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The Impact Of Foreign Aid On The Quality Of Governance: Evidence From Sub-Saharan Africa

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Abstract

Purpose – This paper examines how foreign aid affects the quality of governance in Sub-Saharan Africa. Previous theories put forth in this area offer conflicting guidance and prior empirical findings are often contradictory and inconclusive. This paper attempts to reconcile these divergent theories by shedding fresh insight into the aid and governance relationship.

Design/methodology/approach – The empirical analysis is conducted using pooled OLS, two-stage least-squares, the random-effects model, and the fixed-effects model on a panel of 30 Sub-Saharan African countries for a period of 21 years starting from 1996-2016.

Findings – The results indicate that aid has a positive and statistically significant impact on the quality of governance. This positive association can be attributed to donors targeting aid towards countries with improving governance, and the small coefficient on aid suggests that external actors have little or no significant influence on the country's political system. Subsequently, this study also finds that aid affects the dimension used to measure control of corruption the most and that receiving aid decreases corruption.

Originality/value – In light of numerous recent research in the aid-governance literature, this study broadens the discussion on foreign aid and governance in Sub-Saharan Africa.

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1. Introduction

"If good governance is needed for good development, but aid dependence leads to bad governance, then where does that leave us?" Ear (2007, p.277)

The growing pessimism around foreign aid has motivated new literature which finds that in a good policy environment, substantial amounts of foreign aid yield positive results in the aid-recipient countries (Burnside and Dollar, 2000). At its core, the role of foreign aid is to help recipient governments fulfill their development objectives, leading to poverty reduction and a better standard of living for the poor. However, in the majority of developing countries governments have poor institutional quality and as a result, the impact of aid is minimal (Bräutigam and Knack, 2004).

In many countries, foreign aid has helped in improving the political institutions (Jones and Tarp, 2016) while others suggest aid has had quite the contrary effect, particularly in Sub-Saharan Africa (Moss *et.al*, 2006). Moreover, aid donors prioritize their own goals more than the country's development policies and economic needs (Alesina and Dollar, 2000) resulting in decreased economic development. Aid has been a problem for these countries.

Sub-Saharan Africa is frequently referred to as the classic example of the harmful effects of aid on the quality of governance. Sub-Saharan Africa is 'aid dependent'; meaning that in the absence of external finance, it fails to carry out its essential functions such as delivering public services. Even after receiving aid Sub-Saharan Africa has unsatisfactory progress regarding political administration and bureaucratic services. What is surprising is that given the slow political progress there remains an increasing trend of giving development assistance earmarked to improve the governance quality via civil service reform, democratisation, and other activities. African governors from World Bank (1996) have also agreed with this notion that aid, on the whole, is eroding institutional quality in Africa (Goldsmith, 2000).

According to OECD (2023), the total amount of aid disbursed in 2021 was USD 186 billion out of which Sub-Saharan Africa has received USD 62.29 billion (World Development Indicator, 2023). This indicates that a significant portion of development assistance has been directed towards Sub-Saharan Africa, which is primarily the reason for this paper to analyse the impact of aid on the quality of governance in this region. Furthermore, these large amounts of development assistance to the recipient countries rightly justify the reason for such heated debate among economists about the aid effectiveness in these countries.

In the past, empirical studies have come to a mixed conclusion about the impact of aid on the quality of governance. Some suggest that aid has a beneficial effect on the quality of governance while others articulate that aid erodes governance quality. This study aims to shed new light at the aid and governance relationship by looking at evidence from Sub-Saharan Africa.

2. Literature Review:

2.1 Foreign Aid and Quality of Governance

There have been many empirical studies that have analysed the relationship between foreign aid and the quality of governance. The results remain inconclusive, where some can be said to be direct, and some are ambiguous and mixed.

The early 1990s was the inception of speculation for authors like Lancaster (1993a, 1993b) and Brautigam (1992) to figure out the use of Official Development Assistance (ODA) to enhance good governance which will promote economic development. Degnbol-Martinussen (2002) mentioned

three mechanisms through which aid facilitates governance, all of which point toward a positive association between the quality of governance and foreign aid.

