ARDL Bounds Test
Date: 05/20/26 Time: 10:56
Sample: 2001 2024
Included observations: 24
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	10.03938	6

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Source: Author's computation (2026) using Eview 9

The results for the ARDL bounds test are summarized below as Table 4.4. As is clear from the estimates, the F-statistic value is 10.03938 and is large relative to the upper critical bound for I(1) in every case at all levels of significance including 10%, 5%, 2.5% and 1% which are 3.23, 3.61, 3.99 and 4.43 respectively. These results support the rejection of the null hypothesis in as much as youth employment and health care financing are not linked in the long run even at 1% level of significance. Having rejected the null hypothesis, there exists the existence of the long run link between youth employment and health care financing.

The results above confirm the theoretical prediction that financing decisions in the health sector have significant structural impacts on labour market performance, especially for the youth population in developing countries. The determination of cointegration requires estimating the long-term coefficients and the ECM in the following paragraphs.

4.6 LONG-RUN RESULTS FOR THE ARDL MODEL

The long-run cointegrating equation estimated by EViews is expressed as:

Cointeq = - (-40.3357 GHE + 24.3956 OOP - 5.8555 EHF - 11.5469 LIT - 101.3885 POPG + 57.0785 LEXP - 3377.2476)

Table 4.5 PRESENTATION OF THE LONG-RUN RESULTS

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GHE	-40.33573...	100.135662	-0.402811	0.6942
OOP	24.395562	50.684739	0.481320	0.6389
EHF	-5.855456	12.389615	-0.472610	0.6450
LIT	-11.54688...	27.986675	-0.412585	0.6872
POPG	-101.3884...	288.122623	-0.351893	0.7310
LEXP	57.078526	126.230689	0.452176	0.6592
C	-3377.247...	7082.09196...	-0.476871	0.6420

Source: Author's computation (2026) using Eview 9

From the results shown in Table 4.5, it is clear that although the signs of the coefficients are consistent with theory, none of the variables is statistically significant at either the 5% or 10% levels. While not surprising in the case of an ARDL model estimated from limited annual data with highly trended variables, such a result must be viewed in context.

For example, Government Healthcare Expenditures (GHE) have a negative coefficient of −40.336,, indicating that, in the long run, higher government expenditures on health fail to deliver youth job outcomes in Nigeria. The explanation for this may lie in the inefficiencies of the Nigerian health system, whereby higher government health expenditure does not guarantee better health outcomes or the productivity gains necessary to boost youth labour market outcomes.

Out-of-Pocket Expenditures (OOP) have a positive long-run coefficient of 24.396, which initially appears quite contradictory. Nonetheless, this may be because OOP expenditure for health service access, especially in the private sector, in Nigeria's primarily informal

economy, has been linked to comparatively higher access to health services, enabling young people to maintain their labour market involvement in the long run.

External Health Finance (EHF) carries a negative long-run coefficient of −5.855, indicating that donor-funded health-related efforts have failed to sustain youth employment growth. This might be because external finance often focuses more on vertical health initiatives (such as immunisation and disease control) rather than on health systems building, which would increase productivity levels.

LIT has a negative coefficient of −11.547,, which may seem unexpected but may arise from structural differences between Nigeria's increasing literacy levels and the requirements of its labour market, meaning that increasing literacy levels have not been accompanied by job creation at a proportionate level among youth.

POPG has a negative sign (−101.389), indicating that Nigeria's fast-growing population puts pressure on its labour market and reduces youth employment per capita in the long run. LEXP is positive (57.079), suggesting that longer longevity leads to greater youth employment in the long run, consistent with the idea that more productive populations lead to higher employment.

Large standard errors of all the long-run estimates result from the limited degrees of freedom caused by the small sample size (only 24 observations) relative to the number of parameters being estimated, as well as the high correlation of the independent health

financing variables – a common feature of macroeconomic time series regressions in developing countries. Despite the insignificance of each long-run coefficient individually, cointegration among them is established via the bounds test in Section 4.4.

4.7 ERROR CORRECTION MODEL (ECM) FOR THE ARDL MODEL

TABLE 4.6PRESENTATION OF THE ERROR CORRECTION MODEL (ECM)

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GHE)	2.388595	1.131536	2.110931	0.0564
D(OOP)	-2.106756	0.888435	-2.371310	0.0353
D(EHF)	-0.802022	0.676151	-1.186159	0.2585
D(LIT)	-1.711667	0.867642	-1.972779	0.0720
D(POPG)	8.755720	7.102989	1.232681	0.2413
D(LEXP)	-1.403940	1.110675	-1.264042	0.2302
CointEq(-1)	0.086358	0.195455	0.441832	0.6665

Cointeq = YEMP - (-40.3357*GHE + 24.3956*OOP -5.8555*EHF
-11.5469*LIT -101.3885*POPG + 57.0785*LEXP -3377.2476)

Source: Author's computation (2026) using Eview 9

In table 4.6 above, it shows in the short run that there is only one significant variable at the 5% level, which has a negative coefficient of −2.107 (Prob.=0.0353). The results reveal that in the short run, an increment of 1 unit of out-of-pocket expenditures among the young people decreases the employment rate by 2.11%. From this result, the authors are further convinced that out-of-pocket expenditure negatively affects the ability to mobilise family resources in the short run, thereby reducing labour participation among youth.

Government healthcare expenditure is positively significant at the 10% significance level (Coeff. = 2.389, Prob. = 0.0564), implying a mild effect on youth employment in the short run through government healthcare investment. Additionally, literacy rate is statistically negative and insignificant at the 10% significance level (Prob. = 0.0720). The authors argue that this could be due to the costs of transition for youths who remain in school rather than enter the labour market in the short run. Moreover, variables of external healthcare financing, population growth, and life expectancy are found to be insignificantly related to employment in the short run.

The value of the coefficient of CointEq(−1), which indicates the speed of convergence of the variable toward long-run equilibrium, is positive (0.086) and insignificant (Prob. = 0.6665). Ideally, the coefficient would be negative and significant in an appropriate error-correction model because the correction toward long-run equilibrium should take place over time. The insignificance of the coefficient of CointEq(−1) means that the process of convergence toward long-run equilibrium is weak, which represents a drawback of this study. The insignificance of the coefficient is primarily caused by the low sample size (24) compared to the number of parameters estimated.

