

External Debt Accumulation and Institutional Quality in Selected ECOWAS and SADC Countries: Implications for Efficiency in Governance

Felix Onoriode Ashakah,^a Titus Olufemi Awogbemi,^b Efe Eunice Aigbomian,^c
Timipa Stanley Ikidi,^d and Festus Ndidi Opara^e

Abstract: *The paper examined the impact of external debt accumulation on institutional quality in selected ECOWAS and SADC countries from 1990 to 2023. The study analysed a group panel data set using the dynamic ordinary least squares (DOLS) and the fully modified ordinary least squares (FMOLS) estimation techniques. The study also analysed sub-group panel data sets on ECOWAS and SADC using the pooled mean group (PMG) estimation technique. The findings from the group analysis revealed that external debt accumulation had a negative and significant impact on institutional quality in the selected countries at the 1% level during the study period. Also, the panel sub-group analyses revealed that external debt accumulation had a negative and significant impact on institutional quality in ECOWAS and SADC countries, respectively. The implication of the finding is that high external debt accumulation lessens the efficiency of government institutions. The paper recommended that the selected ECOWAS and SADC countries should make effective external debt management policies with the view of reducing external debt accumulation, employing external debt in viable productive expenditures and avoiding spending that can trigger external debt accumulation.*

^a Correspondence Author. Department of Economics, Faculty of the Social Sciences, Delta State University, Abraka, Delta State, Nigeria. Email: ashakah.felix@delsu.edu.ng, ORCID: 0000-0003-3110-0031

^b Department of Economics, Faculty of the Social Sciences. Delta State University, Abraka, Delta State, Nigeria. Email: awogbemito@delsu.edu.ng

^c Department of Banking and Finance, Ambrose Ali University, Ekpoma, Edo State, Nigeria. Email: efehi04@aauekpoma.edu.ng

^d Department of Economics, Banking and Finance, Faculty of Social and Management Sciences, Benson Idahosa University, Edo State, Nigeria. Email: stanleytimipai@yahoo.com

^e Department of Economics, Faculty of the Social Sciences, Delta State University, Abraka, Delta State, Nigeria. Email: oparafestus@delsu.edu.ng

Keywords: External Debt Accumulation; Institutional Quality; ECOWAS; SADC; Panel data

JEL Classification: H03, H05, H06

1. Introduction

In recent times, the implications of high external debt accumulation have become an interesting topic following the high debt accumulation of most countries in the world. In some countries, the stocks of external debt have piled up to a level considered unsustainable, and some of these countries have been classified as highly indebted poor countries (HIPC). It has been widely recognised that the obligation of repaying the accumulated value of external debt and debt services may not be possible, and such precarious situations may compound the economic problems of the indebted countries (Ashakah et al., 2025; Elkhalfi et al., 2024; Ismael, Mahmod, & Khorsheed, 2024; Edo & Ashakah, 2022; Anifowose, 2016). The quality of government institutions to effectively manage external debt stocks to attain a better standard of living for the citizens has been recognised as very critical to the survival of highly indebted poor countries (IMF, 2016).

Many countries resort to external debt to bridge the resource gap to achieve economic growth and development. The effectiveness of government institutions in managing externally sourced funds becomes very important for achieving economic growth and development. The general expression of how external debt accumulation affects institutional quality was emphasised by Karim, Qamruzzaman, & Jahan (2023). The expression provides proof that external debt accumulation hinders the quality of government institutions.

The existing literature recognises that external debt accumulation influences institutional quality. Institutions are social, political, and economic systems that evolved through human efforts to embark on official regulations in promoting human existence (Daude and Stein, 2007; Qamruzzaman, 2022a; Zhuo and Qamruzzaman, 2022; Karim, Qamruzzaman, & Ishrat, 2023). The influence of external debt on institutional quality has often been a complex and controversial issue (Karim, Qamruzzaman, Jahan, 2023; Qamruzzaman, Karim, Jahan, 2022). According to Karim, Qamruzzaman, and Jahan (2023), some researchers argued that high levels of external debt could result in lower levels of institutional quality while others contended that external debt accumulation could improve institutional quality by

providing the resources necessary to make crucial investments. It was also stated that countries with large amounts of external debt would be more susceptible to external shocks like financial crises or natural disasters, which could undermine institutional quality (Karim, Qamruzzaman, & Jahan, 2023).

The purpose of this study is to investigate the impact of external debt accumulation on institutional quality in selected ECOWAS and SADC countries. The selection of these countries was informed by the levels of their indebtedness. The question that comes to mind is whether external debt accumulation has a significant impact on institutional quality in the selected ECOWAS and SADC countries. Karim, Qamruzzaman, and Jahan (2023) revealed that external debt accumulation adversely impacted institutional quality in Bangladesh. The literature revealed that this area of study is yet to be widely investigated, and no study has focused on the ECOWAS and SADC countries. This study becomes important as it contributes to the existing literature and provides evidence for policy formulation and implementation in the selected ECOWAS and SADC countries.

The remaining part of the paper is organised as follows: Section 2 presents some stylised facts on external debt and institutional quality in selected ECOWAS and SADC countries. Section 3 reviews the literature on external debt and institutional quality. Section 4 presents the methods of analysis and data sources. Section 5 shows empirical results of data analysis and discussion, Section 6 presents the conclusion and recommendations, and Section 7 makes a few suggestions for future studies.

