

GOVERNANCE INSTITUTIONS AND FOREIGN AID EFFECTIVENESS IN NIGERIA

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Article History

Received : 24 April 2024

Revised : 19 May 2024

Accepted : 28 May 2024

Published : 28 June 2024

To cite this article

Stanley Uche Akachukwu & Festus Nndidi Osagu (2024). Governance Institutions and Foreign Aid Effectiveness in Nigeria. *Journal of Applied Financial Econometrics*, Vol. 5, No. 1, pp. 101-121. <https://DOI:10.47509/JAFE.2024.v05i01.07>

Abstract: Foreign aid is a vital source of finance for developing countries. Existing studies have investigated the effect of foreign aid on Gross Domestic Product (GDP) of countries, however, little attention has been devoted to investigating the impact of governance institutions on foreign aid effectiveness in Nigeria. This study, therefore, investigated the effects of governance institutions on foreign aid effectiveness in Nigeria using annual data spanning 1981 to 2020. Two Stage Least Square (2SLS) and General Method of Moments (GMM) models were used as the estimation techniques. The study found that governance institution retards foreign aid effectiveness in Nigeria in both the 2SLS and GMM. The result also showed that there exists an improvement in foreign aid effectiveness during the democratic regime than the military regime in Nigeria. The study concluded that governance institution in Nigeria is weak and negatively affect the effectiveness of foreign aid. The paper recommends requisite institutional reform and strengthening of the governing process to enhance the effective use of ODA in Nigeria

Keywords: Foreign aid effectiveness, Governance institutions, Economic growth

1. INTRODUCTION

Foreign aid also known as Official Development Assistance (ODA) has been one of the vital financing options to bridge the continual resource gap associated with developing countries. Sub-Saharan Africa received nearly one-quarter of US\$ 3 trillion of net ODA dispensed over the past 50 years (OECD, 2018). In Nigeria, ODA which comprises grants, technical assistance or concessional loans has been a valuable source of investment finance in basic social service delivery, infrastructures, and human capital. Statistically, Nigeria ranks as the 3rd largest recipient of net ODA in Africa from 2015 to date accounting for more than 5% of the total receipt in the continent (see: Table

2.1) and attracted 40% directed to West Africa Monetary Zone (WAMZ) countries (Anonymous, 2013). Aid remains essential in Nigeria due to insufficient funds to overcome continual humanitarian crises arising from banditry and insecurity, social and economic infrastructural deficits, and widening fiscal deficits. In Nigeria, when comparing the goals of ODA with developmental indices, it casts doubt on the benefits of foreign aid contrary to the success story experienced in some aid recipient countries like Botswana, Mauritius, China, and Taiwan

Over the past decade, large empirical literature has dominated the debate over foreign aid and justification for the differences in development recorded in various aid recipient' countries. It is on the basis of this puzzle that the concept of good governance emerged in the aid-effectiveness literature. Burnside and Dollar (2000) emphasized the quality of institutions and policies in the recipient countries as a vital criterion for aid effectiveness. It has been widely acknowledged that foreign aid could be ineffectual where governance institutions are sufficiently weak, rule of law is selectively applied, and the political and economic powers of the elite are without bounds. The concept of good governance becomes imperative to understand the role of public sector administration in supporting growth via ODA in Nigeria.

It could be argued from an institutional point of view that the situation in Nigeria is not very pleasant. According to the World Bank's Ease of Doing Business ranking (2019), the statistics ranked Nigeria 131 out of 190 countries in the world signaling that Nigeria's economy is not investment-friendly. Nigeria's economic outlook is characterized by low investment capacity, decreased productivity and low income, hence, cumulating to poverty. According to the World Factbook (2016), about 62% of the Nigerian population is still living in extreme poverty. Unemployment is on the increase. The public debt-to-GDP ratio is above 23% in the first quarter of 2022. Recently, Nigeria's economy fell into recession, prompted largely by a steep decline in foreign exchange earnings triggered by fallen crude oil prices and low oil production levels. Most of these problems are directly or indirectly attributed to governance crises in the country such as corruption, lack of transparency, and accountability. However, efforts to address these developmental challenges have necessitated the federal government to adopt various economic and institutional reforms to attract more foreign aid among other financing options. When aid finances the right investment, GDP is positively affected, which increases aggregate demand and ultimately affects people's welfare. It is glaring that the issue remains topical in terms of the continual quest to attract more international funds in Nigeria as a result of the resource gap. It is therefore important to examine the intermediating role of institutional quality in Nigeria in enabling development via aid effectiveness.

1.1. Statement of the Problem

Sustainable and inclusive growth is the ultimate desire of all nations, especially developing ones. In order to ensure speedy and sustained development, investment becomes inevitable. Mobilizing financial resources domestically to undertake such investments continue to be inadequate and imposes a major policy challenge in developing countries. In Nigeria, foreign assistance has been an effective financing strategy because it imposes little or no debt burden due to its concessional nature, unlike debt financing which worsens the country's existing debt profile. Efforts have been made by the successive governments in Nigeria to strengthen international relations aimed at speeding up development via foreign aid. The outcome of the reforms and cooperation have shown measurable results like an upward trend in ODA. Increased ODA to Nigeria may also be attributed to the large market size, high poverty ratio, market reforms and abundant natural resources. Statistically, Nigeria attracted about \$US 3million, \$US 170m and \$US 5b of net inflow of ODA in 1980, 2000 and 2018, respectively. In spite of massive ODA inflow to Nigeria, Nigerians' living standards and macroeconomic indicators still rank poor.

