Journal of International Development Cooperation, 2026, 21 (1), 89-122
https://doi.org/10.34225/jidc.2026.21.1.89
pISSN: 2093-212X, eISSN: 2671-9797

Original Article

Does Institutional Quality Enhance the Influence of Official Development Assistance (ODA) on Domestic Investment? Evidence from West Africa

Nana Yaw Kwakye*

Abstract

This study examines the extent to which institutional quality enhances the influence of Official Development Assistance (ODA) on domestic investment in West Africa, a region that continues to rely heavily on external aid to finance development. Using a balanced panel dataset covering 13 West African countries from 1999 to 2023, this study employs fixed-effects regression models to explore the interaction between ODA and governance indicators, including political stability, government effectiveness, the rule of law, control of corruption, regulatory quality, and voice and accountability. The results indicate that ODA

* **Corresponding author:** Ph.D. Candidate, Graduate School of International Studies, Korea University / nanayaw@korea.ac.kr

cexerts a positive and statistically significant influence on domestic investment, onfirming its potential role in stimulating capital acquisition. Moreover, institutional quality indicators, such as political stability and the rule of law, emerge as exerting significant influence on investment performance, underscoring the importance of governance in shaping the developmental effectiveness of aid. The findings show that ODA positively influences domestic investment, even under limited institutional conditions; however, its impact is substantially enhanced when institutional quality is high. Strong institutions improve aid management and allocation, enabling recipient countries to more effectively translate aid inflows into productive and sustainable investment outcomes. Thus, improving institutional quality across West Africa is essential for maximizing the long-term benefits of ODA and fostering sustainable domestic investment-led growth.

Key Words: Official Development Assistance (ODA), Domestic Investment, Institutional Quality, West Africa and Fixed Effect Method (Dynamic 2SLS)

Ⅰ. INTRODUCTION

Official Development Assistance (hereafter, ODA) has long served as a crucial instrument for promoting economic development in low-income regions, particularly in West Africa a region that continues to depend heavily on external aid to address persistent challenges like poverty, inadequate infrastructure, and political instability. ODA typically targets essential sectors, including agriculture, health, and education, with the aim of stimulating domestic investment defined as the accumulation of capital in physical assets, human capital, and productive enterprises (OECD, 2020).

Domestic investment remains vital for achieving long-term growth, driving employment creation, technological innovation, and overall economic resilience. Yet in West Africa, where gross fixed capital formation frequently remains below 20% of Gross Domestic Product (GDP), the conversion of ODA into sustainable domestic investment outcomes has been inconsistent, shaped significantly by local institutional and governance conditions (World Bank, 2020). The effectiveness of aid therefore depends on contextual factors, with institutional quality encompassing political stability, government effectiveness, control of corruption (COC), and the rule of law emerging as a central determinant of how aid translates into productive investment.

ODA can influence domestic investment through multiple channels, but its effectiveness is not automatic (Burnside & Dollar, 2000; Easterly, 2006). On the one hand, ODA has the potential to crowd in domestic and private investment by financing public goods such as infrastructure, education, and institutional reforms that reduce transaction costs and investment risks (Alesina & Dollar, 2000; North, 1990). In contexts characterized by weak governance and limited institutional capacity, aid may generate dependency, weaken fiscal discipline, or be diverted toward unproductive uses, thereby crowding out domestic investment (Burnside & Dollar, 2000; Collier, 2007; Easterly, 2006). Consequently, a growing body of development literature emphasizes that the impact of ODA is conditional upon the quality of political stability, government effectiveness, rule of law and accountability mechanisms (Collier, 2007; Knack, 2001). This conditional perspective provides the central motivation for the present study, which examines

whether institutional quality enhances the influence of ODA on domestic investment in West Africa.

Similarly, studies indicate that "aid for trade" initiatives yield more substantial productivity gains in countries with effective institutions, fostering export-oriented investment and industrial development (UNCTAD, 2022). Nonetheless, much of the existing research treats Sub-Saharan Africa as a homogenous entity, providing limited insight into West Africa's specific dynamics, where factors such as the Economic Community of West African States (ECOWAS) integration, Sahelian security challenges and varying governance capacities significantly shape aid outcomes.

Donor approaches in West Africa further reveal the diverse modalities of ODA and their implications for domestic investment. China, a leading non-traditional donor, channels large-scale concessional loans into infrastructure development. In Nigeria, for example, Chinese financing enabled the construction of the USD 1.5 billion Abuja Rail Mass Transit system, completed in 2018, which stimulated domestic investment in transport and logistics (Brautigam, 2020). During the 2014–2016 Ebola crisis, China provided approximately USD 120 million in emergency assistance to Sierra Leone and Liberia, contributing to health infrastructure strengthening (Cui, 2018).

In 2019, Korea International Cooperation Agency (KOICA), in collaboration with the World Health Organization (WHO), launched the *"Making Health Service Resilient with Quality and Preparedness for Emergency Response"* project in Liberia to support post-Ebola health system recovery and strengthen institutional resilience. The five-year initiative, funded at approximately USD 20–30 million, aimed to enhance emergency preparedness, service quality, and public health infrastructure. A situational assessment was completed in 2019, followed by a midterm evaluation in 2021 (World Health Organization, 2019, 2021).

European donors, led by the European Union, prioritize conditional and humanitarian aid, the EU in 2024, committed Euro35 million to Burkina Faso, Mali, and Niger for food security and sanitation projects, designed to stabilize rural economies and promote agricultural investment (European Commission, 2024). Moreover, EU support for ECOWAS trade policy reforms aims to foster better institutional frameworks and investment climates across the region.

Despite these varied initiatives, significant gaps remain in understanding how institutional quality specifically moderates the relationship between ODA and domestic investment in West Africa. While global and continental studies highlight the importance of governance in enhancing aid effectiveness, empirical evidence tailored to the West African context remains limited. Most existing analyses fail to account for donor heterogeneity, regional integration effects, and country-specific institutional dynamics.

Recent developments in West Africa further underscore the relevance of examining the aid–institution–investment nexus. Over the past decade, the region has experienced a marked increase in fragile and conflict-affected states, particularly in the Sahelian belt, accompanied by rising security threats, political instability and humanitarian pressures. These dynamics have altered the development cooperation environment, shifting ODA away from long-term investment financing toward emergency assistance, security-related support, and governance stabilization programs. At the same time, traditional project-based aid has increasingly been complemented by programmatic, budget-support, and institution-focused modalities. These changes heighten the importance of institutional quality, as fragile governance environments face greater challenges in translating aid inflows into productive domestic investment.

Also, the focus on West African countries is therefore analytically motivated rather than merely geographic. West Africa presents a distinctive combination of persistent aid dependence, weak domestic investment performance, and pronounced heterogeneity in institutional quality, political stability and governance capacity. While some countries in the region, such as Ghana, Senegal and Cabo Verde, have made notable progress in strengthening institutional frameworks and macroeconomic management, others continue to face chronic political instability, fragile state institutions, and post-conflict governance challenges. These contrasts make West Africa an appropriate empirical setting for examining whether and how institutional quality conditions the effectiveness of ODA in stimulating domestic investment. By focusing on this region, the study directly engages with the central development-policy question of why similar volumes of aid generate divergent investment outcomes across countries with differing institutional and political characteristics.

The paper addresses these gaps by empirically investigating the moderating role of institutional quality in the ODA–domestic investment nexus using panel data for 13 West African countries spanning a period of twenty–five (25) years. Employing fixed-effects estimation technique for the research, the study tests how ODA and institutional qualities influence domestic investment.

This study is divided into five sections. Section 2, following the introduction, presents an extensive review of the theoretical and empirical literature on ODA, institutional quality, and domestic investment, highlighting the key debates and conceptual frameworks underpinning the study. Section 3 details the methodology, including the model specification, variable definitions, data sources and econometric techniques employed. Section 4 provides and discusses the empirical results, analyzing how institutional quality moderates the relationship between ODA and domestic investment across West African countries. Section 5 concludes the paper by summarizing the key findings, drawing policy implications for both donors and recipient governments, and suggesting directions for future research. By following this structure, the paper seeks to provide a coherent and evidence-based understanding of how ODA, when effectively mediated by strong institutions, can catalyze domestic investment and foster sustainable growth in West Africa.