2. Some Stylised Facts

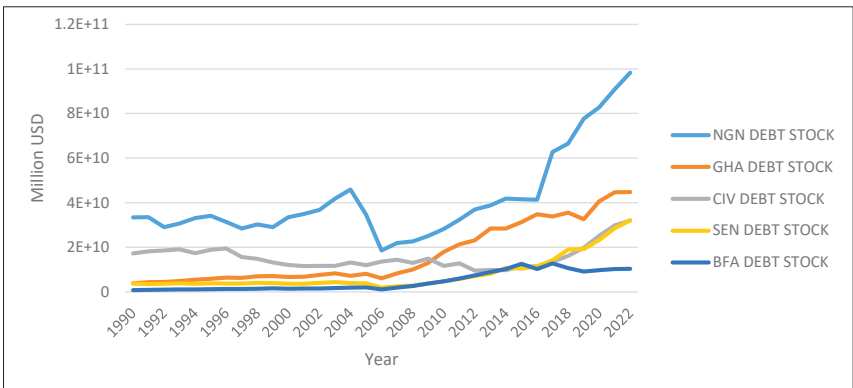
This section presents some stylised facts about external debt accumulation and institutional quality in the selected ECOWAS and SADC countries from 1996 to 2023. This presentation is aimed at showing the trends of external debt accumulation and institutional quality in the regions.

2.1 Stylised facts of external debt

This subsection presents and analyses some stylised facts of external debt at the individual selected ECOWAS and SADC countries, as well as from the regional and global perspectives.

Figure 1 shows the trends of external debt stocks of each of the selected ECOWAS countries for the study. Nigeria had external debt stock of about 1.2 trillion USD (1,369, 303,379,701.00 USD), Ghana had external debt stock of about 556 million USD (555,884,785,044.30 USD), Cote d'Ivoire had a total debt stock of about 514 million USD (513,816,793,353.00 USD), Senegal had a total external debt stock of about 268 million USD (267,784,536,741.00 USD) and Burkina Faso had a total external debt stock of about 155 million USD (155,064,105,807.70).

Figure 1: Trends of external debt stock of the selected ECOWAS countries



Source: World Development Indicators (WDI), 2024

Figure 1 shows that Nigeria had the highest external debt stock among the selected ECOWAS countries, with a total external debt stock of about 1.2 trillion USD. Ghana followed with a total external debt stock of about 556 million USD. Côte d'Ivoire follows next with a total debt stock of about 514 million USD. Following Cote d'Ivoire is Senegal with a total external debt stock of about 268 million USD. The least indebted among the five selected countries in the ECOWAS sub-region was Burkina Faso, with a total external debt stock of about 155 million USD. The analysis showed that Nigeria's total external debt stock was about twice the total of the other four selected ECOWAS countries.

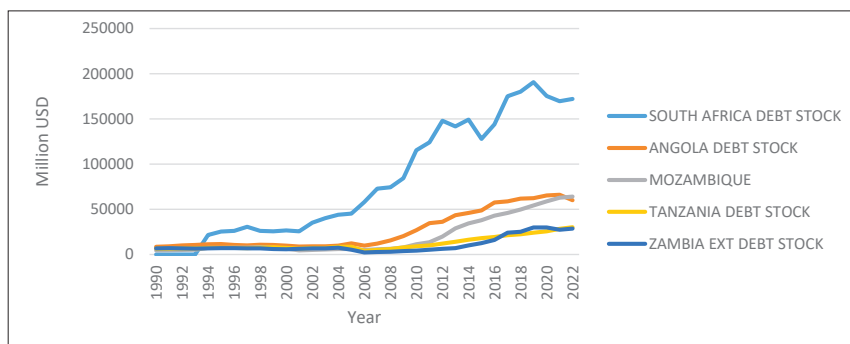
It is clear from Figure 1 that the trends of external debt stock of all the selected ECOWAS countries started rising in 2006. The rise in the ECOWAS countries' external debt stock can be attributed to the financing

of developmental projects toward a high economic growth rate. The rise of the ECOWAS countries' total external debt stock was higher from 2020 to 2022; this could be attributed to the request for external debt for government spending.

Figure 2 shows the trends of the total external debt stock of selected SADC (Southern African Development Community) countries. South Africa had the highest external debt stock among the selected SADC countries, with a total external debt stock of about 2.7 trillion USD (2, 674,601,394,393.70 USD). Angola followed with a total external debt stock of about 887 million USD (887, 033, 580, 274. 70). Mozambique followed next with a total debt stock of about 648 million USD (647, 636, 244, 883. 10). Followed Mozambique is Tanzania with a total external debt stock of about 390 million USD (390, 413, 878, 860. 90). The least indebted among the five selected countries in the SADC sub-region was Zambia with a total external debt stock of about 344 million USD (343, 998, 811, 449.90). The analysis showed that South Africa's total external debt stock was about twice the total of the other four selected ECOWAS countries.

It is also clear from Figure 2 that the trends of external debt stock of all the selected SADC countries started rising continuously from 2010. The rise in the SADC countries' external debt stock could be attributed to the financing of developmental projects toward a high economic growth rate.

