Hayaloğlu, P. (2023). "Foreign Aid, Institutions, and Economic Performance in Developing Countries", Eskişehir Osmangazi Üniversitesi İİBF Dergisi, 18(3), 748 – 765.
Doi: 10.17153/oguiibf.1277348

Başvuru: 05.04.2023 Kabul: 05.07.2023 *Araştırma Makalesi/Research Article*

Foreign Aid, Institutions, and Economic Performance in Developing Countries

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Gelişmekte Olan Ülkelerde Dış Yardım, Kurumlar ve Ekonomik Performans	**Foreign Aid, Institutions, and Economic Performance in Developing Countries**
Öz	**Abstract**
Resmi kalkınma yardımları gelişmekte olan ülkelerde sermaye eksikliğine çözüm önerisi olarak sunulmuş olsa da literatürde dış yardımların etkinliği konusunda fikir birliği oluşmamıştır. Bunun yanında yardımların ancak belli koşullar altında büyümeyi olumlu etkileyebileceğini öne süren görüşler, kurumsal kaliteyi yardımların olumlu etkisini teşvik edecek önemli bir kanal olarak görmektedir. Bu kapsamda çalışma dış yardım, kurumsal yapı ve ekonomik performans arasındaki ilişkileri Avrupa, Amerika, Afrika ve Asya bölgesindeki 80 ülke için incelemektedir Elde edilen bulgulara göre, örneklem ülkelerde resmi kalkınma yardımları ve kurumsal yapının kalitesi ekonomik büyümeyi pozitif yönde etkilemektedir. Ayrıca dış yardımların kurumsal yapı üzerindeki etkisinin pozitif olduğu tespit edilmiştir.	Although official development assistance presents a solution for developing countries to overcome the lack of capital, there is no consensus in the literature on the effectiveness of foreign aid. Moreover, opinions claiming that aid can only affect growth positively under certain conditions see institutional quality as an essential aspect that boosts the positive impact of aid. This study examines the relationships between foreign aid, institutional structure, and economic performance for 80 countries in Europe, America, Africa, and Asia. It is found that official development assistance and the quality of institutional structure in the sample countries affect economic growth positively. It also provides some suggestive evidence showing that foreign aid has a positive effect on the institutional structure.
Anahtar Kelimeler: Dış Yardım, Kurumlar, Ekonomik Performans	**Keywords:** Foreign Aid, Institutions, Economic Performance
JEL Kodları: B15, F35, O11	**JEL Codes:** B15, F35, O11

Araştırma ve Yayın Etiği Beyanı	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
Yazarların Makaleye Olan Katkıları	Çalışmanın tamamı yazar tarafından hazırlanmıştır.
Çıkar Beyanı	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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1. Introduction

The main reasons developing countries need more help with their development are the inability of them to accumulate sufficient physical or human capital, insufficient infrastructure, and the inability to establish relevant institutions (Wako, 2018: 23). In this context; foreign aid is an essential tool for low-income countries that cannot develop by using their potential. Organization for Economic Cooperation and Development (OECD) defines Official Development Assistance (ODA), or foreign aid, as government aid designed to promote developing countries' economic development and prosperity. Foreign aid can be provided directly from a donor country or transferred through a multilateral development agency such as the United Nations and the World Bank. These agencies are important actors in development cooperation (OECD, 2021a). Foreign aid provided by high-income countries to low-income countries has constantly been increasing over the years. While the aid provided by the member countries of the Development Assistance Committee (DAC), the majority of which was established by the OECD, was $ 33,040.88 million in 1970, this figure increased to $ 171,629.13 million in 2019. Asia and Africa are the regions receiving the most aid flows when the distribution of the provided aid is examined in terms of regions. Aid to Africa has increased from $ 7,749.57 million in 1970 to $ 61,069.29 million in 2019. Aid to Asia increased from $ 16,677.06 million in 1970 to $ 50,613.17 million in 2019. The regions that received the least aid were Oceania, Europe, and America (Figure A1) (see Appendix).