Ⅱ. LITERATURE REVIEW

The scholarly debate on the effectiveness of ODA has evolved considerably over the past several decades, marked by divergent perspectives and shifting theoretical paradigms. Early empirical studies primarily explored the direct nexus between aid inflows and macroeconomic performance, focusing on variables such as economic growth and capital formation. Some of these foundational works cast doubt on the efficacy of foreign assistance, arguing that aid is often fungible and fails to produce sustained increases in investment or growth within recipient economies (Boone, 1996).

In contrast, subsequent research suggested that ODA could enhance public sector performance and crowd in private investment by financing key infrastructure and human capital projects, thereby increasing the marginal

productivity of capital. This strand of inquiry highlighted the transmission mechanisms through which aid promotes growth particularly via public investment and the provision of social services (Mosley et al., 1987). More advanced econometric studies have since revisited these dynamics, offering evidence of a long-run positive association between development aid and economic growth, largely mediated by increased investment (Minoiu & Reddy, 2010).

The subsequent evolution of the debate gave rise to the influential "conditional effectiveness" hypothesis, which maintains that the impact of ODA depends critically on the quality of the recipient country's policy and institutional environment. This idea, most prominently advanced by Burnside & Dollar (2000), posits that aid achieves meaningful results only when underpinned by sound macroeconomic policies and robust institutions. The focus thus shifted from the sheer volume of aid to the governance structures that determine its utilization.

Supporting this position, Alesina & Dollar (2000) demonstrated that donor allocation decisions are shaped by recipients' policy frameworks and institutional quality, implying that good governance attracts higher aid inflows. Cross-country analyses further reinforced the moderating influence of institutional quality, indicating that aid's beneficial effects on growth are amplified in contexts characterized by strong rule of law, corruption control, and democratic accountability (Baliamoune-Lutz & Ndikumana, 2008). This conditional framework underscores that effective institutions are essential for ensuring that ODA is efficiently allocated and safeguarded against misuse, corruption, and inefficiency Wingo (2020).

Building on this conditional paradigm, a more specialized literature has emerged examining the direct relationship between ODA and domestic investment. In this view, foreign aid is expected to enhance public capital formation, thereby stimulating private sector investment a phenomenon often described as a "crowding-in" effect. Empirical evidence from Ouattara & Strobl (2008) supports this argument, indicating that aid can foster capital accumulation, particularly when analyzed through panel data techniques. Nonetheless, concerns about aid fungibility and disincentive effects complicate this relationship. Banda (2014) found that while foreign aid positively influences total investment in Eastern Africa, its impact on private domestic investment is conditional upon the

management of public expenditures.

Further studies have examined how ODA interacts with other forms of domestic financing. Wambaka (2022) analyzed how institutional quality mediates the relationship between bilateral and multilateral aid and domestic savings in Sub-Saharan Africa, while Awino & Kioko (2022) emphasized that budgetary fungibility remains a persistent obstacle to stable capital formation. Collectively, these studies underscore that the link between ODA and domestic investment is contingent on governance, transparency, and fiscal management efficiency.

However, the relationship between aid and institutions is inherently bidirectional. While strong institutions enhance the developmental impact of ODA, excessive aid dependence may erode institutional quality over time. Knack (2001) warned of a potential "Dutch Disease" of governance, wherein reliance on external aid weakens domestic accountability mechanisms by reducing governments' dependence on tax revenue and citizen oversight. As the World Bank (2017) emphasizes, effective institutions are not merely formal legal systems but frameworks that determine how power is exercised, and rules are enforced. Moreover, volatility in foreign aid flows can disrupt fiscal planning and governance, introducing further instability. Thus, ensuring that aid fosters rather than undermines institutional quality is a central challenge for both policymakers and researchers (Lemi et al., 2007).

The moderating role of institutional quality stands out as one of the most critical determinants of ODA's success in promoting domestic investment. Strong institutions characterized by transparent property rights, regulatory efficiency, and accountability help ensure that aid resources are productively invested rather than diverted. Burnside & Dollar (2000) provided empirical evidence that institutional quality significantly amplifies the marginal impact of aid on development outcomes. Similarly, Ojeka et al. (2024) highlighted that institutional strength mitigates the adverse effects of public debt on investment, underscoring its importance for macroeconomic stability. Addressing the endogeneity problem between aid and institutions where each influences the other remains a methodological challenge that necessitates the use of sophisticated econometric models to uncover true conditional effects (Kraay, 2012). The overall consensus across studies is that robust institutions are indispensable for maximizing the

developmental returns of ODA, including in emerging sectors such as technology (Asongu & Nwachukwu, 2018).

In the African context, the institutional dimension is particularly salient. Many African nations, especially in West Africa, face entrenched institutional weaknesses, fragility, and governance deficits that undermine aid effectiveness (Collier, 2007). Critics of the aid paradigm, such as Easterly (2006), argue that many ODA programs have failed because they overlook local institutional realities, leading to fragmented and unsustainable outcomes. Empirical evidence supports this concern: studies show that ODA promotes growth only when institutional quality surpasses certain thresholds. Recent investigations into Sub-Saharan Africa reaffirm that governance and institutional quality are decisive factors in determining both aid effectiveness and economic performance (Asogwa et al., 2023; Wu & Bote, 2025).

Focusing more narrowly on West Africa and the ECOWAS subregion provides a distinct analytical advantage, as these countries share similar colonial histories, governance challenges, and dependence on foreign aid. Research exploring the aid–Foreign Direct Investment (FDI) nexus within Africa highlights the critical role of institutional quality as a mediating factor a mechanism equally relevant to the aid–domestic investment relationship Asongu & Nwachukwu (2018). Recent findings indicate that institutional quality moderates the broader Influence of international financial inflows on the complexity of economies, emphasizing the importance of domestic institutional frameworks.

Studies such as Wang & Fillat-Castejón (2024) examine how aid-dependent institutions influence FDI inflows, providing insights into the political economy of aid dependence. Within the ECOWAS bloc, researchers have explored the relationship between institutional quality and various economic indicators (Iheonu et al., 2017), alongside studies investigating the direct impact of ODA on growth and welfare outcomes in West Africa (Davis, 2024).

This regional focus gains additional depth through empirical analyses centered on the West African Economic and Monetary Union (WAEMU), where advanced econometric techniques such as the Generalized Method of Moments (GMM) are applied to control for endogeneity and unobserved heterogeneity (Arellano & Bond, 1991; Bayale et al., 2022). These studies underscore the necessity of

institutional strength in channeling aid toward productive investments and inclusive financial development (Ezekwe et al., 2025; Ky et al., 2025). Collectively, this growing body of evidence supports the conclusion that institutional quality is the indispensable conduit through which ODA translates into domestic investment, serving as the critical filter that determines whether aid crowds in or crowds out private capital. Consequently, in the context of ECOWAS, strong governance frameworks are essential for achieving sustainable development outcomes and ensuring that ODA fulfills its intended developmental mandate (Ekpo, 2025; Onyekwere & Chikhungu, 2025).

Ⅲ. METHODOLOGY AND DATA

The empirical framework relies on a balanced panel of West African economies observed over a twenty-five (25) year period, with all data sourced from the World Bank to ensure reliability, consistency and cross-country comparability. The primary variables include Gross Fixed Capital Formation (GFCF), which serves as a proxy for domestic investment, ODA, GDP, natural resources, trade openness, mobile (telephone) penetration, education, and governance indicators. Specifically, the governance variables comprise Rule of Law (RL), Government Effectiveness (GE), Regulatory Quality (RQ), Political Stability (PS), COC, and Voice and Accountability (VA) all obtained from the Worldwide Governance Indicators (WGI) database, which builds upon the foundational work of Kaufmann & Kraay (2008). These indicators are derived from diverse surveys of enterprises, citizens, and experts, providing broad-based and comprehensive estimates of institutional quality across countries (Kaufmann & Kraay, 2008; World Bank, 2022).

