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Research Article

External Debt and Poverty Headcount Ratio in West African Countries: Does Governance Matter?

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Abstract: This paper analyses the link between external debt and poverty headcount ratio in the fifteen (15) West African countries, taking into account governance. Using the feasible generalized least squares (GLS) panel method for the period 1996-2021, we find that an increase in external debt contributes to the worsening poverty headcount ratio in the region. Then, enhancing governance while borrowing external funds does improve the poverty level. The regression shows that in West African Countries, governance indicators as well as the composite index of governance and the interaction term (governance composite index* external debt) contribute significantly to the reduction of the poverty rate. Therefore, there is a need for West African governments to be cautious when borrowing external funds and work towards sustainable debt management to prevent negative effects on poverty rates. In addition, the level of good governance should be improved in external debt management and poverty ratio reduction.

***Keywords*:** external debt, governance quality, poverty headcount ratio, West African countries

JEL Codes: D1, I1, I2, D6, D31-D33

1. Introduction

In economics and development studies, the relationship between external debt and poverty in developing countries has become an increasingly relevant field of study. Consequently, reducing poverty has been a top priority for the global community and international organizations such as the United Nations Development Programme (UNDP) whose core mission is eliminating poverty and meeting the Sustainable Development goal of reducing extreme poverty by 2030. According to Nimvyap et al. (2023), governments must use public debt or external debt as a vital tool to finance public expenditures, develop projects and foster economic growth, which is an essential prerequisite for all development processes in the majority of developing nations. Therefore, external debt has become a necessary instrument for stimulating sustainable economic growth, bridging the poverty gap and advancing development, especially in nations with developing economies (Eke & Akujuobi, 2021).

Nevertheless, excessive borrowing of funds, without proper investment planning and good governance can result in high debt loads and interest payments, which can have several negative consequences on the economy (Joy & Panda, 2020). The resulting consequences have posed a significant obstacle to attaining the 2030 Sustainable Development

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Goals (SDGs) and eradicating hunger and poverty in poor countries. Developing countries such as West African countries have also used similar debts to expand their economies and improve the standard of life for their people, but the high rates of borrowing in these nations have not been reflected in the reduction of poverty in those nations. Indeed, the past 20 years have seen a more than four-fold increase in West African countries' public debt. In 2005, it was valued at US$58.50 billion; by 2020, it reached US$296.76 billion. With a total of US$98.92 billion in external debt as of 2019, ECOWAS owed US$39.6% (US$39.17 billion) in commercial loans, 19.1% (US$18.89 billion) in bilateral loans, 41.3% (US$40.86 billion) in multilateral loans, and 15.2% (US$15.04 billion) to the International Monetary Fund (IMF). In addition, the ECOWAS' debt to GDP ratio of 36.7% in 2020 increased by 5.1 percentage points from 31.6% in 2019 (Nigerian Economic Summit Group, 2023). Yet, severe global poverty increased from 8.2% in 2019 to 8.8% in 2020, according to the Sustainable Development Goals (SDGs, 2020) 2020 report. The analysis also predicted that in 2020, an additional 71 million people in the region would experience severe poverty as a result of the coronavirus disease pandemic (COVID-19). As for Appiah-Otoo et al. (2022), the emergence of risky social groupings, disputes, low living standards, financial difficulties, unemployment, inadequate education, and poor diet habits are all linked to this rapid increase in poverty.

A considerable number of studies have been carried out to investigate the nexus of external debt and poverty reduction and reached inconclusive results (Oyedele et al., 2013; Kasidi & Said, 2013; Sasmal & Sasmal, 2016; Feriyanto et al., 2020); governance and poverty reduction (Kaufmann & Mastruzzi, 2009; Grindle, 2004; Aloui, 2019). On the one hand, some researchers (Chani et al., 2011; Eke & Akujuobi, 2021; Feriyanto et al., 2020) found that external debt helps to promote economic growth and reduces poverty through the financing of government deficit expenditures in health, education, etc. However, when the external debt becomes excessive, it can create a great debt burden for a country which may thwart the economic growth of the countries and aggravate poverty. Conversely, when the external debt is optimally utilized, it fosters economic growth and reduces poverty in countries. On the other hand, good governance is known as the most important factor that backs up a successful development, therefore promoting good governance helps to fight against poverty by reducing the level of corruption, preventing violent conflict, and promoting social inclusion.

This study draws attention to the intricate connection between public debt and poverty in developing nations. Despite the inconclusiveness of findings, the study emphasizes the necessity for policymakers to take a comprehensive approach to alleviating poverty by taking into account the improvement of governance quality.

For developing countries like West African countries, the problem of external debt has become urgent and requires investigation into appropriate management and effective use to promote economic growth and reduce poverty. It is on this background that this study, by taking into account the role of governance, seeks to investigate the relationship between external debt and poverty reduction in West African countries.

The present study is different in several ways from earlier studies. Initially, it employs a novel empirical methodology by analyzing the correlation between external debt and poverty reduction in the West African region. Additionally, it examines the effect of governance on poverty reduction in the West African region. Furthermore, the majority of earlier research failed to consider the importance of governance in moderating external debt in their analysis, especially in the West Africa case which is captured in this study; and variables like the unemployment rate in favour of concentrating primarily on GDP and human capital index. Countries were chosen for this study according to several factors, including data availability, geographic location, degree of development, and the first study capturing the role of governance on external debt on poverty reduction in West Africa.

