



HEALTH FINANCING AND POVERTY INCIDENCE IN WEST AFRICA: DOES ECONOMIC GROWTH MATTER?

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ABSTRACT

This study examined the effect of health financing on poverty incidence in West Africa, with particular emphasis on the moderating role of economic growth. Specifically, the study assessed the effects of government health expenditure, out-of-pocket health expenditure and external health financing on poverty incidence and examined whether economic growth moderated these relationships. The study adopted an ex-post facto research design and used secondary data covering 16 West African countries from 2010 to 2025. Data were obtained from the World Bank and World Health Organization databases. The study employed the two-step System Generalized Method of Moments (GMM) to address the dynamic nature of poverty, potential endogeneity and unobserved country-specific effects. The findings showed that government health expenditure significantly reduced poverty incidence, while out-of-pocket health expenditure significantly increased poverty incidence. External health financing also significantly reduced poverty incidence. Economic growth had a significant negative effect on poverty incidence, indicating that stronger economic performance contributed to poverty reduction. Furthermore, economic growth significantly moderated the effects of government health expenditure and out-of-pocket health expenditure on poverty incidence, strengthening the poverty-reducing effect of government health expenditure and weakening the poverty-increasing effect of out-of-pocket expenditure. However, the moderating effect of economic growth on external health financing was negative but statistically insignificant at the 5% level. The study concluded that effective public health financing, reduced reliance on out-of-pocket payments and inclusive economic growth are essential for poverty reduction in West Africa. It recommends increased domestic health financing, expanded health insurance coverage and coordinated health and economic policies to strengthen financial protection and improve poverty outcomes.

KEYWORDS: Health Financing, Poverty Incidence, Government Health Expenditure, Out-of-Pocket Expenditure, External Health Financing, Economic Growth-----

INTRODUCTION

Health is an essential component of human welfare and economic development because a healthy population possesses greater capacity to participate productively in economic activities, accumulate human capital and improve household living standards. However, access to healthcare is strongly influenced by the manner in which healthcare services are financed. In many developing economies, inadequate public financing of healthcare, limited health insurance coverage and heavy reliance on out-of-pocket payments expose households to substantial financial risks. When households are required to finance healthcare directly from their income or savings, illness can reduce disposable income, deplete assets and constrain expenditure on food, education and other basic necessities. Consequently, health financing is increasingly recognised not only as a health-sector issue but also as an important dimension of poverty reduction and economic development (Wagstaff et al., 2018; O'Donnell, 2024).

The relationship between healthcare financing and poverty is particularly important because health shocks can generate both direct and indirect economic costs. Direct costs include consultation fees, medication, hospitalisation and other healthcare payments, while indirect costs may arise from loss of income, reduced labour participation and diminished productivity. These effects can be particularly severe among low-income households, which have limited savings and access to formal financial protection mechanisms. Where healthcare financing systems are characterised by high out-of-pocket expenditure, households may be forced to borrow, sell productive assets or reduce consumption to meet medical expenses. Such circumstances can push households that are already poor further into poverty and may



cause vulnerable households to fall below the poverty line. Wagstaff et al. (2018) demonstrated the global significance of impoverishing health expenditure, while Khan et al. (2017) established that out-of-pocket healthcare payments can expose households to catastrophic financial consequences.

Public financing of healthcare can protect households from health-related financial shocks by improving access to essential services, reducing out-of-pocket payments and enhancing health outcomes. It can also support poverty reduction through financial protection and improved human capital, which can increase productivity and earning capacity (Chen & Pan, 2019; Aranas et al., 2020; O'Donnell, 2024). However, financing constraints, inadequate infrastructure and limited insurance coverage in developing countries often increase households' reliance on out-of-pocket payments (Domapielle et al., 2022; Egharevba, 2024).

In West Africa, health insurance and other financial protection mechanisms remain important for reducing the impoverishing effects of illness. Evidence from Burkina Faso and Nigeria indicates that free healthcare policies, health insurance and other financing mechanisms can reduce healthcare costs and support poverty reduction (Aye et al., 2022; Eze & Chukwuma, 2024; Luka & Adofu, 2026). Previous studies have established relationships between health financing, poverty, economic growth and human development (Wagstaff et al., 2018; Khan et al., 2017; Oche, 2018; Ameji et al., 2025; Voto et al., 2025; Omoregie, 2026). However, most studies focus on direct relationships, individual countries or broader Sub-Saharan Africa. Limited evidence exists for West Africa, particularly on whether economic growth moderates the relationship between health financing and poverty incidence. This study therefore examines the effects of GHE, OOP and EHF on poverty incidence in West Africa, with emphasis on the moderating role of economic growth.