Although the proportion of foreign aid transferred to developing countries is gradually increasing, there is still no consensus in the literature about the impact of foreign aid on social and economic development in these countries. Sachs (2005), the spearhead of this debate, argues that the level of savings and investment required for growth in low-income countries is insufficient; thus, foreign aid is necessary to boost development. As an opposing view, Easterly (2003), Easterly et al. (2004), and Easterly (2006) argue that foreign aid does not have a positive effect on growth. Another group of studies argues that foreign aid would affect growth positively only under certain conditions. For instance, the impact of foreign aid on growth depends on good monetary, financial, and trade policies based on the studies of Burnside and Dollar (2000). It is also determined by climate conditions, as reported by Dalgaard et al. (2004).

Contrarily, Wako (2016) argues that the effectiveness of aid on the growth of countries depends on the quality of the existing policies or the institutional environment. According to North (2002), institutions are "the rules of the game played in society; To put it in a more formal way, they are the constraints imposed by people that shape the interaction." Especially since the 1990s, the institutional structure has turned out to be accepted as the main determinant of growth performance (Barro 1991, Mauro 1995, De Haan and Siermann 1995, Hall and Jones 1999, Knack and Keefer 1997, Leblang 1996, Tanzi and Davodi 1997). In the following years, Acemoğlu (2009), Acemoğlu and Robinson (2012), Acemoğlu et al. (2003), Rodrik (2000), North (2002), and Dawson (2003, 2010) have made significant contributions to the literature with their research. According to the theory, the quality of the institutional structure encourages growth by preparing a suitable environment for investments to be made in an economy. The effectiveness of the institutional structure is measured by factors such as the provision of fundamental rights and freedoms in a society, the control of corruption, the rule of law, and the protection of property rights. An effective institutional structure reduces the uncertainty in the economy and transaction costs. Thus, it can produce long-term economic results by affecting decisions such as production, consumption, and savings. However, Young and

Sheehan (2014) argue that today, institutional quality stands out as an area where aid flows can have an impact on economic growth.

The main motivation of this study is the arguments on the effect of foreign aid on the growth of the recipient country. I aim to contribute to the ongoing debate in the literature by presenting empirical evidence for low-income countries that continue to use foreign aid. The study also aims to determine the impact of the institutional structure, which is an important channel, in the aid-growth relationship. Thus, the aid-growth nexus, which is at the origin of the debates, is examined from a perspective that considers the institutional structure. I exploit two institutional quality indicators to identify potential channels through which aid can have an impact on growth. One of these consists of political rights and civil freedom indices obtained from Freedom House. Another is obtained from Worldwide Governance Indicators (WGI) data created by the World Bank. The reason for choosing these two institutional variables is that they stand out in the literature as an important channel that affects the efficiency of foreign aid.

In the study, I examine the relationships between foreign aid, institutional quality, and economic performance for 80 countries using the panel data analysis method with the data between 2000 and 2019. To shed light on the discussions about foreign aid, I examine the effects of (1) foreign aid on economic growth, (2) institutions on economic growth and (3) foreign aid on institutions. The sample includes 6 countries from Europe, 15 countries from America, 38 countries from Africa, and 21 countries from Asia. The following sections of the study are organized as follows: Section 2 discusses the related literature. Section 3 presents the methodology and empirical results. Finally, Section 4 concludes the general assessment of the study.

2. Literature Review

Many studies in the literature examine the effects of foreign aid on the economic performance of the recipient countries. Some of these studies show that foreign aid has a positive impact on growth. For example, Cungu and Swinnen (2003) find a positive relationship between aid and growth in 20 transition countries between 1989-1997. Karras (2006) concludes that for 77 developing countries from 1997-2012, ODA positively affected growth. Adamu (2013) estimates the relationship between foreign aid and growth for the Economic Community of West African States' members and concludes that the impact of foreign aid on economic growth is positive and strong. Guitaru (2015) uses time series analysis to estimate the effects of foreign aid on Kenya's economic growth between 1970 and 2000. The results suggest that foreign aid has a positive impact on economic growth. Moolio and Kong (2016) predict the long-term relationship between aid and economic growth in Cambodia, Lao PDR, Myanmar, and Vietnam in their study. They conclude that foreign aid has a positive impact on economic growth. Golder et al. (2021) investigate the impact of foreign aid on economic growth in Bangladesh using annual data covering the period 1989-2018. The results show that foreign aid is an important determinant of Bangladesh's economic progress both in the long and short term.