Figure 2: Trends of external debt stock of the selected SADC countries

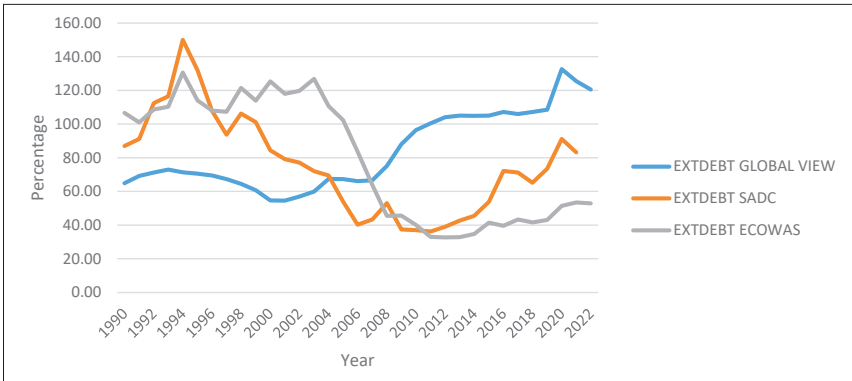


Source: World Development Indicators (WDI), 2024

Figure 3 shows the trends of external debts as a percentage of gross domestic product (GDP) at the global and regional (ECOWAS and SADC) levels. The trends experienced positive fluctuations throughout the period of the study. In 1990, the global external debt to GDP was about 65%, ECOWAS' external debt to GDP was about 107% while SADC's external debt to GDP was about 87%. The trends show that ECOWAS's external debt was higher than its GDP in 1990. The global and SADC external debt to GDP ratios estimated as 65% and 87% respectively showed that the debt stock, both at the regional and global levels, was on the high side. The trends showed that external debt accumulations were much higher in 1994 at the global and regional levels, when the global external debt to GDP was 71%, that of ECOWAS was 131%, and SADC was 150%.

The trends at the regional levels went down from 1995 to 2011 before picking up. The trend at the global level went down from 1994 to 2000. The trends at the global and regional levels (SADC) rose from 2020 due to the effects of COVID-19 on the world economy. ECOWAS experienced a slight upward movement from about 51% in 2020 to about 53% in 2022.

Figure 3: Trends of regional and global external debt stock as percentage of GDP

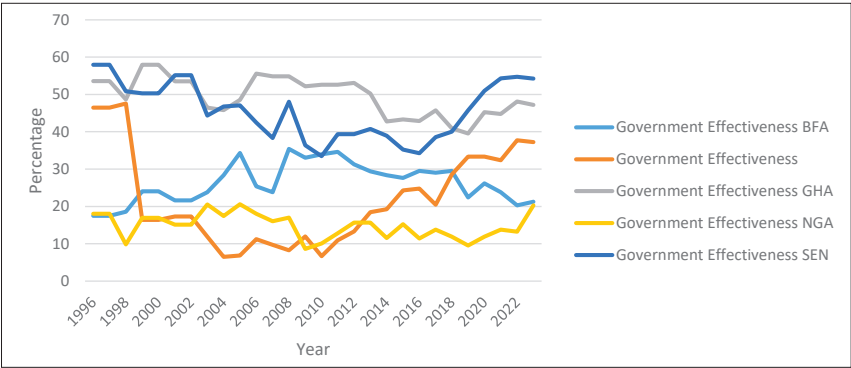


Source: World Development Indicators (WDI), 2024

2.2 *Stylised facts of institutional quality*

This subsection presents and analyses some stylised facts of institutional quality at the individual selected ECOWAS and SADC countries, focusing on government effectiveness.

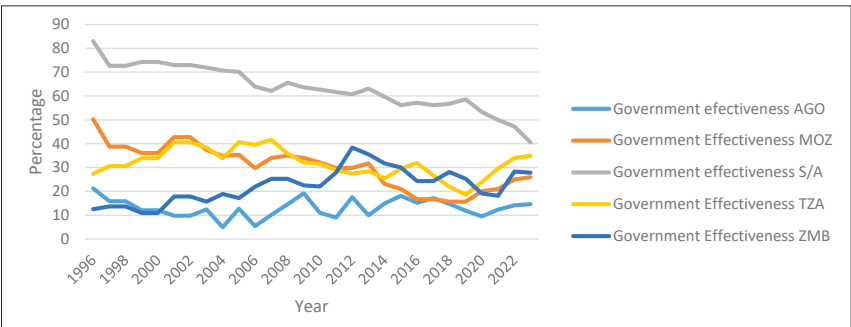
Figure 4: Trends of government effectiveness in the selected ECOWAS countries



Source: World Development Indicators (WDI), 2024

Figure 4 shows the trends of government effectiveness of each of the selected ECOWAS countries for the study. The average government effectiveness in the selected ECOWAS countries during the period of analysis differs. Nigeria posted the least average government effectiveness among the selected ECOWAS countries at about 15% (14.82272), Cote d'Ivoire posted the next lowest average value of about 22% (21.96106%), followed by Burkina Faso at about 26% (26.29085), next to Burkina Faso was Senegal at about 46% (45. 73998). Ghana had the highest average government effectiveness of about 49% (49.49566) during the period of the study. Ghana's highest percentage of government effectiveness reflects its regulatory quality of about 47% (WDI, 2024). It means that government effectiveness has implications for its institutional regulatory quality.

