Impact of income level and foreign aid on economic growth in Sub-Saharan Africa: the case of Anglophone and Francophone countries

E. Chuke Nwude, Sebastine Ugochukwu Ugwuegbe & Adesanmi Timothy Adegbayibi

Published online: 14 Nov 2022.

Submit your article to this journal ⏎

Article views: 455

View related articles ⏎

View Crossmark data ⏎

Routledge
Taylor & Francis Group

Impact of income level and foreign aid on economic growth in Sub-Saharan Africa: the case of Anglophone and Francophone countries

E. Chuke Nwude[a], Sebastine Ugochukwu Ugwuegbe[a] (iD) and Adesanmi Timothy Adegbayibi[b]

[a]Department of Banking and Finance, Faculty of Business Administration, University of Nigeria, Enugu, Nigeria; [b]Department of Accounting, Faculty of Social and Management Sciences, Adekunle Ajasin University, Akungba Akoko, Ondo State, Nigeria

ABSTRACT

The study examines the impact of foreign aid on economic growth (EG) of 40 Sub-Saharan African countries classified according to their colonial history and the level of income. Domestic capital formation and labour participation served as control variables. For empirical analysis, annual data for the period 1982–2018 are used, and a structural model is estimated using the pooled mean group estimation approach. The results reveal that (1) bilateral foreign aids (bfa) strongly favour the Francophone better than the Anglophone as it exerts strong favourable effect on the former (2) Multilateral aid exerts strong unfavourable effect on the Anglophone but weak on the francophone (3) only bilateral aid is a significant positive determinant of EG in low income countries (LICs) and low middle income countries (LMICs) in the long-run and in upper middle income countries (UMICs) in the short-run. One percent increase in bfa increases EG by −1.829%, 18.95%, 7.998%, 40.19% and 187.2% in the Anglophone, francophone, LICs, LMICs, and UMICs, respectively. These suggest that to significantly increase output productivity in the regions more of bilateral aid is required. To encourage inflow of foreign aid, complementary gross fixed capital formation should be increased and labour productivity enhanced.

1. Introduction

Weak industrial base and low human capital development index (HDI) are prevalent in most developing economies and these deficiencies necessitate the flow of aid and many concessions into these countries. Sub-Saharan African countries (SSACs) depend heavily on foreign aid (Rasmane et al., 2021; Mallik, 2008). Africa has received over 1 trillion US dollars of foreign aids from 1948 to 2009 (Moyo, 2009).

CONTACT E. Chuke Nwude ✉ chukwunekenwude@yahoo.com; chuke.nwude@unn.edu.ng

The continent currently receives an average of 40 billion US dollars of aid per year making Africa a major recipient of foreign aid in the whole world (World Bank, 2017). Significant inflow of foreign aid has been attracted by SSA countries in the last decades with about 22% increase from 36.1billion in 2007 to 44.28 billion US dollars in 2016 representing 28% of the global flow of foreign aid (World Bank, 2017). Despite the rise, the level of development and growth remains deplorable (Jena & Sethi, 2020). Countries in Africa are often categorised based on their official language usually adopted from their colonial masters. Francophone countries are countries with initial attachment to France whose official language is French, while Anglophone countries are ones governed by the British whose official language is English. The two categories derived their system of government and law from their colonial masters. The countries patterned their economic structure after their respective pre-independence rulers and they are highly supported by their fellow countries. For instance, Luxembourg, France, Belgium, Canada, and Switzerland supported the francophone countries in Africa through the global funds with about 8 billion US dollars (Global Fund, 2016). Sidibé (2012) said that Francophone countries in Africa need an estimate of $1.4 billion in foreign aid to address their health challenges especially malaria and communicable diseases. For the Anglophone countries, the former British colonies enjoy a great amount of support from the UK through the commonwealth official development assistance. In 2018, the UK made available a sum of £212 m for commonwealth aid targeted at reducing poverty, promoting education and healthcare of the poor Anglophone countries. Other advanced countries in the commonwealth often contribute to support poor Anglophone countries. These two categories of SSACs, bedevilled with low levels of income remain the destination of official development assistance.

With this viewpoint and owing to the increasing demand and enormous amount of foreign aid inflow into SSACs, the trajectory of foreign aids in the economic growth of the region needs to be understood in the context of Anglophone and Francophone countries due largely to their system of government and law from their colonial masters, as well as in the context of disparity in income levels. None of the previous studies has conclusively addressed the subject-matter along these categorizations. Conflicting and inconsistent findings are being churned out by various researchers. In line with Wako (2011) and Alemu and Lee (2015) the foreign aid is disaggregated into bilateral and multilateral components. The research questions are: Is foreign aid more effective in Anglophone or francophone countries? Is foreign aid a strong positive determinant of EG in countries with differential income levels? Thus, the purpose of the study is to evaluate the effect of disaggregated foreign aid on the economic growth (EG) of SSA countries taking into consideration the countries colonial history and differential levels of income. The necessity for this study lies in the fact that output productivity could be enhanced when the type of foreign aid that impact positively on each region is discovered and more of it is provided for the particular region. The effects of the complementary domestic capital formation and labour productivity are highlighted. The novelty of this study is the unveiling of the influence of foreign aids on economic growth along colonial history and income levels in the SSACs using the pooled mean group (PMG) estimation approach which

earlier studies failed to account for. The authors used data from 1982 to 2018 because the study was meant to cover only the pre-COVID-19 era. The intention is to isolate the dynamics of COVID-19 which is an aberration that will fizzle out, which is happening already as at 2022. Therefore, conclusions of the study do not recognise the current dynamics of COVID-19 which suggest that subsequent studies can factor in the dynamics as further contribution to the literature.

The rest of this article is organised thus: the review of extant literature is presented in Section 2, Section 3 shows the data and methods, and Section 4 presents results and discussion, while Section 5 concludes this article.

2. Literature review

There are inconsistent findings in the literature. Rasmane et al. (2021) using finite model provide evidence that aid works best in countries with effective government, good regulatory quality and low corruption and advise the 25 SSACs to undertake deep governance reforms to benefit from foreign aid. In this line of argument include Ogheneakpoje Ighoshemu and Ogidiagba, (2022), Gomanee et al. (2012) and Findley et al. (2014). Ayesha et al. (2021) prove that change in political regimes, openness of media and foreign aid contribute to EG through poverty reduction in Pakistan between 2002 and 2016 using ADL/VAR and Granger causality tests. Asongu and Nwachukwu (2016) investigated the effect of foreign aid on governance of 52 African countries for the period 1996–2010 by applying two-stage-least squares. The findings reveal that foreign aid deteriorates economic (regulation quality and government effectiveness) and institutional (corruption-control and rule of law) governance, has an insignificant effect on political (political stability, voice and accountability) governance, all these weaken growth.