In addition, numerous literature analyses fostering the quality of governance by using aid as a reward incentive or enticement. Kaufmann and Kraay (2002) talk about how a lot of multilateral agencies and individual donors like the World Bank and the United States of America have directed official development assistance towards countries that have improving institutions along with sound policy development. Their decision on targeting such countries originates from the reason that development assistance works best in countries that show promising institutional development. Booth (2011) discusses this *ex-post* condition noting the 'common sense appeal' of aid as a reward incentive for good governance. He mentions this is a crucial factor for policymakers to rationalise aid disbursements to corrupted political bodies. However, Epstein and Gang (2009) argue that the good intentions of donors may be thwarted by the receiving countries' unethical interests. Ear (2007) also argues that aid complements the quality of governance in recipient countries when technical support is provided for good governance, as well as by helping human development. In sub-Saharan Africa, it is found that improvement in economic freedom and democratic performance is related to a higher aid/GDP ratio (Goldsmith 2001).

While various theoretical rationales have paved a path for using aid as a method to facilitate governance quality, there is also a contrasting chorus of opinions that advocate that aid erodes the quality of governance. Busse and Groning (2009) state that large amounts of aid when coupled with rent-seeking and 'moral hazard', negatively impacts governance quality: statements which are seconded by Moss et al. (2006). Brazys (2013) discusses that governments become less accountable to the rational and efficient expenditure of public money especially when the source is anything other than the domestic tax revenues. This is because the budget surpluses will have to be repaid to the donor but not to the public. Alternatively, governments receiving large amounts of foreign aid or other external finance time and again are influenced by a 'use it or lose it' mentality resulting in government largesse which hinders economic development and/or quality of governance (Brazys 2013). In line with this Castel-Branco (2008) in his case study on aid effectiveness in Mozambique noted that many recipient governments first use this development assistance in their interest of survival and second for efficient use of public development. Moreover, Ahmed (2012) has shown that aid is being used to fund their election campaigning which in turn supports the growth of corruption, favouritism, and nepotism which erodes the quality of governance.

Aid dependency reduces recipient countries' accountability and local ownership as well as reduced alacrity of generating tax revenues. Consequently, in the recipient countries, Knack (2001) observed a negative association between aid and governance quality. Likewise, Bräutigam and Knack (2004) concluded a robust and negative link upon studying the aid-governance quality relationship for 32 sub-Saharan African countries. Their study had another essential finding that countries exhibiting improved governance quality received more aid from aid donors.

Using a panel dataset of 209 countries and territories over five years, Ear (2007) studied the impact of aid and quality of governance. The author made use of data from World Governance Indicators (WGI). Furthermore, a composite measure for *Governance Index* was constructed by the author by taking simple averages of the six aspects of governance without attaching any weights. The study applied panel estimation method and concluded that higher levels of aid reduce only one dimension (the rule of law). However, the results were not statistically significant. Moreover, the author noted that the association between the quality of governance and foreign aid is not robust. Likewise, Asongu (2013) also used World Governance Indicators (WGI) dataset to study the effect of foreign aid on the quality of governance, where the author found a negative association between the two variables.

Therefore, on the whole, the empirical evidence concerning the relationship between aid and the quality of governance remains ambiguous. Nonetheless, a majority of the scholarly literature suggests that the quality of governance is negatively affected by foreign aid while there remains some suggestion that foreign aid is granted as an incentive to improve the quality of governance.

2.3 Endogeneity of Aid:

Boone (1996), and Burnside and Dollar (2000) take into account the issue of simultaneity bias due to the endogeneity of aid explicitly. The authors noted a brief discussion of the potential sources of endogeneity of aid in their aid-growth regression analysis. The principal cause is that it is arduous to distinguish aid as a lump-sum transfer from the independent level of income. It is well known that empirically the relationship between aid and income per capita is negative.

Traditionally, aid is not exogenous to growth if aid is dependent on the level of income and given that there is a conditional convergence towards a steady state concerning per capita income. At the least, it can be assumed that aid is predetermined. Typically, in cross-country studies of aid say, four-year averages of variables are taken. If this is the case the assumption of aid allocation decisions must be made before four to five years or else the pre-determinedness assumption will be violated. This is very seldom the case, and hence the endogeneity issue should be taken into account seriously. From a researcher's perspective, it is a very thought-provoking issue that Boone (1996), Burnside and Dollar (2000) have shed light upon.