Figure 5: Trends of the selected SADC countries' government effectiveness



Source: World Development Indicators (WDI), 2024

Figure 5 shows the trends of government effectiveness (in percentage ranking) of the selected SADC countries for the study. It shows that all the SADC countries considered for the study had average government effectiveness of less than 50%, except South Africa, with an average government effectiveness of about 63% (63.36695). This shows that government effectiveness in the SADC sub-region is low and below average. Angola had an average government effectiveness of about 13% (13.07664%), Mozambique had an average government effectiveness of about 30% (30.34628%), South Africa had an average of government effectiveness of about 63% (63.36695), Tanzania had an average of government effectiveness at about 32% (31.8631%), and Zambia had an average government effectiveness of about 22% (22.31796%). South Africa, the largest economy in SADC with the highest external debt stock during the period of the study, posted the highest average government effectiveness of about 63%. The very high government effectiveness of South Africa's institutions reflects the efficiency of the use of its external debt in the process of growth and development.

3. Review of Empirical Literature

The impact of high external debt accumulation on institutional quality has attracted attention in recent times. Karim, Qamruzzaman, and Jahan (2023) investigated the nexus between renewable energy consumption, government debt, globalisation, FDI, and institutional quality, focusing on Bangladesh from 1995 to 2021 and by implementing both symmetric and asymmetric frameworks. The symmetric assessment revealed that a positive and statistically significant linkage existed between globalisation, FDI, financial development, and institutional quality. Additionally, an adverse connection was exposed between governmental debt propensity and institutional quality. The asymmetric investigation established both long-run and short-run asymmetric linkage between explanatory variables and institutional quality. Based on the study findings, several policy suggestions were derived to improve the present institutional quality in Bangladesh.

Abotsi (2023) explored the influence of cross-country indicators of governance from African countries on public debt accumulation. The study deployed a quantitative research design technique. Secondary annual data were used in this study, covering the period from 1996 to 2022 for 48

countries in Africa. The study deployed the system's generalised method of moments for the estimation. The study found that countries that have high regulatory quality standards and control corruption and ensure effective governance accumulate less government debt, while countries that abide by the rule of law instead accumulate more government debt. The study also found that economic growth and government revenue reduced government gross debt while government expenditure and investments increased public debt. The study recommended that achievable policy targets should be set to boost institutional quality and FDI.

Mehmood, Mohd-Rashid, Aman-Ullah, and Zi Ong (2021) assessed public debt and institutional quality using the country-level institutional quality data for Pakistan throughout 1996 to 2018. The ordinary least squares, quantile regression and robust regression were employed to assess the factors influencing the public debt. The results indicated that the factors of voice and accountability, regulatory quality, and control of corruption had a positive and significant relationship with public debt, while political stability, government effectiveness, and the rule of law had a negative and significant effect on public debt. Based on the findings, it was concluded that poor country-level institutional quality posed a substantial market risk as it signalled the existence of an unfavourable economic condition that raised public debt. It was also revealed that an improved performance of country-level institutional quality could lead to the improvement of financial market transparency, hence reducing public debt.

Nguyen and Luong (2021) examined fiscal policy, institutional quality and public debt in 27 transition countries over the period 2000–2018, applying Ordinary Least Squares (OLS), random effects, and two-step GMM methods. The main findings showed that institutional quality had impact on public debt. The results of the study convinced policymakers of the crucial implications of both fiscal policy and institutional quality in managing public debt.

Tarek and Ahmed (2017) examined how governance institutions affect public debt accumulation in MENA countries during the 1996–2015 period. The results showed that only three governance indicators support the hypothesis that poor governance leads to higher accumulation of MENA public debt. Moreover, the estimates suggested a significant indirect impact of bad governance operating via decreased GDP growth. These findings have important implications for policymakers of these countries, which are

currently facing major fiscal and external imbalances due to the high cost of war and terrorist attacks, low oil prices, and a decline in trade.

3.1 Gap in the literature

We observed from the literature that empirical studies that focus on the effects of external debt accumulation on institutional quality are in short supply. Based on the literature search, there is no previous study that empirically investigates external debt accumulation and institutional quality, focusing on the ECOWAS and SADC countries. The current study employed the Panel Pooled Group Mean (PPGM) and Panel Dynamic Ordinary Least Squares (PDOLS) estimation techniques for robustness and validation of the results. The gap identified from the review is filled by this study, and policy evidence is provided to reduce the effects of external debt accumulation on institutional quality.

4. Model and Estimation Technique

4.1 Model specification

The model specified examines the effect of external debt accumulation on institutional quality in the selected ECOWAS and SADC countries and was based on the specification of Karim, Qamruzzaman, and Jahan (2023) with slight modifications. The model is specified in functional form as follows:

$$instq = f(extdt, trd, fdi, exch) \quad (1)$$

Where *instq* denotes institutional quality and is represented by government effectiveness in percentile ranking between 0% and 100%. The higher the percentage, the higher the institutional quality of a country. Government effectiveness represents institutional quality in this study because it is assumed that regulatory quality will be high when government institutions are effective. *Exttdt* represents external debt measured as a percentage of gross domestic product. The closer it is to 100%, the higher the debt accumulation of a country. *Trd* represents trade openness, measured as the percentage of trade to gross domestic product. *FDI* represents foreign direct investment inflow, measured as a percentage of gross domestic product. *Exch*

denotes the exchange rates of a country in terms of another currency.