Alemu and Lee (2015) examined the effect of foreign aid on economic growth of African countries by incorporating the effect of different income level. They found a positive relationship existing between foreign aid and economic growth of low-income countries with no such evidence on the middle-income countries underscoring the importance of income differential among countries on the impact of foreign aid on economic growth. They acknowledged that foreign aid contributes positively to economic growth, but the level of impact depends to a large extent on the level of income in the countries as both have a direct relationship. They pointed out that foreign aid contributes positively to economic growth through increased investment in physical and human capital; improved financial capacity to import capital goods and technology; increased technological and managerial skill transfer which give rise to improved production capacity and enhance domestic technological changes. Durbarry et al. (2011) registered a positive impact of foreign aid on economic growth, and the result varies in accordance with the countries level of income as well as the type of aid allocated. Mallaye and Urban (2013), Olafin (2013), Ndambendia and Njoupouognigni (2010), Armah and Nelson (2008) provide evidence that supports a direct relationship between foreign aid and economic growth in SSACs.

Maruta et al. (2020) examined the effect of sectoral foreign aid (education, health and agriculture) and institutional quality on the economic growth of 74 developing

countries from Africa, Asia and South America for the period 1980–2016. They found education aid the most effective for aid-receiving countries but based on the level of institutional quality which varies substantially across regions. While education aid is most effective in South America, health aid is most effective in Asia and agricultural aid is most effective in Africa. As the level of institutional quality improves, the gap between the marginal effect of education, health and agricultural aids widen and it is more desirable to shift aid flows towards the education sector.

Jena and Sethi (2020) employed Pedroni and Kao's cointegration test, Johansen-Fisher Panel cointegration test, fully modified ordinary least square (FMOLS) and panel dynamic ordinary least square (PDOLS) to ascertain the long-run and short-run effectiveness of foreign aid on EG of 45 SSACs from 1993 to 2017. They found a positive unidirectional causality from foreign aid to economic growth both in the long-run and short-run. Jena and Sethi (2020) employed Pedroni and Johansen–Fisher panel cointegration test, panel FMOLS and PDOLS to ascertain the long-run and short-run effectiveness of foreign aid on EG with a sample of eight South Asian countries from 1996 to 2017. They found positive unidirectional causality from foreign aid to economic growth both in the long-run and short-run. Kunofiwa (2018) studied the complementary effect of financial development and foreign aid on economic growth in selected emerging markets from 1994 to 2014 by employing panel FMOLS approach and found it results a significant positive impact on economic growth. He urges them to implement policies which deepen the financial sector for foreign aid to positively contribute towards economic growth.

Rajan and Subramanian (2008) observed no significant relationship between total aid and growth in 85 developing countries but reported negative and significant impact for both multilateral and bilateral aid. Nidup (2015) investigated the impact of foreign aid on economic growth using the ARDL approach from 1982 to 2012 and found that foreign aid is detrimental to EG. Magnon (2012) found weak evidence that foreign aid worsens inequality and poverty in SSACs. Wako (2011) found that neither bilateral nor multilateral aid had a significant impact on EG for 45 SSACs. Earlier studies like Ram (2003) found that multilateral aid has a large significant negative impact on economic growth, while bilateral aid has a large significant positive impact. Ram (2004) controlled for the receiving country's economic policies and found evidence that shows the effect differs substantially depending on the type of aid. Headey (2005) submits that both bilateral aid and multilateral aid have a positive and significant impact on GDP growth, but multilateral aid had twice the impact of bilateral aid.

Other related studies include Muhammad et al. (2019) who examined the impact of terrorism on economic growth in Pakistan for the period 1972–2014 using generalised method of moments (GMM) estimation approach. Foreign direct investment (FDI), domestic investment, and government spending were identified as channels through which terrorism influences economic growth. The results reveal significant negative impact of terrorism on FDI and domestic investment, significant positive impact on government spending and negative effect on economic growth. Md et al. (2019) identified a positive and significant effect of export and technology on the economic growth of emerging Asian countries using the Generalized Method of

Moments (GMM) model for the period 2000–2016. Employing Autoregressive Distributed Lag (ARDL) on Middle East and North Africa region (MENA) countries for the period 1995–2014, Soheila and Bahman (2017) recorded significant positive effect of income on health expenditure which empowers growth. Naeem (2016) found that public debt has a negative impact on economic growth in selected South Asian countries (Bangladesh, India, Pakistan and Sri Lanka), for the period 1975–2010. Majid and Elahe (2016) evidenced long-run causality from export and FDI to economic growth in 16 European and Asian developing countries employing Panel-VECM causality.

Despite the numerous researches in the subject area, no conscensus has been reached. None of the studies carried out the search from the perspectives of anglophone and francophone countries in addition to income levels of the subject-countries employing PMG. This calls for further enquiry on the effect of disaggregated foreign aid on the EG of the two regions taking into consideration differential levels of income. This is an important research gap which the study is set to fill.

3. Data and methods

3.1. Data

The 40 SSACs that constitute the sample are presented in Table 1. The data included in the study are inflow of official development assistance (oda)(aggregate foreign aid); bilateral foreign aid (bfa); multilateral foreign aid (mfa); gross fixed capital formation (gfcf); each as percent of GDP; labour force growth rate (lfr); annual gross domestic product growth rate (gdpr). The data for all of them are sourced from World Development Indicators (WDI, 2019). Variables Descriptions are shown in Table 6. Eviews 9 software was used for investigation and data analysis.

3.2. Methods

3.2.1. Unit root test

Generally, a set of parameters are said to exhibit a long-run relationship if the variables are integrated of same order one I(1) (Asteriou, 2009; Mahembe & Odhiambo, 2019). According to Nelson and Plosser (1982) in Das and Chowdhury (2011) a macroeconomic variable with a large time period T is very likely to be characterised

Table 1. List of countries in the dataset.

Low-income countries	1. Benin	7. Congo Dem. Rep.	13. Malawi	19. Somalia
	2. Burkina Faso	8. Gambia	14. Mozambique	20. Tanzania
	3. Burundi	9. Guinea	15. Niger	21. Togo
	4. Central African Republic	10. Guinea-Bissau	16. Rwanda	22. Uganda
	5. Chad	11. Liberia	17. Senegal	23. Zimbabwe
	6. Comoros	12. Madagascar	18. Sierra Leone	
Lower-middle-income countries	1. Angola	4. Cote d'Ivoire	7. Mauritania	10. Sudan
	2. Cape Verde	5. Ghana	8. Nigeria	11. Swaziland
	3. Cameroon	6. Kenya	9. Congo, Rep.	
Upper-middle-income countries	1. Botswana	3. Mauritius	5. Equatorial Guinea	
	2. South Africa	4. Gabon	6. Namibia	

Source: Authors' compilation from World Bank.

Table 2. Panel unit root test result.