The remainder of this article is organized as follows: following the introduction, part two is the review of selected literature relevant to the subject matter. Part three focuses on methodology, part four focuses on the result of data analysis and discussion of major findings, and part five concludes the article and gives recommendations for the study.

2. Empirical review

The link between external debt and poverty reduction is of greater interest to governments, policymakers and academics. However, scholars disagreed on its effect on poverty reduction. Though studies have been conducted on the issue, they end up with inconclusive results. According to certain research on the subject, external debt can help developing nations reduce poverty when it is utilized to finance public investments (Oyedele et al., 2013; Kasidi & Said, 2013; Feriyanto et al., 2020). They argue that these kinds of investments have the power to boost the economy, create jobs, and reduce poverty. On the other hand, a different corpus of research contends that high amounts of public debt could make poverty reduction programs more difficult. According to their argument, a high level of public or external debt can restrict the amount of money available for social expenditures and discourage private investments, which makes the climate less conducive to reducing poverty. In this regard, Ashraf et al. (2020) used data from 1972 to 2018 to investigate the relationship between Pakistan's external debt and poverty reduction. They found that higher levels of poverty, both temporary and permanent, are strongly correlated with higher levels of external debt. To reduce poverty and promote sustainable development, the authors recommend adopting prudent debt management procedures and reducing dependence on borrowing from external sources. By concentrating on a developing nation with a significant debt load and a variety of poverty indicators, this study adds to the body of existing research. To promote economic growth and reduce poverty, it highlights the necessity to reduce excessive foreign debt, hence supporting the debt overhang concept.

However, Fayzullokh et al. (2023) also examined the influence of public debt on poverty reduction in developing countries while considering other contributing factors such as economic growth, population, inflation, human development index, and institutional quality. The study used a panel data approach with a dataset encompassing 21 years, from 2000 to 2021, and includes data from 20 developing countries. The authors showed that public debt has a significant and positive correlation with poverty, indicating that high levels of public debt can lead to an increase in poverty in developing countries. According to the authors, countries must be cautious when taking on debt and give debt sustainability priority to prevent detrimental effects on poverty levels since high levels of public debt have the potential to increase poverty in developing nations. On the other hand, there is a strong and negative association between poverty and human development as well as economic progress, indicating that these variables may help lower poverty in developing nations. They stress the necessity for policymakers to take a holistic strategy to decrease poverty, one that takes into account variables that contribute to poverty in addition to public debt reduction. These elements include fostering economic growth, improving governance quality, and addressing other problems.

Ochalibe et al. (2017) also investigated the correlations between external loans and poverty elimination efforts in Nigeria from 2010 to 2020 by using a qualitative descriptive method for data analysis. The study found, among other things, that Nigeria's external debt hasn't helped to reduce poverty. The authors also discovered that the funds were not used for spending in profiTable industries that would have alleviated poverty. In light of the results, the study suggested that Nigeria's future external debt should be prioritised towards the reduction of poverty. They therefore advocated for the necessity of heavily funding initiatives with strong capital returns using external loans to achieve the intended impact of reducing poverty.

The study by Naeem and Hamid (2016) examined the connection between economic growth, poverty reduction, and public debt in South Asian nations (Bangladesh, India, Pakistan, and Sri Lanka) between 1975 and 2010. The research made use of an empirical model that extends the analysis to look at the effect of public debt on poverty and integrates it into growth equations. Through panel data estimation techniques, the results indicate that higher levels of public debt impede overall economic expansion and have a negative impact on economic growth in the chosen South Asian countries. The analysis suggests that public external debt has a similar impact on the rich and the poor, albeit it does not find a significant correlation between income inequality and public external debt or the service of that debt. In summary, the study conducted by Naeem and Hamid (2016) provides a significant understanding of the intricate relationships among public debt, economic expansion, and the mitigation of poverty in South Asian nations.

Akindutire and Yetunde (2019) investigated the effects of external debt on poverty reduction in Nigeria within the temporal scope from 2000 to 2017 by using the Auto Regressive Distributed Lag (ARDL) estimation technique. It came out that, while all of these factors had negative signs in the short run, debt service payments, inflation, and exchange rates were found to have negative effects on poverty over the long term, indicating a poverty reduction. Consequently, it was determined that, over time, external debt had little to no beneficial impact on poverty in Nigeria. Therefore, they recommended that there is a need to efficiently utilize the external debt for the purpose requested for achieving poverty reduction, and promoting the growth of the country, a portion of these resources ought to go towards providing public social goods and services, which eventually contribute to lowering the rate of poverty and raising citizens' standards of living.

Addressing the relationship between poverty and economic growth has been a key concern in the fields of development studies, economics, and policy-making. Scholars have challenged the widely held belief that poverty levels decrease with economic expansion. They contend that several additional factors, such as the level of GDP, inflation and public health expenditure can contribute to alleviating poverty, especially in developing countries.