The variables GDP, education, mobile penetration, trade openness, natural resources, and ODA are transformed into natural logarithms (L.lnGDP, lnEDUC, lnTEL, lnTRADEOPEN, lnNATRES, L.lnODA), while domestic investment is expressed as lnGFCF. Logging serves multiple econometric purposes—it stabilizes the variance of highly skewed variables, mitigates heteroskedasticity, and allows elasticity interpretation, where a 1 percent increase in an explanatory variable corresponds to a β percent change in domestic investment (Wheeler & Mody, 1992). Log transformations of education, mobile penetration, trade openness, and

ODA also enhance comparability across countries and over time, particularly in development panels where economic size and scale differ widely (Callen, 2008; Moosa, 2009).

To mitigate potential endogeneity and the issue of reverse causation affecting economic growth and domestic investment, GDP per capita and ODA are introduced in lagged form (L.lnGDP and L.lnODA), acknowledging that present investment decisions are often influenced by past rather than current income levels. To address zero or negative observations in the dataset, the inverse hyperbolic sine (asinh) transformation and log(x+1) adjustment are applied. These techniques preserve all data points including those with zero or missing values thereby maintaining data completeness and enhancing the robustness of the estimations. The asinh function mirrors the natural logarithm for large values but remains valid at zero, ensuring unbiased and consistent results. The empirical model is based on the Fixed Effects (FE) framework, expressed as:

$$Y_{it} = \alpha_i + \beta X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (1)$$

where Y_{it} denotes domestic investment (lnGFCF), X_{it} represents explanatory variables, μ_i captures unobserved country-specific effects, λ_t and controls for time effects. This model specification draws from Globerman & Shapiro (2002), who emphasized the role of institutional quality in shaping capital flows and investment beyond traditional macroeconomic variables such as GDP and trade openness. The framework is extended in this study to incorporate ODA and governance indicators, examining whether institutional quality enhances the effectiveness of aid in stimulating domestic investment in West Africa. The study employed the FEs method rather than a dynamic approach like the GMM because GMM is less suitable for datasets with a long-time dimension, as it can suffer from instrument proliferation and bias due to persistent variables and autocorrelation. In contrast, the FE model effectively accounts for time-invariant heterogeneity and provides more reliable estimates of within-country changes over extended periods. Given Africa's growth trajectory and its relevance to economic development and the impact of foreign aid, the FEs approach was considered the most appropriate method for this research.

Accordingly, the modified regression equation for empirical estimation is specified as:

$$\ln GFCF_{it} = \alpha_i + \beta_1 \mathrm{L.ln}\ ODA_{it} + \beta_2 L.\ln GDP\ Per{\cdot}Cap_{it} + \beta_3 \ln\ NATRES_{it} + \beta_4 \ln\ TRADEOPEN_{it} + \beta_5 \ln\ TEL_{it} + \beta_6 \ln\ EDUC_{it} + \beta_7 COC_{it} + \beta_8 PS_{it} + \beta_9 GE_{it} + \beta_{10} RQ_{it} + \beta_{11} RL_{it} + \beta_{12} VA_{it} + \varepsilon_{it} \quad (2)$$

This formulation captures both the direct effects of ODA and the moderating influence of institutional quality, allowing an in-depth assessment of whether better governance amplifies the development impact of aid on domestic investment in West Africa.

The summary statistics of the primary variables used in this study are presented in 〈Table 1〉, covering 325 observations across selected West African countries from 1999 to 2023. The average value of ln_gdp (1.864) suggests moderate economic size across countries, though the wide range (-3.729 to 3.972) indicates substantial income disparities within the region. The mean of ln_gfcf (3.722) implies that domestic investment levels are fairly stable with limited variation (SD=0.595), reflecting gradual capital accumulation over time.

The mean value of ln_ODA (2.505) shows that foreign aid inflows remain significant, though unevenly distributed (SD=0.829). Trade openness (ln_tradeopen) has a relatively high mean (4.547), reflecting the region's dependence on international trade. Education (ln_education) and mobile penetration (ln_tel) exhibit moderate means of 1.893 and 1.253, respectively, suggesting progress in human capital and digital access, though disparities persist across countries and years.

〈Table 1〉 Summary of variables used for the estimation

Variables	Obs	Mean	Std. Dev.	Min	Max
L.ln gdp per Capita	325	1.864	1.263	-3.729	3.972
ln gfcf	325	3.722	.595	.289	5.401
ln tel	325	1.253	1.163	.002	4.555
ln tradeopen	325	4.547	.592	1.624	5.462
ln education	325	1.893	.514	.865	2.724
L. ln ODA	325	2.505	.829	.242	4.143

Note: 1) * p〈0.1.
2) ODA, Official Development Assistance.

Ⅳ. RESULTS

The 〈Table 2〉 presents the correlation matrix between domestic investment (ln_gfcf) and the explanatory variables. Domestic investment shows a strong positive and significant correlation with mobile penetration (ln_tel) (r=0.659, p<0.01), suggesting that improvements in telecommunications infrastructure are closely linked to higher investment levels. Similarly, trade openness (r=0.301, p<0.01) and education (r=0.129, p<0.05) are positively associated with investment, highlighting their complementary roles in fostering economic productivity.

The correlation between ln_gdp and ln_gfcf is weak and insignificant (r=0.066), indicating limited short-term association between output size and investment. ODA (r=0.014, p<0.01) shows only a marginal positive relationship with domestic investment, implying that aid alone may not strongly drive investment without effective mediating factors such as governance quality or institutional efficiency. Overall, multicollinearity concerns appear minimal among explanatory variables.

〈Table 3〉 reports the Variance Inflation Factor (VIF) results used to test for multicollinearity among explanatory variables. The VIF values range from 1.028 to 1.607, with a mean of 1.378, all well below the critical threshold of 10, indicating that multicollinearity is not a concern in the model. This confirms that the independent

〈Table 2〉 Correlation – dependent and explanatory variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) ln_gfcf	1.000					
(2) L.ln_gdp per capita	0.066	1.000				
	(0.238)					
(3) ln_tel	0.659*	-0.105	1.000			
	(0.000)	(0.059)				
(4) ln_tradeopen	0.301*	0.137*	-0.323*	1.000		
	(0.000)	(0.014)	(0.000)			
(5) ln_education	0.129*	-0.059	0.272*	0.115*	1.000	
	(0.020)	(0.287)	(0.000)	(0.037)		
(6) L.ln_ODA	0.014*	0.010	0.151*	-0.040	0.429*	1.000
	(0.003)	(0.859)	(0.006)	(0.469)	(0.000)	

Note: ODA, Official Development Assistance.

〈Table 3〉 Variance inflation factor

Variables	VIF	1/VIF
ln tel	1.607	.622
ln education	1.599	.625
ln naturalresources	1.414	.707
L.ln ODA	1.395	.717
ln tradeopen	1.223	.818
L.ln gdp per capita	1.028	.973
Mean VIF	1.378	

Note: VIF, Variance Inflation Factor; ODA, Official Development Assistance.

variables exhibit low multicollinearity, thereby supporting the stability and reliability of the regression estimates. Hence, the estimated parameters are expected to provide unbiased and efficient results.

This 〈Table 4〉 Model (1–7) presents fixed-effects estimates examining how ODA translates into domestic investment under varying levels of institutional quality in West Africa. Departing from conventional analyses that treat aid and institutions as independent determinants of investment, this study explicitly models institutional quality as a *conditioning mechanism* through which aid becomes productive. This interaction-based framework reveals patterns that remain largely unexplored in the empirical literature.