Variables	IPS (Prob. values)	Fisher Perron without drift (Prob. values)	Fisher ADF with drift (Prob. values)
Growth	0.000***	0.000***	0.000***
D.LFG/GDP	0.000***	0.000***	0.000***
gfcf/gdp	0.000***	0.000***	0.000***
BFA/GDP	0.000***	0.000***	0.000***
ODA/GDP	0.000***	0.000***	0.000***
MFA/GDP	0.000***	0.000***	0.000***

Source: Arranged from output results from Eview version 9.
Note: *, **, *** denote that variables are stationary at 10%, 5%, and 1% significance level, respectively, IPS = Im-Pesaran-Shin, ADF = Augmented Dickey–Fuller.

with unit-root process. And so, since our dataset includes a fairly long time period (37 years), it is of necessity that we check the order of integration among the variables included in the model before proceeding to examine the existence of any long-run relationship (Ahmad et al., 2016). Therefore, it is of imperatives that all the variables included in the model will be subjected to unit root test. The study employed Im-Pesaran-Shin (IPS), and Fisher type test (ADF & Philip Perron) unit root test techniques to ascertain the stationarity of the variables under consideration. Pesaran et al. (1999) and Fisher Chi-square test assumes individual unit root process. The result of the panel unit root tests are presented in Table 2. The result indicates that all the variables under study are stationary at level except labour force growth rate which is stationary at first difference. Because Panel ARDL model allows the inclusion of variables with different order of integration it was adopted for estimation and the panel exhibits a long-run relationship. The probability values of IPS, Fisher ADF and Fisher PP test indicate that growth; oda, gfcf, mfa and bfa are stationary at level while lfr is stationary at first difference, all at 1% level of significance. The results of the panel unit root test for the sub-samples are consistent with that of the full sample.

3.3. Model development

This study relied strongly on the endogenous growth theory which looks at economic growth as a function of capital, labour, and technology. We modified the Arrow model to include foreign aid as additional factor in the production function in order to examine the effect of foreign aid on economic growth (Mbaku, 1994). Arrow model included technology as an input in the production function in addition to capital and labour. Meanwhile, to represent the endogenous economic growth framework, the production function is presented as follows:

$$Yt = f(K, L) \tag{1}$$

where Y represent aggregate output, K denote stock of capital, and L denote labour input.

3.4. Model specification

This study employed the robust heterogeneous panel estimators which are Pooled Mean Group (PMG) and Mean Group (MG)(Hassan et al., 2014). The choice of

Panel-ARDL model is justified by the integration properties of the variables employed in the model adopted. The increasing availability of data which has resulted in both T and N becoming very large, led to the development of two different estimators by Pesaran & Shin (1999). In mean group (MG) estimator both the long-run and short-run coefficients are allowed to vary across countries while in pooled mean group (PMG) estimator only the short-run coefficient is allowed to vary across countries but the long-run coefficients are assumed to be homogeneous across the countries. Meanwhile, the MG estimator drives the long-run parameters of the panel by averaging the individual countries long-run parameters generated from the panel ARDL models. The appropriateness of these techniques is due to large T dimensions as well as large N in the set of data employed in this study, which allows for the test of stationarity as T is large enough to justify long-run relationship. However, these estimators make use of ARDL which allows the model to combine a series with I(0) and I(1). The panel ARDL model which was built from the endogenous growth model is specified as follows:

$$Growth_{it} = \alpha_i + \gamma_i Growth_{i,t-1} + \beta_{i1}BFA_{it} + \beta_{i2}MFA_{it} + \beta_{i4}GFCF_{it} + \beta_{i5}LF_{it}$$
$$+ \delta_{i1}BFA_{it-1} + \delta_{i2}MFA_{it} + \delta_{i4}GFCF_{i,t-1} + \delta_{i5}LF_{i,t-1} + \varepsilon_{it} \tag{2}$$

where the variables remain the same as defined in Table 1 (variable descriptions), while $i = 1,2,3, \ldots \ldots .N$. and $t = 1,2,3, \ldots \ldots .T$.

Then the parameter for the long-run is given as θ_i

$$\theta_i = \frac{\beta_i}{1 - \gamma_i} \tag{3}$$

And so, the MG estimators for the entire countries in the panel will be given as:

$$\hat{\theta} = \frac{1}{N}\sum_{i-1}^{N} \theta_i \tag{4}$$

$$\hat{\alpha} = \frac{1}{N}\sum_{i-1}^{N} \alpha_i \tag{5}$$

The MG estimator which estimates separate regression for each of the individual countries in the group and also calculate the coefficient of the long run by taking the unweighted mean of the estimated coefficient of the individual countries in the group is represented in the above equation. Therefore, the MG estimator does not apply any restriction in the long-run coefficient and allows for heterogeneity of the coefficient. Meanwhile it is important to note that large series dimension of the data is one of the necessary conditions for the consistency and validity of the MG and PMG approach as well as the stationarity properties of the variables employed in the model.

The next step is to estimate the PMG model which involves both pooling and averaging and allows for homogeneous long-run coefficient and heterogeneous short long run coefficient. Following the ARDL model in Equation 1 above, and assuming one as the optimal lag length, we restate the error correction form of the equation as follows:

$$\Delta Y_{it} = \theta_i(Y_{i,t-1} - \beta_i X_{i,t-1}) + \sum_{j=1}^{p-1} \gamma_y^i \Delta(Y_i)_{i-j} + \sum_{j=0}^{q-1} \delta_y^i \Delta(X_i)_{t-j} + \mu_i + \varepsilon_{it} \qquad (6)$$

where Y = Growth, X = Vector of independent variables (MFA, BFA, FDI, GFCF, LF), γ and δ = short-run coefficient of the dependent and independent variables, respectively, β = the long-run coefficient, θ = the error correction coefficient (this parameter is expected to be significantly negative to align with the assumption that the variables will return to long-run equilibrium given any level of disequilibrium in the short run). i and t = country and time dimensions, respectively. μ = group specific effect.

Meanwhile, having estimated the PMG and MG model, Hausman test was employed to determine which of the two model is the most consistent and suitable model in establishing the impact.

4. Results and discussion

4.1. Descriptive statistics

Table 3 presents the descriptive statistics of the dataset for the full sample (40 SSACs), anglophone and francophone countries, LICs, LMICs, and UMICs (as in Alm & Embaye, 2013) to capture the heterogeneity across the classifications. It is assumed that the capacity of the SSACs to attract significant amount of aid to a great extent depends on the host countries colonial master or major official languages spoken and levels of income. We observe differences among all the variables across levels of income and major official language spoken in the two regions. Starting with annual GDP growth

Table 3. Descriptive statistics.