In the context of aid-governance regressions, if aid donors provide resources based on the recipient countries' quality of governance as a reward or punishment, then aid will be endogenous. Knack (2001) notes that OLS [Ordinary Least Squares] estimates will be upward bias if donors are allocating aid toward nations with declining governance quality, i.e. aid could be endogenous. He further states by looking at income per capita as a determinant of a need for aid, it is perhaps more reasonable for donors to target aid toward improving governance quality since these governments are more likely to use aid effectively. Consequently, the latter part of the argument will make the OLS estimate understate the true effect of foreign aid on the quality of governance.

3. Data and Methodology

3.1 Data Description

This study uses four-year averages of five periods from 1996-2016 for a panel of 30 Sub-Saharan African countries consisting of 150 observations. To reduce annual volatility in the data, four-year averages of all data have been computed, leaving five periods of four years averages. The periods used are - Period 1: 1996-00, Period 2: 2001-04, Period 3: 2005-08, Period 4: 2009-12, Period 5: 2013-16. Tables I and II below detail the description of the variables and the descriptive summary statistics of the dataset used to carry out the analysis.

Table I: Variables Description

Variables	Definitions	Data Source
QUALITY OF GOVERNANCE	A composite governance quality index constructed using perception-based measures.	Calculation made by author using data from WGI[1]
ACCOUNTABILITY	Perception-based measure on Voice and Accountability.	WGI
STABILITY	Perception-based measure for political stability and absence of violence and measure.	WGI
EFFECTIVENESS	Perception-based measure for the ability of government to make effective policy.	WGI
REGULATORY	Perception-based measure on the regulatory quality	WGI
LAW	Perception-based measure for the rule of law.	WGI
CORRUPTION	Perception-based measure on control of corruption.	WGI
ODAGNI	Official Development Assistance (ODA) as a percentage of GNI	World Bank (WDI)[2]
LAGAID	Lagged one period of ODA as a percentage of GNI	World Bank (WDI)
POPGRW	Population growth rate	World Bank (WDI)
LIFEXP	Life expectancy at birth	World Bank (WDI)
GOVEXP	Total government expenditure as a percentage of GDP	World Bank (WDI)
TRADEGDP	Total imports plus exports as a percentage of GDP	World Bank (WDI)
GDPPC	GDP per capita growth rate in real terms	World Bank (WDI)
EX-BRITISH	Colony dummy to capture the British colonial legacy	

The 30 countries used in the dataset are namely Algeria, Angola, Benin, Burkina Faso, Cameroon, Chad, Cote d' Ivoire, Congo, Egypt, Ethiopia, Ghana, Guinea, Kenya, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Niger, Nigeria, Rwanda, Senegal, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zambia and Zimbabwe.

The dependent variable is the 'Quality of Governance' index; it is a simple unweighted average of all the six dimensions of the governance indicators obtained from the World Bank's Worldwide Governance Indicators (WGI) namely: Voice and Accountability; Political Stability and Absence of Violence/Terrorism; Government Effectiveness; Regulatory Quality; Rule of Law; Control of Corruption. It is re-scaled with a score of 0 to 5. A higher score indicates a better quality of governance and a lower score means a lower quality of governance.

[1] World Bank's Worldwide Governance Indicators (WGI) available at: https://info.worldbank.org/governance/wgi/
[2] World Bank's World Development Indicators (WDI) available at: http://wdi.worldbank.org/tables

Table II: Summary Statistics

Variables	N	Mean	Std.Dev.	Min	Max	Skewness	Kurtosis
QUALITYOF GOVERNANCE	150	1.877	0.553	0.534	3.338	0.124	2.966
ODAGNI	150	7.724	6.504	0.083	31.783	0.995	3.91
POPGRW	150	2.517	.812	0.151	5.521	-0.460	4.052
LIFEXP	150	57.97	8.294	42.645	75.749	0.499	2.427
GOVEXP	150	14.599	8.290	5.249	82.062	5.154	39.396
TRADEGDP	150	64.263	22.930	21.161	147.516	0.961	4.026
GDPPC	150	1339.59	1652.169	122	9683.252	2.484	9.87
EX-BRITISH	150	0.373	0.485	0	1	0.524	1.274