When examining studies demonstrating the failure of foreign aid in receiving countries, Nowak-Lehmann et al. (2012) find that the direct impact of foreign aid on income per capita is not statistically significant, or it is minute negative effect on aid (in countries highly dependent on aid). On the other hand, Mallik (2008) examines the effect of ODAs on the growth of six African countries (Central African Republic, Malawi, Mali, Niger, Sierra Leone, and Togo) and

finds that the long-term impact of aid on growth is negative for most. Ekanayake and Chatrna (2010) analyze the relationship between foreign aid and growth for 85 developing countries, including Asia, Africa, Latin America, and the Caribbean. When the model is estimated for different periods, different regions, and different income levels, it is concluded that the effect of foreign aid on economic growth is mixed. Burke and Ahmadi-Esfahani (2006) examine the impact of aid on growth for three South-East Asian countries (Thailand, Indonesia, and the Philippines) from 1970-2000. The results show that aid has an insignificant effect on the growth rates of these three countries. Yiew and Lau (2018) found that foreign aid initially negatively affected the growth of a sample of 95 developing countries but contributed to it after a certain time. Azam and Feng (2022) analyze the impact of foreign aid on economic growth in developing countries. They use cross-sectional time series analysis for a group of 37 developing countries comprising low-income, lower middle income, and upper middle-income groups for the period 1985-2018. The results show that foreign aid tends to increase economic growth in the overall sample. However, the study finds that the effect of foreign aid on economic growth is limited in low-income countries. Additionally, the study reveals that foreign aid only promotes growth among the lower middle-income group, while it has a negative impact on growth in both low-income and upper middle-income countries.

In the literature, some studies indicate that the effectiveness of foreign aid has a positive effect only under certain conditions. In their research on developing countries for the years 1970–1993, Burnside and Dollar (2000) find that the positive effect of foreign aid on growth depends on good monetary, financial, and trade policies and that the effect on growth is weak when there are inefficient policies. Dalgaard et al. (2004) find that foreign aid positively affects growth, but the degree of this effect depends on climate conditions. This finding suggests that foreign aid is less effective for tropical areas. Martinez (2015) investigates the impact of foreign aid on gross domestic product (GDP) growth for low- and middle-income countries. The research results show that foreign aid has a positive impact on the economic growth of the recipient country. However, the research suggests that political conflict and geographical factors may reduce this positive effect. Iwegbu and Dauda (2022) investigate the effectiveness of foreign aid in reducing poverty in Africa. In the study covering the period of 1980-2017, the results show that foreign aid increased with effective fiscal policy towards education and health has a positive impact on income levels in all the regions except Central Africa. Gebresilassie et al. (2023) examine the impact of foreign aid on economic growth in Ethiopia using time series data for the period 1974-2017. The model results show that foreign aid has a negative impact on economic growth both in the long run and the short run. The paper suggests that the negative effect of foreign aid is due to weak institutional regulations that contribute to the allocation of funds to inefficient sectors.

On the other hand, Hansen and Tarp (2001) find that aid increases the growth rate in most instances, and this result is not dependent on 'good' policies. Easterly (2003) repeats the work of Burnside and Dollar (2000) using different definitions of "aid," "good policy," and "growth," with an extended sample covering the years 1970-1997. According to the results, the coefficients of aid interaction and policy effectiveness variables are not statistically significant. Easterly et al. (2004) investigate the relationship between aid, policy, and growth for the years 1970-1997 using the same control variables as Burnside and Dollar (2000). In the study, there is no evidence that assistance supports growth in a good policy environment when the data period is expanded. In their study, Rajan and Subramanian (2005) find no evidence that aid

works better with better policies or geographic environments or that certain types of aid work better than others.