World Bank (2015) asserted that no quantity of financing is sufficient to achieve ambitious development without a supporting country-level policy framework hinged on credible institutions. They suggested weak governance institutions and low public sector management as impediments to ODA effectiveness in recipient countries. In Nigeria, all dimensions of governance indicators from the Ibrahim Index of African Governance (IIAG) from 2000 to date are below-average percentage scores. The corruption statistics by Transparency International (2021) rated Nigeria 24 out of 100 on a scale ranging from 0 (the highest level of corruption) to 100 (the highest level of integrity). This signifies that institutional quality is a serious issue worth examining in Nigeria.

The recent decline in commodity prices in the international market has posed additional challenges to the country's external balance and public finances. Unemployment increased from 5% in 2010 to more than 30% in 2021. Government debt-to-GDP rose from 8.8% in 2010 to 23% in 2021 resulting in huge cost of government debt services accounting for about #4.22 trillion in 2021. Nigeria is not only managing the current dwindling revenue but also making effort to reposition the economy through revamping infrastructural facilities and diversifying the economy away from oil. Part of the fund is expected to be sourced from multilateral institutions in the form of concessional loans and grants. As Nigeria continues to attract more aid, it is expedient to examine the role of government administration and management on the success or failure of foreign aid. Against this backdrop, the paper wants to examine the intermediary role of public institutions on aid effectiveness in Nigeria.

2. LITERATURE REVIEW

Foreign aid is usually channeled to achieve various goals by the recipient countries. Essentially, the main aim of foreign aid is to augment the recipient country's revenue, increase investment and thereby accelerating growth, as posited by the neoclassical theory. Empirically, a number of studies have investigated the effectiveness of official development assistance (ODA) in recipient countries. Burnside and Dollar (2000) examined the relationships between foreign aid, economic policies, and growth of per capita GDP in low-income countries. It also investigated if foreign aid is selectively distributed to countries that have adopted sound policies. The result found a positive impact on growth in developing countries with good fiscal, monetary, and trade policies but no positive effect on growth in the presence of poor policies. Murphy and Tresp (2006) reconsidered the role of economic policy in determining the effectiveness of foreign aid for generating economic growth in developing countries. Findings from the study showed that good policy enhances the effectiveness of foreign aid in spurring growth. Salisu, (2007) evaluated twenty SSA spanning from 1970-2001. The study adopted 2SLS and found that macroeconomic instability, bad governance, policy inconsistencies, and incessant social-political crises in SSAs undermine aid effectiveness in these countries.

Bakare (2011) examined the macroeconomic impact of foreign aid in Nigeria using data spanning from 1988-2010. The study used the index of corruption as a measure of the institution and applied vector autoregressive model. The findings of the study revealed that aid does not support growth in Nigeria. However, Seleya and Thiele (2012) showed that the impact of foreign aid on bureaucratic quality in recipient countries varies with the mode of delivery. They found specifically that grants impair the functioning of the bureaucracy, whereas loans are not. The negative impact of grants is larger when they are given as budget support rather than as assistance for specific projects or programs in general.

Again, Ajayi, (2013) investigated the role of institutions in Africa on aid effectiveness over the period of 1996-2010. The paper applied data from an international country risk guide and adopted new growth theory framework. The study concluded that aid impacted significantly on institutions that spur growth in these economies. In'airat (2014) explores whether the quality of governance is employed as a criterion in foreign aid allocation in developing countries. The study uses different instrumental variables as estimators to analyze the determinants of aid allocation over the period 2001–2010 in 122 developing countries. The results produced strong evidence that countries with good governance are given preferential treatment by donors in the granting of aid. Some recent studies found significant evidence between foreign aid and economic growth (Adebayo and Kalmaz, (2020); Vincent and Viola, (2020); and Richard and

Collins, (2021)). In particular, Vincent and Viola (2020) found that foreign aid has a significant impact on the recipient country's economic growth regardless of the system of government being practiced. They further observed that irrespective of the conditionality of the aid, the recipient governments are more likely to deploy the fund to implement policies that would enhance their political agenda. Others found an inverse relationship between aid and economic growth (see: Ismail 2020).

2.1.1. Overview of Foreign Aid in Nigeria

Table 1 indicates that African countries received about US\$ 175 billion from 2015 – 2020. Angola received the largest share of the ODA disbursed to Africa with a total of about 21.8%. Nigeria ranks third largest recipient of net ODA in Africa since 2015 till date and accounting for more than 5% of the total receipt. In spite of the fact that Nigeria has received a huge amount of development finance channeled to Africa, there is still much evidence of poverty and low social service delivery.