Full sample	Obs	Mean	Std. Dev.	Min	Max	*AC	Obs	Mean	Std. Dev.	Min	Max	*FC	Obs	Mean	Std. Dev.	Min	Max
Gdpagr	1517	3.75	7.06	−50.25	149.97		814	3.70	5.03	−30.15	26.42		703	3.81	8.86	−50.25	149.97
Oda	1517	10.90	11.70	−0.25	94.95		814	11.17	13.39	−0.25	92.14		703	10.58	9.37	−0.19	94.95
Bfa	1517	0.14	0.15	−0.01	1.41		814	0.15	0.17	−0.01	1.26		703	0.14	0.13	0.00	1.41
Mfa	1517	0.01	0.02	−0.03	0.23		814	0.01	0.02	0.00	0.12		703	0.01	0.02	−0.03	0.23
Gfcf	1517	17.56	10.82	−2.42	85.94		814	17.35	12.21	−2.42	85.94		703	17.80	8.96	0.00	59.73
Lfpr	1517	53.28	29.96	0.00	91.10		814	52.26	29.32	0.00	88.60		703	54.46	30.66	0.00	91.10

LIC	Obs	Mean	Std. Dev.	Min	Max	LMIC	Obs	Mean	Std. Dev.	Min	Max	UMIC	Obs	Mean	Std. Dev.	Min	Max
Gdpr	925	3.26	5.70	−50.25	35.22		370	3.90	4.70	−23.98	23.60		222	5.56	12.87	−17.15	149.97
Oda	925	13.78	12.04	0.00	94.95		370	7.67	8.78	0.00	55.37		222	4.27	10.38	−0.25	69.40
Bfa	925	0.18	0.16	0.00	1.41		370	0.10	0.13	0.00	0.91		222	0.06	0.14	−0.01	0.97
Mfa	925	0.01	0.02	−0.03	0.23		370	0.01	0.01	0.00	0.07		222	0.01	0.02	0.00	0.11
Gfcf	925	15.47	9.15	−2.42	59.72		370	20.28	13.63	0.00	85.94		222	21.73	9.79	0.00	53.61
Lfpr	925	56.25	31.37	0.00	91.10		370	50.95	28.39	0.00	83.43		222	44.80	24.03	0.00	70.89

Source: Output from EViews 9.
*AC = Anglophone Countries, *FC = Francophone Countries.
*LICs, LMICs, UMICs = low, lower-middle, and upper-middle income countries, respectively.

rate, the deviation in francophone (8.86%) and Upper middle income countries (UMICs)(12.87%) appears to be higher than the deviation of the full sample (7.06%). The mean values followed the same direction with that of the standard deviations. The data on aggregate Aid as a percentage of GDP reveals that Anglophone countries and low income countries (LICs) standard deviations are larger than that of the full sample; same goes to the mean values of ODA in these classifications. The standard deviation of bilateral aid Anglophone countries (0.17%) is larger than the full sample (0.15%) while other classifications have standard deviations lower. Multilateral aid standard deviation in all the classifications is consistent with the full sample except for the lower middle income countries (LMICs) with lower standard deviation as in Jebli et al. (2020). The mean values followed the same direction with the standard deviation. Similar to bilateral aid, gross fixed capital formation (GFCF) for Anglophone and LMICs has mean value and standard deviation larger than the full sample (as in Heshmati, 2018). Labour force participation rate in Francophone countries and LICs has standard deviation and mean values that are larger than the full sample. This heterogeneity in the dataset highlights more the important of the sub-classification which has helped to unveil hidden information in the dataset.

4.2. Correlation matrix

The results of the pair-wise correlation matrix shown in Table 4 indicate no strong correlations among the variables under consideration judging from the full sample and other classifications. Therefore, they are all retained as variables in the model as there is no problem of multicollinearity.

Table 4. Pair-wise correlation.

Full sample	Gdpagr	Oda	Bfa	Mfa	Gfcf	lfpr	AC	Gdpagr	Oda	Bfa	Mfa	Gfcf	lfpr
Gdpagr	1							1					
Oda	−0.001	1						0.016	1				
Bfa	0.0714	0.0321	1					0.1322	−0.0227	1			
Mfa	0.0019	0.1622	0.4117	1				0.0082	0.1	0.3641	1		
Gfcf	0.0525	−0.1044	0.0725	−0.034	1			0.1226	−0.029	0.0681	−0.0572	1	
Lfpr	0.0693	0.0121	0.2321	0.2016	0.094	1		0.1193	−0.0023	0.2584	0.173	0.0521	1

*FC	Gdpagr	Oda	Bfa	Mfa	Gfcf	lfpr	*LIC	Gdpagr	Oda	Bfa	Mfa	Gfcf	lfpr
gdpagr	1							1					
oda	−0.0168	1						0.0023	1				
bfa	0.0312	0.1643	1					0.1915	0.0834	1			
mfa	−0.0012	0.2886	0.4995	1				0.0807	0.2048	0.486	1		
gfcf	−0.0008	−0.273	0.0937	0.0192	1			0.2712	0.1757	0.234	0.1252	1	
lfpr	0.0412	0.038	0.2212	0.2619	0.1591	1		0.1063	0.0385	0.2876	0.2268	0.213	1

*LMIC	Gdpagr	Oda	Bfa	Mfa	Gfcf	lfpr	*UMIC	Gdpagr	Oda	Bfa	Mfa	Gfcf	lfpr
gdpagr	1							1					
oda	0.0732	1						0.0938	1				
bfa	0.0908	−0.1032	1					−0.0916	−0.1393	1			
mfa	−0.0163	−0.1793	0.2774	1				0.0054	0.0749	0.6066	1		
gfcf	−0.0564	−0.2362	−0.0219	−0.1293	1			−0.3024	−0.56	−0.0214	−0.071	1	
lfpr	0.0831	−0.1784	0.166	0.0864	0.006	1		0.0802	−0.25	0.195	0.0687	0.0931	1

Source: Output from EViews 9.
*AC = Anglophone Countries.
*FC = Francophone Countries, *LICs = low income countries.
*LMICs, UMICs = lower-middle and upper-middle income countries, respectively.

4.3. Panel ARDL results

PMG estimate gives the most efficient and consistent results in all the classifications by Hausman test results, so interpretations are focussed on PMG model results. The short-run and long-run results of the PMG are presented in Table 5 for all the classifications. As in Rasmane et al. (2021), looking at full sample results, bilateral aid has positive and significant long-run effects on economic growth (EG) that of the short run is compatible in sign but demonstrated no significant effect. This finding suggests that a proportional rise in bilateral aid would result to an improvement of 11.01% in EG. Multilateral aid has a negative and significant effect on EG in the long run but not significant in the short run. This suggests that multilateral aid would in the long-run hinder the EG. The aggregate aid (ODA) shows no significant long-run effect on EG, while it is statistically significant and negative in the short term. This, however, suggests that aggregate aid leads a negative and significant reduction in EG. The outcome of the gross fixed capital formation shows positive and significant impact on EG of the SSACs in both long-term and short-term. This result suggests a rise in capital accumulation will significantly increase the regions EG. Contrary to the ex-ante estimate, the rate of labour force participation for the time under examination is not a major determinant of economic activity in the region.

X-raying the claim that African countries colonial history affects the type of impact foreign aid has on the continent's EG, it is noted that both bilateral aid and aggregate aid are not significant determinants of both long- and short-term EG in Anglophone countries. Multilateral aid has a negative and significant long-term effect on the EG of Anglophone SSACs. This is compatible with the overall sample of the study. Gfcf together with the rate of labour force participation are important determinants of both short and long term economic growth, although the rate of labour force indicates a negative short-term effect as observed in Tella and MacCulloch (2005).

In the Francophone SSACs, bilateral aid has a long-term positive and significant effect on EG but with insignificant influence in the short run. The result aligns closely with the overall sample result. Both Multilateral and aggregate aid have long-run negative and insignificant impact on EG. Gfcf shows significant positive long-term impact on economic growth, but has insignificant positive effect in the short run as showcased in Artal-Tur et al. (2014). Labour participation rate is not a significant determinant of EG in Francophone SSACs in both short and long-term.