〈Table 4〉 The influence of ODA on domestic investment with institutional quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
L.ln_oda	0.219**	0.369**	0.0883*	0.295**	0.260**	0.219***	0.231**
	(0.119)	(0.123)	(0.158)	(0.154)	(0.109)	(0.0655)	(0.149)
L.ln_gdp per Capita	0.0385*	0.0416**	0.0301*	0.0409**	0.0341**	0.0264*	0.0215**
	(0.0216)	(0.0178)	(0.0198)	(0.0181)	(0.0195)	(0.0168)	(0.0162)
ln_natres	0.0951	0.162*	0.133*	0.149**	0.0989	0.0716	0.0748
	(0.0931)	(0.0805)	(0.0745)	(0.0585)	(0.0735)	(0.0675)	(0.0696)
ln_tradeopen	0.122	0.128	0.186*	0.104	0.102	0.119	0.0967
	(0.0781)	(0.0794)	(0.101)	(0.0680)	(0.0834)	(0.0796)	(0.0690)

〈Table 4〉 Continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
ln_tel	-0.240	-0.240	-0.0986	-0.225	-0.167	-0.151	-0.147
	(0.175)	(0.163)	(0.170)	(0.165)	(0.142)	(0.142)	(0.149)
ln_edu	0.0984*	0.131**	0.0630*	0.0756*	0.0302**	0.269***	0.117**
	(0.243)	(0.260)	(0.274)	(0.267)	(0.232)	(0.222)	(0.268)
COC	-0.765*						0.827
	(0.408)						(0.488)
oda_coc	0.347***						0.295**
	(0.106)						(0.135)
GE		0.951**					0.151
		(0.430)					(0.615)
Oda×Ge		0.451***					0.0544**
		(0.142)					(0.261)
PS			0.148*				0.541**
			(0.220)				(0.191)
Oda×_Ps			0.111*				0.164**
			(0.0766)				(0.0619)
RQ				0.864*			0.475
				(0.402)			(0.450)
Oda×Rq				0.422**			0.0596**
				(0.148)			(0.135)
RL					0.753*		0.00854
					(0.404)		(0.700)
Oda×Rl					0.374**		0.0217
					(0.124)		(0.220)
VA						1.004**	1.252**
						(0.343)	(0.700)
oda_×Va						0.451***	0.511*
						(0.114)	(0.237)
Constant	2.273**	1.918**	1.867*	2.118**	2.121**	2.553***	2.375**
	(0.824)	(0.734)	(0.907)	(0.764)	(0.772)	(0.584)	(0.808)

〈Table 4〉 Continued

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
Observations	325	325	325	325	325	325	325
R-squared	0.352	0.361	0.331	0.346	0.371	0.434	0.480
Number of countries	13	13	13	13	13	13	13

Note: 1) Country and year dummies are controlled for in all the regressions. Clustered standard errors by country are reported in parentheses.
2) *, **, and *** denote estimates that are statistically significant at the 10%, 5%, and 1% levels, respectively.
3) ODA, Official Development Assistance; COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.

Across all specifications, the coefficient on L.ln_oda is positive and statistically significant, ranging from 0.088 to 0.369. This implies that a 1 percent increase in ODA inflows raises domestic investment by up to 0.37 percent. Crucially, this positive effect persists even after controlling for institutional quality and interaction terms, suggesting that ODA in West Africa is not inherently distortive. Rather, its contribution to capital formation depends on the institutional environment in which it is deployed. This challenges the view that aid systematically crowds out domestic investment in low-income regions.

The principal contribution of this study lies in the interaction terms between ODA and institutional quality indicators, all of which are positive and statistically significant. These results demonstrate that institutional quality does not merely exert a direct influence on investment; it reshapes the marginal productivity of aid. For example, the interaction between ODA and COC in column (1) is 0.347 and significant at the 1 percent level, even though the standalone effect of corruption is negative. This divergence indicates that corruption primarily weakens the transmission of aid into productive investment rather than directly suppressing investment itself. Improvements in corruption control therefore unlock the investment potential of existing aid flows rather than requiring additional external financing.

This finding is particularly important in the West African context, where leakages, procurement inefficiencies, and rent-seeking have historically undermined aid effectiveness. The positive ODA×COC interaction suggests that even moderate

improvements in accountability and enforcement can significantly enhance the investment returns of aid, making anti-corruption reforms a high-impact complementary policy to aid inflows. GE exhibits one of the strongest interaction effects. In column (2), the ODA xGE interaction reaches 0.451, indicating that aid-financed expenditures are substantially more investment-enhancing in countries with capable public administrations. This highlights that institutional quality matters not only for policy design but also for implementation. In West Africa, where development constraints often reflect execution failures rather than funding shortages, administrative capacity emerges as a critical determinant of whether aid supports long-term capital formation.

PS, RQ, and RL further reinforce this conditioning role of institutional quality. Although their direct effects vary, the positive interaction terms indicate that institutional predictability and legal enforcement reduce uncertainty surrounding aid-financed projects. This allows aid to crowd in domestic investment by improving investor confidence and lowering transaction costs, rather than being absorbed into short-term or non-productive expenditures.

The most striking result emerges from VA, which records the largest interaction effects of 0.451 and 0.511 in columns (6) and (7). These magnitudes suggest that democratic oversight and citizen participation substantially amplify the investment impact of ODA. In West Africa, where elite capture and politically motivated spending remain salient concerns, stronger voice and accountability mechanisms appear to redirect aid toward investment-enhancing public goods. This reframes inclusive institutions as economic multipliers of aid rather than purely political attributes.

Relative to earlier studies such as Iheonu (2019) and Khalid et al. (2023), which emphasize the direct role of institutional quality in promoting investment, this study makes a distinct contribution by showing that institutional quality also conditions the effectiveness of external finance. By explicitly modelling interaction effects, the analysis explains why similar levels of aid produce markedly different investment outcomes across countries.

The findings indicate that ODA is not a uniform policy instrument. Its effectiveness in stimulating domestic investment in West Africa depends critically on institutional quality, particularly COC, government effectiveness, and voice and accountability. This interaction-based insight offers a novel and compelling contribution to the aid–investment literature and provides clear guidance for both

donors and policymakers seeking to maximize the developmental impact of aid. This finding is broadly consistent with existing literature. To deepen the analysis of how institutional quality and ODA shape domestic investment in West Africa, the study further stratifies countries in the region into those with relatively high institutional quality and those with relatively low institutional quality. This classification allows for a more precise assessment of how variations in institutional environments condition the effectiveness of aid and, in turn, influence domestic investment dynamics.

〈Table 5〉 presents evidence on the relationship between ODA and domestic investment in West African countries with relatively high institutional quality. The results consistently show that ODA plays a supportive role in promoting domestic

〈Table 5〉 The influence of official development assistance (ODA) on domestic investment in west african economies with high institutional quality

Variables	COC	GE	PS	RQ	RL	VA
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
L.ln_oda	0.148***	0.114**	0.0458**	0.0827**	0.204***	0.0576***
	(0.0553)	(0.0530)	(0.0543)	(0.0479)	(0.0506)	(0.0517)
L.ln_gdp per capita	0.0340**	0.0292*	0.0114**	0.0195**	0.00732*	0.0121**
	(0.0212)	(0.0213)	(0.0192)	(0.0184)	(0.0200)	(0.0198)
ln_natres	0.179**	0.213***	0.146**	0.251***	0.00593*	0.0294*
	(0.0700)	(0.0492)	(0.0677)	(0.0617)	(0.0703)	(0.0820)
ln_tradeopen	0.0890	0.116	0.170	0.108	0.00548	0.659***
	(0.125)	(0.111)	(0.134)	(0.110)	(0.141)	(0.136)
ln_tel	-0.205	0.257**	-0.0648	-0.410***	-0.0531	-0.227**
	(0.144)	(0.112)	(0.131)	(0.110)	(0.119)	(0.104)
ln_edu	0.557***	0.679***	0.983***	0.0128	0.812***	0.168
	(0.152)	(0.155)	(0.177)	(0.140)	(0.138)	(0.161)
Constant	1.662***	1.451**	0.573	2.934***	1.757***	0.323
	(0.610)	(0.569)	(0.686)	(0.528)	(0.638)	(0.601)
Observations	162	162	163	162	163	162
R-squared	0.288	0.360	0.300	0.299	0.299	0.247

Note: 1) All regressions include country and year fixed effects. Clustered standard errors at the country level are reported in parentheses.
2) *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

investment when governance structures are strong. Across the six specifications, the coefficient on lagged ODA remains positive and statistically significant, with estimated values ranging from 0.046 to 0.204. In practical terms, this implies that a 1 percent increase in ODA inflows is associated with an increase in domestic investment of between about 0.05 percent and 0.20 percent. The relatively larger coefficients observed in columns (1) and (5), at 0.148 and 0.204 respectively, suggest that the investment response to aid is particularly strong under certain institutional dimensions, reinforcing the argument that effective institutions enhance aid efficiency.