According to the World Bank's (2014) research on global poverty trends, economic growth plays a major role in reducing poverty. It was discovered that in areas experiencing significant economic expansion, the prevalence of poverty declined. Emerah and Ogege (2013) conducted a study on the issue in Nigeria and concluded that there is an existence of a long-run relationship between poverty reduction and GDP. In contrast, Ijirshar and Godoo (2016), revealed that the external debt service harmed economic growth in the long and short run and, therefore does not help to alleviate poverty. In the same vein, Naheem and Sherbaz (2016), revealed that there is a positive effect of indebtedness on GDP and poverty which, however, implies that, external debt and its repayment increases the level of poverty in Pakistan. However, Kasidi and Said (2013), using time series data on external debt and economic performance, showed that there is a significant impact of external debt and debt service on GDP growth. The total external debt stock has a positive effect of about 0.36939 on GDP and the debt service payment has a negative effect of about 28.517 on GDP. In the long run, the result t showed that there is no long-run relationship between external debt and GDP.

Studies investigated by researchers between inflation and poverty reduction yield inconclusive results. Some researchers assert that inflation causes poverty by decreasing people's purchasing power, particularly for those in low-income categories (World Bank, 2022). In essence, these people's real income decreases as prices rise, which forces them into ever-deeper poverty. Along the same line, Chani et al. (2011), when investigating the role of economic growth and inflation in explaining the prevalence of poverty in Pakistan, through the ARDL model, confirmed that in the short run, inflation has a positive impact on poverty. Still, to Romer and Romer (1998), higher rates of poverty are not necessarily correlated with low levels of inflation. However, they also pointed out that hyperinflation, or extremely high inflation, has the potential to exacerbate poverty. However, according to Galindo and Ros (2008), in Latin America, those in need may profit slightly from inflation since they typically own assets like real estate that insulate them from rising prices. They concluded that the way the economy is structured and the kinds of assets that poor individuals own have a significant impact on how inflation affects poverty. Janjua and Kamal (2014), also explored the role of education and health in poverty alleviation and found that the efficient use of public expenditures on education and health not only results in improved educational and health outcomes but also permits a poverty reduction.

Other researchers also analyzed the impact of the unemployment rate on poverty reduction and concluded that the unemployment rate constitutes an obstacle to poverty reduction. Feriyanto et al. (2020) examined the impact of unemployment, minimum wage, and real gross regional domestic product (GRDP) on poverty reduction in the provinces of Indonesia. Using periodic data over the period 2010-2019, the fixed effect model of the panel data, showed that unemployment and wages had a significant positive effect on poverty in provinces of Indonesia. Therefore, to lower poverty in Indonesia, government policy must prioritize lowering unemployment, preserving price stability to protect buying power and wage levels and raising the real GDP per capita.

Kiaušienė (2015) researched the impact of unemployment on poverty in European nations. The study indicated that women without jobs have a positive correlation with the likelihood of falling into poverty, which means that the proportion of unemployed women in that category grew. On the other hand, since those who work earn money, it follows that if the unemployment rate is kept low, there will be fewer impoverished individuals. Additionally, according to Kiaušienė's survey, fewer women than men were unemployed. Despite Nigeria's ranking as the 158th most developed nation in the world, Adejimi and Ogunode's (2015) study also found that the unemployment rate had a greater impact on poverty in the country.

Aloui (2019) explored the relationship between governance and poverty reduction in sub-Saharan Africa with data ranging from 1996 to 2016. They showed that governance indicators have a positive and negative effect on poverty reduction in Sub-Saharan African countries, which implies that result governance dimensions play a key role in poverty reduction, especially, the role of government effectiveness. According to Wei (1999) and the World Bank (1994), combating corruption will reduce poverty. Indeed, fighting corruption and the fight against poverty are often based on the assumption that efforts to combat corruption will stimulate economic growth, which will benefit the whole economic system. Anderson (2003), also pointed out that people in poverty are more vulnerable to the violence of political power and are less equipped to defend themselves against harm and financial loss as a result of this misconduct. The risk of police violence against the poor is higher than that of the rich in many nations. The inadequate defence of property rights has a detrimental impact on the poor as well. Therefore, he showed how improving the rule of law plays can contribute to reducing poverty.

3. Methodology

The study used secondary data from World Development Indicators and the World Governance Indicators of the World Bank to analyse the relationship between external debt, health expenditure and poverty reduction in West Africa. According to Oyedele et al. (2013), variables such as external debt can be used to demonstrate how public spending on socio-goods and services will directly contribute to the reduction of poverty.

This study also investigates the role of governance on external debt and poverty reduction relationships in developing countries such as West African countries using a panel data methodology. The panel dataset includes information from 15 developing countries of West Africa over 26 years, from 1996 to 2021 because governance indicators have been compiled by the World Bank from 1996 to the most recent one 2021. The main model used in this study is as follows:

$$\text{Poverty}_{it} = \beta_0 + \beta_1\text{External debtt}_{it} + \beta_2\text{Gross Domestic Product per capita}_{it} + \beta_3\text{Unemployment} + \beta_4\text{Inflation}_{it} + \beta_5\text{Healthexpenditure}_{it} + \varepsilon_{it} \quad (1)$$

$$\text{Poverty}_{it} = \beta_0 + \beta_1\text{External debt}_{it} \times \text{GCI}_{it} + \beta_2\text{GCI}_{it} + \beta_3\text{externdebt}_{it} + \beta_4\text{GDPpc}_{it} + \beta_5\text{Inflation}_{it} + \beta_6\text{Unemployment rate}_{it} + \beta_7\text{Healthexpenditure}_{it} + \varepsilon_{it} \quad (2)$$

Where:

Poverty = Poverty headcount ratio at national poverty lines (% of population).