4.8 ECONOMIC TEST OF SIGNIFICANCE (A PRIORI TEST)

Table 4.7PRIORI TEST FOR SHORT-RUN COEFFICIENTS

VARIABLES	EXPECTED	OBTAINED	COEFFICIENT
GHE	POSITIVE	POSITIVE	**2.3886**
OOP	NEGATIVE	NEGATIVE	**−2.1068**

EHF	POSITIVE	NEGATIVE	**−0.8020**
LIT	POSITIVE	NEGATIVE	**−1.7117**
POPG	NEGATIVE	POSITIVE	**8.7557**
LEXP	POSITIVE	NEGATIVE	**−1.4039**

Source: Author's computation (2026) using Eview 9 output

Table 4.8PRIORI TEST FOR LONG-RUN COEFFICIENTS

VARIABLES	EXPECTED	OBTAINED	COEFFICIENT
GHE	POSITIVE	NEGATIVE	**−40.3357**
OOP	NEGATIVE	POSITIVE	**24.3956**
EHF	POSITIVE	NEGATIVE	**−5.8555**
LIT	POSITIVE	NEGATIVE	**−11.5469**
POPG	NEGATIVE	NEGATIVE	**−101.3885**
LEXP	POSITIVE	POSITIVE	**57.0785**

Source: Author's computation (2026) using Eview 9 Output

4.9 STATISTICAL TEST OF SIGNIFICANCE (FIRST ORDER TEST)

I. T-TEST OF SIGNIFICANCE FOR THE SHORT-RUN

Decision Rule: Reject H_0 if Prob. < 0.05 (Significance level = 5%)

SIGNIFICANT (NOT REJECT NULL HYPOTHESIS)

D(OOP) Prob. = 0.0353. Null Hypothesis: OOP do not impact youth employment in Nigeria.The decline in employment in the youth will only last temporarily since out of pocket health expenditures also pose a threat in terms of negatively affecting youths in employment at present time frame as it would apply to Nigerian society.

NOT SIGNIFICANT (REJECT THE NULL HYPOTHESIS)

Prob. Of D(GHE) = 0.0564 We are not able to reject null hypothesis because the p value is more than 0.05. We can concluded government expenditure on healthcare affect youth employment. But the coefficient value estimation is positive thus supports the theory.

Prob. Of D(EHF) = 0.2585 The null hypothesis does not get rejected, There is no impact of external health expenditure on the youth unemployment in short run.

II. T-TEST OF SIGNIFICANCE FOR THE LONG-RUN

Decision rule: If Prob. < 0.05, we reject H0 (5% level of significance)

GHE (Prob. =0.6942):Null Hypothesis is rejected.This means in the long run, the Government's expense on health shows no significant difference from zero at 5% level of significance regarding the influence it impacts upon youth employment.

OOP(Prob. =0.6389):Null Hypothesis is rejected .The effect of private Out-of-pocket spending on the young unemployment rate, in the long run, is not statistically different from zero at the 5% significance level.

EHF (Prob. =0.6450):Null Hypothesis is rejected.There are no statistically significant effects of external financing of health on employment of the youth at 5% confidence level.

The Probability values of all independent variables are above the 0.05 significance level between 0.6389 and 0.7310 level. The main reasons for the small probabilities for almost all independent variable are very low sample size (n=24) and high collinearity in between independent variables. Cointegration, However, exists on our data after testing with bounds test F-statistic is 10.039.

4.9.2F-TEST OF SIGNIFICANCE

Null Hypothesis of joint slope coefficients = 0 is rejected since Probability of F-statistics = 0.000000 < 0.05. This implies that the alternate hypothesis is accepted since GHE, OOP, EHF, LIT, POPG, and LEXP collectively predict youth unemployment in Nigeria from 2000 to 2024.

4.9.3 R-SQUARED TEST

Based on the value of R-squared 0.9979, we can infer that 99.79% variations in the youth unemployment Nigeria is related to the six independent variables of the ARDL model and 0.21% variations in the youth unemployment Nigeria is due to some other

unrecognized influences. As Adjusted R-squared is 0.9960 which indicate there is not useless independent variable in the model.

This is because in this case, the reason why the Adjusted R^2 (0.9960) is almost similar to R^2 (0.9979) indicates that the model is fitted appropriately, and all the independent variables have an effect on youth employment in Nigeria.

Both figures lie within the very strong fit range (greater than 0.80). Thus, the ARDL model adopted in this study is appropriate for explaining youth employment in Nigeria from 2000-2024.

Given the extremely high goodness-of-fit of the ARDL model ($R^2 = 0.9979$; Adjusted $R^2 = 0.9960$), one can be quite confident in the efficiency of selected health care finance and management variables in forecasting youth unemployment in Nigeria.

4.10 ECONOMETRIC TEST OF SIGNIFICANCE (SECOND ORDER TEST)

4.10.1 AUTOCORRELATION TEST

Table 4.10 THE AUTOCORRELATION RESULT

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.458724	Prob. F(2,10)	0.1354
Obs*R-squared	7.911457	Prob. Chi-Square(2)	0.0191

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 06/01/26 Time: 15:11
Sample: 2001 2024
Included observations: 24
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
YEMP(-1)	0.171048	0.198141	0.863265	0.4082
GHE	0.525032	1.074921	0.488438	0.6358
GHE(-1)	0.428679	0.978950	0.437897	0.6708
OOP	-0.605092	0.845226	-0.715894	0.4904
EHF	0.044730	0.633160	0.070645	0.9451
EHF(-1)	0.580583	0.755490	0.768484	0.4600
LIT	-0.248156	0.840265	-0.295331	0.7738
LIT(-1)	0.097073	0.784772	0.123696	0.9040
POPG	-0.937429	6.454776	-0.145230	0.8874
LEXP	-0.771384	1.056277	-0.730285	0.4820
LEXP(-1)	0.023890	1.187507	0.020118	0.9843
C	76.35818	102.6169	0.744109	0.4739
RESID(-1)	-0.216106	0.332809	-0.649339	0.5308
RESID(-2)	-0.722980	0.327193	-2.209642	0.0516

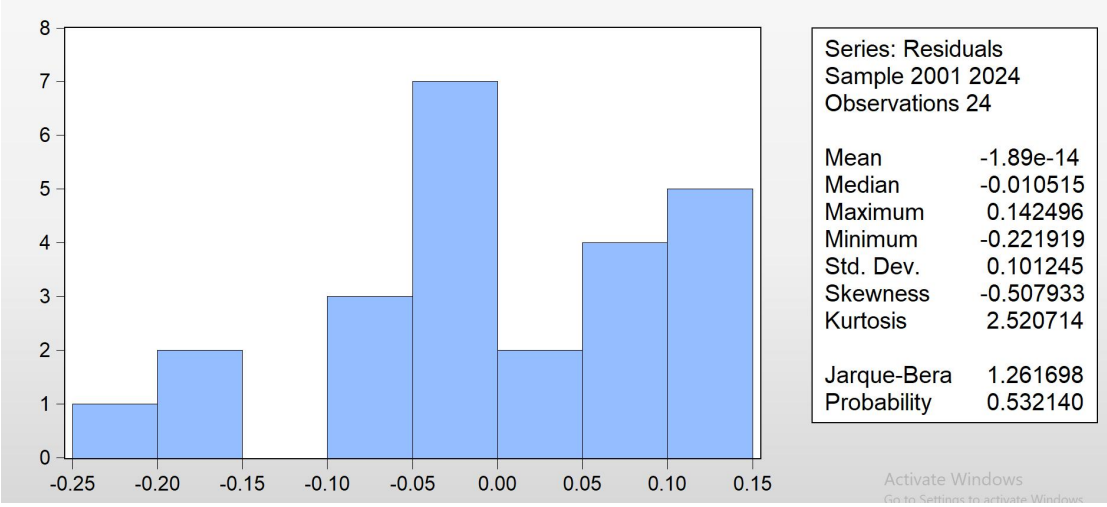
R-squared	0.329644	Mean dependent var	-1.89E-14
Adjusted R-squared	-0.541819	S.D. dependent var	0.101245
S.E. of regression	0.125716	Akaike info criterion	-1.018386
Sum squared resid	0.158045	Schwarz criterion	-0.331188
Log likelihood	26.22063	Hannan-Quinn criter.	-0.836072
F-statistic	0.378265	Durbin-Watson stat	2.447467
Prob(F-statistic)	0.948255		