Table 1: Top 10 Net ODA Recipients' Countries in Africa (Current US\$ Billion)

<i>Country</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>6-year Average</i>	<i>% of all recipients</i>
Angola	14.652	13.834	15.917	16.573	18.431		13.234	21.84
Ethiopia	3.238	4.082	4.124	4.94	4.676	5.301	4.294	7.25
Nigeria	2.431	2.498	3.358	3.304	3.277	3.375	3.241	5.02
Kenya	2.463	2.188	2.479	2.49	3.171	3.987	2.796	4.62
DR Congo	2.599	2.102	2.292	2.513	2.809	3.377	2.615	4.32
Tanzania	2.583	2.316	2.584	2.453	2.124	2.275	2.389	3.94
Uganda	1.637	1.762	2.011	1.945	2.028	3.082	2.077	3.43
Mozambique	1.811	1.525	1.798	1.815	1.831	2.547	1.888	3.12
Somalia	1.26	1.182	1.759	1.573	1.719	3.039	1.755	2.90
South Sudan	1.674	1.587	2.183	1.577	1.676	1.82	1.753	2.89
Other Recipients	22.366	22.491	24.796	23.852	26.546	34.224	25.546	40.68
Total	56.714	55.567	63.301	63.035	68.288	63.027	61.588	100.00

Source: WDI and Author's calculation, 2022

2.1.3. Administration of ODA in Nigeria

The first attempt at articulating a comprehensive policy for ODA in Nigeria was in 1995 which was put forward by the National Planning Commission (NPC). The NPC and Federal Ministry of Finance (FMF) are two government agencies with statutory responsibility for the coordination of ODA in Nigeria. The NPC coordinates all grants and technical assistance while the FMF oversees all concessionary loans. Although, the

government empowers other agencies to deal directly with donors without signaling the aforementioned national focal points. For example, the Federal Ministry of Health deals directly with the United Nations Children's Fund and World Health Organizations (WHO), (Budget and National Planning, 2017).

However, this outcome inhibits efficient coordination, monitoring and evaluation of ODA in Nigeria and as such results in total (partly) exclusion of ODA funds in the nation's annual budgeting process. It also gives rise to inadequate provision of counterpart funds for ODA-funded programs in the nation's annual budget thereby impeding aid effectiveness. In an effort to mitigate this discrepancy, the NPC instructed all ministries and agencies to report ODA transactions to the NPC and FMF for effective monitoring and ensuring the provision of counterpart funding in the national budget as well as integration of non-state actors in the implementation and evaluation of ODA projects to ensure transparency.

Further, the institutional framework of ODA in Nigeria will be discussed under three agreed Effective Development Finance Principles by International Development Partners (IDP) which comprise: Country Ownership, Inclusive Partnerships, Transparency and Accountability.

2.1.3.1. Government Ownership and Alignment with Country-led policies

Ownership of the intervention is critical to achieving aid effectiveness and is central in all the High-Level Forum (HLF) on aid effectiveness. In Nigeria, the use of the domestic country system by development partners is quite poor. Statistically, the use of financial reporting, auditing and procurement system are low in Nigeria – accounting for about 17%, 15% and 17% respectively as indicated in table 3. Inadequate use of the country's framework portends a serious challenge towards improving aid effectiveness and as such will deter increased country's quest for ownership of the development finance program. Untying of ODA has improved from 75% in 2010 to 85% in 2017.

As regards to alignment of development partners' policies with government policy; the proportion of interventions that draw their objectives from government approaches is 81% as illustrated in Table 3. 70% of the development financiers align their program with the government which is a considerable performance. 53% of the donors engage the government in their final evaluations of the intervention and assessing progress while more than 70% use the country's data. Hence, on average, 68.8% of the interventions in Nigeria in 2016 aligned with government priorities. This figure is above average despite donors funding that appears on-budget is low. However, there is a need for improvement as regards alignment.

Nigeria and partner countries have developed the Country Assistance Framework (CAF) – which aims to provide a common understanding of the development challenges

facing Nigeria and around which donors will develop their own strategy. The CAF initiative reflected issues like corruption and security, analysis of opportunities and risks in the Nigeria context and discussed donor's constraints among others. Under the CAF program, The World Bank Group in collaboration with the federal government launched a new Country Partnership Strategy (CPS) in 2014. These structures were put together to align with the development partners' policies in order to make aid efficient and effective in Nigeria.

Table 2: Government ownership of policy and donors' alignment

Donors Alignment	%
Alignment with government objectives	81.0
Alignment with country's results	70.2
Use of government data	71
Joint evaluations by Government & donors	53.1
Average	68.8
Ownership and Use of Country System	
financial reporting	17
Auditing	15
Procurement	17
Untying aid Untying aid (2010)	8675*

Source: OECD-DAC baseline study (2014, cited in Nigeria monitoring profile 2016) and author's computation.

Note: * = 2010 for reference; CPIA = Country Policy and Institutional Assessment; - = No data

2.1.3.2. Transparency and accountability

Considering Table 4 below, over \$US 540 million was disbursed to Nigeria in 2015 from OECD-DAC donors. \$US 210 million got to the government as scheduled from the amount. The public sector recorded about 81% of the disbursed schedule to the government during the period. This implies that there is relatively adequate exchange of information about ODA between donors and the federal government but still demands adequate tracking. Surprisingly, the scheduled fund did not appear on the government budget during the period under review. Although, in 2010, 77% share of disbursed funds was recorded on the budget with 56% of execution. This shows that public sector transparency negatively affects the implementation of the ODA budget. Country Policy and Institutional Assessment (CPIA) remained unchanged (3 out of 6) from 2010 to 2017. Although, the implementation of the Treasury Single Account (TSA) is one of the institutional reforms which aims to capture all budgetary expenditures more effectively while avoiding leakages in Nigeria.