External Debt = Public debt as a percentage of GDP from the World Bank, International Debt Statistics.

GDPpc = Percentage change in real GDP per capita from the World Bank national accounts data.

Inflation = measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly percentage change in consumer prices from the International Monetary Fund data.

Governance Indicators = obtained from Worldwide Governance Indicators.

GCI captures the composite index of governance for country i in year t.

Health expenditure: current expenditures on health per capita in current US dollars. Estimates of current health expenditures include healthcare goods and services consumed during each year for country i in year t from the World Health Organization Global Health Expenditure database (http://apps.who.int/nha/database), mostly composed of public and private health expenditures.

Unemp_{it}: Unemployment rate (%) for country i in year t.

GCI × External Debt_{it} = captures the interaction between governance composite index and external debt for a country I in year t.

The interaction term between the governance composite index and external debt; governance composite index is to examine the indirect impact of governance on poverty reduction. These interaction terms help to determine whether, beyond the direct effect, governance improves the efficacy of external debt. External debt might improve poverty reduction if there is a good institution in place, especially the institutions through which those funds are channelled. Therefore, the external debt variable interacts with governance to understand how these funds are affected by the quality of governance in a country in any given year.

This paper was conducted to see how the relationship between external debt and governance contributes to reducing poverty in West African countries. This relationship is controlled by the GDP per capita, health expenditure, the unemployment rate, and the level of inflation.

The feasible generalized least squares method estimation technique is used in this study. Indeed, in the presence of heteroskedasticity adding to the fact that the number of countries (N = 15) is less than the time period (T = 26), serial correlation and cross-sectional correlations, the feasible generalized least squares (FGLS) estimator is more efficient than the pooled OLS (Bai et al., 2020; Hoechle, 2007). It directly takes into account the above problems in the estimation to avoid spurious results. Besides, the FGLS does improve efficiency in terms of mean squared error than OLS, and it helps to obtain an unbiased standard error estimator and appropriate rejection rate as T increases (Miller & Startz, 2018; Farag et al., 2013; Mumuni & Mwimba, 2023). See appendixes (1, 2, 3 and 4).

4. Results and discussions

Table 1. Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
poverty headcount ratio	390	46.48969	11.01103	21.5891	83.43333
External debt	390	4.043e + 09	6.078e + 09	1.831e + 08	3.439e + 10
GDP per capita	390	934.171	774.145	138.714	3928.309
Inflation rate	390	6.415	8.21	-3.503	50.734
Health expenditure	390	44.011	32.956	-1.47	198.523
Unemployment rate	390	4.411	2.89	0.32	14.878
Governance quality composite index	390	-0.6041074	0.4973517	-1.808162	0.5904297

Source: Author's compilation

Table 1 presents the descriptive statistics of the variables in the study. The summary of statistics. The mean, standard deviation, minimum and maximum values of the variables are presented. The mean is an indicator of the average value of the variable. The standard deviation shows the spread of the variable from the mean; thus, it shows the volatility of the variable. In addition, we report the minimum and the maximum values of each of the variables within the study period. From Table 1, the mean per capita GDP growth in West Africa over the period was 934.171 (current US$) with a standard deviation of 774.145, indicating the volatility of growth in the region during this period.

Over the period 1996-2021, Table 1 shows that on average, West African countries borrowed from external sources roughly 4.043 billion USD. At the same time, statistics show that on average 46.48% of the citizens in the region live under the national poverty headcount ratio, which reveals a high level of poverty in the region compared with 22% of the population in the European countries (World Bank, 2023). The above Figure 1 also indicates that globally an increase in the external debt contributes to worsening the level of poverty line in the region.

In addition, governance quality indicates that governance remains poor and the weakest point in West African countries. On average, Table 1 reveals that governance is still negative (-0.6). As a result, statistics show that in the absence of good governance, increasing the level of external borrowings continuously aggravates the poverty headcount ratio in the region. However, slightly, the level of governance constitutes a pillar to managing the external borrowings as indicated in Figure 2. As for Figure 3, it shows that the level of governance contributes to improving the poverty headcount ratio in the region. Therefore, when external borrowing is moderated by good governance principles, it contributes to improving the poverty headcount ratio in the region.