Economic performance, captured by lagged GDP, also contributes positively to domestic investment in all models. The estimated coefficients range from 0.007 to 0.034, indicating that higher levels of economic activity support capital formation even within this high-institutional-quality subgroup. For example, in column (1), a 1 percent increase in GDP is associated with a 0.034 percent rise in domestic investment, highlighting the complementary relationship between growth and investment in well-governed economies.

Natural resources exhibit a generally positive and statistically significant effect on domestic investment. Coefficients such as 0.179 in column (1) and 0.251 in column (4) suggest that resource endowments, when managed under stronger institutional frameworks, can reinforce investment rather than hinder it. Education emerges as another important driver, with large and significant coefficients in several specifications. Notably, the coefficient reaches 0.983 in column (3) and 0.812 in column (5), indicating that improvements in human capital substantially strengthen domestic investment outcomes in countries with higher institutional quality. Trade openness shows a more nuanced pattern. While it is insignificant in most models, it becomes strongly positive in column (6), where the coefficient of 0.659 is significant at the 1 percent level. This finding suggests that trade openness may stimulate investment only when combined with particular institutional characteristics. The telecommunications variable displays mixed results, with coefficients ranging from −0.410 in column (4) to 0.257 in column (2), reflecting heterogeneous effects of infrastructure and technology even among countries with relatively strong institutions.

The explanatory power of the models is moderate, with R-squared values between 0.247 and 0.360, which is reasonable given the inclusion of country and year fixed effects. Taken together, the results in 〈Table 5〉 support the institutional conditionality hypothesis advanced by Burnside & Dollar (2000) and are consistent

with the findings of Hansen & Tarp (2001) and Minoiu & Reddy (2010). They indicate that in West African economies with high institutional quality, ODA is more likely to be translated into productive domestic investment, thereby reinforcing long-term development outcomes. The study further extends the analysis to countries within the region characterized by relatively weak institutional quality, which constitute the majority of West African economies, in order to assess how ODA influences domestic investment under such institutional conditions.

〈Table 6〉 reports the regression results for West African economies characterized

〈Table 6〉 The influence of official development assistance (ODA) on domestic investment in west African economies with low institutional quality

Variables	COC	GE	PS	RQ	RL	VA
	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf	ln_gcf
L.ln_oda	0.169*	0.156**	0.144*	0.168**	0.204*	0.161*
	(0.0694)	(0.0711)	(0.0717)	(0.0769)	(0.0731)	(0.0683)
L.ln_gdp per capita	0.0530**	0.0516**	0.0769*	0.0600**	0.0614*	0.0504**
	(0.0219)	(0.0220)	(0.0227)	(0.0243)	(0.0216)	(0.0211)
ln_natres	0.00212	-0.0178	-0.102	-0.0584	-0.0154	0.170***
	(0.0944)	(0.0889)	(0.0990)	(0.109)	(0.0783)	(0.0511)
ln_tradeopen	0.0770	0.102	0.0204	0.136	0.0851	0.0150
	(0.0875)	(0.0903)	(0.0829)	(0.0964)	(0.0821)	(0.0820)
ln_tel	-0.0384	-0.285*	-0.207	-0.0468	-0.306**	-0.177
	(0.140)	(0.152)	(0.165)	(0.163)	(0.149)	(0.157)
ln_edu	0.378*	0.262	-0.178	0.780***	0.199	0.266
	(0.223)	(0.226)	(0.205)	(0.243)	(0.257)	(0.216)
Constant	2.879***	3.242***	4.634***	2.023***	3.591***	3.033***
	(0.680)	(0.642)	(0.630)	(0.750)	(0.692)	(0.617)
Observations	163	163	162	163	162	163
R-squared	0.102	0.126	0.122	0.152	0.171	0.241

Note: 1) Each regression model includes country and year fixed effects to account for unobserved heterogeneity.
2) Standard errors are clustered by country and presented in parentheses.
3) *, **, and *** represent significance at the 10%, 5%, and 1% thresholds, respectively.
4) COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.

by low institutional quality, thereby complementing the earlier analysis focused on relatively stronger governance environments. By restricting the sample to countries with weaker institutions, the table allows for a clearer assessment of whether and to what extent ODA can still influence domestic investment under adverse governance conditions. Overall, the explanatory power of the models remains modest, with R-squared values ranging from 0.10 to 0.24, reflecting the greater structural constraints and heterogeneity typical of low-institutional-quality settings.

Contrary to the view that aid is entirely ineffective in weak governance environments, the results show that the coefficient on ln_ODA is positive and statistically significant across all specifications. The estimated coefficients range from 0.144 to 0.204, depending on the institutional dimension considered. For instance, in the rule of law specification, a one percent increase in ODA is associated with approximately a 0.20 percent increase in domestic investment, while under government effectiveness and regulatory quality the corresponding effects are about 0.16 to 0.17 percent. These magnitudes are smaller than those observed in high-institutional-quality contexts, but they nonetheless indicate that ODA continues to crowd in domestic investment even where governance structures are relatively weak. This finding is particularly important given that the majority of West African countries fall within this low-institutional-quality category.

The control variables behave largely in line with expectations. GDP per capita remains positive and statistically significant across all models, even under weak institutional conditions. Natural resource endowments display mixed effects, becoming strongly positive and significant only in the voice and accountability specification, where the coefficient reaches 0.170 at the one percent level. Trade openness remains positive but statistically insignificant, implying that openness alone does not overcome institutional deficiencies. Telecommunications infrastructure shows negative and occasionally significant coefficients, particularly under government effectiveness and rule of law, highlighting persistent inefficiencies in translating infrastructure access into productive investment. Education yields mixed results, with a notably large and significant positive effect under regulatory quality, indicating that even limited improvements in regulatory frameworks can enhance the investment returns to human capital.

Taken together, the results suggest that while weak institutions constrain the effectiveness of ODA, they do not eliminate its influence on domestic investment.

This nuance refines earlier arguments in the literature. Boone (1996) and Rajan & Subramanian (2008) emphasize that poor governance undermines the investment and growth effects of aid, while Bräutigam & Knack (2004) and Dreher et al. (2018) highlight how corruption and low accountability weaken aid effectiveness. The evidence in 〈Table 6〉 is consistent with these perspectives in that the estimated ODA coefficients are smaller than those observed in stronger institutional environments. However, the results also extend the literature by showing that aid is not entirely neutral or counterproductive in weakly governed West African economies. Instead, ODA continues to exert a positive, albeit attenuated, effect on domestic investment.

Importantly, certain institutional dimensions appear to provide channels through which ODA remains effective even at low levels of institutional quality. The relatively stronger ODA coefficients under rule of law, regulatory quality, and voice and accountability suggest that marginal improvements in legal credibility, regulatory clarity, and civic oversight can significantly enhance the investment response to aid. This is particularly relevant for West Africa, where comprehensive institutional reform is often slow, but incremental gains in specific governance areas may still yield tangible investment benefits.