Some of the studies include institutional quality in the analysis as an important channel through which aid can affect economic growth. The findings of these studies, in which different institutional variables represent institutional quality, are also controversial. For example, Fayissa and El-kaissy (1999) use cross-sectional data from 80 developing countries for the years 1971-1990. The findings of this study show that foreign aid has a positive effect on economic growth in developing countries. However, the impact on economic growth is negative in the absence of political and civil liberties. In'airat (2014) examines the relationship between aid and good governance in developing countries. The study investigates the determinants of aid allocation using different panel data estimators over the period of 2001-2010. The results provide strong evidence that countries with good governance receive preferential treatment from donors. Among the six governance indicators, voice and accountability and control of corruption are of critical importance in aid allocation decisions. Maruta et al. (2020) investigated the relationship between foreign aid, institutional quality, and economic growth in 74 developing countries for the years between 1980-2016. In the study, which deals with the aid for education, health, and agriculture sectors, sectoral aid is determined to have a positive effect on growth, and this effect depends on the institutional structure. Yahyaoui and Bouchoucha (2020) analyze the role of institutional quality in improving the effectiveness of foreign aid. They conduct panel data analysis for 25 low-income and 23 middle-income African economies for the period 1996-2014. Both short-term and long-term results confirm that foreign aid is not effective in terms of economic growth. The study considers institutional quality as a channel that enhances the effectiveness of aid and uses six governance variables obtained from Kaufmann et al. (2014). The relevant governance indicators that improve aid effectiveness in low-income countries are rule and laws, government effectiveness, and voice and accountability. In middle-income countries, all institutional indicators improve aid effectiveness except for rules and laws.

Akramov (2012) examines whether the level of governance in aid-receiving countries is important for aid effectiveness. The analysis covers data from 140 developing countries between 1973 and 2022. The findings show that the quality of democratic governance in the recipient country is not a guarantee of the effectiveness of foreign aid. Younis (2015) investigates the role of foreign aid in promoting sustainable development, taking into account the institutional quality of a country. He analyzes the data of four South Asian countries for the years between 1976 and 2013. The results show that foreign aid has a negative impact on sustainable development, except when in the case of low GDP growth. Ogundipea and Ola-Davida (2014) examine the effect of foreign aid on GDP per capita in West Africa between 1990 and 2012. They analyze foreign aid within seven sub-categories: agriculture, communication, industry, engineering, education, health, and food safety. The research shows that aid boosted growth in a favorable macroeconomic environment in most cases. However, they determine that institutional quality and infrastructure development do not significantly affect the aid-growth relationship. Adusei (2020) used dynamic panel data analysis covering 42 African countries from 1983-2018. The study's findings suggest that whatever the political and institutional environment, aid has a positive impact on growth. However, it is revealed that the mediating role of the institutional environment is unimportant. Hassan (2021) estimates the moderating impact of institutions on foreign aid and growth for Nigeria. In the study, he uses

the Canonical Cointegration Regression method for 1984-2018. Findings from the study suggest that foreign aid has a positive effect on economic growth, but the quality of institutions in the country might reduce this positive effect. Abate (2022) investigates whether institutional quality and economic freedom are important in the relationship between aid and growth. Panel data analysis was carried out using the data of 44 developing countries covering the period of 2002-2019. According to the results, the relationship between foreign aid and economic growth is in an inverted U shape. It has been found that the contribution of aid to economic growth is only positive at a low level (not more than 8-9% of GDP) and becomes harmful at higher levels. In addition, it was found that institutional quality and economic freedom are crucial in shaping the relationship between aid and economic growth.