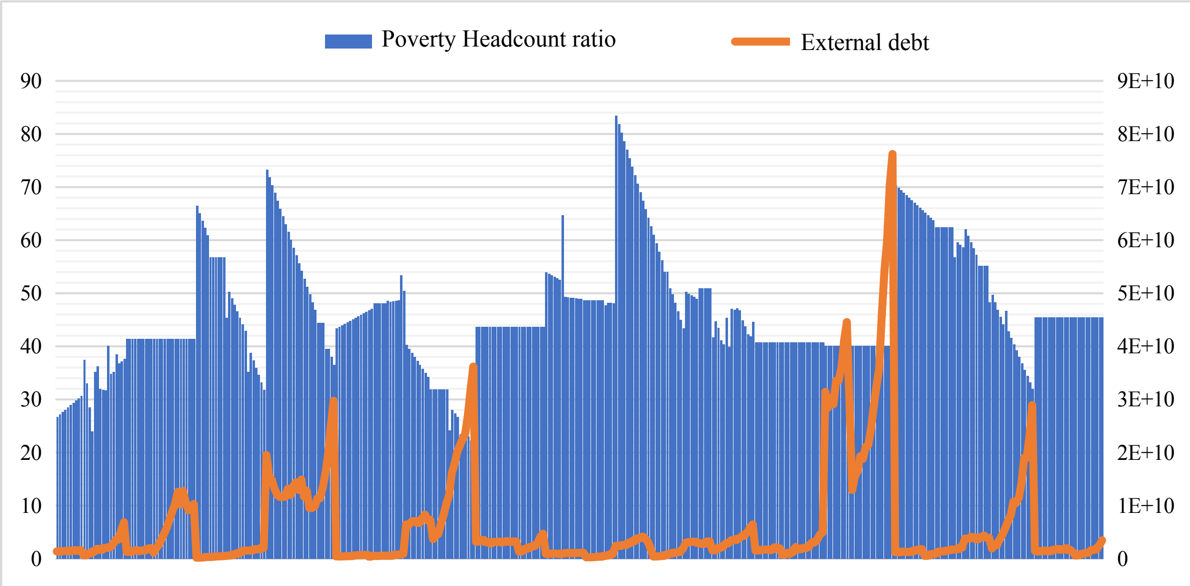

Figure 1. Relationship between poverty headcount ratio and external debt in West Africa
Source: Author's compilation

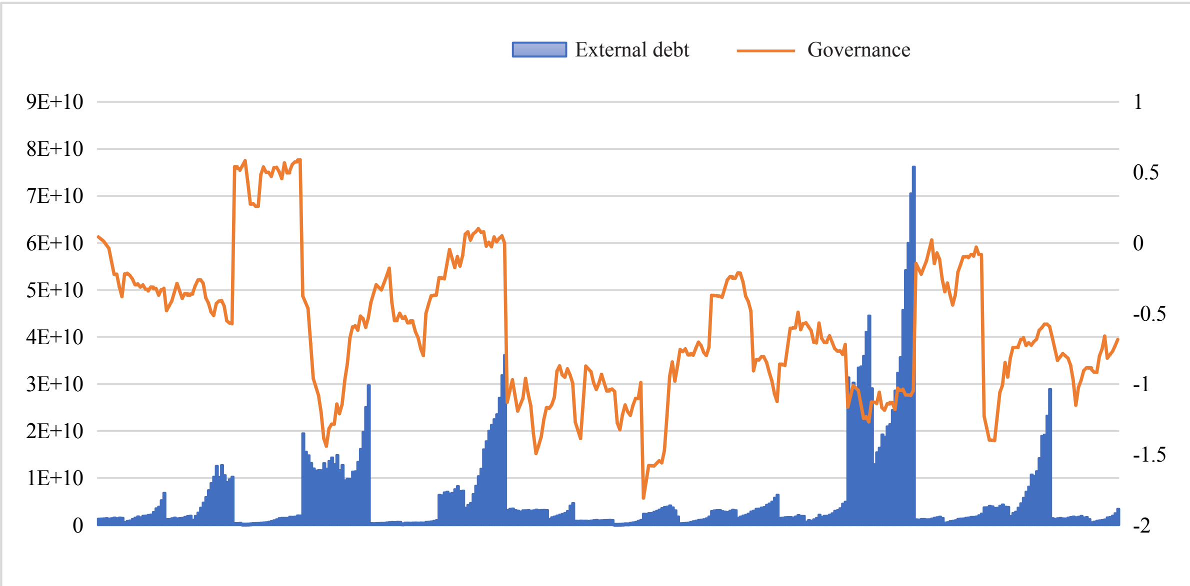

Figure 2. Relationship between external debt and governance in West Africa
Source: Author's compilation

Tests in panel units such as panel unit-root test, correlation, and heteroskedasticity have been performed to avoid sporous regression. Based on panel regression analysis using the feasible generalized estimation technique, we come to the following conclusions:

Table 2 Relationship between external debt and poverty headcount ratio in West African countries.