The model is specified econometrically as:

$$instq_{it} = \beta_0 + \beta_1 extdt_{it} + \beta_2 trd_{it} + \beta_3 fdi_{it} + \beta_4 exch_{it} + U_{it} \quad (2)$$

The variables are as previously defined. β_1 to β_4 are the parameters of the variables whose values are expected to be positive or negative, as the case may be, i represents the individual country at time t . U is the error term capturing other variables that affect institutional quality that are not incorporated into the model.

4.2 Model estimation technique

The specified model 2 was estimated using Pooled Mean Group (PMG), Panel Dynamic Ordinary Least Squares (PDOLS) and Panel Fully Modified Ordinary Least Squares (PFMOLS), as was used in other cross-country studies (Manni, Mansur & Afzal, 2025; Ashakah & Okungbowa, 2020; Ashakah & Ogbabor, 2020). The Panel Dynamic Ordinary Least Squares (PDOLS) was also employed to address the problems of endogeneity, heterogeneity and serial correlation, which are common with panel data analysis.

The choice of the panel pooled mean group was informed by the dimension ($N > T$) of the panel data set for the study (Woodridge, 2000). 'N' is the number of countries (10) while 'T' is the number of years (33). The estimation techniques are appropriate for achieving the study's objective. The use of the PDOLS and FMOLS was informed by the Pedroni co-integration test result, which showed that a long-run relationship existed among the variables.

Before estimating the specified model, preliminary panel data analyses were conducted to determine the stationarity status and long-run co-integration of the series. For the stationarity check, a summary of the major panel unit root tests methods of Levin, Lin & Chu (LLC), Im, Pesaran & Shin (IPS), ADF Fisher Chi-Square, and PP Fisher Chi-Square was applied, while the Kao and Pedroni Residual co-integration tests were adopted to ascertain the existence of co-integration.

4.3 *The data and sources*

The data used in this study are annual panel data, a combination of time series and cross-sectional data. The sample data covers the period 1990-2023 for ten (10) ECOWAS and DASC countries. The selected ECOWAS countries include Burkina Faso, Côte d’Ivoire, Ghana, Nigeria, and Senegal. The selected SADC countries include Angola, Mozambique, Tanzania, South Africa, and Zambia. The data on institutional quality, external debt, trade openness, and foreign direct investment were obtained from the World Development Indicators (WDI, 2024), and the exchange rates data were obtained from the various countries’ data custodians.

5. **Results and Discussion**

In this section, we present and discuss the summary statistics, unit root tests, and co-integration test results. The model estimation results are thereafter presented and discussed.

5.1 *Descriptive statistics*

The descriptive statistics were explored in this study, as in Kilishi, Abdulhakeem and Ojonugwa (2025) and Okere et al. (2025). The mean value of institutional quality was about 24%, indicating that, on average, the selected ECOWAS and SADC countries were ranked very low during the period of the study. The mean value of external debt was about 75%. External debt was expressed as a percentage of GDP. The estimated mean value of external debt accumulation was at 75%, indicating that the level of external debt accumulation in the selected ECOWAS and SADC countries was very high.

Table 1: Results of descriptive statistics

	INSTQ	EXDBT	TOPN	FDI	EXCH
Mean	23.65966	75.28535	54.54381	3.032289	305.5279
Median	20.95238	52.39641	53.83307	1.534315	89.53243
Maximum	83.06011	581.1186	135.2796	40.16725	2297.764
Minimum	0.000000	0.000000	0.000000	-10.03838	0.000000
Std. Dev.	19.88083	80.22117	24.68299	5.936665	433.1949

	INSTQ	EXDBT	TOPN	FDI	EXCH
Skewness	0.517766	2.473873	0.292989	3.342949	2.333795
Kurtosis	2.420192	11.34358	3.834481	17.32475	9.877693
Jarque-Bera	19.48432	1301.655	14.38290	3456.946	955.7321
Probability	0.000059	0.000000	0.000753	0.000000	0.000000
Sum	7855.006	24994.74	18108.55	1006.720	101435.3
Sum Sq. Dev.	130826.9	2130129.	201661.8	11665.76	62114744
Observations	332	332	332	332	332

Source: Authors' Compilation (2025)

Table 1 showed that the mean values of trade openness, foreign direct investment, and exchange rate were estimated at 56%, 3%, and 306 USD, respectively. These indicated that, on average, trade was 56% of GDP, foreign direct investment inflow was just about 3% of GDP, and the exchange rate was, on average, 306 USD.

5.2 Correlation chart

The correlation chart in Table 2 shows that there is a negative association between institutional quality and external debt accumulation, the main variables of interest in the study. The relationships between institutional quality and other variables in the model are positive. The relationships are expected to be validated with the outcome of the regression results.

Table 2: Correlation chart

	INSTQ	EXDBT	TOPN	FDI	EXCH
INSTQ	1				
EXDBT	-0.22	1			
TOPN	0.24	0.14	1		
FDI	0.05	0.41	0.28	1	
EXCH	0.03	-0.19	-0.21	-0.15	1

Source: Authors' Compilation (2025)

5.3 Results of panel unit root tests

The Augmented Dickey-Fuller, Levin, Lin & Chu, Im, Pesaran and Shin, PP

Fisher Chi-square, and ADF Fisher Chi-square unit root testing processes were employed. The results of the panel unit root tests are presented in Table 3.