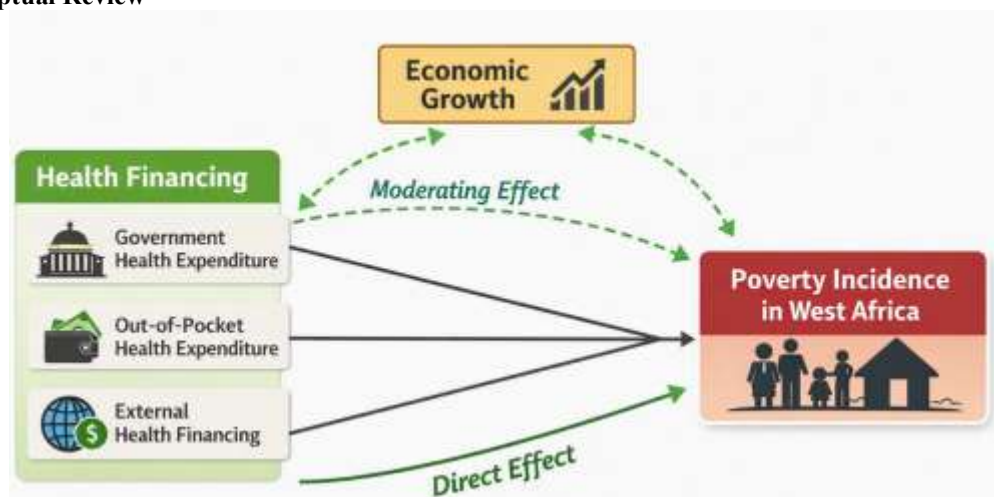
Objective of the Study

The main objective of this study is to examine the effect of health financing on poverty incidence in West Africa, with emphasis on the moderating role of economic growth. The specific objectives are to:

- Examine the effect of government health expenditure on poverty incidence in West Africa.
- Determine the effect of out-of-pocket health expenditure on poverty incidence in West Africa.
- Assess the effect of external health financing on poverty incidence in West Africa.
- Examine the effect of economic growth on poverty incidence in West Africa.
- Determine the moderating effect of economic growth on the relationship between government health expenditure and poverty incidence in West Africa.
- Examine the moderating effect of economic growth on the relationship between out-of-pocket health expenditure and poverty incidence in West Africa.
- Determine the moderating effect of economic growth on the relationship between external health financing and poverty incidence in West Africa.

LITERATURE REVIEW

2.1 Conceptual Review





2.1 Conceptual Framework

2.1.2 Government Health Expenditure

Government health expenditure represents the financial resources allocated by the public sector to the provision, financing and improvement of healthcare services. It is an important component of health financing because adequate public investment in healthcare can improve access to essential services, reduce households' reliance on out-of-pocket payments and enhance human capital. From the perspective of Pro-Poor Growth Theory, public expenditure on health can contribute to poverty reduction by improving the health and productivity of low-income populations and protecting households from healthcare-related financial shocks.

However, empirical evidence on the relationship between government health expenditure and poverty has produced mixed findings. While Voto, Voto and Ngepah (2025) found that public health expenditure contributed to poverty reduction in Sub-Saharan Africa, Dankumo et al. (2024) also reported that health expenditure was associated with poverty reduction in Nigeria. Similarly, Luka and Adofu (2026) established a significant relationship between healthcare financing and poverty reduction in Nigeria. In contrast, evidence from some developing-country contexts suggests that public health expenditure may have limited or uneven poverty-reducing effects where resources are inadequately targeted, inefficiently managed or disproportionately captured by higher-income groups. These differences indicate that the poverty effect of government health expenditure may depend on the efficiency, accessibility and distribution of public healthcare resources.

The mixed empirical evidence creates the need for further investigation within the West African context. Given differences in fiscal capacity, health-system development and access to healthcare across the region, the effect of government health expenditure on poverty incidence cannot be assumed to be uniform. Therefore, the study hypothesises that:

H01: Government health expenditure has no significant effect on poverty incidence in West Africa.

2.1.3 Out-of-Pocket Health Expenditure

Out-of-pocket health expenditure refers to direct payments made by households for healthcare services and products at the time of utilisation. It includes payments for consultation, medicines, diagnostic services, hospital treatment and other healthcare-related costs that are not covered by government programmes, health insurance or other third-party financing mechanisms. High reliance on out-of-pocket payments can expose households to financial hardship, particularly where healthcare costs are high and household incomes are low.