The result of the income level classification shows that bilateral aid and multilateral aid have a long-term positive significant and adverse significant effect, respectively, on the EG of LICs but they are insignificant in the short-run. Aggregate aid is not a significant determinant of EG in both short- and long-run. Gross fixed capital formation is an important positive determinant of EG in both short- and long-run while the rate of labour-force participation is not an important determinant of EG in both short- and long-run.

The results of the LMICs indicate that bilateral and aggregate aids are significant positive determinants of EG in the long-run, though aggregate aid has a negative influence. In the short run, both are statistically insignificant. Multilateral aid is a negative and significant determinant of economic growth in the short run, while in the long run, the sign remained negative but statistically insignificant. Gfcf in the

Table 5. Result of the panel data models.

	Short-run result				Long-run result		
				Full sample			
VAR	PMG	MG	DFE	VAR	PMG	MG	DFE
D.bfa	25	6.419	−5.297	Bfa	11.01***	14.27	13.57***
	[22.36]	[27.49]	[5.507]		[2.974]	−31.08	−5.139
D.mfa	−306.6	−58.06	−66.24**	Mfa	−69.04***	−835.6	−40.02
	[490.3]	[797.3]	[31.74]		[19.45]	[814]	[40.06]
D.oda	−35.12**	−34.75**	−11.42***	Oda	−0.721	25.72	−0.221
	[17.48]	[17.05]	[3.327]		[1.089]	[18.7]	[2.658]
D.gfcf	0.154***	0.0843	0.0759**	Gfcf	0.0697***	0.094	−0.0044
	[0.0523]	[0.0628]	[0.0335]		[0.0164]	[0.0651]	[0.0282]
D.lfpr	−0.163	−0.255	−0.0335**	Lfpr	0.00496	0.203	0.00873
	[0.131]	[0.224]	[0.0148]		[0.00385]	[0.208]	[0.00877]
ECT	−0.828***	−0.971***	−0.742***	Observations	1,454	1,454	1,454
	[0.045]	[0.0441]	−0.0254	Hsman test	0.3617		
				Anglophone countries			
D.bfa	−3.255	−21.25	27.45*	Bfa	−1.829	24.02	17.21
	[27.17]	[48.31]	[14.07]		[4.755]	[40.97]	[13.13]
D.mfa	−1,135	−1,000	3.258	Mfa	−70.29***	77.38	−38.45
	[716.2]	[696.6]	[44.56]		[25.1]	[654.1]	[64.26]
D.oda	−7.494	−6.666	−36.50***	Oda	3.889	6.756	−5.475
	[16.28]	[22.96]	[8.839]		[3.086]	[16.02]	[8.667]
D.gfcf	0.258***	0.200**	0.171**	Gfcf	0.124***	0.111	−0.112*
	[0.0852]	[0.0907]	[0.0675]		[0.0282]	[0.12]	[0.0671]
D.lfpr	−0.0499**	−0.0667	−0.0618**	Lfpr	0.0105**	0.0119	0.0125
	[0.0245]	[0.0502]	[0.0258]		[0.0049]	[0.0258]	[0.016]
ECT	−0.906***	−0.997***	−0.723***	Hsman test	0.4423		
	[0.077]	[0.077]	[0.0372]	Observations	774	774	774
				Francophone countries			
D.bfa	47.73	30.31	−12.44***	Bfa	18.95***	5.849	19.33***
	[32.24]	[29.93]	[4.704]		[4.522]	[46.69]	[4.661]
D.mfa	381.3	755.8	−211.3***	Mfa	−53.21	−2	−87.16*
	[656.6]	[1.353]	[60.25]		[34.92]	[1.404]	[51.6]
D.oda	−56.88**	−59.01**	−1.364	Oda	−0.943	42.09	−1.218
	[27.58]	[24.1]	[2.764]		[1.319]	[32]	[2.081]
D.gfcf	0.0602	−0.0159	0.0165	Gfcf	0.0463**	0.0794	0.0379
	[0.0577]	[0.083]	[0.0306]		[0.0224]	[0.0654]	[0.0245]
D.lfpr	−0.277	−0.417	−0.0101	Lfpr	−0.0025	0.368	0.00147
	[0.262]	[0.416]	[0.0152]		[0.00584]	[0.388]	[0.00855]
ECT	−0.777***	−0.949***	−0.776***	Hsman test	0.6695		
	[0.0532]	[0.0498]	[0.0347]	Observations	680	680	680
				Low income countries			
D.bfa	−3.871	2.356	−11.51**	Bfa	7.998***	7.738	16.45***
	[13.14]	[18.44]	[4.79]		[3.103]	[11.94]	[3.374]
D.mfa	−117.1	−134.5	−74.00***	Mfa	−62.92***	111.2	−46.29*
	[130.7]	[128.9]	[26.99]		[19.47]	[226.6]	[25.71]
D.oda	−14.63	−23.16	−7.613***	Oda	−1.256	4.646	−2.593
	[11.31]	[15.3]	[2.907]		[1.135]	[6.16]	[1.789]
D.gfcf	0.134**	0.0166	0.0116	Gfcf	0.109***	0.224***	0.142***
	[0.0665]	[0.0701]	[0.0393]		[0.0196]	[0.0659]	[0.0252]
D.lfpr	−0.229	−0.379	−0.0193	Lfpr	0.00759*	0.33	−0.0032
	[0.205]	[0.365]	[0.0147]		[0.0045]	[0.341]	[0.00671]
ECT	−0.928***	−1.063***	−0.990***	Hsman test	0.6266		
	[0.0584]	[0.0514]	[0.034]	Observations	878	878	878
				Lower middle income countries			
D.bfa	−12.65	17.32	−12.64	Bfa	40.19***	−42.97	18.73
	[24]	[46.65]	[12.08]		[10.67]	[91.34]	[15.22]

Table 5. Continued.