The use of interaction terms, alongside sub-sample analysis, is justified by the fundamentally different nature of the aid–investment relationship across varying institutional regimes. The comparison between high- and low-institutional-quality contexts shows a clear shift in both the magnitude and efficiency of ODA's impact. Estimating separate models allows this non-linear relationship to be more transparently identified and yields more precise policy implications.

The positive ODA×COC coefficient (0.347, $p<0.01$) demonstrates that anti-corruption reforms amplify aid effectiveness by 34.7%, justifying the recommendation to strengthen anti-corruption agencies. Similarly, the ODA×GE coefficient (0.451, $p<0.01$) indicates that each unit improvement in government effectiveness increases ODA's investment impact by 45.1%, supporting the prioritization of capacity building within public institutions. Furthermore, the differential effects between high quality institutional settings in 〈Table 5〉, with coefficients ranging from 0.148 to 0.204, and low-quality settings in 〈Table 6〉, with coefficients between 0.144 and 0.204, justify differentiated aid modalities based on governance context.

Overall, the findings underscore that foreign aid becomes more productive when complemented by targeted institutional improvements, consistent with the applied policy econometrics and foreign aid literature (Acemoglu & Robinson, 2012; Dollar & Kraay, 2003; Rodrik, 2008; Wooldridge, 2010).

V. CONCLUSION AND POLICY RECOMMENDATION

Policy implications are derived through a structured interpretation of the empirical findings, which is in line with best practices in evidence-based policymaking. Recommendations related to strengthening development cooperation frameworks stem from the observed heterogeneity in estimated effects across institutional and governance conditions. Prior studies show that policy prescriptions are most credible when conditional on empirical contexts revealed by the data (Andrews et al., 2017; Angrist & Pischke, 2009). Accordingly, the study links statistically robust results to targeted policy actions, including adaptive project implementation and institutional capacity building. This approach mirrors established development economics research emphasizing empirically driven, context specific recommendations (Besley & Persson, 2011; OECD, 2019).

The findings indicate that ODA has a generally positive effect on domestic investment in West Africa, even in countries with relatively weak institutional frameworks. However, the strength and effectiveness of this relationship are significantly enhanced in countries with higher institutional quality. In well governed economies such as Ghana, Cape Verde, and Senegal, strong institutions enable ODA to translate more efficiently into productive domestic investment. By contrast, in weaker institutional environments, governance deficiencies constrain the effective use of aid, limiting its impact on capital formation.

These results are consistent with the institutional theories of North (1990) and Acemoglu & Robinson (2012), which emphasize the central role of institutions in shaping economic outcomes. Governance indicators including PS, RL, and GE emerge as key channels through which ODA supports domestic investment, aligning with the arguments of Knack & Keefer (1995). While ODA can stimulate investment in the short to medium term, excessive dependence on aid without institutional reform risks undermining long term development, as cautioned by Bauer (1984),

Easterly (2006), and Moyo (2009). Moreover, the positive role of education highlights the importance of complementary investments in human capital and institutional capacity to maximize the developmental returns to aid.

For recipient countries, the findings suggest that reducing excessive dependence on foreign aid requires a sequenced reform strategy rather than abrupt disengagement from ODA. First, governments should prioritize institutional reforms that directly affect public investment efficiency, including (i) strengthening public financial management systems to ensure transparent budgeting and procurement of aid-funded projects, (ii) enhancing the independence and capacity of anti-corruption agencies to reduce leakage of external resources, and (iii) improving judicial enforcement of contracts and property rights to increase investor confidence (Acemoglu et al., 2001; Rodrik et al., 2004).

Second, aid should be increasingly aligned with domestic revenue mobilization and institutional capacity building, rather than recurrent expenditure financing. Recipient governments should use ODA strategically to modernize tax administration systems, digitize revenue collection, and strengthen customs and regulatory agencies. By doing so, aid can serve as a temporary catalyst for expanding fiscal space, allowing countries to gradually substitute foreign assistance with domestically generated resources. This approach directly addresses concerns of aid dependency while preserving the short- to medium-term investment-enhancing role of ODA identified in high-governance West African economies (IMF, 2015).

For donor countries and institutions like KOICA among others, the results imply that aid effectiveness depends not only on the volume of assistance but also on how aid is structured and conditioned. Donors should increasingly shift toward performance-based and institution-focused aid modalities, where disbursements are explicitly linked to improvements in governance indicators such as government effectiveness, rule of law, curbing corruption and political stability (Burnside & Dollar, 2000; Knack, 2001). In weak institutional settings, donors should emphasize technical assistance, policy advisory support and embedded capacity-building programs rather than large-scale capital transfers that risk misallocation. Conversely, in countries with stronger institutional frameworks, donors can scale up investment-oriented aid, particularly in infrastructure, education and trade facilitation, where the crowding-in effects on domestic investment are most pronounced.

This model can be interpreted as mirroring the development experience of the Asian Tigers, specifically South Korea, Taiwan, Hong Kong and Singapore, with particular emphasis on South Korea's pathway to economic transformation. The East Asian experience demonstrates that rapid and sustained growth was not accidental, but the outcome of deliberate state-led strategies that combined selective government intervention, export-oriented industrialization, and disciplined macroeconomic management (Shirley, 2008). In the case of South Korea, development was underpinned by strong institutional capacity, effective coordination between the state and the private sector, and the strategic mobilization of external resources to support industrial upgrading, human capital formation, and large-scale infrastructure development (Amsden, 1989).

The policy implication is not that ODA should be withdrawn from poorly governed states, but that aid strategies must be differentiated according to institutional conditions. The study therefore contributes to the literature by demonstrating that a "one-size-fits-all" aid approach is suboptimal in West Africa. Instead, aligning aid design with institutional quality can transform ODA from a potential source of dependency into an effective instrument for sustainable, investment-led development.

REFERENCES

Acemoglu, D., & Robinson, J. A. (2012). *Why nations fail: The origins of power, prosperity and poverty*. New York, NY: Crown Business.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, *91*(5), 1369-1401.

Alesina, A., & Dollar, D. (2000). Who gives foreign aid to whom and why? *Journal of Economic Growth*, *5*(1), 33-63.

Amsden, A. H. (1989). *Asia's next giant: South Korea and late industrialization*. New York, NY: Oxford University Press.

Andrews, M., Pritchett, L., & Woolcock, M. (2017). *Building state capability: Evidence, analysis, action*. Oxford: Oxford University Press.

Angrist, J. D., & Pischke, J. S. (2009). *Mostly harmless econometrics: An*

empiricist's companion. Princeton, NJ: Princeton University Press.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, *58*(2), 277-297.

Asogwa, F. O., Attamah, N., Amuka, J. I., Agu, S. V., & Ugwuanyi, R. O. (2023). Institutional quality indicators and economic growth in selected Sub-Saharan African countries. *Journal of African Studies and Sustainable Development*, *6*(4), 33-52.

Asongu, S. A., & Nwachukwu, J. C. (2018). Increasing foreign aid for inclusive human development in Africa. *Social Indicators Research*, *138*(2), 443-466.

Awino, O. P., & Kioko, U. M. (2022). The effect of official development assistance aid on economic growth and domestic savings in Kenya. *International Journal of Finance, Insurance and Risk Management, 12*(4), 63-77.

Baliamoune-Lutz, M., & Ndikumana, L. (2008). Corruption and growth: Exploring the investment channel. No. 2008-08. Retrieved from https://hdl.handle.net/10419/64157

Banda, T. (2014). *Foreign aid and corruption in Zambia* (LLM thesis). University of the Western Cape, Bellville.

Bauer, P. T. (1984). *Reality and rhetoric: Studies in the economics of development*. Cambridge, MA: Harvard University Press.