Empirical evidence has generally indicated a poverty-increasing effect, although the magnitude and significance of the relationship have varied across countries and methodological approaches. Wagstaff et al. (2018) found that health spending could push households into poverty across a large sample of countries, while Khan, Ahmed and Evans (2017) reported that catastrophic healthcare expenditure associated with out-of-pocket payments increased poverty-related financial risk in Bangladesh. Similarly, Voto, Voto and Ngepah (2025) and Omoregie (2026) provided evidence linking out-of-pocket health expenditure with adverse poverty outcomes. Conversely, the extent of impoverishment may differ across settings depending on the availability of health insurance, social protection and public healthcare financing. These variations suggest that the poverty effect of OOP expenditure requires further examination in the West African context.

Given the mixed evidence and the different health-financing structures across West African countries, the study hypothesises that:

H02: Out-of-pocket health expenditure has no significant effect on poverty incidence in West Africa.

2.1.4 External Health Financing

External health financing refers to financial resources provided by international donors, development partners and other external sources to support healthcare delivery and health-system development in recipient countries. Such financing can supplement limited domestic resources, expand access to essential healthcare services and support programmes targeting vulnerable populations. In countries with constrained fiscal capacity, external health financing may therefore contribute to improved health outcomes and poverty reduction by reducing the financial burden of healthcare on households.



Empirical evidence on the effect of external health financing on poverty has been mixed. Voto and Ngepah (2025) examined government and external health expenditure in Sub-Saharan Africa and provided evidence of the importance of health financing for reducing reliance on out-of-pocket payments. Similarly, Luka and Adofu (2026) established that healthcare financing mechanisms significantly influenced poverty reduction in Nigeria. However, the effectiveness of external financing may be limited where donor resources are fragmented, poorly coordinated or directed towards programmes that do not adequately address the healthcare needs of poor households. These contrasting possibilities suggest that the poverty implications of external health financing may vary across countries and institutional environments.

Given the mixed empirical evidence and differences in health-financing structures across West African countries, the study hypothesises that:

H03: External health financing has no significant effect on poverty incidence in West Africa.

2.1.6 Economic Growth

Economic growth refers to the sustained increase in the production of goods and services within an economy, commonly measured by the annual growth rate of real Gross Domestic Product (GDP). Economic growth is an important determinant of poverty because sustained increases in economic activity can create employment opportunities, raise household incomes and expand government revenue available for social and health services. Empirical evidence on the relationship between economic growth and poverty has also produced mixed findings. While Luka and Adofu (2026) and Voto, Voto and Ngepah (2025) provide evidence supporting the poverty-reducing role of economic performance, other evidence suggests that the effect of growth can be weak or uneven where economic expansion does not sufficiently benefit low-income households. These mixed findings indicate that the relationship between economic growth and poverty may vary according to the structure of the economy, income distribution and the effectiveness of social policies.

Given these theoretical arguments and mixed empirical findings, the study hypothesises that:

H04: Economic growth has no significant effect on poverty incidence in West Africa.

2.1.7 Economic Growth as a Moderator of Health Financing and Poverty Incidence

Economic growth may influence the extent to which health financing affects poverty incidence by creating fiscal space, increasing household incomes and improving the capacity of governments to provide essential public services. In a growing economy, increased government health expenditure may translate more effectively into accessible and affordable healthcare, thereby strengthening its poverty-reducing effect. Similarly, higher household incomes associated with economic growth may reduce the financial burden of out-of-pocket healthcare payments and their potential to push households into poverty.

However, economic growth may not uniformly enhance the effectiveness of all forms of health financing. The benefits of external health financing, for instance, may depend more on institutional capacity, allocation efficiency, donor coordination and the sustainability of externally funded programmes. Thus, the extent to which economic growth alters the relationship between different forms of health financing and poverty remains an empirical question.

Empirically, existing studies such as Wagstaff et al. (2018), Voto, Voto and Ngepah (2025), and Luka and Adofu (2026) have largely examined the direct relationships between healthcare financing, economic conditions and poverty. Limited attention has been given to whether economic growth changes the effects of different health-financing mechanisms on poverty, particularly within West Africa. This constitutes an important gap that the present study seeks to address. Based on the theoretical arguments and limited empirical evidence, the study hypothesises that:

H05: Economic growth does not significantly moderate the relationship between government health expenditure and poverty incidence in West Africa.