Table 3: Results of panel unit tests

Variable	LLC Test/ (Prob.)	IPS Test/ (Prob.)	ADF/ FiTest (Prob.)	PP Fisher/ (Prob.)	LLC Test/ (Prob.)	IPS Test/ (Prob.)	ADF/ FiTest/ (Prob.)	PP Fisher/ (Prob.)	
Variable	Level Test Results				First Difference Test Results				Remark
EXDT	0.41681/0.3384	0.0041/0.5016	15.0909/0.7712	16.5418/0.6825	7.63948/0.0000	3.67671/0.0001	50.4705/0.0002	127.52/0.0000	I(1)
INSTQ	1.11940/0.8685	1.38322/0.9167	11.0663/0.9445	154.88/0.0000	16.2371/0.0000	12.5806/0.0000	155.913/0.0000	2633.91/0.0000	I(1)
EXCH	3.56870/0.9998	2.91204/0.9982	19.8289/0.4687	16.3025/0.6977	3.92266/0.0000	6.12222/0.0000	93.4405/0.0000	137.179/0.0000	I(1)
FDI	3.25713/0.0006	2.29327/0.0109	34.0292/0.0259	59.0663/0.0000	N/A	N/A	N/A	N/A	I(0)
TOPN	1.6895/0.0456	1.87239/0.0306	32.8092/0.0354	33.0337/0.0335	N/A	N/A	N/A	N/A	I(0)

Source: Authors' compilation (2025)

The four tests showed that the variables considered for the study were integrated in different orders. Foreign direct investment (FDI) and trade openness were integrated in order zero, while external debt (EXTDEBT), government effectiveness (INSTQ), and exchange rate (EXCH) were

integrated into order one. It can be inferred that the variables are of mixed order of integration.

5.4 Results of panel co-integration tests

The study conducted Pedroni Residual and Kao Co-integration tests to determine the existence of a long-run relationship among the variables. The results of the co-integration tests are presented in Tables 4a and 4b. Both tests prove the existence of a long-running relationship among the variables. The Pedroni Residual co-integration test showed that six out of eleven statistics were significant. The hypothesis that there was no co-integration was rejected. The ADF t-statistic of the Kao co-integration test validated the test result of the Pedroni Residual co-integration test (Tefere & Teera, 2018; Ashakah & Osakwe, 2019; Edo & Ashakah, 2022).

Table 4a: Pedroni residual co-integration test

Series: INSTQ EXDBT TOPN FDI EXCH				
Alternative hypothesis: common AR coefficients. (within-dimension)				
	Statistic	Probability	Weighted Statistic	Probability
Panel v-Statistic	-1.366129	0.9141	-1.612428	0.9466
Panel rho-Statistic	-7.431097	0.0000	-6.308069	0.0000
Panel PP-Statistic	-20.66902	0.0000	-15.30328	0.0000
Panel ADF-Statistic	-0.152017	0.4396	1.057819	0.8549
Alternative hypothesis: individual AR coefficients. (between-dimension)				
	Statistic	Probability		
Group rho-Statistic	-6.056063	0.0000		
Group PP-Statistic	-19.58030	0.0000		
Group ADF-Statistic	1.448988	0.9263		

Source: Authors' Compilation (2025)

Table 4b: Kao cointegration test

	t-Statistic	Probability
ADF	-4.388926	0.0000
Residual variance	17.42128	
HAC variance	6.177314	

Sources: Author's Compilation (2025)

5.5 Presentation and discussion of results

The findings from the group analysis using the PDOLS and the FMOLS techniques are presented in Table 5. The results show that an increase in external debt accumulation decreases institutional quality in the selected ECOWAS and SADC countries. This conforms to a priori expectation. The effect is highly significant at the 5% level. A unit rise in the external debt accumulation is associated with about 0.052721 units and -0.060742 units fall in the institutional quality. This is an indication that external debt accumulation is one of the major causes of the falling standard of institutional quality in the ECOWAS and SADC countries.

Table 5: Group model estimation results

Dependent Variables: INSTQ
Sample: 1990-2023

Variables	Panel Dynamic OLS		Panel Fully Modified OLS	
	Coefficient	t-statistic / Prob.	Coefficient	t-statistic / Prob.
EXTD	-0.052721	-1.992152 / 0.0480**	-0.060742	-3.076524 / 0.0023***
TOPN	0.110789	1.385507 / 0.1677	0.146237	2.406614 / 0.0167**
FDI	0.725346	1.889297 / 0.0606	0.506378	2.184462 / 0.0297**
EXCH	0.010731	1.378770 / 0.1698	0.010506	2.093372 / 0.0371**
R ²		0.674060		0.387523
Adjusted R ²		0.419059		0.361755

Source: Authors' Compilation (2025)

Two and three asterisks (** and ***) denote 5% and 1% significance levels, respectively

The findings from the sub-group analyses, as presented in Table 6, equally revealed that external debt accumulation in ECOWAS and SADC, respectively, had a negative and significant impact on institutional quality. A unit rise in external debt was associated with a 0.184173 unit fall in institutional quality in the selected ECOWAS countries. Likewise, a unit rise in external debt was associated with a 0.081813 unit fall in institutional quality in the selected SADC countries.

The findings imply that external debt accumulation reduces the efficiency of government institutions, ceteris paribus, in the selected ECOWAS and SADC countries. This could result in low regulatory quality, high corruption, inefficient rule of law, and political instability. Inefficient

institutions result in poor economic policies, which will adversely affect the economic systems. This evidence aligns with the findings from Karim, Qamruzzaman & Jahan (2023), who also found that external debt accumulation was associated with decreased institutional quality in Bangladesh.