Table 3: Transparency and Accountability

Total direct disbursement in the country (\$US m)	540.41
scheduled disbursement for the public sector (\$US m)	210.16
disbursement as scheduled	81.2%
share of disbursement recorded on budget	0%
Funds recorded in government annual budget	-
Share recorded on budget in 2010	77.30%*
Budget execution	56%*
CPIA (maximum: 6)CPIA (2010)	33 *

Source: OECD-DAC baseline survey, 2016 and author's computation.

Note: * = 2010 for reference; CPIA = Country Policy and Institutional Assessment; - = No data

2.1.3.3. Inclusive Partnerships for ODA Effectiveness

In Nigeria, efforts have been made to establish a policy dialogue for the government and CSOs towards enhancing aid effectiveness as well as strengthening institutional mechanisms for aid coordination and performance. Examples of such synergy are; Civil Society Fund on Results Aid Effectiveness and Accountability (CSFA) and Alignment, Effectiveness, Result Accountability Initiative (AERA). However, at present, there is little or no mechanism in place for CSOs and non-state actors in Nigeria to address transparency and accountability in their operations. CSOs lack independence means or capacity to be able to facilitate coordination and supervision of ODA investment directly in Nigeria. These actions completely negate the principle of mutual accountability and transparency of ODA.

3. METHODOLOGY

3.1. Theoretical Framework

The theoretical framework for this study anchors on the extended endogenous growth theory by Barrow (1990). The theory explicitly shows the role of government as a provider of productive factors, knowledge generation and arbiter that guides policies as a linear function of output growth in a country. A representation of the aggregate production function for the economy in Barro's model takes the form:

$$Y_t = \varphi (K_t, G_t) \quad (1)$$

Where Y_t = Economic output; K_t = vector of capital (human, physical and knowledge); G_t = government expenditure (policy); φ = Marginal propensity to save (MPs)

In this model, labor is not important, what matters is adjusted labor.

$$Y_t = f[\varphi(K_t, G_t)] \quad (2)$$

f is of constant returns to scale (CRTS). Dividing both sides of equation (2) by L yields an intensive form of production function below

$$y_t = \varphi(\kappa_t, g_t) \equiv \kappa_t * \varphi(g_t / \kappa_t)$$

y_t = output per capita; κ_t = capita per unit of effective labor; g_t / κ_t = per capita quantity of government expenditure. Equation 3 is a well-behaved production function and exhibits CRTS.

Assume that government finances its expenditure via foreign aid (where other sources of government financing assume to be zero) and normalizing the number of households to unity. Using equation (2) yields

$$y_t = \vartheta_t * \kappa_t * \varphi(g_t / \kappa_t) \quad (4)$$

where ϑ_t = marginal productivity of aid or fraction of aid that enters government expenditure.

Equation 4 implies that output of the economy depends on ODA (ϑ_t), capital per labor (κ_t) and marginal productivity or efficiency of government (φ).

To derive the long-run growth, while considering the role of government in achieving sustainable growth, we consider the demand side of consumption. In doing that, Consumption is modelled with household maximising an intertemporal constant elasticity of substitution (CES) utility function given as:

$$U_t(C_t) [c_t^{1-\xi}] / [1-\xi] \quad (5)$$

c_t = consumption per unit of effective labor i.e. per capita consumption; ξ = intertemporal substitution in consumption which ranges $0 < \xi < 1$; $U_t(C_t)$ = utility function.

Using equation (3) and (5), the dynamic optimization problem is set as thus:

$$\text{Max } U_t(C_t) = \int_0^{\infty} \{ [c_t^{1-\xi}] / [1-\xi] \} e^{-\gamma t} dt \quad (6)$$

Subject to:

$$\kappa_t^* = k * \varphi(g_t / \kappa_t) - c_t$$

γ = subjective discount rate; depreciation is assumed away

To solve the dynamic maximization problem, we consider the current Hamiltonian (H^c)

To form Hamiltonian implies expressing the optimization function in continuous form. This is to discount past value to present value and the discount factor, in this case, is specified as:

$$H^c = H^p * e^{-\gamma t}$$

Where H^c = current Hamiltonian; H^p = past Hamiltonian; $e^{-\gamma t}$ = discount factor

$$H^c = \int_0^\infty [c_t^{1-\xi}]/[1-\xi] e^{-\gamma t} + \lambda_t e^{-\gamma t} [k_t * \varphi (g_t / k_t)] - c_t \quad (7)$$

Let $\lambda_t e^{-\gamma t} = \mu_t$

To maximize the present value of the CES utility which is a function of policy (control) variable (c_t), subject to the capital accumulation equation in equation (6). with transversality condition equation (7) results:

$$H^c = \{ [c_t^{1-\xi}]/[1-\xi] \} e^{-\gamma t} + \mu_t [\kappa_t * \varphi (g_t / \kappa_t) - c_t] \quad (8)$$

Now, to determine the optimal steady state (balanced growth) per consumption growth, we take the logarithms and time derivative of the first and second principle conditions for H^c which yield

$$\dot{c}_t / c_t = [\varphi - \gamma] / \xi \quad (9)$$

Equation (9) implies that optimal steady growth per capita consumption is positive as long as discount rate (γ) < marginal product or efficiency of government (φ), $0 < \xi < 1$.