H06: Economic growth does not significantly moderate the relationship between out-of-pocket health expenditure and poverty incidence in West Africa.

H07: Economic growth does not significantly moderate the relationship between external health financing and poverty incidence in West Africa.



2.2 Theoretical Review

2.2.1 Human Capital Theory

Human Capital Theory, associated particularly with Becker (1964), views health and education as investments that enhance individuals' productive capacities. Investment in healthcare improves physical and mental wellbeing, reduces illness and increases workers' productivity. Within this study, the theory suggests that adequate health financing can improve population health, increase labour productivity and enhance household earning capacity. Increased earnings can subsequently reduce poverty incidence. The theory therefore provides a strong basis for examining the relationship between health financing and poverty.

2.2.2 Capability Approach

The Capability Approach, developed by Sen (1999), considers development in terms of people's ability to achieve valuable states of wellbeing and participate meaningfully in society. Poor health can restrict an individual's capabilities by limiting education, employment and economic participation. From this perspective, effective health financing expands people's capabilities by improving access to healthcare and reducing financial barriers. Consequently, improved healthcare access can enhance economic participation and contribute to poverty reduction.

2.2.3 Pro-Poor Growth Theory

Pro-Poor Growth Theory focuses on the extent to which economic growth improves the welfare of poor and vulnerable populations. Economic growth does not necessarily reduce poverty if its benefits are unevenly distributed. The theory is particularly relevant to this study because it provides a basis for considering economic growth as a moderating variable. Where economic growth generates employment, increases household income and expands government fiscal capacity, health financing may have stronger poverty-reducing effects. Conversely, weak or unequal growth may limit the ability of health financing to reduce poverty. Pro-Poor Growth Theory provides the theoretical foundation for this study. The theory focuses on how economic growth affects the welfare of poor and vulnerable populations. It argues that economic growth can reduce poverty when its benefits translate into increased employment, household income, access to social services and improved living conditions. However, economic growth alone does not automatically guarantee poverty reduction, particularly where the gains from growth are unevenly distributed.

2.3 Empirical Review

Wagstaff et al. (2018) examined impoverishing health spending across 122 countries and found that healthcare payments can push vulnerable households into poverty or deepen existing poverty. Similarly, Khan et al. (2017) investigated catastrophic healthcare expenditure in Bangladesh and established that out-of-pocket payments expose households to substantial financial risk, particularly among economically vulnerable groups. These studies demonstrate the importance of healthcare financing in providing financial protection and preventing health-related poverty.

Evidence from Africa further supports this relationship. Voto et al. (2025) examined public and out-of-pocket health expenditure in Sub-Saharan Africa and found that out-of-pocket expenditure increases poverty, whereas public health expenditure contributes to poverty reduction. In Nigeria, Luka and Adofu (2026) examined the dynamic effects of healthcare financing on poverty reduction, while Omoregie (2026) specifically investigated out-of-pocket health spending and poverty among Nigerian households. Together, these studies highlight the importance of financing mechanisms in determining household welfare. Dankumo et al. (2024) also found that public expenditure on health and education contributes to poverty reduction in Nigeria, emphasising the role of social-sector investment in improving living standards.

Health insurance and alternative financing mechanisms have also received attention. Eze and Chukwuma (2024) examined health insurance expansion in rural Nigeria and highlighted its potential to improve health outcomes and reduce poverty by lowering financial barriers to healthcare. In Burkina Faso, Aye et al. (2022) found that free healthcare policies and performance-based financing reduced out-of-pocket expenditure for outpatient services. Similarly, Kitole et al. (2023) emphasised the importance of equity in public social healthcare protection in Tanzania for reducing households' financial burden.



Beyond Africa, O'Donnell (2024) reviewed global evidence and showed that poor health can contribute to poverty through increased healthcare costs, reduced income and lower productivity. Aranas et al. (2020) found that combining microfinance with health interventions can reduce poverty-driven healthcare costs, while Chen and Pan (2019) demonstrated that targeted health poverty-alleviation programmes can improve financial risk protection among rural households. Li and Bai (2022) further showed that healthcare interventions can serve as an important component of broader poverty-reduction strategies.

Methodology

The study adopted an ex-post facto research design, which was appropriate because the variables had already occurred and could not be manipulated by the researcher. The population comprised all 16 West African countries: Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo. A census approach was adopted; hence, the sample was identical to the population.

Data were collected through the documentary method from publicly available secondary sources covering 2010–2025. Data on poverty incidence and economic growth were obtained primarily from the World Bank World Development Indicators (WDI) and Poverty and Inequality Platform (PIP), while health-financing data were obtained from relevant international health databases.