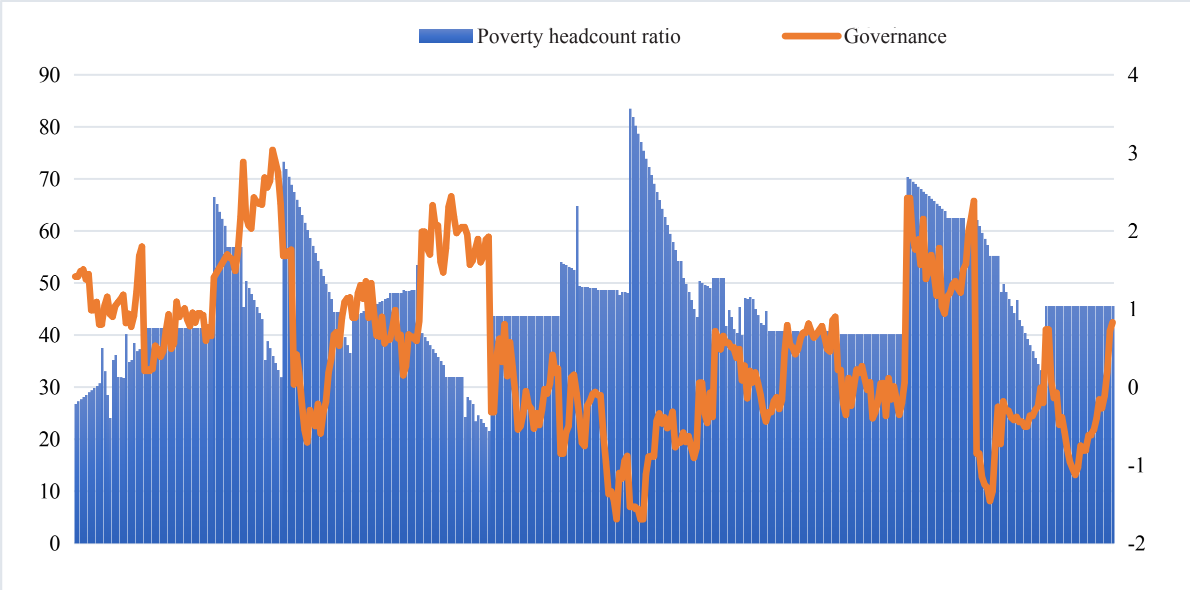

Figure 3. Relationship between poverty headcount ratio and governance in West Africa
Source: Author's compilation

Table 2. Effect of external debt poverty on headcount ratio in West Africa

National poverty headcount ratio	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
External debt	1.988	0.534	3.72	0.000	0.942	3.034	***
Health expenditure	0.029	0.017	1.73	0.084	0.004	0.061	*
GDP per capita	-3.379	0.422	-8.01	0.000	-4.205	-2.552	***
Unemployment rate	0.392	0.178	2.21	0.027	0.044	0.74	**
Governance quality composite index	-3.768	0.435	-8.67	0.000	-4.62	-2.916	***
Inflation	-0.096	0.037	-2.61	0.009	-0.168	-0.024	***
Constant	76.629	6.576	11.65	0.000	63.741	89.518	***
Mean dependent var	46.490		SD dependent var		11.011		
Number of obs	390		Chi-square		198.401		

Source: Authors, from Stata 14 *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The results (Table 2) show that external debt has a significant and positive influence on the poverty headcount ratio. This reflects the fact that as external debt rises, poverty levels rise. To quantify this, our study shows that an increase of one per cent in external debt corresponds to an average almost 2 per cent increase in poverty level in West African countries. This result is in line with Loko et al. (2003) who found that external debt affects poverty through its negative impacts on public investments, income growth and high debt services crowding out of governments' spending in social aspects of the economy. The results (Table 2) indicate that the external debt contributes to aggravating the poverty headcount ratio in the region. This result could be explained by the fact that an increase in external debt often brings about higher taxes and lower spending on social services, which can exacerbate poverty. This result emphasizes how necessary it is to exercise caution while managing the budget and controlling debt as part of larger initiatives to reduce poverty in developing nations.

Contrary to Komarudin (2020), we also observe a positive correlation between health expenditure and poverty headcount ratio. This implies that the poverty level increases as more funds are spent in the health sector. The study further found a positive correlation between the unemployment rate and poverty, suggesting that an increase in unemployment corresponds to an increase in poverty levels. Specifically, an augmentation of one per cent in the unemployment rate leads to an average 0.39 per cent increase in poverty. The fact that increasing health expenditure contributes to worsening the poverty headcount ratio in the region can be justified by the fact that most of the households in the region (developing countries) do not have medical insurance to afford health expenses and, therefore are exposed to unaffordable prices of health care services. It is also known that with a low level of health, people cannot participate in the labour market to earn a minimum wage for basic needs affordability. Therefore, poor health due to out-of-pocket payments (as a major means to finance the health care system in most developing countries) through a reduction of people's income will inevitability lead to deepening the poverty level in the region. This result also suggests that the implementation of an optimal income distribution mechanism focused on people living close to or below the poverty line could lead to a reduction in poverty, instead of increasing health spending. Indeed, increasing health spending could improve the health of the population so that they can participate in the labour market, but at the same time, it could contribute to a high rate of unemployment, thus aggravating poverty and the social status of the population.

In addition, the correlation between inflation and poverty is negative. A one per cent rise in the inflation level will contribute to worsening the poverty level. Specifically, a one per cent increase in inflation level may result in an average 0.09 per cent decrease in poverty. Significantly, we found that both the gross domestic product and governance quality have a significant and negative correlation with poverty. This indicates that gross domestic product and governance quality effectively reduce poverty levels. Our research elucidates that an enhancement of one per cent in the GDP or governance quality is viewed as an average decrease in poverty level by almost 3.38% and 3.77%, respectively. Inflation showed a statistically significant and negative relationship with poverty (Table 2). The negative coefficient for inflation shows that lowering inflation can reduce poverty. This indicates that if other things remain constant decrease in inflation leads to a decrease in the poverty level in the economy. This result is similar to the findings of Nwadike et al. (2020). They found a negative and statistically significant under certain specifications in the case of low-income countries. It suggests that the monetary or fiscal policies of the government can raise or lower the rate of poverty in the region. In other words, a policy that is appropriate for the situation would reduce poverty, while a strategy that is not appropriate will increase it when the rate of inflation rises or falls. It also means that people can buy less with an equal amount of money when inflation drives up the cost of products and services while maintaining the nominal income. As a result, people's money is worth less and they have less purchasing power.