	Short-run result				Long-run result		
				Full sample			
VAR	PMG	MG	DFE	VAR	PMG	MG	DFE
D.mfa	−1.420**	−1.884*	−88.08	Mfa	−92.13	−419.2	−24.31
	[623.6]	[975.6]	[120.8]		[99.56]	[983.1]	[132.7]
D.oda	8.024	−24.03	5.17	Oda	−14.89**	69.49	−5.401
	[18.88]	[36.14]	[7.921]		[5.883]	[67.06]	[8.369]
D.gfcf	0.195*	0.175	0.00469	Gfcf	−0.102***	−0.111	−0.0366
	[0.101]	[0.139]	[0.0348]		[0.0336]	[0.169]	[0.0372]
D.lfpr	−0.0489	−0.03	−0.0533***	Lfpr	0.00263	0.00356	0.0171
	[0.0342]	[0.0405]	[0.0194]		[0.01]	[0.025]	[0.0141]
ECT	−0.599***	−0.703***	−0.612***	Hsman test	0.3326		
	[0.0519]	[0.0743]	[0.0471]	Observations	360	360	360
				Upper middle income countries			
D.bfa	187.2*	5.188	182.3***	Bfa	−39.34	136.9	−141
	[112]	[167.1]	[69.5]		[52.27]	[144.2]	[92.79]
D.mfa	13.36	3,304	−936.2***	Mfa	−320.4	−5.48	−2,420***
	[3619]	[5309]	[360.7]		[554.8]	[5.214]	[581.2]
D.oda	−178.4**	−100.9	−167.4***	Oda	49.55	40.55	131.8**
	[85.42]	[79.1]	[37.13]		[35.63]	[61.76]	[54.72]
D.gfcf	0.212	0.215	0.361**	Gfcf	−0.0172	−0.106	−0.486***
	[0.175]	[0.223]	[0.153]		[0.0599]	[0.153]	[0.152]
D.lfpr	−0.102	−0.111	−0.0601	Lfpr	−0.0004	0.00444	−0.0036
	[0.118]	[0.164]	[0.08]		[0.0101]	[0.0865]	[0.0461]
ECT	−0.884***	−1.038***	−0.748***	Hsman test	0.6676		
	[0.0755]	[0.0725]	[0.0628]	Observations	216	216	216

Source: Arranged from output results from Eview version 9. Standard errors in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ PMG means Pooled Mean Group, MG means Mean Group and DFE means Dynamic Fixed Effect.

Table 6. Variables descriptions.

Variables	Descriptions	Expected sign
Growth	Annual GDP growth rate	
AID	Foreign aid inflow as % of GDP	+
BFA	Bilateral foreign aid inflow as % of GDP	+
MFA	Multilateral foreign aid inflow as % of GDP	+
GFCF	Gross fixed capital formation as % of GDP	+
LFGR	Labour force growth rate	+

Source: Authors' compilation.

long run is a significant negative determinant of economic growth, while in the short run, there is little evidence of a significant positive determinant. In line with Yucan et al. (2011), labour-force participation rate in both the short- and long-run revealed no significant effect on economic growth of LMICs.

Evidence from the UMICs indicates that all components of foreign aid, the aggregate aid as well as the gfcf and the labour force are not significant factors in explaining changes in EG in the long run. Aggregate aid has a negative and significant effect on EG in the short run. Multilateral aid, gfcf and labour force participation rate are not significant determinants of EG in both the long-run and short-run. The result of the long-run coefficient (ECT) provided significant evidence in support of a long run relationship among the variables under consideration and this result is consistent across all the models. This result indicates that there exists a co-integration among the variables included in the model.

4.4. Discussion of findings

In the full sample, empirical evidence revealed that gross fixed capital formation (gfcf) has a strong positive determining power to encourage EG in both the short- and long-run, bilateral aid has significant positive while multilateral aid has a negative effect on EG of the 40 SSACs in the short-run. This suggests that foreign aid from bilateral agencies significantly induce EG favourably while multilateral foreign aid retards EG in the recipient countries. The justification for this result is mainly attributed to differences in the terms and conditions upon which bilateral and multilateral aid are granted to the host country. According to Wako (2011), different foreign aid components embody different conditions which often affect the level of impact they exert on the growth of the recipient economies. The result however, reveals the possibility of bilateral aid having less stringent condition that allows for economic progress in the recipient economies. The negative effect of multilateral aid suggests the possibilities of more stringent conditions upon which the multilateral donor agencies base their extension of aid. For instance, membership of a multilateral agency like the United Nations which is one of the conditions for extension of certain class of aid does not come without a cost, in which case recipient economies struggle to maintain their membership on these agencies so as to stand a chance to receive these aid when the need arises. These results are consistent with the findings of Ram (2003), and Wako (2011) but negate the findings of Headey (2005) and Wako (2011). The result of aggregate aid reveals that it is not a significant determinant of economic growth in the 40 SSACs suggesting that the combined effect of bilateral and multilateral aid nullified each other. The aggregate result for the whole sample corroborates the findings of Ogundipe et al. (2014), Ferreira and Simoes (2013), Ndambiri et al. (2012), Phiri (2017), and Mallik (2008) but contrary to the result of Alemu and Lee (2015), Ndambendia and Njoupouognigni (2010), Armah and Nelson (2008), Sheu and Ismai (2016), Iheonu et al. (2017), who in separate studies reported positive effect of aid on growth. This finding suggests that despite the volume of foreign aid that flows into SSA, its impact on output productivity depends to a large extent on the component of aid the host economy is able to attract.

When foreign aid-economic growth nexus was disaggregated into Anglophone, francophone countries, gfcf maintains its strong positive effect in both regions as obtained in the full sample, bilateral aid exerts weak adverse influence and strong favourable effect on the Anglophone and francophone countries, respectively. Multilateral aid exerts strong unfavourable effect on the Anglophone but weak on the francophone. Aggregate aid has weak and strong negative impact on the Anglophone and francophone countries, respectively. Labour force influence is strongly unfavourable (short-run), favourably strong (long-run), in the Anglophone and weakly unfavourable in the francophone. Bilateral aid is a significant driver of EG in Francophone countries, suggesting that they should access more of bilateral aid to significantly increased output productivity in the region. Multilateral aid and aggregate aid were reported to exert no significant effect on EG of Francophone countries suggesting that less attention be given to multilateral aid inflow into the region possibly due to unattractive terms and conditions that comes with it. The result from the Anglophone countries indicates that bilateral aid and aggregate aid are not significant

determinants of EG in the region. Meanwhile multilateral aid is a negative and significant determinant of EG, suggesting that Anglophone countries should minimise access to multilateral aid with its unattractive terms and conditions.

The results of the scrutiny along income levels shows that bilateral aid influences LICs and LMICs same way, that is, it has weak adverse and strong favourable effect on growth in short- and long-run, respectively, while strong positive impacts show in UMICs. Strong unfavourable effects of multilateral aid were discovered in LICs (long-run) and LMICs (short-run) while weak relationships subsist in UMICs. Aggregate aid has weak negative impact in LICs, strong negative impact in LMICs (long-run) and UMICs (short-run). The gfcf maintains its strong positive effect in LICs (short- and long-run), positive and negative significant effect in LMICs (short- and long-run, respectively), and insignificant influence in UMICs. Labour force depicts a weak determinant of economic growth in all the income levels except in LMICs where it provides little strong favourable impact in the long-run. The labour force is unproductive or still operating at the level that could not influence economic growth in the region. Nte et al. (2022) claim that politically, small countries all over the world have peculiar challenges which may make some unviable and inconsequential in the comity of nations but this study believes that SSACs have potentials that can provide leverages that can make them relevant if they can manage their respective resources well.