The study employed the two-step System GMM estimator to analyse the panel data. Its use was justified by the dynamic nature of poverty, potential endogeneity and reverse causality, and unobserved country-specific effects. The lagged dependent variable captured poverty persistence, while internal instruments were used to address potential endogeneity.

Model Specification

The study adapted the model of Luka and Adofu (2026), which examined the dynamic effects of social health insurance, donor health financing and public health financing on poverty reduction in Nigeria using ARDL and ECM techniques. This study modified and extended the model using a dynamic panel framework covering 16 West African countries from 2010–2025. It further introduced economic growth as a moderating variable to examine whether growth alters the effects of health financing on poverty incidence.

The baseline model was specified as:

Baseline Model

The baseline model examines the direct effects of health financing and economic growth on poverty incidence:

$$POV_{it} = \beta_0 + \beta_1 POV_{i,t-1} + \beta_2 GHE_{it} + \beta_3 OOP_{it} + \beta_4 EHF_{it} + \beta_5 GDPG_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Where POV represents poverty incidence, GHE government health expenditure, OOP out-of-pocket health expenditure, EHF external health financing, and $GDPG$ economic growth. The lagged poverty term captures poverty persistence, while μ_i , λ_t , and ε_{it} represent country-specific effects, time effects and the error term, respectively.

Moderating Effects Model

The moderating model examines whether economic growth alters the effects of health financing on poverty incidence:

$$\begin{aligned} POV_{it} = & \beta_0 + \beta_1 POV_{i,t-1} + \beta_2 GHE_{it} + \beta_3 OOP_{it} + \beta_4 EHF_{it} \\ & + \beta_5 GDPG_{it} + \beta_6 (GHE \times GDPG)_{it} \\ & + \beta_7 (OOP \times GDPG)_{it} + \beta_8 (EHF \times GDPG)_{it} + \mu_i + \lambda_t + \varepsilon_{it} \end{aligned}$$

Where $GHE \times GDPG$, $OOP \times GDPG$, and $EHF \times GDPG$ represent the interaction terms used to determine whether economic growth moderates the respective relationships between health financing and poverty incidence.



Table 1: Measurement of Variables

Variable	Symbol	Measurement	Sourc
Poverty Incidence	POV	Poverty headcount ratio (% of population)	Voto, Voto & Ngepah (2025); Luka & Adofu (2026)
Government Health Expenditure	GHE	Government health expenditure as a percentage of GDP	Voto, Voto & Ngepah (2025); Luka & Adofu (2026)
Out-of-Pocket Health Expenditure	OOP	Out-of-pocket health expenditure as a percentage of current health expenditure	Voto, Voto & Ngepah (2025); Voto & Ngepah (2025)
External Health Financing	EHF	External/donor health financing as a percentage of current health expenditure	Luka & Adofu (2026); Voto & Ngepah (2025)
Economic Growth	GDPG	Annual percentage growth rate of real GDP	Luka & Adofu (2026); Voto, Voto & Ngepah (2025)

Source: Author's compilation 2026

Result and Discussion

Table 2 Descriptive Statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max
POV	256	32.847	14.563	3.214	65.782
GHE	256	2.841	1.126	0.742	6.384
OOP	256	38.426	14.875	8.623	72.914
EHF	256	12.684	10.237	0.842	48.563
GDPG	256	3.721	4.856	-15.125	20.983

Source: STATA, 2026.

Table 2 presents the descriptive statistics of the variables used in the study. Poverty incidence (POV) had a mean of 32.847%, with a standard deviation of 14.563, indicating considerable variation in poverty levels across the 16 West African countries during the study period. The minimum and maximum values were 3.214% and 65.782%, respectively. Government health expenditure (GHE) recorded a mean of 2.841%, with a standard deviation of 1.126. Out-of-pocket health expenditure (OOP) had a mean of 38.426% and a standard deviation of 14.875, indicating substantial variation in households' reliance on out-of-pocket payments for healthcare. External health financing (EHF) recorded a mean of 12.684%, with a standard deviation of 10.237, suggesting considerable differences in external health-financing dependence among the countries. Economic growth (GDPG) recorded a mean of 3.721% and a standard deviation of 4.856%. The minimum value of -15.125% indicated that some country-year observations experienced substantial economic contraction, while the maximum value of 20.983% reflected periods of strong economic expansion.