On the group analysis, the results from the PFMOLS revealed that globalisation, FDI, and exchange rates had a positive and significant impact on institutional quality. The results from the PDOLS revealed a positive but insignificant impact. The PFMOLS results showed that a unit rise in globalisation, FDI and exchange rates would be associated with 0.146237, 0.506378, and 0.010506 units rise in institutional quality, respectively. This implies that trade openness, FDI and exchange rates will help to boost institutional quality in the selected countries. These corroborate the evidence from the studies by Karim, Qamruzzaman, & Jahan (2023), which also found that globalisation and FDI increase institutional quality in Bangladesh in the long run.

With regard to the subgroup analyses (results presented in Table 6), the empirical results on ECOWAS revealed that globalisation, FDI, and exchange rate had a positive and significant impact on institutional quality. The results showed that a unit rise in globalisation, FDI, and exchange rates would result in a 0.452732, 3.839075, and 0.017950 rise in institutional quality, respectively. These results are also in agreement with the findings of Karim, Qamruzzaman, & Jahan (2023).

The coefficient of determination (Adjusted R-squares) obtained from the PDOLS and the PFMOLS stand at about 42% and 36% respectively, indicating that about 42% and 36% of the systematic variations in the dependent variable (institutional quality) were captured by all the explanatory variables in the model. The low R-squared value is, however, not a major issue in the result, as Iyoha (2004) noted; the coefficients of determination of panel data studies are sometimes low due to heterogeneity effects.

Table 6: Sub-group model estimation results

Dependent Variables: INSTQ

Sample: 1990-2023

PMG (2,1,1,1,1)

Variables	ECOWAS		SADC	
	Coefficient	t-statistic / Prob.	Coefficient	t-statistic / Prob.
EXTD	-0.184173	-3.168097 / 0.0018***	-0.081813	-3.397494 / 0.0009***
TOPN	0.452732	5.826661 / 0.0000***	0.097667	0.777789 / 0.4379
FDI	3.839075	6.338874 / 0.0000***	0.155008	0.452651 / 0.6514
EXCH	0.017950	4.937967 / 0.0000***	0.000877	0.203359 / 0.8391

Source: Authors' compilation (2025)

Two and three asterisks (** and ***) denote 5% and 1% significance levels, respectively

6. Conclusion and Recommendations

The paper examined the effect of external debt accumulation on institutional quality in the selected ECOWAS and SADC countries from 1990 to 2023. The Panel Dynamic Ordinary Least Squares (PDOLS) and the Panel Fully Modified Ordinary Least Squares (PFMOLS) techniques were employed in the data analysis. The aim of using the PDOLS was to address the problems of endogeneity, heterogeneity, and serial correlation that are common with panel data analysis. The findings were that external debt accumulation reduced institutional quality in the selected ECOWAS and SADC countries, implying that external debt accumulation hinders government effectiveness, promotes corruption, and dwindles regulatory quality. Trade openness, foreign direct investment, and exchange rate had positive implications on institutional quality in the selected ECOWAS and SADC countries.

Given the negative effects of external debt accumulation on institutional quality in the selected ECOWAS and SADC countries, the study recommends the following:

- i. The governments should reduce external debt accumulation by borrowing less from external sources and improving domestic revenue generation to finance government expenditures.
- ii. The government should utilise external debt for viable, productive expenditures to generate funds to repay the amount borrowed and accrued interest.
- iii. The government should make effective external debt management policies with a view to reducing external debt accumulation.

7. Suggestions for Future Studies

- i. The current study explored the impact of external debt accumulation on institutional quality in the selected ECOWAS and SADC countries. This study recommends that future studies should explore the causal relationship between external debt accumulation and institutional quality to determine whether external debt accumulation causes institutional deterioration or weak institutions attract unsustainable debt.
- ii. Future studies should expand the geographical scope beyond ECOWAS and SADC to include other African countries.

CRedit author statement

Felix Onoriode Ashakah: Conceptualisation and part writing of the original draft. **Titus Olufemi Awogbemi:** Design of methodology and part writing of the original draft. **Efe Eunice Aigbomian:** Data collection and analysis. **Timipa Stanley Ikidi:** Review of relevant literature and part writing of the original draft. **Festus Opara:** Part writing of the original draft and editing.

Acknowledgement

We would like to thank our colleagues for their insightful discussions and our families for their unwavering encouragement.

References

- Abotsi, K. (2023). The influence of governance indicators on public debt accumulation in Africa. *Journal of Economics and Administrative Sciences*, 3(2), 23-32. Available at: 10.1108/JEAS-08-2023-0227
- Anifowose, O.L. (2016), Impact of external debt and debt servicing on some ECOWAS countries' economic growth. *Elixir Financial Management*, 91, 38247-38251. Available online at www.elixirpublishers.com
- Ashakah, O. F. & Ogbebor, T.O. (2020). Foreign direct investment, financial development and economic growth in key emerging markets. *Journal of Economics and Allied Research*, 5(1), 57-71. Available at <https://jearecons.com/index.php/jearecons/article/view/73>