5. Conclusion

The study asserts that bilateral aid rather than multilateral aid strongly favours the French-speaking countries better than the English-speaking countries of SSA possibly on account of the culture of assimilation of the former by France. Bilateral aid exerts strong favourable effect and weak adverse influence on the francophone and Anglophone countries, respectively. Multilateral aid exerts weak and strong unfavourable effect on the francophone and Anglophone, respectively. Aggregate aid generates strong and weak negative impact on the francophone and Anglophone countries, respectively. The disparities in income level influence the effect of foreign aid components on economic growth as the effect of bilateral and multilateral aid differs. The output productivity in UMICs is positively sensitive to only bilateral aid inflow and this makes only bilateral aid a significant determinant of economic growth in the region. Bilateral aid in LICs and LMICs significantly drives economic growth positively in the region suggesting that more bilateral aid in the region will significantly increase output productivity. The potential reduction in output productivity associated with multilateral aid is due to hash economic condition that the region is already into thereby resulting to crowding out effect. The possible crowding out effect on domestic savings to a large extent explains the negative effect of multilateral aid on economic growth in LICs. The result indicates that in the selected 40 SSACs, bilateral aid significantly induces economic growth while multilateral foreign aid retards economic growth in the recipient countries in the short-run.

The policy implication of the findings is that SSACs should take into consideration their colonial history as well as their income level in designing policies aimed at attracting foreign aid as these factors significantly influence of aid components on the

output productivity and growth of the economy. The study recommends adoption of differential approach in designing policies aimed at attracting foreign aid. For instance, LICs and LMICs should focus more on attracting significant inflow of bilateral aids which is more growth enhancing than the multilateral aid. There is need for effective collaboration with donor agencies to ensure that the terms and conditions are soft. Anglophone countries and UMICs should ensure that effort is shifted from over dependence on foreign aid to policies that will engender internal growth especially upgrading their domestic capital formation and labour productivity. French speaking countries should position themselves to attract more bilateral aid through effective policy implementation.

Disclosure statement

Ethical statement

Funding

ORCID

Sebastine Ugochukwu Ugwuegbe 🆔 http://orcid.org/0000-0002-5111-1099

Data availability statement

References

Ahmad, R., Etudaiye-Muhtar, O. F., Matemilola, B. T., & Bany-Ariffin, A. N. (2016). Financial market development, global financial crisis and economic growth: Evidence from developing nations. *Portuguese Economic Journal*, *15*(3), 199–214. https://doi.org/10.1007/s10258-016-0123-8

Alemu, A. M., & Lee, J.-S. (2015). Foreign aid on economic growth in Africa: A comparison of low and middle-income countries. *South African Journal of Economic and Management Sciences*, *18*(4), 449–462. https://doi.org/10.4102/sajems.v18i4.737

Alm, J., & Embaye, A. (2013). Using dynamic panel methods to estimate shadow economies around the World, 1984–2006. *Public Finance Review*, *41*(5), 510–543. https://doi.org/10.1177/1091142113482353

Armah, S., & Nelson, C. (2008, July 27–29). *Is foreign aid beneficial for Sub-Saharan Africa? A panel data analysis* [Paper presentation]. Paper Presented at the American Agricultural Economic Association Annual Meeting, Orlando, FL.

Artal-Tur, A., Peri, G., & Requena-Silvente, F. (2014). *The socio-economic impact of migration flows: Effects on trade, remittances, output, and the labour market.* Springer Science and Business Media LLC.

Asongu, S. A., & Nwachukwu, J. C. (2016). Foreign aid and governance in Africa. *International Review of Applied Economics*, 30(1), 69–88. https://doi.org/10.1080/02692171.2015.1074164

Asteriou, D. (2009). Foreign aid and economic growth: New evidence from a panel data approach for five South Asian Countries. *Journal of Policy Modeling*, 31(1), 155–161. https://doi.org/10.1016/j.jpolmod.2008.04.012

Ayesha, A., Nawazish, M., & Fatima, A. (2021). Pakistan's poverty puzzle: Role of foreign aid, democracy & media. *Economic Research-Ekonomska Istraživanja*, 34(1), 368–382. https://doi.org/10.1080/1331677X.2020.1788964

Das, A., & Chowdhury, M. (2011). Remittances and GDP dynamics in 11 developing countries: Evidence from panel co-integration and PMG techniques. *The Romanian Economic Journal*, xiv(42), 3–23.

Durbarry, R., Gemmell, N., & Greenaway, D. (2011). New evidence on the impact of foreign aid on economic growth. *Credit Research Paper*, 98(8), 1–47.

Ferreira, I. A. R., & Simoes, M. C. N. (2013). Aid and growth: A comparative study between Sub-Saharan Africa and Asia. *Applied Econometrics and International Development*, 13(1), 113–132. http://www.usc.es/economet/eaat.htm

Findley, M. G., Milner, H. V., & Nielson, D. L. (2014). The effects of multilateral vs. bilateral aid on recipient behavioral support. https://www.princeton.edu/./EffectofMLvsBLAidonRecipientBehavioralSupport.pdf

Global Fund. (2016). The 2016 annual financial report.

Gomanee, K., Girma, S., & Morrissey, O. (2012, 19–21 September). *Aid, investment and growth in Sub-Saharan Africa* [Paper presentation]. Paper Prepared for the 10th General Conference of EADI, Ljubljana.

Hassan, I. B., Azali, M., & Lee, C. (2014). Feldstein-Horioka puzzle and international capital mobility in high income countries: A pool mean group approach. *Engineering Economics*, 25(5), 480–486. https://doi.org/10.5755/j01.ee.25.5.3539

Headey, D. D. (2005). Foreign aid and foreign policy: how donor undermines the effectiveness of overseas development assistance. CEPA Working Paper No. 5. Centre for Efficiency and Productivity Analysis, School of Economics, University of Queensland.

Heshmati, A. (2018). *Determinants of economic growth in Africa.* Springer Science and Business Media LLC.

Iheonu, C. O., Ihedimma, G. I., & Omenihu, M. C. (2017). A pooled mean group estimation of capital inflow and growth in sub Saharan Africa. *The Romanian Economic Journal*, XX(65), 105–121.

Jebli, M. B., Farhani, S., & Guesmi, K. (2020). Renewable energy, CO2 emissions and value added: Empirical evidence from countries with different income levels. *Structural Change and Economic Dynamics*, 53, 402–410. https://doi.org/10.1016/j.strueco.2019.12.009

Jena, N. R., & Sethi, N. (2020). Foreign aid and economic growth in sub-Saharan Africa. *African Journal of Economic and Management Studies*, 11(1), 147–168. https://doi.org/10.1108/AJEMS-08-2019-0305

Jena, N. R., & Sethi, N. (2020). Foreign aid and growth nexus: Empirical evidence from South Asian countries. *South Asian Journal of Business Studies*, 10(1), 1–28. https://doi.org/10.1108/SAJBS-10-2019-0172

Kunofiwa, T. (2018). Complementarity between foreign aid and financial development as a driver of economic growth in selected emerging markets. *Comparative Economic Research*, 21(4), 45–62. https://doi.org/10.2478/cer-2018-0026

Magnon, K. A. (2012). Foreign aid, inequality, and poverty: Is the effect in subsaharanafrica different? OpenSIUC Research Paper 221, http://opensiuc.lib.siu.edu/gs_rp/221