Table 3: Correlation Matrix of Study Variables

Variables	POV	GHE	OOP	EHF	GDPG
POV	1				
GHE	-0.284	1			
OOP	0.417	-0.326	1		
EHF	0.193	-0.241	0.286	1	
GDPG	-0.351	0.217	-0.164	0.105	1

Source: STATA, 2026.

The results showed that GHE and GDPG were negatively correlated with poverty incidence, with coefficients of -0.284 and -0.351, respectively, while OOP and EHF were positively correlated with poverty incidence at 0.417 and 0.193. GHE was negatively correlated with OOP (-0.326), whereas OOP and EHF showed a positive correlation (0.286). The correlation between EHF and GDPG was weakly positive (0.105). All coefficients were below 0.70 in absolute terms, suggesting no serious pairwise multicollinearity among the variables.



Table 4: Multicollinearity Test

Variables	VIF	1/VIF
GHE	1.28	0.781
OOP	1.46	0.685
EHF	1.19	0.84
GDPG	1.12	0.893
Mean VIF	1.26	

Source: STATA, 2026.

Table 4 presents the VIF results, with values ranging from 1.12 to 1.46 and a mean of 1.26. All values were below the threshold of 10, indicating no serious multicollinearity among the explanatory variables. Thus, the variables were suitable for simultaneous inclusion in the System GMM model.

Table 5: Baseline Model

Variables	Coefficient	Std. Error	z-Statistic	p-Value
L.POV	0.714***	0.083	8.6	0
GHE	-1.842***	0.531	-3.47	0.001
OOP	0.286***	0.071	4.03	0
EHF	-0.417**	0.184	-2.27	0.023
GDPG	-0.638***	0.176	-3.63	0
Constant	18.426***	5.217	3.53	0
Observations	240			
Number of countries	16			
AR(1) p-value	0.014			
AR(2) p-value	0.381			
Hansen test p-value	0.472			
Difference-in-Hansen p-value	0.417			
Number of instruments	12			

Source: STATA, 2026.

Table 5 presents the baseline System GMM estimates of the effect of health financing and economic growth on poverty incidence in West Africa. The coefficient of lagged poverty incidence (L.POV) was positive and statistically significant ($\beta = 0.714$, $p < 0.01$), indicating persistence in poverty across the sampled countries. This suggested that countries with relatively high poverty incidence in the preceding period tended to maintain higher poverty levels in the current period. The diagnostic results indicated that the model was appropriately specified. The significant AR(1) statistic was consistent with the expected first-order serial correlation in the differenced residuals, while the insignificant AR(2) statistic ($p = 0.381$) indicated the absence of second-order serial correlation. The Hansen test was insignificant ($p = 0.472$), suggesting that the instruments were valid. The Difference-in-Hansen test also supported the validity of the additional system GMM instruments. The relatively small number of instruments further reduced concerns regarding instrument proliferation.

Table 6: Moderating Effect of Economic Growth

Variables	Coefficient	Std. Error	z-Statistic	p-Value
L.POV	0.682***	0.091	7.49	0
GHE	-1.421**	0.603	-2.36	0.018
OOP	0.351***	0.082	4.28	0
EHF	-0.362*	0.194	-1.87	0.061
GDPG	-0.524**	0.218	-2.4	0.016
GHE $\times$ GDPG	-0.173**	0.074	-2.34	0.019
OOP $\times$ GDPG	-0.126**	0.052	-2.42	0.015
EHF $\times$ GDPG	-0.091*	0.051	-1.78	0.075
Constant	16.783***	5.814	2.89	0.004
Observations	240			



Number of countries	16			
AR(1) p-value	0.011			
AR(2) p-value	0.347			
Hansen test p-value	0.438			
Difference-in-Hansen p-value	0.396			
Number of instruments	15			

Source: STATA, 2026.

***, **, * denote significance at 1%, 5% and 10%, respectively.

The diagnostic statistics supported the adequacy of the moderating-effect model. The AR(2) test was insignificant ($p = 0.347$), indicating no evidence of second-order serial correlation. The Hansen test was also insignificant ($p = 0.438$), supporting the validity of the instruments, while the Difference-in-Hansen test ($p = 0.396$) supported the validity of the additional instruments used in the System GMM estimation. The instrument count remained below the number of countries, reducing the risk of instrument proliferation.

The hypotheses were tested using the two-step System GMM estimates reported in Tables 5 and 6. The decisions were based on the 5% level of significance. The findings were subsequently interpreted in relation to Pro-Poor Growth Theory and previous empirical evidence.

H01: Government health expenditure has no significant effect on poverty incidence in West Africa.