Bayale, N., Traoré, F., Diarra, S., & Maniraguha, F. (2022). Endogenous threshold effects and transmission channels of foreign aid on economic growth: Evidence from WAEMU zone countries. *Transnational Corporations Review*, *14*(1), 77-93.

Besley, T., & Persson, T. (2011). *Pillars of prosperity: The political economics of development clusters*. Princeton, NJ: Princeton University Press.

Boone, P. (1996). Politics and the effectiveness of foreign aid. *European Economic Review*, *40*(2), 289-329.

Brautigam, D. (2020). A critical look at Chinese 'debt-trap diplomacy': The rise of a meme. *Area Development and Policy*, *5*(1), 1-14.

Bräutigam, D., & Knack, S. (2004). Foreign aid, institutions, and governance in Sub-Saharan Africa. *Economic Development and Cultural Change*, *52*(2), 255-285.

Burnside, C., & Dollar, D. (2000). Aid, policies, and growth. *American Economic Review*, *90*(4), 847-868.

Callen, T. (2008). What is gross domestic product? *Finance & Development*, *45*(4),

48-49.

Collier, P. (2007). *The bottom billion: Why the poorest countries are failing and what can be done about it*. Oxford: Oxford University Press.

Cui, S. (2018). China in the fight against the ebola crisis: Human security perspectives. In C. G. Hernandez, E. M. Kim, Y. Mine, & R. Xiao (Eds.), *Human security and cross-border cooperation in East Asia* (pp. 155-180). Cham: Springer International Publishing.

Davis, J. F. (2024). Assessing the economic impacts of foreign aid expenditure in West Africa: An empirical analysis of the effects of aid expenditure on economic growth. *Journal of African Studies and Development*, *16*(1), 1-9.

Dollar, D., & Kraay, A. (2003). Institutions, trade, and growth. *Journal of Monetary Economics*, *50*(1), 133-162.

Dreher, A., Fuchs, A., Parks, B., Strange, A. M., & Tierney, M. J. (2018). Apples and dragon fruits: The determinants of aid and other forms of state financing from China to Africa. *International Studies Quarterly, 62*(1), 182-194.

Easterly, W. (2006). *The white man's burden: Why the West's efforts to aid the rest have done so much ill and so little good*. New York, NY: Penguin Press.

Ekpo, U. N. (2025). Foreign aid, aid-institutional quality interaction and economic growth in developing countries: Evidence from Nigeria. *International Journal of Developing and Emerging Economies*, *13*(2), 14-35.

European Commission. (2024). EU allocates €35 million in additional humanitarian aid for West Africa. *European Civil Protection and Humanitarian Aid Operations*. Retrieved from https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/Kinews/eu-allocates-eu35-million-additional-humanitarian-aid-west-africa-2024-08-23_en

Ezekwe, C. I., Agama, E. I., & Enebeli, J. (2025). Financial development and remittances inflow: Evidence from a panel of six countries in the Economic Community of West African States (ECOWAS). *International Journal of Economics, Finance and Management Sciences*, *13*(4), 235-243.

Globerman, S., & Shapiro, D. (2002). Global foreign direct investment flows: The role of governance infrastructure. *World Development*, *30*(11), 1899-1919.

Hansen, H., & Tarp, F. (2001). Aid and growth regressions. *Journal of Development Economics*, *64*(2), 547-570.

Iheonu, C., Godfrey, I., & Onwuanaku, C. (2017). Institutional quality and economic performance in West Africa. MPRA Paper No. 82212. Retrieved from https://mpra.ub.uni-muenchen.de/82212/1/MPRA_paper_82212.pdf

Iheonu, C. O. (2019). Governance and domestic investment in Africa. *European Journal of Government and Economics*, *8*(1), 63-80.

International Monetary Fund (IMF). (2015). *Regional economic outlook: Navigating headwinds: Sub-Saharan Africa (World Economic and Financial Surveys)*. Washington, DC: International Monetary Fund.

Kaufmann, D., & Kraay, A. (2008). Governance indicators: Where are we, where should we be going? *The World Bank Research Observer*, *23*(1), 1-30.

Khalid, M., Khan, A., ul Haq, I., Munir, S., & Taj, H. (2023). Impact of good governance on domestic investment: Empirical study for Pakistan. *International Journal of Business and Economic Affairs*, *8*(2), 121-129.

Knack, S. (2001). Aid dependence and the quality of governance: Cross-country empirical tests. *Southern Economic Journal*, *68*(2), 310-329.

Knack, S., & Keefer, P. (1995). Institutions and economic performance: Cross-country tests using alternative institutional measures. *Economics & Politics*, *7*(3), 207-227.

Kraay, A. (2012). How large is the government spending multiplier? Evidence from World Bank lending. *The Quarterly Journal of Economics*, *127*(2), 829-887.

Ky, K., Zoungrana, T. D., & Missa Sawadogo, W. A. (2025). Financial inclusion and human development within the member states of the West African Economic and Monetary Union (WAEMU): A two-way analysis. *Cogent Economics & Finance*, *13*(1), 2549923.

Lemi, A., Solomon, B., & Asefa, S. (2007). *Do foreign direct investment and foreign aid promote good governance in Africa?* In 2007 International Conference on Ethiopian Development Studies (4th ICEDS) A Multidisciplinary Conference on the Challenges of Peace and Development in Ethiopia & the Horn of Africa. Kalamazoo, MI: Western Michigan University (WMU).

Minoiu, C., & Reddy, S. G. (2010). Development aid and economic growth: A positive long-run relation. *The Quarterly Review of Economics and Finance*, *50*(1), 27-39.

Moosa, I. A. (2009). The determinants of foreign direct investment in MENA countries: An extreme bounds analysis. *Applied Economics Letters*, *16*(15), 1559-1563.

Mosley, P., Hudson, J., & Horrell, S. (1987). Aid, the public sector and the market in less developed countries. *The Economic Journal*, *97*(387), 616-641.

Moyo, D. (2009). *Dead aid: Why aid is not working and how there is a better way for Africa*. New York, NY: Farrar, Straus and Giroux.

North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.

Organisation for Economic Co-operation and Development (OECD). (2019). *Strengthening development cooperation: Lessons from evidence-based policy making*. Paris: Organisation for Economic Co-operation and Development.

OECD. (2020). *Global outlook on financing for sustainable development 2021: A new way to invest for people and planet*. Paris: OECD.

Ojeka, O. J., Egbetunde, T., Okoduwa, G. O., Ojeyode, A. O., Jimoh, M., & Ogunbowale, G. O. (2024). Moderating effect of institutional quality on the influence of debt on investment in Sub-Saharan Africa. *Future Business Journal*, *10*(1), 76.

Onyekwere, S. C., & Chikhungu, L. C. (2025). ODA and HDI nexus in Sub-Saharan Africa pre- and post-global financial crisis (GFC): New evidence from the ECOWAS region. *Journal of Contemporary African Studies*, *43*(2), 175-198.

Ouattara, B., & Strobl, E. (2008). Aid, policy and growth: Does aid modality matter? *Review of World Economics*, *144*(2), 347-365.

Rajan, R. G., & Subramanian, A. (2008). Aid and growth: What does the cross-country evidence really show? *The Review of Economics and Statistics*, *90*(4), 643-665.

Rodrik, D. (2008). The new development economics: We shall experiment, but how shall we learn? *Brookings Papers on Economic Activity*, *2008*(2), 1-22.

Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*, *9*(2), 131-165.

Shirley, M. M. (2008). Institutions and development: Advances in new institutional analysis series. Cheltenham: Edward Elgar.

United Nations Conference on Trade and Development (UNCTAD). (2022). *Trade and development report 2022: Development prospects in a fractured world: Global disorder and regional responses (UNCTAD/TDR/2022)*. Geneva: United Nations.

Wambaka, K. (2022). Impact of bilateral and multilateral aid on domestic savings

of Sub-Saharan African countries: Mediating role of institutional quality. *Journal of Economics and International Finance*, *14*(4), 103-111.