- Ashakah, O. F. & Osakwe, J. (2019). Foreign direct investment and economic growth: Evidence from the ECOWAS sub-region. *Lafia Journal of Economics and Management Sciences*, 4(2), 38-53. Available at <https://lajems.com/index.php/lajems/article/view/125>
- Ashakah, O. F. & Okungbowa, O.G. (2020). Effect of international trade on economic growth in ECOWAS sub-region. *Confluence Journal of Economics and Allied Sciences*, 3(2), 55-75.
- Ashakah, O. F., Irogbo, P. U., Ezech, M. C., Owhe-Ureghe, A. O., Igben, H. and Opara, F. N. (2025). External debt, debt service and economic growth: Empirical evidence from the ECOWAS sub-region. *International Journal of Economics and Financial Issues*, 15(1), 422-430. DOI: <https://doi.org/10.32479/ijefi.17739>
- Daude, C. & Stein, E. (2007). The quality of institutions and foreign direct investment. *Economics and Politics*, 19(3), 317-344. DOI: 10.1111/j.1468-0343.2007.00318.x
- Edo, S. & Ashakah, O. F. (2022). Fiscal imbalance, financial development and external debt accumulation in selected African countries. *International Journal of Monetary Economics and Finance*, 15(6), 542-566. DOI: 10.1504/IJMEF.2022.10048786
- Elkhalfi, O., Chaabita, R., Benboubker, M., Ghoujdam, M., Zahraoui, K., El Alaoui, H., Laalam, S., Belhaj, I., Hammouch, H. (2024). The impact of external debt on economic growth: The case of emerging countries. *Research in Globalisation*, 9, 1-10. DOI: 10.1016/j.resglo.2024.100248
- IMF (2016). Heavily Indebted Poor Countries (HIPC) Initiative and Multilateral Debt Relief Initiative (MDRI) — Statistical update. *International Monetary Fund Update*, 1-19.
- Ismael, N.B., Mahmod, S. H. O., & Khorsheed, H. S. (2024). External debt and economic growth: Empirical evidence from developing countries. *International Journal of Engineering, Business and Management*, 8(3) 1-9. DOI: <https://dx.doi.org/10.22161/ijebm.8.3.1>
- Iyoha, M. A. (2004). African economic integration: Are there lessons for the West African Monetary Zone? *West African Financial and Economic Review*, 1(2), 74-105.
- Karim, S., Qamruzzaman, M. & Jahan, I. (2023). Nexus between government debt, globalisation, FDI, renewable energy, and institutional quality in Bangladesh. *International Journal of Energy Economics and Policy*, 13(3), 443 - 456. Available at: <http://hdl.handle.net/11159/631203>
- Kilishi, A., Abdulhakeem, A. & Ojonugwa, E. G. (2025). Probing further the

- impact of political institutions on the quality of economic institutions in Sub-Saharan Africa. *Institutions and Economies*, 17(3), 53-82.
- Manni, U. H., Mansur, K. H. & Afzal, M. N. I. (2025). Factors influencing the consumption of renewable energy in selected ASEAN countries: A dynamic panel data analysis. *Institutions and Economies*, 17(1), 57-83.
- Mehmood, W., Mohd-Rashid, R., Aman-Ullah, A. & Zi Ong, C. (2021). Country-level institutional quality and public debt: Empirical evidence from Pakistan. *Journal of Asian Finance, Economics and Business*, 8(4), 0021–0032. Available at: doi:10.13106/jafeb.. 2021.vol8.no4.0021
- Nguyen, T. A.N. & Loung, T.T. H. (2021). Fiscal policy, institutional quality, and public debt: Evidence from transition countries. *Sustainability*, 13, 1-15. Available at: <https://doi.org/10.3390/su131910706>.
- Okere, W., Oluwafemi S. E., Okeke, C. A., Njogo, B., Adeyemi, L. A. & Soyinka, O. O. (2025). Greening the planet: Navigating carbon accounting for sustaining food security in Sub-Saharan Africa. *Institutions and Economies*, 17(3), 1-26.
- Qamruzzaman, M. (2022a). Nexus between economic policy uncertainty and institutional quality: Evidence from India and Pakistan. *Macroeconomics and Finance in Emerging Market Economies*, 1-20.
- Qamruzzaman, M., Karim, S., & Jahan, I. (2022). Nexus between economic policy uncertainty, foreign direct investment, government debt and renewable energy consumption in 13 top oil-importing nations: Evidence from the symmetric and asymmetric investigation. *Renewable Energy*, 195, 121-136. DOI: 10.1016/j.renene.2022.05.168
- Tarek, B. A. & Ahmed, Z. (2017). Governance and public debt accumulation: Quantitative analysis in MENA countries. *Economic Analysis and Policy*, 56, 1-13. DOI: 10.1016/j.eap.2017.06.004
- Terefe, K. D. & Teera, J. (2018). Determinants of tax revenue in East African countries: An application of multivariate panel data cointegration analysis. *Journal of Economics and International Finance*, 10(11), 134-155. DOI: 10.5897/JEIF2018.0924
- World Bank (2024). World Development Indicators (WDI). Available at: <https://data.worldbank> [Last accessed on 2024 Oct 22].
- Zhuo, J., & Qamruzzaman, M. (2022). Do financial development, FDI, and globalisation intensify environmental degradation through the channel of energy consumption: Evidence from belt and road countries. *Environmental Science and Pollution Research*, 29(2), 2753-2772. DOI: 10.1007/s11356-021-15796-0.