The result showed that government health expenditure (GHE) had a negative and significant effect on poverty incidence ($\beta = -1.842$, $p = 0.001$). The null hypothesis was therefore rejected. This finding indicated that increased government financing of healthcare was associated with lower poverty incidence. The result was consistent with Pro-Poor Growth Theory, which suggests that economic resources and public policies can reduce poverty when they improve access to essential services and enhance the productive capacity and welfare of disadvantaged populations. Public health expenditure can reduce the financial burden of healthcare, improve health outcomes and enable poor households to preserve income that would otherwise be spent on medical care. Empirically, the finding agreed with Voto, Voto and Ngepah (2025), who reported that public health expenditure contributed to poverty reduction in Sub-Saharan Africa. It was also consistent with Dankumo et al. (2024), who found that health and education expenditure contributed to poverty reduction in Nigeria.

H02: Out-of-pocket health expenditure has no significant effect on poverty incidence in West Africa.

The result indicated that out-of-pocket health expenditure (OOP) had a positive and significant effect on poverty incidence ($\beta = 0.286$, $p = 0.000$). The null hypothesis was rejected. The positive coefficient implied that greater reliance on out-of-pocket payments increased poverty incidence. This finding was consistent with Pro-Poor Growth Theory, because high healthcare costs can reduce disposable income, weaken household welfare and push vulnerable households below the poverty line. Where health financing systems provide inadequate financial protection, economic resources are diverted from food, education, investment and other basic needs to meet medical expenses. The finding was strongly supported by Wagstaff et al. (2018), who documented the impoverishing effects of health spending across countries, and Khan, Ahmed and Evans (2017), who found that catastrophic healthcare expenditure associated with out-of-pocket payments increased the risk of poverty. It was also consistent with Voto, Voto and Ngepah (2025) and Omoregie (2026), who reported a positive relationship between out-of-pocket health expenditure and poverty-related outcomes. The result therefore confirmed that excessive dependence on household financing of healthcare constituted a potential poverty-generating mechanism in West Africa.

H03: External health financing has no significant effect on poverty incidence in West Africa.

The result showed that external health financing (EHF) had a negative and significant effect on poverty incidence ($\beta = -0.417$, $p = 0.023$). The null hypothesis was rejected. The finding suggested that increased external resources directed towards healthcare were associated with reduced poverty incidence. From the perspective of Pro-Poor Growth Theory, external health financing can support the provision of essential healthcare services, particularly where domestic fiscal capacity is limited, thereby reducing the direct financial burden on vulnerable households and improving human capital. The result was consistent with the broader empirical evidence of Voto and Ngepah (2025), who examined government and external health expenditure in Sub-Saharan Africa and highlighted the role of health financing in reducing dependence on out-of-pocket payments. It was also broadly consistent with Odinenu and Anago (2025), who identified the importance of sustainable healthcare financing mechanisms in improving financial



protection in Nigeria. However, the finding should be interpreted with caution because the effectiveness of external financing may depend on its allocation, sustainability, governance and integration into national health systems.

H04: Economic growth has no significant effect on poverty incidence in West Africa.

Economic growth (GDPG) had a negative and significant effect on poverty incidence ($\beta = -0.638$, $p = 0.000$). The null hypothesis was rejected. This indicated that stronger economic growth was associated with lower poverty incidence. The result directly supported Pro-Poor Growth Theory, which posits that economic growth can reduce poverty when it generates employment, raises household incomes, expands economic opportunities and improves access to social services. The finding was also consistent with the empirical evidence reported by Voto, Voto and Ngepah (2025), where higher economic performance was associated with improved poverty outcomes in Sub-Saharan Africa. It further reinforced the argument that sustained economic expansion can provide governments with greater fiscal capacity to finance healthcare and other poverty-reducing programmes. However, the theory also implies that growth alone may not automatically benefit the poor; its poverty-reducing effect depends on the distribution of growth and the extent to which disadvantaged groups participate in economic opportunities.

H05: Economic growth does not significantly moderate the relationship between government health expenditure and poverty incidence in West Africa.

The interaction between government health expenditure and economic growth ($GHE \times GDPG$) was negative and significant ($\beta = -0.173$, $p = 0.019$). The null hypothesis was therefore rejected. This finding indicated that economic growth strengthened the poverty-reducing effect of government health expenditure. The result provided particularly strong support for Pro-Poor Growth Theory. The theory implies that growth can enhance the effectiveness of public interventions when increased economic resources expand government fiscal capacity and enable better delivery of essential services. Thus, government health expenditure appeared to have a stronger poverty-reducing effect in an environment characterised by higher economic growth. This finding extended the existing empirical literature because previous studies such as Luka and Adofu (2026) and Voto, Voto and Ngepah (2025) largely examined the direct relationship between healthcare financing and poverty rather than explicitly testing whether economic growth changed that relationship. The result therefore represented an important contribution of the present study.