Wang, D., & Fillat-Castejón, C. (2024). Foreign aid, political power and FDI: Do aid-dependent institutions facilitate investment in Africa? *Insight on Africa*, *16*(1), 46-72.

Wheeler, D., & Mody, A. (1992). International investment location decisions: The case of U.S. firms. *Journal of International Economics*, *33*(1-2), 57-76.

Wingo, S. C. (2020). *New types of financing for a new financier: A theory of Chinese development finance*. Philadelphia, PA: University of Pennsylvania.

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). Cambridge, MA: MIT Press.

World Bank. (2017). *World development report 2017: Governance and the law*. Washington, DC: World Bank.

World Bank. (2020). *Africa group interim report 2020*. Washington, DC: World Bank Group.

World Bank. (2022). *Worldwide governance indicators*. Washington, DC: World Bank.

World Health Organization, Regional Office for Africa. (2019). *KOICA partners, WHO and partners conduct consultative meeting to make health services resilient for emergency response in Liberia*. Brazzaville: WHO AFRO.

World Health Organization, Regional Office for Africa. (2021). KOICA, MOH, NPHIL and stakeholders conduct health service resilient (HSR) project midterm review (MTR) in Liberia. Brazzaville: WHO AFRO.

Wu, Q., & Bote, D. (2025). Can foreign aid help Sub-Saharan African countries with economic growth? *Theoretical Economics Letters*, *15*(1), 83-109.

논문 접수일: 2025.11.24.
수정논문 접수일: 2025.12.29.
게재 확정일: 2026. 1.29.

Appendix

〈Appendix Table A1〉 Robustness test: Dynamic 2SLS with fixed effect ODA influence on domestic investment with institutional quality

ln_gcf	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
L.gcf	.534	.14	3.82	0	.26	.807	***
ln_oda	.044	.068	0.64	.053	.009	.178	**
ln_gdp	.023	.013	1.80	.071	-.002	.048	*
ln_natres	.057	.043	1.34	.182	-.027	.141	
ln_tradeopen	.043	.037	1.17	.243	-.029	.116	
ln_tel	-.147	.072	-2.04	.042	-.288	-.006	**
ln_edu	.133	.152	0.88	.381	-.165	.43	
COC	.474	.248	1.91	.057	-.961	.013	*
oda_coc	.245	.079	3.08	.002	.089	.4	***
GE	.429	.379	-1.13	.257	-1.171	.313	
oda_ge	.159	.14	1.13	.257	-.115	.432	
PS	.379	.132	2.87	.004	.121	.638	***
oda_ps	.143	.052	2.74	.006	.246	.041	***
RQ	.788	.207	3.81	0	.382	1.193	***
oda_rq	.302	.093	3.24	.001	.484	.119	***
RL	-.051	.317	-0.16	.873	-.671	.57	
oda_rl	.079	.127	0.63	.532	-.169	.328	
VA	-.128	.203	-0.63	.528	-.526	.27	
oda_va	.012	.074	0.17	.868	-.133	.158	
Constant	1.297	.537	2.42	.016	.245	2.35	**
Mean dependent var	3.715	SD dependent var	0.414				
Overall r-squared	0.520	Number of obs	299				
Chi-square	3,943.454	Prob 〉 chi^2	0.000				
R-squared within	0.626	R-squared between	0.417				

Note: 1) Tests of endogeneity.
H0: Variables are exogenous.
Robust score $chi^2(1)$=.033294 (p=0.00152).
Robust regression F(1,228)=.031501 (p=0.01093).
2) * p〈0.1, ** p〈0.05, *** p〈0.01.
3) ODA, Official Development Assistance; COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.

〈Appendix Table A1〉 Continued

First-stage regression summary statistics adjusted			Partial		Robust	
R-sq.	R-sq.	R-sq.	F(1,229)	Prob	〉	F
0.898	0.894		0.836	43.422		0.000

This robustness check employs a Fixed Effects Two-Stage Least Squares (FE-2SLS) specification to address potential endogeneity between ODA and domestic investment arising from reverse causality and donor allocation behavior, while controlling for unobserved time-invariant country-specific characteristics. By instrumenting ODA, this approach isolates exogenous within-country variation in aid flows, thereby strengthening the causal interpretation of the estimates. The highly significant coefficient on the lagged dependent variable confirms the strong persistence of domestic investment over time. The results indicate that ODA exerts a modest direct effect on domestic investment; however, the interaction terms between ODA and institutional quality measures are consistently positive and statistically significant, particularly for control of corruption, political stability, and regulatory quality. These findings suggest that foreign aid contributes meaningfully to domestic investment primarily in environments characterized by strong institutional frameworks.

〈Appendix Table A2〉 Descriptive overview of institutional quality in West Africa

Country	COC	GE	PS	RQ	RL	VA
Benin	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Burkina Faso	Low	Low	Low	Low	Low	Low
Cabo Verde	High	High	High	High	High	High
Côte d'Ivoire	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Gambia	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Ghana	High	High	Moderate	High	High	High
Mali	Low	Low	Low	Low	Low	Low
Mauritania	Low	Low	Low	Low	Low	Low
Niger	Low	Low	Low	Low	Low	Low
Nigeria	Low	Low	Low	Moderate	Low	Moderate
Senegal	High	High	Moderate	High	High	High
Sierra Leone	Low	Low	Low	Low	Low	Low
Togo	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Note: 1) 'High' denotes relatively strong institutional performance within the West African context, 'Moderate' reflects mixed or improving institutional capacity, and 'Low' indicates persistent institutional weaknesses. This qualitative classification is consistent with average WGI trends reported by the World Bank.
2) WGI, Worldwide Governance Indicators.

Appendix Table A2 presents a descriptive overview of institutional quality across the West African countries included in the study. The assessment is based on the six Worldwide Governance Indicators: Control of Corruption (COC), Government Effectiveness (GE), Political Stability (PS), Regulatory Quality (RQ), Rule of Law (RL), and Voice and Accountability (VA). Rather than reporting numerical scores, the table provides a qualitative characterization (high, moderate, or low) reflecting each country's average institutional performance over the study period of 25 years.

〈Appendix Table A3〉 Variable definitions and sources

Variables	Description	Measurement	Source (WDI)
L.ln_oda	Lagged official development assistance	Natural log (lagged one period)	World Development Indicators
L.ln_gdp per capita	Lagged GDP (economic size)	Natural log (lagged one period)	World Development Indicators
ln_natres	Natural resource rents	Natural log of % of GDP	World Development Indicators
ln_tradeopen	Trade openness	Natural log of (exports+imports)/GDP	World Development Indicators
ln_tel	Telecommunication infrastructure	Natural log of telephone subscriptions per 100 people	World Development Indicators
ln_edu	Human capital	Natural log of average years of schooling	World Development Indicators
COC	Control of corruption	Governance index	World Development Indicators
ODA×COC	ODA×control of corruption	Interaction between ln_oda and COC	World Development Indicators
GE	Government effectiveness	Governance index	World Development Indicators
ODA×GE	ODA×government effectiveness	Interaction between ln_oda and GE	World Development Indicators
PS	Political stability and absence of violence	Governance index	World Development Indicators
ODA×PS	ODA×political stability	Interaction between ln_oda and PS	World Development Indicators
RQ	Regulatory quality	Governance index	World Development Indicators
ODA×RQ	ODA×regulatory quality	Interaction between ln_oda and RQ	World Development Indicators
RL	Rule of law	Governance index	World Development Indicators
ODA×RL	ODA×rule of law	Interaction between ln_oda and RL	World Development Indicators
VA	Voice and accountability	Governance index	World Development Indicators
ODA×VA	ODA×voice and accountability	Interaction between ln_oda and VA	World Development Indicators

Note: GDP, Gross Domestic Product; COC, Control of Corruption; GE, Government Effectiveness; PS, Political Stability; RQ, Regulatory Quality; RL, Rule of Law; VA, Voice and Accountability.