Source: Author's computation (2026) using Eview 9

Then after conducting the ARDL technique, Breusch-Godfrey serial correlation LM test was conduct to check the serial correlation on the residuals of regression equation of ARDL model. Based on result that F-statistic p-value of LM test for serial correlation=0.1354 Which is more than 0.05, the hypothesis, there is no serial correlation on result is rejected, and implied that there is serial correlation.

4.10.2 NORMALITY TEST

Table 4.11THE NORMALITY RESULT (HISTOGRAM)



Source: Author's computation (2026) using Eview 9

To determine whether a null hypothesis related to the normality distribution of the residual of the model must be rejected, this would be confirmed by the Jarque Bera Test for normality. Jarque Bera test for normality will bring out the Statistic value which is 1.261698 as the p - value equal 0.532140. This result gives indication that at the level of signification of 5%, the statistic test shows a p-value of (0.532140) which is far above the limit which means a null hypothesis is to be accepted. By another aspect the coefficient of skewness is equal to-0.507933.

As such we say we have negative skewness. The kurtosis which is 2.520714 will bring out that we had to deal with normal distribution, since 2.520714 is a result close to 3.

4.10.3 HETEROSKEDASTICITY TEST

Table 4.12THE HETEROSKEDASTICITY RESULT

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.594613	Prob. F(11,12)	0.2173
Obs*R-squared	14.25075	Prob. Chi-Square(11)	0.2194
Scaled explained SS	2.708916	Prob. Chi-Square(11)	0.9940

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/01/26 Time: 15:36
Sample: 2001 2024
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.023850	8.353943	-0.960486	0.3558
YEMP(-1)	-0.008530	0.015226	-0.560218	0.5856
GHE	-0.199918	0.088146	-2.268021	0.0426
GHE(-1)	0.148384	0.082427	1.800192	0.0970
OOP	0.078134	0.069209	1.128959	0.2810
EHF	-0.013195	0.052672	-0.250519	0.8064
EHF(-1)	-0.055395	0.061204	-0.905091	0.3832
LIT	0.099731	0.067589	1.475549	0.1658
LIT(-1)	-0.067107	0.067493	-0.994280	0.3397
POPG	-0.673846	0.553321	-1.217822	0.2467
LEXP	0.164821	0.086521	1.904982	0.0810
LEXP(-1)	-0.099546	0.100640	-0.989133	0.3421

R-squared	0.593781	Mean dependent var	0.009823
Adjusted R-squared	0.221414	S.D. dependent var	0.012375
S.E. of regression	0.010919	Akaike info criterion	-5.889773
Sum squared resid	0.001431	Schwarz criterion	-5.300746
Log likelihood	82.67727	Hannan-Quinn criter.	-5.733504
F-statistic	1.594613	Durbin-Watson stat	2.361796
Prob(F-statistic)	0.217313		

Source: Author's computation (2026) using Eview 9

Homoskedasticity test has been performed by applying Breusch Pagan Godfrey test. It has observed the result that the p-value of the LM test statistic (LM-statistic R-squared Observations=14.25) is 0.2194. Thus this is considered to be statistically insignificant at 5% significant level which confirms to accept the null hypotheses.

4.11 HYPOTHESIS TESTING USING ARDL

Hypothesis One(H1): Both short and long run (0.0564 and 0.6942) are also high as compared to 5 % critical probability. It is found that Government Health Expenditure has an insignificant influence on youth employment in both the short run and the long run. Hence we do not reject H. That is, the result indicates that the expenditures of Government Health expenditure has negative insignificant relationship on the youth employment in Nigeria. Nevertheless, the positive regression in short run as 2.389 supports the theory that youth unemployment is due to youth spending on health.

Hypothesis Two(H): The significance of the coefficient in the short run, where $p<0.05$(0.0353) provide sufficient enough reason to reject the H . The regression of OOP for the short run is-2.107 implying that the impact on youth unemployment is negative. A one per cent increase in healthcare expenditure through OOP implies a reduction in the youth unemployment by 2.11 percentage points. This however corroborates SHI's 5.3 Recommendation 2; a positive recommendation that must increase.

Hypothesis Three(H): In short run, the value of probability is 0.2585 more than 0.05 while in long run, it is 0.6450 which is also more than 0.05. In addition, the results indicate that if youth unemployment is in short run, the P value is 0.1705 and if youth unemployment is in long run, P value is 0.4251 more than 0.05 Therefore, the null hypothesis is that there exist no significant effect of expenditure on health services through external finance on youth unemployment in the short-run as well as in the long run. In long run, external expenditures are more significant in terms of its

probability(0.6450>0.05) but on value it is less in terms of its impact. While in short run the impact is very low and has been insignificant. Even though the coefficient for both short and long run have negative values. In other words, increased expenditure in externally-funded health service did not results in any significant decrease of youth employment, but had a minimal influence only.

4.12 DISCUSSION OF FINDINGS

The discussion is structured around the variables that explain the model, using information from short-run ARDL models, OLS regression results, and long-run coefficients to provide an all-inclusive analysis of the interaction between healthcare finance and youth employment in Nigeria from 2000 to 2024.

4.12.1 GOVERNMENT HEALTHCARE EXPENDITURE

Short-Run: Positive but insignificantly so (coeff. = 2.389, prob. = 0.0564)

Long-Run: Negative and insignificant (coeff. = -40.336, prob. = 0.6942)

In the short run, increased government spending on health is associated with higher youth employment. This result supports Human Capital Theory because, according to the theory, improvements in health can generate immediate gains in productivity, as additional money spent on health care lowers current disease rates and allows young people to remain in the workforce. In the long run, this gain becomes insignificant and may even be negative, suggesting that the short-term gains from health spending do not translate into future job creation. Such results theoretically imply a mismatch between

input and output, or, put differently, inefficient institutional performance, as pointed out by Human Capital Theory critics (Carnoy, 1977; Bowles & Gintis, 1975).