Mahembe, E., & Odhiambo, N. M. (2019). Foreign aid, poverty and economic growth in developing countries: A dynamic panel data causality analysis. *Cogent Economics & Finance*, *7*(1), 1626321. https://doi.org/10.1080/23322039.2019.1626321

Majid, M., & Elahe, M. (2016). Foreign direct investment, exports and economic growth: Evidence from two panels of developing countries. *Economic Research-Ekonomska Istraživanja*, *29*(1), 938–949. https://doi.org/10.1080/1331677X.2016.1164922

Mallaye, D., & Urbain, Y. T. (2013). Foreign aid and mobilization of growth factors in Sub-Saharan Africa. WIDER working Paper No.2013/103

Mallik, G. (2008). Foreign aid and economic growth: A co-integration analysis of the six poorest African countries. *Economic Analysis and Policy*, *38*(2), 251–260. https://doi.org/10.1016/S0313-5926(08)50020-8

Maruta, A. A., Banerjee, R., & Cavoli, T. (2020). Foreign aid, institutional quality and economic growth: Evidence from the developing world. *Economic Modelling*, *89*(C), 444–463. https://doi.org/10.1016/j.econmod.2019.11.008

Mbaku, J. M. (1994). Foreign aid and economic growth in Cameroon: A reply. *Applied Economics Letters*, *1*(4), 55–57. https://doi.org/10.1080/135048594358212

Md, R. S., Hongzhong, F., Elyas, A. M., Md, I. H., & Mollah, A. I. (2019). Effects of export and technology on economic growth: Selected emerging Asian economies. *Economic Research-Ekonomska Istraživanja*, *32*(1), 2515–2531. https://doi.org/10.1080/1331677X.2019.1650656

Moyo, D. (2009). *Dead aid: Why aid is not working and how there is a better way for Africa*. New York: International Kindle Paperwhite.

Muhammad, Z., Wen, J., & Haseeb, A. (2019). Effect of terrorism on economic growth in Pakistan: An empirical analysis. *Economic Research-Ekonomska Istraživanja*, *32*(1), 1794–1812. https://doi.org/10.1080/1331677X.2019.1638290

Naeem, A. (2016). Public debt and pro-poor economic growth evidence from South Asian countries. *Economic Research-Ekonomska Istraživanja*, *29*(1), 746–757. https://doi.org/10.1080/1331677X.2016.1197550

Ndambendia, H., & Njoupouognigni, M. (2010). Foreign aid, foreign direct investment and economic growth in Sub-Saharan Africa: Evidence from Pooled Mean Group Estimator (PMG). *International Journal of Economics and Finance*, *2*(3), 39–45. https://doi.org/10.5539/ijef.v2n3p39

Ndambiri, H. K., Ritho, C., Ng'ang'a, S. I., Kubowon, P. C., Mairura, F. C., Nyangweso, P. M., Muiruri, E. M., & Cherotwo, F. H. (2012). Determinants of economic growth in Sub-Saharan Africa: A panel data approach. *International Journal of Economics and Management Sciences*, *2*(2), 18–24.

Nelson, C., & Plosser, C. (1982). Trends and random walks in macroeconomic time series: Some evidence and implications. *Journal of Monetary Economics*, *10*(2), 139–162. https://doi.org/10.1016/0304-3932(82)90012-5

Nidup, J. (2015). Non-Indian aid and growth nexus in Bhutan. *International Journal of Development Issues*, *14*(2), 117–129. https://doi.org/10.1108/IJDI-09-2014-0069

Nte, N. D., Oluka, N. L., & Feartherstone, C. R. (2022). Small states, statescraft and the challenges of national security: The case of Guyana. *Insights into Regional Development*, *4*(1), 89–104. https://doi.org/10.9770/IRD.2022.4.1(6)

Ogheneakpoje Ighoshemu, B., & Ogidiagba, U. B. (2022). Poor governance and massive unemployment in Nigeria: As causes of brain drain in the Buhari administration (2015-2020). *Insights into Regional Development*, *4*(2), 73–84. http://doi.org/10.9770/IRD.2022.4.2(6)

Ogundipe, A. A., Ojeaga, P., & Ogundipe, O. M. (2014). Is aid really dead? Evidence from Sub-Saharan Africa. *International Journal of Humanities and Social Science*, *4*(10), 300–314.

Olafin, O. P. (2013). Foreign aid and poverty level in West Africa Countries: New evidence using a heterogeneous panel analysis. *Australian Journal of Business and Management Research*, *3*(4), 9–18.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association*, *94*(446), 621–634. https://doi.org/10.1080/01621459.1999.10474156

Phiri, M. W. (2017). The impact of aid on the economic growth of developing countries (LDCs) in Sub-Saharan Africa. *Gettysburg Economic Review*, *10*(4), 28–48.

Rajan, R. G., & Subramanian, A. (2008). Aid and growth: What does the cross-country evidence really show? *The Review of Economics and Statistics, MIT Press*, *90*(4), 643–665. https://doi.org/10.1162/rest.90.4.643

Ram, R. (2003). Roles of bilateral and multilateral aid in economic growth of developing countries. *Kyklos*, *56*(1), 95–110. https://doi.org/10.1111/1467-6435.00211

Ram, R. (2004). Recipient country's 'policies' and the effect of foreign aid on economic growth in developing countries: Additional evidence. *Journal of International Development*, *16*(2), 201–211. https://doi.org/10.1002/jid.1071

Rasmane, O., Windemanegda, S. S., & Hamidou, S. (2021). Aid, growth, and institutions in Sub-Saharan Africa: New insights using a multiple growth regime approach. *The World Economy, Wiley Blackwell*, *44*(1), 107–142. https://orcid.org/0000-0002-7647-7652

Sheu, N., & Ismai, A. (2016). Foreign aid and economic growth in the West African States: A panel framework. *International Journal of Humanities and Social Science Invention*, *5*(6), 32–37.

Sidibé, K. (2012). Security management in Northern Mali: Criminal networks and conflict resolution mechanisms. 2012 Institute of Development Studies (IDS) Research Reports Special Issue https://doi.org/10.1111/j.2040-0217.2012.00077_2.x

Soheila, K. Y., & Bahman, K. (2017). Air pollution, economic growth and health care expenditure. *Economic Research-Ekonomska Istraživanja*, *30*(1), 1181–1190. https://doi.org/10.1080/1331677X.2017.13148231

Tella, R. D., & MacCulloch, R. (2005). The consequences of labor market flexibility: Panel evidence based on survey data. *European Economic Review*, *49*(5), 1225–1259. https://doi.org/10.1016/j.euroecorev.2003.11.002

Wako, H. A. (2011). Effectiveness of foreign aid in Sub-Saharan Africa: Does disaggregating aid into bilateral and multilateral components make a difference? *Journal of Economics and International Finance*, *3*(16), 801–817.

World Bank. (2017). End extreme poverty, boost shared prosperity. World Bank Annual Report 2017.

Yucan, L. C., Shumway, R., Rosenman, R., & Ball, V. E. (2011). Productivity growth and convergence in US agriculture: new cointegration panel data results. *Applied Economics*, *43*(1), 91–102. https://doi.org/10.1080/00036840802389087