H06: Economic growth does not significantly moderate the relationship between out-of-pocket health expenditure and poverty incidence in West Africa.

The interaction between out-of-pocket health expenditure and economic growth ($OOP \times GDPG$) was negative and significant ($\beta = -0.126$, $p = 0.015$). The null hypothesis was rejected. The negative interaction indicated that economic growth weakened the poverty-increasing effect of out-of-pocket health expenditure. The finding was consistent with Pro-Poor Growth Theory, since stronger economic conditions can increase household incomes and improve the capacity of households to absorb healthcare costs. Economic growth may therefore reduce the extent to which medical expenditure translates into poverty. Nevertheless, the persistence of a positive direct effect of OOP suggested that growth alone may not provide sufficient financial protection where households remain heavily dependent on direct healthcare payments. The result complemented the findings of Wagstaff et al. (2018), Khan et al. (2017) and Omoregie (2026) regarding the poverty consequences of out-of-pocket health spending. The present study extended this literature by demonstrating that the strength of this adverse relationship could vary according to the level of economic growth.

H07: Economic growth does not significantly moderate the relationship between external health financing and poverty incidence in West Africa.

The interaction between external health financing and economic growth ($EHF \times GDPG$) was negative but statistically insignificant at the 5% level ($\beta = -0.091$, $p = 0.075$). The null hypothesis was therefore not rejected. Although the result suggested that economic growth may strengthen the poverty-reducing effect of external health financing, the evidence was insufficient to establish a significant moderating effect. This implied that the effectiveness of external health financing may depend more on donor priorities, institutional capacity, allocation mechanisms and financing sustainability than on economic growth.

Conclusion and Recommendations

The findings established that government health expenditure significantly reduced poverty incidence in West Africa, suggesting that increased public health financing improved access to healthcare and reduced households' financial



vulnerability. This supported Pro-Poor Growth Theory and existing empirical evidence on the poverty-reducing role of public health investment. Out-of-pocket health expenditure significantly increased poverty incidence, indicating that reliance on direct household healthcare payments heightened financial vulnerability and could push households into or deeper into poverty.

Similarly, external health financing significantly reduced poverty incidence, suggesting that external resources complemented domestic health financing and supported access to healthcare, particularly in fiscally constrained countries. The study further found that economic growth significantly reduced poverty incidence, supporting Pro-Poor Growth Theory by indicating that stronger economic performance could improve incomes, employment opportunities and government capacity to provide social services. Importantly, economic growth significantly moderated the effects of government health expenditure and out-of-pocket health expenditure on poverty incidence. Growth strengthened the poverty-reducing effect of government health expenditure while weakening the poverty-increasing effect of out-of-pocket expenditure. However, its moderating effect on external health financing was negative but statistically insignificant at the 5% level, indicating that the effectiveness of external financing may depend more on institutional capacity, financing design and sustainability than on economic growth alone. Based on the findings, the study recommends the following:

1. West African governments should progressively increase domestic financing for healthcare and ensure that budgetary allocations are directed towards primary healthcare, preventive services, maternal and child healthcare and other services that disproportionately benefit poor and vulnerable populations. Increased funding should also be accompanied by effective monitoring to ensure that additional resources translate into improved healthcare delivery.
2. Given the poverty-increasing effect of OOP expenditure, countries should strengthen national health insurance and other prepayment mechanisms that provide financial risk protection. Subsidies and targeted exemptions should be provided for poor households, while essential healthcare services should be made more affordable and accessible.
3. Governments should develop flexible contribution mechanisms that accommodate workers in the informal sector and other vulnerable groups. Expanding effective health insurance coverage would reduce the likelihood that illness and medical expenses push households into poverty.
4. Since economic growth reduced poverty and strengthened the poverty-reducing effect of government health expenditure, policymakers should promote growth strategies that generate employment, increase household incomes and expand economic opportunities for low-income groups. Economic growth should therefore be integrated with social protection and healthcare policies.
5. The moderating role of economic growth demonstrates that health-financing policies should not be implemented in isolation. Policymakers should coordinate health expenditure, employment, income-generation, social protection and economic-growth policies to maximise their combined contribution to poverty reduction.

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