4.12.2 OUT-OF-POCKET HEALTHCARE EXPENDITURE

Short-Run: Negative and statistically significant (coeff. = −2.107, prob. = 0.0353

Long-Run: Positive and statistically insignificant (coeff. = 24.396, prob. = 0.6389)

Short-term negative effects appear to stand out as the clearest results and those most in line with economic theory. With the household having to make payments toward healthcare, money that might have been used for learning new skills or seeking employment will instead be used to cover those costs. Therefore, it is difficult for youth to find ways to join or remain in the workforce. The results obtained here can be explained by Welfare Economics Theory, which holds that welfare loss is associated with market failure when it is absent. Insurance and risk-sharing shift the health care burden disproportionately to youth and the poorest individuals. Long-term negative effects have a positive sign; however, they are statistically insignificant, meaning they cannot be taken as evidence of any long-term benefits from out-of-pocket payments.

4.12.3 EXTERNAL HEALTHCARE FINANCING

Short Run: Negative and insignificant (coeff. = -0.802, prob. = 0.2585) – no immediate impact on employment.

Long Run: Negative and insignificant (coeff. = -5.855, prob. = 0.6450) – no sustained impact on employment.

Both the short- and long-run coefficient estimates are not statistically significant and are negative. From the theoretical standpoint, this result is in line with the criticism of the Social Determinants of Health model regarding the nature of externally financed health programs: the Nigerian experience of such aid suggests that it focuses on particular diseases, such as HIV, malaria, and vaccination programs, without addressing the health system or human capital development issues. Since vertical projects do not aim to change the structure of factors that affect youth employment, they neither positively nor negatively affect youth employment.

4.12.4 LITERACY RATE

Short-run: Negative and marginal LIT (prob. = 0.0720) and LIT(−1) (coeff. = 2.709, prob. = 0.0087)

Long-run: Negative and insignificant (coeff. = −11.547, prob. = 0.6872)

The negative effect that is expected in the short run is based on the well-known principle of opportunity cost that is common to the field of human capital theory; adolescents who are still engaged in learning and training to increase literacy cannot be considered part of the labour force; hence, increasing literacy will result in a short-term decrease in the number of people employed. On the other hand, the positive lagged effect of 1 year indicates the payoff from the delayed benefits of this investment, in line with the earnings function proposed by Mincer (1974), where returns on education and literacy become evident after some time as youths gain the necessary skills and join the labour force.

4.12.5 POPULATION GROWTH RATE

Short-Run: Positively and insignificantly associated with (coefficient = 8.756, probability = 0.2413)

Long-Run: Negatively and insignificantly associated with (coefficient = −101.389, probability = 0.7310)

The above-discussed trend features a positive but insignificant short-term relationship, while a negative long-term relationship; together, these trends represent the demographic dividend-burden dichotomy at the heart of development economics. While having more young people means more workers, if they cannot find enough jobs, this will eventually mean fewer jobs for everyone. This is a structural issue, not a financial one, albeit one related to finance, because inadequate health-sector finance limits productive potential.

4.12.6 LIFE EXPECTANCY

In the Short Run: Current LEXP is negative and insignificant (probability = 0.2302). Lagged LEXP(−1) negative and significant (coefficient = −3.525, probability = 0.0183)

In the Long Run: Positive and insignificant (coefficient = 57.079, probability = 0.6592)

In regard to the contemporaneous negative and statistically significant lagged effect, it shows that there is a transitional process in the labour market, whereby increased life expectancy causes more elderly people to work for longer and hence compete with the younger generation for job openings. The positive, but statistically insignificant, long-run effect is consistent with the theory that predicts an increase in productivity and employment in a healthy populace, as proposed by Grossman's health capital model

(1972). It is important to note that the lack of statistical significance is due to perfect collinearity between LEXP and LIT.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY RECOMMENDATION

5.1 SUMMARY OF FINDINGS

This research paper explores the effects of healthcare finance on youth unemployment in Nigeria from the year 2000 to 2024 using the ARDL bounds test methodology, to understand the short and long-run relations between the variables, as per the three objectives outlined in Chapter One of the thesis.

As far as the first objective, which is concerned with the examination of the impact of government financing of health care on youth employment, goes, there seems to be some positive impact in the short term, which proves that investments into health can result in some short-term productivity in Nigeria. Nevertheless, in the long term, the effect is not statistically significant anymore.

In connection with the second objective, which seeks to analyze the effect of Out-of-Pocket financing on youth employment, Out-of-Pocket Expenditure turns out to be the most harmful financing mechanism from the short-term perspective, as it shows statistically significant negative influence on youth employment. Such an observation confirms the theory that household out-of-pocket expenditure prevents money allocation for education and skill formation and labor market participation. In the long run, there is a positive impact on youth employment, although not statistically significant one, which has to be mentioned due to the lack of data.

Regarding the third objective, external finance impact on youth employment: It has found that the external finance neither helps youth employment in short or long run. Thus current policy with emphasis to eradicate the problem does not help youth employment in Nigeria.

In all the objectives, based on the bound test, it has been found that there is stability in the cointegration relationship among the variables (F-statistic = 10.039). This means that healthcare financing and youth employment have economic structure relationship although the long-run relationship has been found insignificant. Implications of this study reveal that healthcare financing has a short-run impact on youth employment; moreover, whether the financing is made by the government or households or any other, it has the same impact on youth employment in Nigeria.

5.2 CONCLUSION

In essence, this research confirms that health finance is an important factor determining youth employment in Nigeria. It is proven that youth employment is largely influenced by how health services are provided through the country's expenditure on health care, private spending on health services or foreign funding for health programs. Private spending turns out to be the most harmful, while public spending shows positive effects, though with poor efficiency. Foreign funds do not contribute much to youth employment due to inefficient allocation.

In turn, the presence of cointegration among all the factors indicates that appropriate changes in health financing policy can yield sustainable effects on youth employment. As

a result, it can be concluded that to address youth employment problems in Nigeria under the National Youth Policy and the 2030 Agenda for SDG Goal 8, a radical revision of the health financing policy is needed.

5.3 POLICY RECOMMENDATION

In view of the findings from this research work, the following are recommended:

1. Increase in and Improvement of the Efficiency of Public Health Spending

It is important that the government increase the amount of money allocated to the health sector to meet the Abuja Declaration standard of 15% and ensure efficient use through results-based financing and auditing.

2. Expand Social Health Insurance to Lessen OOP Expenditure

Social health insurance coverage needs to expand massively to include informal sector employees and unemployed youth. Social and community-based insurance initiatives should extend nationwide to lessen the burden of catastrophic OOP expenditure, allowing more family savings to be invested in education, skill training, and employment opportunities for young people.