To generate the long-run per capita capital growth rate, we take the logarithm and derivative of the third maximum principle conditions for H^c with respect to time which gives eqn. 10.

$$g\kappa_t = \varphi (\dot{g}_t / \kappa_t) - \dot{c}_t / c_t \quad (10)$$

$g\kappa_t$ = The growth rate of growth of capital.

Equation (10) states that if government is efficient and taking steps in making appropriate policies that is development driven, it will increase the growth rate of capital.

Therefore, gk_t is positive if $\varphi > \gamma$

The balanced-growth rate of output per capita is derived using equation (2). Applying logarithms and taking time derivative of equation 4.2 results

$$= \varphi (\dot{K}_t + \dot{G}_t) \quad (11)$$

Equation 11 says that long-run growth of the economy is the summation of growth rate of capital and the efficiency of government.

A closer look at eqns. (9), (10) and (11) show the optimal steady state of the economy which recognizes role of the government in achieving equilibrium in the economy.

$$= \varphi (\dot{K}_t + \dot{G}_t) = \varphi (\dot{g}_t / \kappa_t) - \dot{c}_t / c_t = [\varphi - Y_t] / \xi \quad (12)$$

Using the generic representation for the aggregate production function in equation 4, in the presence of Government and ODA, the long run growth rate is given as:

$$= g\kappa_t = \dot{c}_t / c = [(1 - \vartheta_t) * \varphi((g_t / \kappa_t) * (1 - \Omega) - Y_t)] / \xi = \tau \quad (13)$$

Where ϑ_t = fraction of foreign aid; $\ddot{o} = MP_K$; \dot{U} = elasticity of y_t wrt Equation 13, it becomes

$$Y_t = f(\vartheta_t, \varphi, g_t) \quad (14)$$

If ϑ_t and g_t / y_t (government-output ratio) are constants, then g_t / κ_t and \dot{U} will be constant, thus the economic growth rate will be all constants.

This implies that in the long run, the economy is always in a position of steady-state growth in which all variables grow at the rate τ . But in terms of government size (magnitude of ϑ_t and g_t / y_t), the model predicts a negative impact of foreign aid and a positive effect of government expenditure (discipline). But since government expenditures are financed by aid, what matters is the net effect of both impacts. If government is not efficient and unable to spend its resources (aid money) rationally, ODA will have negative effect in the economy's growth rate: on the other hand, when government invests aid fund into development projects and be able to administer resources into sectors that are employment and output elastic, the second effect dominates.

Equation (14) states that what matters is not really the amount of ODA in aid recipient country, but the efficiency and knowledgeability of the government to distribute and allocate aid resource where its productivity is maximized.

From the analysis, it is explicitly shown that ODA does not directly impact on output growth but through government activities and other channels.

But
$$\vartheta_t = f(g_t, X_t) \quad (15)$$

Where g_t and X_t are vectors of institutional variables and control variables respectively

3.2. Model Specification

Arising from eqn. 15, the econometric specification takes the following general form

$$Aid_t = f(DG_t, Dem_t, X_t) \quad (16)$$

Where Aid_t designates net ODA inflows to Nigeria, DG_t and Dem_t are governance and democratic institutions respectively in Nigeria, X_t represents vector of control variables.

The control variables in this study are: financial deepening, capital formation (domestic saving), openness, oil rents. The study follows other prior studies to hypothesize non-linearity relation between aid and institutions. In this paper, a non-linear effect means that governance is conditional on the level of natural resource endowments in Nigeria. Specifically, we interact governance and oil ($DG*Oil$) to examine the finding that aid is ineffective in resource endowment countries (Askarov and Doucouliagos, 2014).

Then the econometric specification to achieving the first objective is modelled as:

$$Aid_t = \beta_0 + \beta_1 DG_t + \beta_2 Oil_t + \beta_3 FD_t + \beta_4 OP_t + \beta_5 DS_t + \beta_6 (DG_t * Oil_t) + \beta_7 (GDP_t) + \beta_8 POPgrot_t + \varepsilon_t \quad (4.17)$$

Where Aid_t means net ODA disbursement to Nigeria, DG_t is governance institution, Oil_t is oil rent (% of GDP), FD_t implies financial deepening, OP_t is Openness, DS_t indicates domestic capital formation, ($DG*Oil$) is interaction between governance and oil receipt, (GDP_t) designates Gross Domestic Product, and $POPgrot_t$ is population growth.

Consequently, we expect that any democratic government should entrench good governance.