3.2 The Model

This study aims to analyse the impact of foreign aid on the quality of governance of Sub-Saharan African countries. A panel estimation methodology is applied using data from 30 of the largest ODA recipients in Sub-Saharan Africa with four-year averages of five periods from 1996-2016. The following model is employed:

$$QUALITY\ OF\ GOVERNANCE_{i,t} = a + \beta_1 ODAGNI_{i,t} + \beta_2 POPGRW_{i,t} + \beta_3 LIFEXP_{i,t} + \beta_4 GOVEXP_{i,t} + \beta_5 TRADEGDP_{i,t} + \beta_6 EX\text{-}BRITISH_{i,t} + \beta_7 GDPPC_{i,t} + u_{i,t} \quad (1)$$

Where i indexes countries and t indexes time. The dependent variable $QUALITY\ OF\ GOVERNANCE_{i,t}$ is the quality of governance, and the independent variables are $ODAGNI_{i,t}$ which is ODA as a percentage of gross national income (GNI), $POPGRW_{i,t}$ represents the annual population growth rate in each of the countries, $LIFEXP_{i,t}$ represents the total life expectancy in years of the sampled countries, $GOVEXP_{i,t}$ measures the total government expenditure as a percentage of GDP for the countries, $TRADEGDP_{i,t}$ takes into account the "trade openness" of the economy measured as total trade to GDP ratio of the countries, $EX\text{-}BRITSH_{i,t}$ is a dummy variable to capture whether the countries have an ex-British colonial legacy or history, and $GDPPC_{i,t}$ measures GDP per capita in real terms.

3.3 Estimation Method

This analysis makes use of time-series cross-sectional (TSCS) data for a period of 21 years starting from 1996-2016, based on a panel of 30 Sub-Saharan African countries. As mentioned before, to reduce annual volatility in the data, four-year averages of all data have been computed, leaving five periods of four years averages comprising 150 observations. The key variable of interest ODA as a percentage of GNI was transformed into logarithmic form, therefore the model being estimated is in the level-logs format.

A number of models will be used to test the hypothesis and estimate the parameters of equation *(1)*. These involve estimation methods richer than OLS estimates such as pooled OLS model, two-stage least-squares (2SLS), the random-effects model (RE), and the fixed-effects (FE) model which were previously employed by scholars such as Knack (2001), Brautigam and Knack (2004).

In equation *(1)* the error term should capture all factors other than those present in the model. Hence, it is very much plausible that the factors in the error term are correlated with $ODAGNI_{i,t}$, from equation *(1)*. If this is the case then pooled OLS model will have an upward bias in predicting the impact of aid on quality of governance. To deal with this issue, an instrumental variable approach is required, provided that valid instruments are present. The two-stage least-squares is used to calculate the IV estimates used by Knack (2001)

and Brautigam and Knack (2004). This method considers $ODAGNI_{i,t}$ from equation *(1)* no longer exogenous making it an endogenous variable.

The 2SLS model can be written in simultaneous-equations:

$$QUALITY\ OF\ GOVERNANCE_{i,t} = a + \beta_1 ODAGNI_{i,t} + \beta_2 POPGRW_{i,t} + \beta_3 LIFEXP_{i,t} + \beta_4 GOVEXP_{i,t} + \beta_5 TRADEGDP_{i,t} + \beta_6 EX\text{-}BRITISH_{i,t} + \beta_7 GDPPC_{i,t} + u_{i,t} \quad (2)$$

$$ODAGNI_{i,t} = a_0 + a_1 Z_{it} + u_{i,t} \quad (3)$$

where, Z is the instrument and $E(u|Z) = 0$.

One period of lagged aid values, is used here as an instrumental variable to deal with potential endogeneity as used by Headey (2005) and Ear (2007). To control for unobserved heterogeneity in the model the fixed effects model is used. This method removes the effect of any time-invariant characteristics from the regressors thus enabling to get an unbiased causal effect of aid on quality of governance. The critical assumption of the FE model is that each country's characteristics should be uncorrelated with other countries in the sample. Again, if the error term is correlated, we will get biased results. Thus, the random-effects model should be used to analyse the relationship. The logic behind using RE is that this model assumes that the cross-country variations are random and are not correlated with the regressors. Therefore, if it is believed that cross-country variations may affect the dependent variable random-effects model should be employed (Torres and Reyna, 2007).