3. Redirect Health Aid to Focus on System Strengthening

Foreign health aid must be redirected from vertical initiatives to comprehensive health system strengthening. Foreign aid should incorporate human capital development and

youth employment goals into its programs, and set domestic resource mobilisation criteria to avoid excessive aid dependency.

4. Realign Education Investment with Labour Force Requirements

In light of the delayed positive impact of literacy on youth employment, continued investment is required in technical/vocational training and the health sector to address the skill requirements of the labour force in Nigeria and alleviate any potential discrepancy between education and employment.

5. Combination of Demographic Policy with Healthcare Investment

If Nigeria is to capitalise fully on its demographic dividend, it will require the implementation of employment programmes for youth, along with reproductive health and family planning initiatives. The key to translating an increased life expectancy rate into a better-performing young labour force lies in investing in preventive healthcare.

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APPENDIX

I

	YEMP	GHE	OOP	EHF	LIT	POPG	LEXP
Mean	52.64000	2.688000	66.08400	5.448000	64.95200	2.638000	51.97600
Median	53.00000	2.700000	66.30000	5.200000	65.10000	2.640000	52.00000
Maximum	55.30000	3.500000	71.50000	8.000000	74.20000	2.690000	57.30000
Minimum	48.00000	1.800000	60.00000	3.200000	55.00000	2.550000	46.50000
Std. Dev.	2.165256	0.500267	3.656692	1.557006	6.041186	0.038730	3.401627
Skewness	-0.756736	-0.125243	-0.120824	0.208483	-0.065719	-0.534952	-0.035456
Kurtosis	2.474051	1.884319	1.718852	1.709249	1.742076	2.428611	1.726444
Jarque-Bera	2.674185	1.361966	1.770557	1.916562	1.666301	1.532479	1.694763
Probability	0.262608	0.506119	0.412599	0.383552	0.434678	0.464758	0.428536
Sum	1316.000	67.20000	1652.100	136.2000	1623.800	65.95000	1299.400
Sum Sq. Dev.	112.5200	6.006400	320.9136	58.18240	875.9024	0.036000	277.7056
Observations	25	25	25	25	25	25	25

II

Null Hypothesis: YEMP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.328933	0.5981
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(YEMP)
Method: Least Squares
Date: 06/01/26 Time: 14:52
Sample (adjusted): 2002 2024
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
YEMP(-1)	-0.027556	0.020736	-1.328933	0.1988
D(YEMP(-1))	0.994819	0.093787	10.60719	0.0000
C	1.421178	1.105433	1.285631	0.2133

R-squared	0.882410	Mean dependent var	-0.191304
Adjusted R-squared	0.870651	S.D. dependent var	0.439951
S.E. of regression	0.158229	Akaike info criterion	-0.728441
Sum squared resid	0.500728	Schwarz criterion	-0.580333
Log likelihood	11.37707	Hannan-Quinn criter.	-0.691192
F-statistic	75.04147	Durbin-Watson stat	2.461327
Prob(F-statistic)	0.000000		

III

Null Hypothesis: D(YEMP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.024382	0.7267
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(YEMP,2)
Method: Least Squares
Date: 06/01/26 Time: 14:52
Sample (adjusted): 2002 2024
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(YEMP(-1))	-0.078879	0.077002	-1.024382	0.3173
C	-0.047129	0.035686	-1.320647	0.2008

R-squared	0.047591	Mean dependent var	-0.034783
Adjusted R-squared	0.002239	S.D. dependent var	0.161270
S.E. of regression	0.161089	Akaike info criterion	-0.730777
Sum squared resid	0.544943	Schwarz criterion	-0.632039
Log likelihood	10.40394	Hannan-Quinn criter.	-0.705945
F-statistic	1.049359	Durbin-Watson stat	2.152091
Prob(F-statistic)	0.317311		

IV

Null Hypothesis: GHE has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.127749	0.2367
Test critical values:	1% level	-3.808546	
	5% level	-3.020686	
	10% level	-2.650413	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GHE)
Method: Least Squares
Date: 06/01/26 Time: 14:32
Sample (adjusted): 2005 2024
Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GHE(-1)	-0.052207	0.024536	-2.127749	0.0516
D(GHE(-1))	-0.697993	0.219889	-3.174292	0.0068
D(GHE(-2))	-0.632247	0.276095	-2.289964	0.0381
D(GHE(-3))	-0.325103	0.271351	-1.198089	0.2508
D(GHE(-4))	-0.524125	0.220340	-2.378715	0.0322
C	0.361829	0.104206	3.472262	0.0037

R-squared	0.574099	Mean dependent var	0.070000
Adjusted R-squared	0.421991	S.D. dependent var	0.047016
S.E. of regression	0.035745	Akaike info criterion	-3.581488
Sum squared resid	0.017888	Schwarz criterion	-3.282769
Log likelihood	41.81488	Hannan-Quinn criter.	-3.523175
F-statistic	3.774292	Durbin-Watson stat	2.117347
Prob(F-statistic)	0.022535		

V

Null Hypothesis: D(GHE) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.325754	0.0000
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GHE,2)
Method: Least Squares
Date: 06/01/26 Time: 14:33
Sample (adjusted): 2002 2024
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GHE(-1))	-1.437500	0.196226	-7.325754	0.0000
C	0.100000	0.016366	6.110101	0.0000

R-squared	0.718750	Mean dependent var	6.82E-18
Adjusted R-squared	0.705357	S.D. dependent var	0.079772
S.E. of regression	0.043301	Akaike info criterion	-3.358328
Sum squared resid	0.039375	Schwarz criterion	-3.259590
Log likelihood	40.62078	Hannan-Quinn criter.	-3.333496
F-statistic	53.66667	Durbin-Watson stat	2.236111
Prob(F-statistic)	0.000000		

VI

Null Hypothesis: OOP has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.162464	0.9633
Test critical values:	1% level	-3.769597	
	5% level	-3.004861	
	10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OOP)
Method: Least Squares
Date: 06/01/26 Time: 14:39
Sample (adjusted): 2003 2024
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OOP(-1)	0.000974	0.005997	0.162464	0.8728
D(OOP(-1))	-0.062368	0.189205	-0.329629	0.7455
D(OOP(-2))	0.489563	0.184749	2.649875	0.0163
C	-0.356325	0.488875	-0.728867	0.4755

R-squared	0.374952	Mean dependent var	-0.495455
Adjusted R-squared	0.270778	S.D. dependent var	0.078542
S.E. of regression	0.067070	Akaike info criterion	-2.403180
Sum squared resid	0.080972	Schwarz criterion	-2.204808
Log likelihood	30.43498	Hannan-Quinn criter.	-2.356449
F-statistic	3.599267	Durbin-Watson stat	1.908243
Prob(F-statistic)	0.033875		