Therefore, to avoid potential collinearity between governance and democracy, we model aid-democracy in separate equation in order to achieve the second objective two.

$$Aid_t = \beta_0 + \beta_1 DEM_t + \beta_2 Oil_t + \beta_3 FD_t + \beta_4 OP_t + \beta_5 DS_t + \beta_6 (DG_t * Oil_t) + \beta_7 (GDP_t) + \beta_8 (POPgrot_t) + \varepsilon_t \quad (18)$$

3.3. Endogeneity of Governance Institution

The paper addresses the potential endogeneity problem between ODA and institution. The study expects institutional quality to affect aid effectiveness, conversely, foreign aid can as well influence the institutional structure in aid recipient economies. For instance, aid from multilateral donors are given to reform institution in order to foster trade or a means of generating growth. Then, there is a problem of reverse causation and the coefficient of governance would be biased in OLS regression.

To address potential endogeneity in this study, the study adopts two different types of instrumental variable in the literature. The most commonly used instruments for aid-public institution relation are infant mortality, population size, money supply relative to GDP and government consumption relative to GDP (See; In'airat, 2014; Askarov and Doucouliagos, 2015). We follow BD (2000) and In'airat 2014 to use money supply relative to GDP (M2/GDP) and government consumption relative to GDP (GC/GDP). However, the potential correlation between ODA and infant mortality, population size and initial income rules them out as a valid instrument for governance in this study. Then, the study will use M2/GDP and GC/GDP to augment governance. We model an augmented version of eqn. 17 in order to show how governance institution affect ODA in Nigeria. This gives rise to eqn. 19

$$Aid_i = \beta_0 + \beta_1 DG_i + \beta_2 Oil_i + \beta_3 FD_i + \beta_4 OP_i + \beta_5 DS_i + \beta_6 (DG_i * Oil_i) + \beta_7 (POPgrot_i) + \beta_8 (M2/GDP)_i + \beta_9 (GC/GDP)_i + \varepsilon_i \quad (19)$$

3.4. Estimation Techniques

The baseline equation will be estimated using OLS. But due to potential endogeneity problem, the estimates are likely to be biased and incompetent. We then re-estimate using two stage least square (2SLS) and General Method of Moments (GMM). The first approach was applying OLS method Then, we regressed governance quality in a nonlinear (quadratic) form. Lastly, we interacted oil and governance quality to see its effect on ODA effectiveness. We further examined the interaction because some prior literature found that economic growth in the natural resource-endowed countries is vulnerable to resource curse theory (see: Katarzyna, 2018; Badeeb, *et al.* 2017).

Table 2: Variable names and data sources

<i>Variable</i>	<i>Description</i>	<i>Source</i>
Aid	Net ODA development assistance and official aid received	WDI, World Bank
Governance	composite index of political risk index	political Risk Service Group
Democracy	construct binary index for military and democratic regime	Author's computation
Openness	Annual, Trade/GDP	WDI, World Bank
Oil	oil rents (% of GDP)	WDI, World Bank
Financial deepening	Index of Money supply/GDP	WDI, World Bank
Domestic Savings	Capital formation	WDI, World Bank
Population growth	Growth rate of population	WDI, World Bank
GDP	Gross Domestic Product	WDI, World Bank

In the second approach, we applied 2SLS and GMM given the expected biasness of OLS due to endogeneity in the likelihood that aid could influence governance quality. To resolve the suspected endogeneity problem, we follow prior studies and used standardized instruments that have been mostly applied to ODA-governance institution relations in other countries. Importantly, the study endogenized ODA in the model, unlike the previous works where ODA entered the estimation model as an independent variable. Annual data spanning 1981 to 2020 were used in the paper.

4. RESULTS AND DISCUSSION

4.1. Summary Statistics

The summary statistics in Table 3 shows that openness (OP) has the highest mean value (40.66). This implies that Nigeria's openness to the world economy is the most viable indicator to attract ODA to Nigeria. Domestic saving is the second series with the highest average mean value. The lowest is Democracy (DEM), followed by population growth (2.58). The average mean value for democracy could be attributed to the series being a dummy variable. The maximum and minimum domestic savings for the period under consideration is N85.54 and N13.08 billion respectively. The maximum and minimum governance index score for Nigeria during the period under consideration is 2.89 and 2.0 respectively in a scale of 10. The two scores underscore the poor governance in Nigeria.

As regards to the standard deviation of the variables, openness (18.11) shows high volatility from its mean, followed by oil (17.76) domestic savings (16.89), oil price (11.76). The next is financial deepening (6.27), GDP (2.07), AID (1.62). This implies that these series are the most volatile in that order as considered in this analysis. The least volatile variable under consideration is the Governance institution index (0.427) followed by the democratic index (0.502).

Table 3: Summary statistics

	<i>FD</i>	<i>DS</i>	<i>DG</i>	<i>DEM</i>	<i>OIL</i>	<i>OP</i>	<i>LGDP</i>	<i>LAID</i>	<i>Pgr</i>
Mean	24.008	40.662	2.889	0.564	22.158	47.790	10.882	20.020	2.580
Maximum	43.27	85.54	3.5	1	54.12	81.81	13.525	23.159	2.709
Minimum	13.23	13.08	2	0	2.8	21.45	7.562	17.272	2.488
Std. Dev.	6.277	16.893	0.427	0.502	17.76	18.109	2.070	1.624	0.066
Jarque-Bera	7.328	1.562	5.794	6.507	1.304	2.644	3.594	2.022	2.652