4. Results and Discussion

This section reports the empirical results of the model discussed in the previous section and critically analyses the aid-governance relationship of the sampled countries. This section commences by presenting the results of the diagnostics checks done to assess the reliability of the models.

4.1 Robustness of Models

The estimates found using the pooled OLS, 2SLS, random effects (RE), and the fixed effects (FE) models are presented in Table III. To study the impact of the lagged value of aid a separate regression was done under each model except the 2SLS model. Under the 2SLS model, only one regression was carried out using lagged aid as the instrument variable. To understand which model is more reliable the Hausman test and the Breusch-Pagan Lagrange Multiplier test were carried out. At the 5 percent level, the Hausman test fails to reject the null hypothesis, hence concluding that the random effects model is better than the fixed effects model. Subsequently, the Breusch-Pagan Lagrange Multiplier test was applied to check between the random effects and the pooled OLS model. The null hypothesis was rejected hence concluding that the random effects model is more appropriate than the pooled OLS model. The Breusch-Pagan Lagrange Multiplier test was done by incorporating the lagged value of regression in the pooled OLS model and the random effects model. Again, the null hypothesis was rejected at the 5 percent level concluding that random effects are better. This suggests that there is evidence of significant differences across the thirty countries. At last, to compare the pooled OLS and the 2SLS model the Hausman test was conducted. At the 5 percent level, it is confirmed that 2SLS is a better model than the pooled OLS model.

Looking at the F or Wald statistics, all of the ten regressions are significant at the 5% level. This means all of the models can be used to predict the impact of aid on the quality of governance. By comparing all the R-squared across the models, the pooled OLS seems to have the highest R-squared. Under the assumption that *ODAGNI* may be endogenous, model (4) in Table III uses the two-stage least squares method where *LAGAID,* one period of lagged aid values, is used as an instrumental variable to deal with potential endogeneity as used by Headey (2005) and Ear (2007). Put another way, it is believed a lagged aid term will test the dynamic effects

of aid on governance over the short to medium term. For each regression model, robust standard errors were used to correct for potential heteroscedasticity.

4.2 Discussion of Econometric Results for Foreign Aid and Quality of Governance

As stated above, Table III reports three different specifications under each model, except the 2SLS model, with quality of governance as the dependent variable. All the models are estimated with five periods of four-year averages from 1996-2016. The first regressions under each model are carried out without using any aid variables. It is seen that $POPGRW_{i,t}$, $LIFEXP_{i,t}$, and $GOVEXP_{i,t}$ all are significant at the 10% level under the pooled OLS method. However, subsequently, the significance changes for $POPGRW_{i,t}$ and $GOVEXP_{i,t}$ in the 2SLS, random effects, and fixed effects method. The second regressions under each model uses ODA/GNI (in logs) as the predictor variable. In the third regression for all the models, one period lag of ODA/GNI is substituted instead of ODA/GNI as the explanatory variable.

Looking at the results, it can be seen that ODA has *a positive* correlation with the quality of governance, not a negative correlation as predicted by Knack (2001) and Brautigam and Knack (2004). The signs for the other variables are as expected, except for population growth. It can be noted that both the aid variables, i.e. lagged and without lagged aid are significant at the 5 percent level. $ODAGNI_{i,t}$ is also significant at a 5 % level for 2SLS regression, where aid is instrumented with one period of lagged aid value. However, as expected once the unobserved heterogeneity is controlled for under the models in (6), (7), (9), (10), there is no significant relation between aid and quality of governance.

Although the aid-governance results are statistically significant, these results are not economically significant because the effect of ODA is consistently small. These results are in line with Kaufmann and Kraay (2002) and Booth (2011) who associate this positive link between aid and quality of governance by suggesting that donors such as the USA and the World Bank, target aid towards countries with improving governance. This *ex-post* conditionality is enforced so that governments in aid-recipient countries make an effort to make their political system more accountable to qualify for future aid. Goldsmith (2001) notes that the small coefficient of ODA suggests that a country's political system would be influenced by the local politicians and not depend on what external actors want. He further suggests that it is less likely that donors would want to bring a positive change in democracy as this might negatively affect the donors' influence on the aid-recipient countries.