VII

Null Hypothesis: D(OOP) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.846375	0.0682
Test critical values:	1% level	-3.769597	
	5% level	-3.004861	
	10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(OOP,2)
Method: Least Squares
Date: 06/01/26 Time: 14:41
Sample (adjusted): 2003 2024
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(OOP(-1))	-0.544357	0.191246	-2.846375	0.0103
D(OOP(-1),2)	-0.505281	0.153308	-3.295857	0.0038
C	-0.278440	0.093309	-2.984072	0.0076

R-squared	0.685916	Mean dependent var	-0.009091
Adjusted R-squared	0.652854	S.D. dependent var	0.110880
S.E. of regression	0.065329	Akaike info criterion	-2.492624
Sum squared resid	0.081091	Schwarz criterion	-2.343845
Log likelihood	30.41886	Hannan-Quinn criter.	-2.457576
F-statistic	20.74667	Durbin-Watson stat	1.925064
Prob(F-statistic)	0.000017		

VIII

Null Hypothesis: EHF has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.546716	0.9989
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EHF)
Method: Least Squares
Date: 06/01/26 Time: 14:42
Sample (adjusted): 2001 2024
Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EHF(-1)	0.013814	0.008931	1.546716	0.1362
C	0.126212	0.049464	2.551581	0.0182

R-squared	0.098077	Mean dependent var	0.200000
Adjusted R-squared	0.057081	S.D. dependent var	0.065938
S.E. of regression	0.064029	Akaike info criterion	-2.579321
Sum squared resid	0.090192	Schwarz criterion	-2.481150
Log likelihood	32.95186	Hannan-Quinn criter.	-2.553277
F-statistic	2.392329	Durbin-Watson stat	1.468092
Prob(F-statistic)	0.136197		

IX

Null Hypothesis: D(EHF) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.041085	0.0458
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EHF,2)
Method: Least Squares
Date: 06/01/26 Time: 14:43
Sample (adjusted): 2002 2024
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EHF(-1))	-0.665049	0.218688	-3.041085	0.0062
C	0.131553	0.046726	2.815442	0.0104

R-squared	0.305744	Mean dependent var	-0.004348
Adjusted R-squared	0.272684	S.D. dependent var	0.076742
S.E. of regression	0.065448	Akaike info criterion	-2.532189
Sum squared resid	0.089951	Schwarz criterion	-2.433451
Log likelihood	31.12018	Hannan-Quinn criter.	-2.507357
F-statistic	9.248199	Durbin-Watson stat	1.781619
Prob(F-statistic)	0.006209		

X

Null Hypothesis: LIT has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.171784	0.2213
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LIT)
Method: Least Squares
Date: 06/01/26 Time: 14:44
Sample (adjusted): 2004 2024
Included observations: 21 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LIT(-1)	-0.005503	0.002534	-2.171784	0.0453
D(LIT(-1))	-0.168003	0.199864	-0.840585	0.4130
D(LIT(-2))	0.905018	0.155753	5.810595	0.0000
D(LIT(-3))	0.563233	0.220663	2.552461	0.0213
C	0.088211	0.308421	0.286007	0.7785

R-squared	0.839368	Mean dependent var	0.795238
Adjusted R-squared	0.799210	S.D. dependent var	0.092066
S.E. of regression	0.041254	Akaike info criterion	-3.333858
Sum squared resid	0.027231	Schwarz criterion	-3.085162
Log likelihood	40.00551	Hannan-Quinn criter.	-3.279885
F-statistic	20.90169	Durbin-Watson stat	2.476870
Prob(F-statistic)	0.000003		

XI

Null Hypothesis: D(LIT) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.349975	0.9980
Test critical values:	1% level	-3.769597	
	5% level	-3.004861	
	10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LIT,2)
Method: Least Squares
Date: 06/01/26 Time: 14:45
Sample (adjusted): 2003 2024
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LIT(-1))	0.278481	0.206286	1.349975	0.1929
D(LIT(-1),2)	-0.949367	0.192804	-4.923991	0.0001
C	-0.243038	0.168533	-1.442076	0.1656

R-squared	0.628692	Mean dependent var	-0.009091
Adjusted R-squared	0.589607	S.D. dependent var	0.086790
S.E. of regression	0.055599	Akaike info criterion	-2.815172
Sum squared resid	0.058734	Schwarz criterion	-2.666393
Log likelihood	33.96689	Hannan-Quinn criter.	-2.780124
F-statistic	16.08523	Durbin-Watson stat	2.309363
Prob(F-statistic)	0.000082		

XII

Null Hypothesis: POPG has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.773582	0.3828
Test critical values:	1% level	-3.769597	
	5% level	-3.004861	
	10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(POPG)
Method: Least Squares
Date: 06/01/26 Time: 14:46
Sample (adjusted): 2003 2024
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
POPG(-1)	-0.058008	0.032706	-1.773582	0.0931
D(POPG(-1))	0.323055	0.168643	1.915611	0.0714
D(POPG(-2))	0.568831	0.162839	3.493212	0.0026
C	0.152047	0.086621	1.755325	0.0962

R-squared	0.825432	Mean dependent var	0.000909
Adjusted R-squared	0.796337	S.D. dependent var	0.010193
S.E. of regression	0.004600	Akaike info criterion	-7.762566
Sum squared resid	0.000381	Schwarz criterion	-7.564195
Log likelihood	89.38823	Hannan-Quinn criter.	-7.715836
F-statistic	28.37054	Durbin-Watson stat	1.983194
Prob(F-statistic)	0.000000		

XIV

Null Hypothesis: D(POPG) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.676117	0.8330
Test critical values:	1% level	-3.769597	
	5% level	-3.004861	
	10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(POPG,2)
Method: Least Squares
Date: 06/01/26 Time: 14:49
Sample (adjusted): 2003 2024
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(POPG(-1))	-0.073718	0.109031	-0.676117	0.5071
D(POPG(-1),2)	-0.583333	0.171571	-3.399955	0.0030
C	-0.001571	0.001090	-1.440422	0.1660

R-squared	0.427698	Mean dependent var	-0.000909
Adjusted R-squared	0.367456	S.D. dependent var	0.006102
S.E. of regression	0.004853	Akaike info criterion	-7.692415
Sum squared resid	0.000447	Schwarz criterion	-7.543637
Log likelihood	87.61657	Hannan-Quinn criter.	-7.657368
F-statistic	7.099635	Durbin-Watson stat	1.843050
Prob(F-statistic)	0.004982		

XV

Null Hypothesis: LEXP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.105169	0.6966
Test critical values:	1% level	-3.737853	
	5% level	-2.991878	
	10% level	-2.635542	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LEXP)
Method: Least Squares
Date: 06/01/26 Time: 14:50
Sample (adjusted): 2001 2024
Included observations: 24 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEXP(-1)	-0.003566	0.003227	-1.105169	0.2810
C	0.634554	0.167313	3.792607	0.0010