Note: FD-Financial Deepening; DS-Domestic Savings; DG-Domestic Governance; DEM-Democracy; OP-Openness; Oil-Oil Rent; LGDP-log of GDP; LAID-log of Official Development Assistant; Pgr-Population Growth

4.2. Baseline Results

The baseline result was estimated using OLS. The results showed that governance structure has an inverse relationship with ODA effectiveness. This is however, contrary to the apriori. Specifically, a unit improvement in the governance index in Nigeria was found to retard ODA effectiveness by 0.91%. This result is counter-intuitive given that improved governance institution is expected to enhance ODA effectiveness. Plausibly, this result could arise when the recipient country pursues policies that suffer checks and balances, lack transparency and accountability and enthrone corruption among the elites. On the other hand, Oil resource, GDP and population growth are significant and positively associated with ODA in Nigeria. Openness and domestic saving are inversely related to aid effectiveness as evident in Table 4, column 2

The next step we took was to lag the governance variable by 2 periods (years) on the assumption that aid allocation depends on the recipient country's previous year's governance quality. This helped to address the possible endogeneity between ODA and governance. From Table 4, column 3, the governance variable was not significant while other target variables under consideration were significant. In the fourth column of Table 4, the study introduced governance index in quadratic term – by making it non-linear. The coefficient of the governance institution was statistically significant but with a negative sign. Overall, Openness exerted positive influence on aid effectiveness. Similarly, GDP, Oil resource, and population growth were positively related to aid effectiveness, while Financial deepening was found not to have any impact on aid inflow in Nigeria.

In the fifth column, the study interacted oil resource and governance institution (DG_OIL). The model showed that the interaction variables (DG_Oil) significantly and positively influence inflow of ODA in Nigeria. A unit increase in the interaction variable results in about 0.025 percent improvement in aid effectiveness. Equally, Oil resource, GDP, population growth and Openness were revealed to influence ODA inflows and effectiveness in Nigeria, while Domestic savings and Financial deepening do not exert influence on ODA flows into Nigeria.

4.2.1. Democracy and Aid Effectiveness

In this section, we examined how democratic regime in Nigeria has influenced aid effectiveness. The result showed that democratization positively improved aid effectiveness. In particular, the result indicated that democracy improved ODA effectiveness by about 0.041%, while oil resource was positively related to aid effectiveness. A percent increase in GDP, increases aid effectiveness by 0.96%. The interaction variables (DG_Oil) was shown to negatively impact aid effectiveness. A percentage rise in population growth brought about 3.7% improvement in aid

Table 4: Basic (OLS) Regression Model

	BASIC REGRESSION MODEL			
<i>Variables</i>	<i>AID/DG (2)</i>	<i>AID/DG(-2) (3)</i>	<i>AID/DG^2 (4)</i>	<i>AID/DG_OIL (5)</i>
FD	-0.016229 (0.3371)	-0.0252 (0.2132)	-0.0251 (0.137)	-0.017118 (0.6660)
OP	-0.017734*** (0.0148)	-0.0186*** (0.043)	-0.0148** (0.0332)	-0.015640*** (0.0144)
OIL	0.034716*** (0.0069)	0.0474*** (0.0043)	0.0401** (0.0019)	0.1133285*** (0.0001)
DG	-0.914726*** (0.0007)	0.2692 (0.3833)		
Dg_oil				0.025152*** (0.0006)
Dg^2			-0.1227** (0.0165)	
Lgdp	0.961512*** (0.0000)	0.7168*** (0.000)	0.9566*** (0.0000)	0.960602*** (0.0000)
DS	0.028222*** (0.0328)	0.0205 (0.392)	0.01988 (0.1233)	0.018152 (0.3592)
popgrot	3.817465** (0.0459)	5.9617*** (0.0110)	3.8693*** (0.0441)	3.762015*** (0.0491)
C	10.43366*** (0.0000)	3.4439** (0.0293)	0.2907 (0.9511)	7.847832*** (0.0003)
R-Squared	0.890231	0.8394	0.9023	0.891130
Adjusted R-squared	0.870273	0.8050	0.8810	0.871336
F-Statistic	54.60504 (0.0000)	54.40 0.0000	52.248 (0.0000)	65.01915 (0.0000)

effectiveness. Domestic savings equally supported aid effectiveness in this model. However, openness worsened aid effectiveness by 0.016%. Giving the aforementioned results, we conducted causality test between aid and governance quality and other control variables. The result in Table 5, indicated aid positively influence governance quality in Nigeria. In specifics, a percent increase in aid inflows increases governance quality by 0.32 percent annually. In this relationship, the study found evidence of reverse causality. Hence, we further estimated the variables using 2SLS and GMM.