Table III: Aid-Governance Regressions - Using five periods of four-year averages from 1996-2016

VARIABLES DEPENDENT VARIABLE: QUALITYOF GOVERNANCE	(1) Pooled OLS	(2) Pooled OLS	(3) Pooled OLS	(4) 2SLS	(5) Random Effects	(6) Random Effects	(7) Random Effects	(8) Fixed Effects	(9) Fixed Effects	(10) Fixed Effects
ODAGNI	-	0.241***	-	0.134**	-	0.0313	-	-	0.0305	-
		(0.0510)		(0.0616)		(0.0339)			(0.0373)	
LAGAID	-	-	0.100**	-	-	-	0.0187	-	-	0.0262
			(0.0441)				(0.0189)			(0.0181)
POPGRW	-0.124*	-0.182***	-0.163**	-0.223**	-0.0575	-0.0732	-0.0755	-0.0243	-0.0261	-0.0170
	(0.0704)	(0.0621)	(0.0729)	(0.0906)	(0.0557)	(0.0505)	(0.0524)	(0.0702)	(0.0685)	(0.0664)
LIFEXP	0.0172**	0.0130*	0.0143*	0.0179**	0.0202**	0.0190**	0.0174*	0.0239**	0.0239*	0.0221*
	(0.00757)	(0.00725)	(0.00780)	(0.00856)	(0.00968)	(0.00912)	(0.00907)	(0.0117)	(0.0117)	(0.0118)
GOVEXP	0.00948*	0.00758*	0.00936*	-0.00812	-0.00231	-0.00209	-0.00165	-0.00312	-0.00320	-0.00283
	(0.00494)	(0.00451)	(0.00478)	(0.0101)	(0.00205)	(0.00208)	(0.00203)	(0.00229)	(0.00236)	(0.00230)
TRADEGDP	0.00159	0.000115	0.000703	0.00185	-0.00350***	-0.00334**	-0.00333**	-0.00447***	-0.00469***	-0.00499***
	(0.00247)	(0.00243)	(0.00229)	(0.00243)	(0.00125)	(0.00143)	(0.00143)	(0.00110)	(0.00120)	(0.00101)
EX-BRITISH	0.0943	0.0701	0.0594	0.282**	0.0571	0.0757	0.0489	-0.0106	0.00952	-0.0665
	(0.0911)	(0.0858)	(0.0930)	(0.142)	(0.110)	(0.129)	(0.137)	(0.0354)	(0.0319)	(0.0524)
LOGGDPC	0.0178	0.294***	0.103	0.640**	-0.0792	-0.0450	-0.0566	-0.122*	-0.105	-0.122*
	(0.0700)	(0.0911)	(0.0837)	(0.296)	(0.0641)	(0.0600)	(0.0653)	(0.0711)	(0.0651)	(0.0713)
Constant	0.797	-0.887	0.424	-4.015*	1.614***	1.431***	1.633***	1.704***	1.557***	1.806***
	(0.584)	(0.667)	(0.612)	(2.312)	(0.323)	(0.406)	(0.329)	(0.274)	(0.354)	(0.271)
Observations	150	150	149	149	150	150	149	150	150	149
Number of ID	30	30	30	30	30	30	30	30	30	30
R-squared	0.226	0.315	0.271	-	-	-	-	0.166	0.172	0.192

Since this is a level-log model, we can see from the estimates in regression model (4) that for the median country in the sample, a 1% increase in ODA/GNI would increase the quality of governance score by only 0.0013. As mentioned before even though the result is statistically significant at the 5% level, given the small magnitude of the coefficient it is not an economically significant result. As for the other explanatory variables, life expectancy and British colonial legacy all have positive coefficients which is in line with *a priori* expected signs.

However, in line with the literature, it was expected that population growth to have a positive effect on the quality of governance. A possible explanation might be that this study uses a sample of African countries which is ranked as the second most populous continent in the world. Hence the negative relation may be arising because of the lack of government resources per capita in several countries used in the sample (Quazi and Alam 2015).