R-squared	0.052598	Mean dependent var	0.450000
Adjusted R-squared	0.009534	S.D. dependent var	0.051075
S.E. of regression	0.050831	Akaike info criterion	-3.040953
Sum squared resid	0.056844	Schwarz criterion	-2.942781
Log likelihood	38.49143	Hannan-Quinn criter.	-3.014908
F-statistic	1.221399	Durbin-Watson stat	1.753988
Prob(F-statistic)	0.281027		

XVI

Null Hypothesis: D(LEXP) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.826227	0.3587
Test critical values:	1% level	-3.769597	
	5% level	-3.004861	
	10% level	-2.642242	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LEXP,2)
Method: Least Squares
Date: 06/01/26 Time: 14:51
Sample (adjusted): 2003 2024
Included observations: 22 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LEXP(-1))	-0.507692	0.278001	-1.826227	0.0836
D(LEXP(-1),2)	-0.446154	0.205317	-2.172999	0.0426
C	0.230769	0.126774	1.820321	0.0845

R-squared	0.566154	Mean dependent var	0.000000
Adjusted R-squared	0.520486	S.D. dependent var	0.069007
S.E. of regression	0.047785	Akaike info criterion	-3.118088
Sum squared resid	0.043385	Schwarz criterion	-2.969310
Log likelihood	37.29897	Hannan-Quinn criter.	-3.083041
F-statistic	12.39716	Durbin-Watson stat	1.797981
Prob(F-statistic)	0.000359		

XVII

Dependent Variable: YEMP
Method: ARDL
Date: 06/01/26 Time: 15:00
Sample (adjusted): 2001 2024
Included observations: 24 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): GHE OOP EHF LIT POPG LEXP
Fixed regressors: C
Number of models evalulated: 64
Selected Model: ARDL(1, 1, 0, 1, 1, 0, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
YEMP(-1)	1.086358	0.195455	5.558100	0.0001
GHE	2.388595	1.131536	2.110931	0.0564
GHE(-1)	1.094725	1.058111	1.034603	0.3213
OOP	-2.106756	0.888435	-2.371310	0.0353
EHF	-0.802022	0.676151	-1.186159	0.2585
EHF(-1)	1.307689	0.785680	1.664403	0.1219
LIT	-1.711667	0.867642	-1.972779	0.0720
LIT(-1)	2.708835	0.866415	3.126488	0.0087
POPG	8.755720	7.102989	1.232681	0.2413
LEXP	-1.403940	1.110675	-1.264042	0.2302
LEXP(-1)	-3.525256	1.291918	-2.728699	0.0183
C	291.6529	107.2398	2.719634	0.0186

R-squared	0.997899	Mean dependent var	52.66250
Adjusted R-squared	0.995973	S.D. dependent var	2.208838
S.E. of regression	0.140167	Akaike info criterion	-0.785106
Sum squared resid	0.235763	Schwarz criterion	-0.196079
Log likelihood	21.42127	Hannan-Quinn criter.	-0.628837
F-statistic	518.1503	Durbin-Watson stat	2.070647
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

XVII

ARDL Bounds Test
Date: 06/01/26 Time: 15:03
Sample: 2001 2024
Included observations: 24
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	10.03938	6

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Test Equation:
Dependent Variable: D(YEMP)
Method: Least Squares
Date: 06/01/26 Time: 15:03
Sample: 2001 2024
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GHE)	1.735463	1.278906	1.356990	0.1998
D(EHF)	-0.748590	0.863872	-0.866553	0.4032
D(LIT)	-0.762394	1.071223	-0.711704	0.4903
D(LEXP)	-0.103589	1.183094	-0.087557	0.9317
C	54.45775	98.94139	0.550404	0.5921
GHE(-1)	2.376610	1.925414	1.234337	0.2407
OOP(-1)	-0.117925	0.868074	-0.135847	0.8942
EHF(-1)	0.213019	1.204560	0.176844	0.8626
LIT(-1)	0.696900	0.764068	0.912092	0.3797
POPG(-1)	3.106691	6.249078	0.497144	0.6281
LEXP(-1)	-1.983295	1.654268	-1.198896	0.2537
YEMP(-1)	-0.078006	0.182637	-0.427110	0.6769

R-squared	0.920288	Mean dependent var	-0.170833
Adjusted R-squ...	0.847219	S.D. dependent var	0.441814
S.E. of regression	0.172693	Akaike info criterion	-0.367754
Sum squared re...	0.357873	Schwarz criterion	0.221273
Log likelihood	16.41304	Hannan-Quinn criter.	-0.211485
F-statistic	12.59474	Durbin-Watson stat	1.627304
Prob(F-statistic)	0.000059		

XVIII

ARDL Cointegrating And Long Run Form
Dependent Variable: YEMP
Selected Model: ARDL(1, 1, 0, 1, 1, 0, 1)
Date: 06/01/26 Time: 15:07
Sample: 2000 2024
Included observations: 24

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GHE)	2.388595	1.131536	2.110931	0.0564
D(OOP)	-2.106756	0.888435	-2.371310	0.0353
D(EHF)	-0.802022	0.676151	-1.186159	0.2585
D(LIT)	-1.711667	0.867642	-1.972779	0.0720
D(POPG)	8.755720	7.102989	1.232681	0.2413
D(LEXP)	-1.403940	1.110675	-1.264042	0.2302
CointEq(-1)	0.086358	0.195455	0.441832	0.6665

Cointeq = YEMP - (-40.3357*GHE + 24.3956*OOP -5.8555*EHF
-11.5469*LIT -101.3885*POPG + 57.0785*LEXP -3377.2476)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GHE	-40.335736	100.135662	-0.402811	0.6942
OOP	24.395562	50.684739	0.481320	0.6389
EHF	-5.855456	12.389615	-0.472610	0.6450
LIT	-11.546883	27.986675	-0.412585	0.6872
POPG	-101.388...	288.122623	-0.351893	0.7310
LEXP	57.078526	126.230689	0.452176	0.6592
C	-3377.24...	7082.091961	-0.476871	0.6420

XIX

Breusch-Godfrey Serial Correlation LM Test:

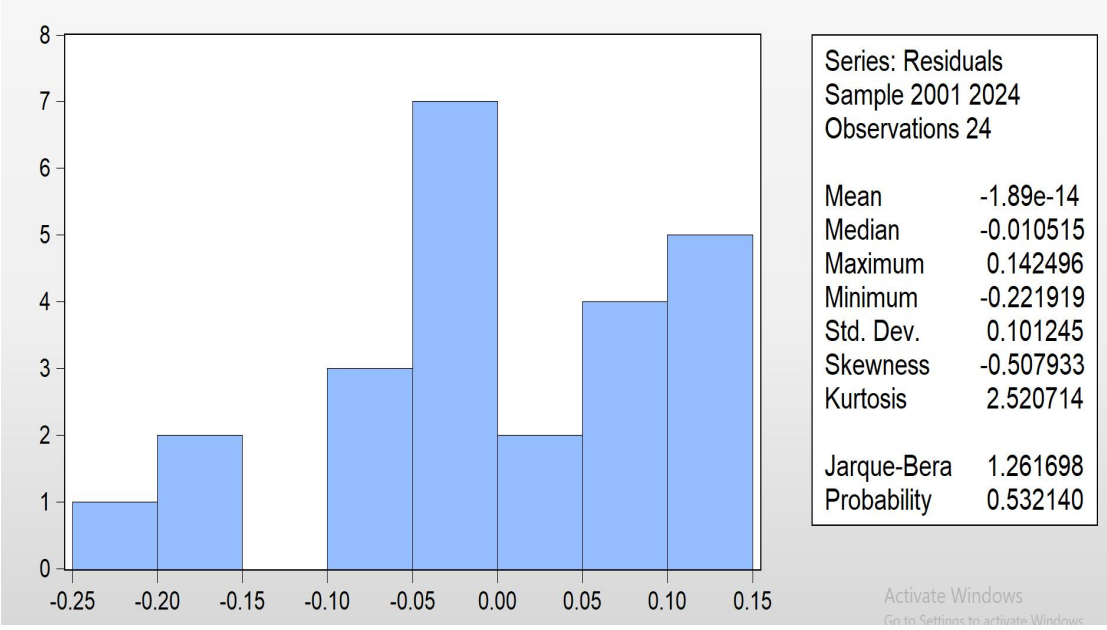
F-statistic	2.458724	Prob. F(2,10)	0.1354
Obs*R-squared	7.911457	Prob. Chi-Square(2)	0.0191

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 06/01/26 Time: 15:11
Sample: 2001 2024
Included observations: 24
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
YEMP(-1)	0.171048	0.198141	0.863265	0.4082
GHE	0.525032	1.074921	0.488438	0.6358
GHE(-1)	0.428679	0.978950	0.437897	0.6708
OOP	-0.605092	0.845226	-0.715894	0.4904
EHF	0.044730	0.633160	0.070645	0.9451
EHF(-1)	0.580583	0.755490	0.768484	0.4600
LIT	-0.248156	0.840265	-0.295331	0.7738
LIT(-1)	0.097073	0.784772	0.123696	0.9040
POPG	-0.937429	6.454776	-0.145230	0.8874
LEXP	-0.771384	1.056277	-0.730285	0.4820
LEXP(-1)	0.023890	1.187507	0.020118	0.9843
C	76.35818	102.6169	0.744109	0.4739
RESID(-1)	-0.216106	0.332809	-0.649339	0.5308
RESID(-2)	-0.722980	0.327193	-2.209642	0.0516

R-squared	0.329644	Mean dependent var	-1.89E-14
Adjusted R-squared	-0.541819	S.D. dependent var	0.101245
S.E. of regression	0.125716	Akaike info criterion	-1.018386
Sum squared resid	0.158045	Schwarz criterion	-0.331188
Log likelihood	26.22063	Hannan-Quinn criter.	-0.836072
F-statistic	0.378265	Durbin-Watson stat	2.447467
Prob(F-statistic)	0.948255		

XX



XXI

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.594613	Prob. F(11,12)	0.2173
Obs*R-squared	14.25075	Prob. Chi-Square(11)	0.2194
Scaled explained SS	2.708916	Prob. Chi-Square(11)	0.9940

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/01/26 Time: 15:36
Sample: 2001 2024
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.023850	8.353943	-0.960486	0.3558
YEMP(-1)	-0.008530	0.015226	-0.560218	0.5856
GHE	-0.199918	0.088146	-2.268021	0.0426
GHE(-1)	0.148384	0.082427	1.800192	0.0970
OOP	0.078134	0.069209	1.128959	0.2810
EHF	-0.013195	0.052672	-0.250519	0.8064
EHF(-1)	-0.055395	0.061204	-0.905091	0.3832
LIT	0.099731	0.067589	1.475549	0.1658
LIT(-1)	-0.067107	0.067493	-0.994280	0.3397
POPG	-0.673846	0.553321	-1.217822	0.2467
LEXP	0.164821	0.086521	1.904982	0.0810
LEXP(-1)	-0.099546	0.100640	-0.989133	0.3421

R-squared	0.593781	Mean dependent var	0.009823
Adjusted R-squared	0.221414	S.D. dependent var	0.012375
S.E. of regression	0.010919	Akaike info criterion	-5.889773
Sum squared resid	0.001431	Schwarz criterion	-5.300746
Log likelihood	82.67727	Hannan-Quinn criter.	-5.733504
F-statistic	1.594613	Durbin-Watson stat	2.361796
Prob(F-statistic)	0.217313		

XXII

Nigeria Dataset (2000–2024)

Year	YEMP	GHE	OOP	EHF	LIT	POPG	LEXP
2000	52.1	1.8	71.5	3.2	55	2.55	46.5
2001	52.4	1.9	71.2	3.4	55.8	2.57	46.9
2002	52.8	2	70.9	3.5	56.6	2.58	47.3
2003	53	2.1	70.5	3.6	57.5	2.6	47.8
2004	53.5	2.1	70	3.8	58.3	2.61	48.2
2005	54	2.2	69.6	4	59.1	2.62	48.7
2006	54.4	2.3	69.1	4.1	60	2.63	49.1
2007	54.8	2.4	68.8	4.3	60.8	2.64	49.6
2008	55.1	2.5	68.3	4.5	61.7	2.65	50.1
2009	55.3	2.5	67.9	4.6	62.5	2.66	50.6
2010	55	2.6	67.4	4.8	63.4	2.67	51
2011	54.7	2.6	66.9	5	64.2	2.67	51.5
2012	54.5	2.7	66.3	5.2	65.1	2.68	52
2013	54.2	2.8	65.8	5.5	65.9	2.68	52.5
2014	53.8	2.8	65.2	5.8	66.8	2.69	53
2015	53.4	2.9	64.7	6	67.6	2.69	53.5
2016	52.8	3	64	6.3	68.5	2.68	54
2017	52.2	3	63.5	6.5	69.3	2.67	54.4
2018	51.7	3.1	63	6.7	70.1	2.66	54.9
2019	51	3.2	62.5	7	70.9	2.65	55.3
2020	50.2	3.2	62	7.3	71.6	2.64	55.7
2021	49.6	3.3	61.5	7.5	72.3	2.63	56.1
2022	49	3.3	61	7.7	73	2.62	56.5
2023	48.5	3.4	60.5	7.9	73.6	2.61	56.9
2024	48	3.5	60	8	74.2	2.6	57.3