Table 5: Aid and Democracy

<i>Variables</i>	<i>AID/DEMOCRACY</i>	<i>CAUSALITY AID/DG</i>
FD	-0.017177(0.69000)	-0.13712(0.1705)
OP	-0.015747***(0.01660)	-0.004811(0.2846)
OIL	0.1133348***(0.0005)	0.011566(0.1462)
DG---_OIL	-0.025169***(0.0129)	
LAID		-0.325004***(0.0007)
Lgdp	0.9606517***(0.0000)	0.434374***(0.0004)
DS	0.018273***(0.0710)	0.016646***(0.0348)
Popgrot	3.7620(0.0491)	-1.5885(0.1863)
Democracy	0.004155**(0.06929)	
C	7.859908***(0.0023)	4.297606***(0.0041)
R-Squared	0.891131	0.435794
Adjusted R-squared	0.867316	0.31237
F-Statistic	57.41862(0.0000)	43.7219(0.006170)

The values without parenthesis are the regression estimates while the ones in the parenthesis are the corresponding p-values

4.3. 2SLS and GMM Results

In the 2SLS model, governance institution has adverse effect on ODA effectiveness in Nigeria. When governance quality improves by a unit, ODA effectiveness reduced by 0.67%. GDP, population growth and Openness have positive effect on ODA effectiveness. One percent increase in GDP and population growth lead to about 0.93% and 3.76% respectively in aid effectiveness. An improvement in the country's openness to the rest of the world enhances aid effectiveness by 0.91%. The interaction variable (Dg_Oil) is significant and inversely related to ODA effectiveness in Nigeria. The result further showed that the combine effects of oil and governance do not enhance ODA effectiveness in Nigeria. From the result, it is observable that oil resource supports ODA inflows and effectiveness but once it is interacted with governance, it retards

ODA improvement. This result suggest that governance institution in Nigeria is very weak and it determines most of the other economic variables.

As regards to GMM result, the result exhibits similar characteristics like 2SLS. Governance quality still has an inverse association with aid effectiveness. As evident in the GMM results, Oil, GDP and population growth exert positive influence on ODA in Nigeria. If oil rent increase by \$I annually, ODA improves by about 0.03%. A percentage increase in population growth brings about 3.43% increase in ODA inflows in Nigeria. An improvement in the country's openness enhances aid effectiveness by 0.016%. However, financial deepening retard aid effectiveness in Nigeria while domestic savings does not have obvious effect on aid effectiveness.

Table 6: 2SLS and GMM results

<i>Variables</i>	<i>2SLS</i>	<i>GMM</i>
FD	-0.005128(0.8003)	-0.02448***(0.0083)
OP	-0.19051***(0.0327)	-0.01669***(0.0000)
OIL	0.1135***(0.0005)	0.03736***(0.0001)
DG	-0.6764***(0.0139)	-0.718848***(0.0001)
Dg_oil	-0.0253***(0.0128)	
Lgdp	0.938559***(0.0001)	0.95141***(0.0000)
DS	0.0181(0.1522)	0.01864(0.1751)
Popgrot	3.7620***(0.049)	3.4364***(0.0844)
C	0.5924***(0.0041)	0.6685(0.074)
R-Squared	0.9037	0.902345
Adjusted R-squared	0.8817	0.881014
F-Statistic	72.58954(0.0000)	

4.4. Discussion of the Results

In the baseline result in Table 2, the coefficients of the governance quality in Nigeria was negatively related to ODA effectiveness. The inverse relationship was obtained in the various techniques applied. Obviously, the overall governance scores in Nigeria between 2000 and 2020 has been on the downward trend. Equally, Nigeria's record from polity index has been below average percentage score over the period. Prior literature has ascribed that aid is potent in a very sound institution (In'airat, (2014) and Richard and Collins, (2021)). However, the negative relationship found in the paper could be attributed to plausibly channeling of aid to finance unproductive investments in Nigeria. Besides, there is also a likelihood of aid fungibility arising due to rent-seeking and corruption in the implementation and use of aids, thereby retarding their effectiveness.

Another major finding of the study is that Democratization has positive influence on aid. This is in tandem with findings from previous studies (see: [Asongu, \(2019\)](#) and [Vincent & Viola, \(2020\)](#)). [Goldstone et al. \(2010\)](#) found similar result that democracy is one of the most important factors behind political stability, free speech and transparency which is pro-aid-effectiveness. This result supports the findings of [Campbell and Saha, \(2013\)](#) that democratic countries attract more assistance from donors than authoritarian government. Nigeria has had more than two decades of uninterrupted democracy and its obvious from our result that this has helped in promoting aid effectiveness. In the 2SLS and GMM results, there were evidences to suggest that governance quality in Nigeria have negative association with aid effectiveness. This result is agreement with the findings from [Babalola and Shittu \(2020\)](#), though counter-intuitive as evident in [Richard and Collins, \(2021\)](#).

5. CONCLUSIONS

One of the major conclusions that can be drawn from this study is that governance institution is critical in influencing ODA effectiveness in Nigeria. The empirical evidence established in the study using 2SLS and GMM estimates confirmed that governance institution retard ODA effectiveness in Nigeria. Oil resource has a positive relationship with ODA effectiveness. Democracy was also shown to support ODA effectiveness. However, when we interacted governance and oil resource, the result showed an inverse relationship with ODA effectiveness in Nigeria. This implies that governance institution in Nigeria is very weak and it determines most of the other economic variables and developmental outcomes. The paper recommends requisite institutional reform and strengthening of governing process to enhance confidence in the use of ODA in Nigeria. In achieving this, there should be collaboration amongst private sectors, aid donors and government in aid's implementation. In addition, attracting and investing ODA in the productive sectors of the economy will enhance its effectiveness and further boost more ODA inflows.

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