The variables associated with government expenditure, trade as a percentage of GDP, and GDP per capita growth initially have positive signs as expected, but subsequently, in the fixed effects and random effects models, their signs change. It is plausible that over time there is little variation in the data of the stated variables so when unobservable heterogeneity is controlled for their signs change.

Even though the *ex-post* condition implies a positive relationship between foreign and quality of governance, it also allows for the major potential of endogeneity in this link where increasing/decreasing aid could be both cause and effect of improving/deteriorating governance.

This possibility of endogeneity is confirmed by results in Table IV where we see a positive relationship when ODA/GNI is substituted as the dependent variable instead of quality of governance. This implies that levels of aid increase with improving levels of governance. Quality of governance is significant at a 1% level, and the R-squared of the model is 0.754. This endogeneity was addressed by using an instrumental variable approach in the 2SLS regression, (4), in Table III. However, a valid instrument for the aid-governance relationship has mixed evidence of being successful in the literature. To address this endogeneity Headey (2005) and Ear (2007) suggest using lagged values of aid, which is an internal instrument and does not help to solve the problem entirely.

Knack (2001) and Brautigam and Knack (2004) use infant mortality and life expectancy as indicators and measures of recipient need while to measure donor interest they use population or colonial legacy. A valid instrument can be used to derive an exogenous measure of aid. Needless to say, these instruments are fundamentally flawed as they are very unlikely to be robustly independent of governance (Ear 2007). Even methodologically these instruments are very likely to induce collinearity between aid and the other regressors. Headey (2005) argues that if the 'aid-hat' variable is re-introduced, it will have a higher correlation than the previous un-instrumented variable, which could lead to biased IV estimates. Thus, it is very evident that the Knack (2001) result overestimates the negative impact of aid on governance. The Knack result is also very sensitive to alternative specifications as seen from Table III of this study. Moreover, using lagged values of aid yields an opposite result to what Knack found.

Table IV: Governance-Aid Regression - Using five periods of four-year averages from 1996-2016

VARIABLES	(1) Pooled OLS	(2) Random Effects	(3) Fixed Effects
DEPENDENT VARIABLE: ODAGNI			
QUALITYOF GOVERNANCE	0.480***	0.326	0.249
	(0.130)	(0.166)	(0.315)
POPGRW	-0.299***	-0.337***	-0.0653
	(0.0919)	(0.127)	(0.147)
LIFEXP	0.00910	0.0114	-0.00637
	(0.00901)	(0.0141)	(0.0289)
GOVEXP	0.00331	0.00339	0.00330
	(0.00387)	(0.00314)	(0.00552)
TRADEGDP	0.00536**	0.00471	0.00834
	(0.00249)	(0.00289)	(0.00515)
EX-BRITISH	0.0551	-0.0214	-0.658***
	(0.120)	(0.217)	(0.117)
LOGGDPC	-1.154***	-0.920***	-0.527*
	(0.0970)	(0.185)	(0.275)
Constant	6.600***	5.163***	4.404***
	(0.885)	(1.052)	(1.237)
Observations	150	150	150
Number of ID	30	30	30
R-squared	0.754	-	0.296

4.3 Discussion of Econometric Results for Foreign Aid and Corruption

Regressions were also run on individual components of governance using equation *(1)* to check which component is affected the most by ODA. Therefore, a total of seven regressions of equation *(1)* is estimated. It is found ODA affects $CORRUPTION_{i,t}$, the indicator used to measure control of corruption, the most out of all the six components.

Separate regressions were done under all the models: the first with ODA/GNI as the predictor variable and then subsequently substituting aid with one period lagged value of aid as the predictor variable. From Table V we observe that receiving aid *decreases* corruption, since a higher value on the indicator means lesser corruption. Under the pooled OLS method both the ODA/GNI and the lagged value of aid are significant at 1% level. Subsequently, as expected the relationship between aid and corruption loses significance once the unobserved heterogeneity is controlled for under the random effects and the fixed effects model.

Although this result is subject to potential endogeneity it is in line with Tavares (2003) who also found that aid decreases corruption. There are two possible explanations presented by the author. First, the conditionality effect, i.e. aid is given to countries with the condition that they improve their institutional quality to qualify for future aid. Second, the liquidity effect, i.e. foreign aid helps fill the resource gap in governments such as alleviating public revenue shortages. This, in turn, helps governments to increase salaries for government officials which may decrease corruption; this argument is also supported by Knack (2001).