The adverse effects of gross domestic product and governance quality on poverty highlight how important economic development is to reducing poverty. According to this association, economies that flourish have higher rates of accumulating wealth and more options for generating funds, which may contribute to a decline in poverty. Thus, policies meant to promote economic growth may also be useful in alleviating poverty. Nevertheless, according to Hassan (2015), GDP growth does not impact positively the poor through job creation. Therefore, there is a need to reassess the growth direction to give priority to key sectors like the agricultural and the industrial sectors to create more jobs in a view to reduce poverty among citizens.

Widespread poverty and high unemployment are positively correlated. Individuals who are unemployed or have irregular part-time work are typically classified as extremely impoverished. Our results (Table 2) are similar to those of (Ayala & Rodríguez, 2016; FitzRoy & Jin, 2017). To alleviate poverty, it is useful to put in place an efficient macroeconomic policy, and create employment opportunities in the region that will reduce unemployment, which, in turn, reduces poverty and income inequality that can ensure equal distribution of income for all levels of society.

Table 3. The relationship between governance dimensions and poverty in West African countries (FGLS results)

Variables	National poverty headcount ratio						
GDP per capita	-0.00551***	-0.00555***	-0.00597***	-0.00556***	-0.00580***	-0.00682***	-0.00551***
	(0.000535)	(0.000463)	(0.000504)	(0.000500)	(0.000537)	(0.000562)	(0.000535)
Unemployment rate	1.960***	1.461***	1.698***	1.871***	2.020***	1.997***	1.960***
	(0.207)	(0.127)	(0.193)	(0.176)	(0.193)	(0.187)	(0.207)
Inflation	-0.198***	-0.221***	-0.232***	-0.245***	-0.300***	-0.325***	-0.198***
	(0.0519)	(0.0537)	(0.0595)	(0.0598)	(0.0674)	(0.0706)	(0.0519)
Government effectiveness	-8.715***						
	(1.266)						
Voice & Accountability		-2.975***					
		(0.469)					
Control of corruption			-3.099***				
			(0.823)				
Quality of Regulation				-11.35***			
				(1.169)			
Rule of Law					-7.066***		
					(0.756)		
Political Stability						-5.146***	
						(0.708)	
Governance quality composite index							-3.957***
							(0.575)
Constant	37.13***	45.55***	44.21***	37.59***	40.16***	43.47***	46.05***
	(1.676)	(0.574)	(1.107)	(1.086)	(0.875)	(0.777)	(0.663)
Observations	390	390	390	390	390	390	390
R-squared	0.286	0.213	0.205	0.337	0.287	0.321	0.286
Number of ID	15	15	15	15	15	15	15

Source: Authors, from Stata 14; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In addition, the findings also highlight the critical roles that governance and growth play in reducing poverty. Controlling corruption, upholding the rule of law, and improving government efficiency are all aspects of improved governance that can foster conditions that are favourable to alleviating poverty. This result also implies that governance plays an important role in poverty reduction, especially in developing countries. Hence, two important strategies for decreasing poverty may be raising the GDP and enhancing governance.

Table 3 shows the results of panel data regressions we performed between 1996 and 2021. In our estimates, we looked at the coefficients associated with the governance indicators and the coefficients associated with the dampening effect of the Composite Governance Index and external debt on poverty, respectively. Regarding the results of the governance indicators, the results of the estimation indicate that several of them have negative and significant coefficients.

The first indicator of government effectiveness appears to be negative and significant in West African countries. We find that the effect of enhancing one unit of government effectiveness will reduce poverty in the region by 8.7. The results show that high rates of government effectiveness are associated with lower levels of poverty in the region. It also indicates the preponderant role of government effectiveness in reducing the poverty level in the region (Table 3).

Secondly, we find that voice and accountability negatively and significantly influence the level of poverty in the region. A one per cent improvement in voice and accountability will lead to a reduction in the poverty level by almost 3% in the region. Enhancement in voice and accountability in the region will contribute to lessening conflict among member nations and the populations. A conducive and peaceful environment promotes business, money generation, and job development. Enhancement in voice and accountability also helps to institutionalise government legitimacy by making laws and procedures enforceable (Table 3; Appendix).

The findings show an inverse correlation between poverty and corruption; in general, countries with lower levels of corruption experience higher levels of poverty. When the corruption level is increased by 1%, it will worsen the poverty level by almost 3.1% in West Africa. This empirical finding indicates that when corruption is not controlled, it will slow economic growth and aggravate income inequality in West Africa, by discouraging foreign and domestic investment, decreasing tax revenue, decreasing revenue from taxes and fees, and lowering the quality of public infrastructure (Table 3).

Regarding the fourth indicator, the quality of regulation has a negative and statistically significant effect on poverty in West African countries. Thus, a one per cent improvement in the quality of regulation will cut down the poverty level by 11.35% in the region. Regulation can directly affect poverty by influencing costs and facilitating the poor's access to essential services; by observing how market liberalization policies affect the impoverished, the regulator can decide on the best time and level of deregulation (Table 3).

As for the rule of law, it also hurts poverty in the region. A one per cent enhancement in the rule of law will lower the poverty level in the West African countries by almost 7.1%. The rule of law is one of the most important dimensions of governance for economic growth and poverty reduction. Improvement in the rule of law contributes to reducing poverty by enhancing peaceful coexistence and providing an enabling environment for the creation of wealth for all citizens (Table 3).