Table V: Aid-Corruption Regression - Using five periods of four-year averages from 1996-2016

VARIABLES	(1) Pooled OLS	(2) Pooled OLS	(3) Random Effects	(4) Random Effects	(5) Fixed Effects	(6) Fixed Effects
DEPENDENT VARIABLE: CONTROL OF CORRUPTION						
ODAGNI	0.206***	-	0.0490	-	0.0429	-
	(0.0422)		(0.0374)		(0.0364)	
LAGAID		0.0725***	-	0.00765	-	0.0165
		(0.0375)		(0.0159)		(0.0189)
POPGRW	-0.252***	-0.231***	-0.118***	-0.113**	-0.0463	-0.0392
	(0.0570)	(0.0730)	(0.0402)	(0.0455)	(0.0608)	(0.0617)
LIFEXP	0.0143**	0.0158**	0.0169*	0.0167*	0.0208	0.0197
	(0.00665)	(0.00695)	(0.00906)	(0.00952)	(0.0142)	(0.0144)
GOVEXP	0.00532	0.00685	-0.00185	-0.00156	-0.00320	-0.00291
	(0.00402)	(0.00426)	(0.00237)	(0.00236)	(0.00282)	(0.00284)
TRADEGDP	-0.00189	-0.00127	-0.00158	-0.00146	-0.00246	-0.00247
	(0.00190)	(0.00186)	(0.00133)	(0.00136)	(0.00162)	(0.00169)
EX-BRITISH	-0.0633	-0.0678	-0.0811	-0.0962	-0.269***	-0.333***
	(0.0702)	(0.0747)	(0.124)	(0.125)	(0.0428)	(0.0613)
LOGGDPC	0.213***	0.0382	-0.0152	-0.0489	-0.0795	-0.104
	(0.0766)	(0.0727)	(0.0523)	(0.0610)	(0.0778)	(0.0809)
Constant	-0.0182	1.150**	1.343***	1.619***	1.517***	1.789***
	(0.558)	(0.498)	(0.479)	(0.364)	(0.454)	(0.384)
Observations	150	149	150	149	150	149
R-squared	0.386	0.335	-	-	0.115	0.112
Number of ID	30	30	30	30	30	30

5. Conclusion

This study analyses the relationship between foreign aid and the quality of governance on a sample of 30 Sub-Saharan African countries, using five periods of four-year rolling averages from 1996-2016. The dependent variable used was the 'Quality of Governance' index, a simple unweighted average of the six dimensions of governance. Data on the six dimensions of governance was obtained from the Worldwide Governance Indicators. ODA as a percentage of GNI, obtained from the World Bank Indicators database, was used as the predictor variable. The study uses four models to estimate the impact of aid on governance: pooled OLS, two-stage least squares (2SLS), random effects, and fixed effects.

This study began by pointing out the discrepancy between theory and evidence in the literature on the relationship between aid and governance quality. While numerous scholars have put forward the theoretical rationales and empirical results of the positive effect of aid on the quality of governance, an equally vocal chorus of opinions present theories and empirical evidence that the aid-governance relationship is quite the contrary. This study makes an effort to reconcile these conflicting theories and empirical evidence by suggesting that aid has a positive and statistically significant impact on the quality of governance. This positive association can be linked with donors targeting aid towards countries with improving governance and the small coefficient on ODA suggests that external actors do not have a significant influence on the country's political system. Subsequently, this study also finds that aid affects the dimension used to measure control of corruption the most, and that receiving aid decreases corruption. That being said, these six dimensions of governance are not

enough to gauge state capacity hence it is quite hard to generalize these results to other aspects of a state's operations.

5.1 Policy Implications

The results of the study reveal two important policy implications. Firstly, aid must be provided with conditions attached that encourage sound political institutions and better governance quality, which will eventually enable countries to support their economic growth. Secondly, aid-recipient governments need to treat aid programs as temporary since aid can play an important role to facilitate a government's self-reliance capacity, but only for a certain period. Therefore, aid donors and aid-recipient governments need to work side by side to plan and anticipate the eventual termination of aid.

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