Political stability appears to be negative and significant in the countries of West Africa. Increasing political stability by 1% reduces poverty by 5 points in West African countries. Therefore, instability provides insight into the rise of poverty in sub-Saharan Africa. A sTable political structure establishes the right economic conditions, minimizes conflicts over income distribution, fosters economic growth, and lessens poverty in developing nations such as West African countries (Table 3).

The study also finds that the interaction term or moderation term (governance composite index* External debt) contributes to lowering the poverty level in West Africa. In the same line with Komarudin (2020), we find that a one per cent improvement in the interaction term will lower the poverty level in West Africa by 0.01 points. It means that increasing and managing external debt requires good governance for governments to foster growth and reduce the poverty level in the region. Good governance ensures the proper functioning of the state and effective governments. It promotes peace, political stability, government effectiveness, lower levels of corruption, voice and accountability, and the rule of law which is good for business, investments, job opportunities, income generation and therefore the fight against poverty.

Table 4. Analysis of the moderation effect of governance composite index and external debt on poverty rate (FGLS results)

National poverty headcount ratio	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
External debt	-1.765	0.305	-5.79	0.000	-2.362	-1.167	***
Governance composite index	-2.559	0.508	-5.04	0.000	-3.554	-1.564	***
Governance composite index* External debt	-0.01	0.1	-2.70	0.007	0.03	0.05	***
Unemployment rate	1.045	0.168	6.22	0.000	0.716	1.374	***
Inflation	-0.069	0.039	-1.79	0.074	-0.145	0.007	*
Constant	81.526	6.532	12.48	0.000	68.723	94.329	***
Mean dependent variable		46.490		SD dependent var		11.011	
Number of observations		390		Chi-square		146.412	

Source: The authors, from Stata 14; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The study also finds that the interaction term or moderation term (governance composite index* External debt) contributes to lowering the poverty level in West Africa (see Table 4). In the same line with Komarudin (2020), we find that a one per cent improvement in the interaction term will lower the poverty level in West Africa by 0.01 points. It means that increasing and managing external debt requires.

5. Conclusion and policy implications

This study aims to analyze the correlation between external debt and poverty in the West African region by considering the role of governance. According to the research, there is a strong positive correlation between external debt and poverty rate, indicating that rising external debt levels contribute to an increase in poverty in developing countries like West African countries. Also, when the external fund is spent on governance principles, it contributes to reducing the poverty level in the region. As such, countries ought to be cautious when taking on debt and work towards sustainable debt management to prevent negative effects on the poverty rate. Furthermore, without cautiousness, countries' capacities to invest in critical sectors like infrastructure, healthcare, and education for long-term growth and the eradication of poverty may be hampered by a high level of external debt. Thus, to prevent poverty from getting worse and impeding their growth, West African countries must manage and use their debt wisely. It should also be noted that good governance plays the most important role in explaining external debt and poverty reduction nexus. The results provide insight into the inconclusive relationship between external debt and the fight against poverty in developing countries, by highlighting the need for a comprehensive strategy for alleviating poverty beyond only reducing external debt. This includes encouraging economic growth and addressing other issues that contribute to poverty. Above all, it is essential to emphasize that good governance constitutes the backbone to carry out an efficient economic policy to lessen poverty.

Conflict of interest

The authors declare no competing financial interest.

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Appendix

A.1 *Heteroscedasticity test (White test)*

e2	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
yhat	-5.773	4.743	-1.22	0.224	-15.098	3.552	
yhat2	0.412	0.167	2.47	0.014	0.084	0.739	**
Constant	54.332	34.24	1.59	0.113	-12.987	121.651	
Mean dependent var		98.329		SD dependent var		195.464	
R-squared		0.048		Number of obs		390	
F-test		9.778		Prob > F		0.000	
Akaike crit. (AIC)		5207.338		Bayesian crit. (BIC)		5219.237	

Source: Author's computation*** p < 0.01, ** p < 0.05, * p < 0.1

A.2 *Autocorrelation test (Jochman's portmanteau test)*

Jochman portmanteau test for within-group correlation in panel data.
H0: no within-group correlation
Chi-sq (324) = 15.000
Prob > Chi-sq = 0.0000

A.3 *Cross-sectional dependence test*

Variable	CD-test	p-value	corr	abs (corr)
Poverty headcount ratio	32.450	0.000	0.621	0.711
Governance quality composite index	-1.290	0.197	-0.025	0.380
Governance quality composite index* external debt	4.080	0.000	0.078	0.392
GDP per capita	45.370	0.000	0.868	0.868
External debt	19.070	0.000	0.365	0.518
Health expenditure	32.470	0.000	0.621	0.838
Inflation	11.960	0.000	0.229	0.372
Unemployment rate	2.100	0.035	0.040	0.513

Source: Author's computation

A.4 *Panel unit root tests*

Generation of panel unit root tests	1st Generation panel unit root tests		2nd Generation panel unit root tests	
Panel Unit root Tests	Levin Lin Chu test (LLC)		Pesaran test	
Variables	P-value at level	P-value at 1st difference	P-value at level	1st difference
National poverty headcount ratio			0.003***	
External debt				0.000***
Composite index of governance	0.0266**			
Governance composite index* External debt				0.000***
Health expenditure				0.000***
GDP per capita			0.000***	
Unemployment rate				0.001***
Inflation			0.000***	

Source: Author's computation