Heckelman and Knack (2009), one of the studies examining the relationship between foreign aid, institutions, and economic performance, find that foreign aid does not have a significant effect on economic freedom in aid-recipient countries. However, when analyzing different categories of economic freedom, foreign aid has growth-enhancing effects. In the study examining 53 African countries for the years 1996-2010, Asongu (2013) finds that the impact of development assistance on institutional quality is negative. In addition, the effect of economic growth on aid is also determined to be negative. Altunbaş and Thornton (2014) examine the impact of foreign aid on democracy for 93 developing economies during the period of 1971-2010. They utilized both Polity IV and Freedom House data as a measure of democracy. The results indicate that foreign aid supports democracy in sample countries. Young and Sheehan (2014) examine the relationship between foreign aid, institutional quality, and growth from 1970-2010 with a sample of 116 countries. They use many institutional variables, including political and economic institutions, and determine whether aid flows have a negative effect on political and economic institutions. Aid flows particularly have a disruptive impact on the legal system and property rights in the recipient country. Also, only economic institutions have a positive effect on growth in growth regressions. Awan and Mustafa (2015) investigate the relationship between corporate governance, foreign aid, and economic growth. In the study that covers the data from six South Asian countries from 1996 to 2012, the results indicate that governance has a positive effect on economic growth. However, there is no correlation between aid effectiveness and good institutions. Furthermore, the effect of foreign aid on economic growth is negative.

Wako (2016) investigates this issue for different donors, using panel data from 43 Sub-Saharan African countries. He states that China's aid to Sub-Saharan Africa causes adverse institutional effects, while the growth and total effect are uncertain. In the long run, aid from 'traditional' donors does not directly affect growth, but the indirect effect is negative. Wako (2018) analyzes the relationship between aid, institutions, and growth for 43 Sub-Saharan African countries using panel data analysis with data between 1980-2013. The intermediary role of institutions and recipient/donor heterogeneity is taken into consideration. In this context, it has been investigated whether the effects of aid on growth and institutions are varying for different recipients (parameter heterogeneity). It also examined whether the effectiveness of aid from different donors varies (donor heterogeneity). Results show that (collective) aid from "traditional" donors does not directly affect long-term growth but has a negative indirect effect.

3. Methodological Framework

3.1 Data and Methodology

This study estimates the relationship between foreign aid, institutional structure, and economic growth for 80 developing countries. I exploit the 2000-2019 data of the sample consisting of European, American, African and Asian countries (see Appendix for the list of the sample countries). The analysis is restricted in terms of data available for countries and time.

Following Young and Sheehan (2014), panel data analysis is chosen to examine the relationship among variables. Panel data analysis combines time series and cross-section observations, as well as it enables researchers "more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency." for the empirical analysis. Due to these advantages, panel data analysis is increasingly used in the existing econometrics literature (Gujarati, 2004; Greene, 2002). In the study, two equations are estimated to examine the relationships between variables. In Equation (1), the effect of foreign aid and institutions on economic growth is analyzed. In Equation (2), the effect of foreign aid and economic growth on institutions is questioned. The models used were also developed based on the models employed by Young and Sheehan (2014) in their studies. The equations are as follows:

$$LnGDP_{it} = \alpha_0 + \alpha_2 LnAid_{it} + \alpha_3 ins_{it} + \alpha_4 control_{it} + \varepsilon_{it} \quad \text{Eq. (1)}$$

$$ins_{it} = \alpha_0 + \alpha_2 LnAid_{it} + \alpha_3 LnGDP_{it} + \alpha_4 control_{it} + \varepsilon_{it} \quad \text{Eq. (2)}$$

Where *i* indicates cross-sections, *t* represents time series, $\mathcal{E}_{it}$ represents error term, and *Ln* shows natural logarithms of the variables. $LnAid_{it}$ is a measure of foreign aid, ins_{ist} is a measure of institutions, and $control_{it}$ is a set of control variables added to the model (A list of the research data and the sources are provided in the Appendix). *Aid* (Total official development flows by country and region), as an indicator of foreign aid in the study, consists of bilateral official flows, such as bilateral ODAs to recipient countries, privileged and non-privileged loans from multilateral sources, and especially loans provided to refinance debt. This variable is in Million USD with 2018 fixed prices and is included in the model by calculating its logarithm. Gross Domestic Product *(LnGDP)* per capita is used as a measure of economic growth. Based on the year 2010, the real value of the variable in USD is used, and its logarithm is also calculated.

I use *Gov* as an indicator of the institutional structure obtained by averaging the WGI data generated by the World Bank (2021a). This variable includes six dimensions of governance: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. Each index takes a value ranging from -2.5 to +2.5, and a higher value means better results in the relevant indicator. I exploit *Dem* as another indicator of institutional structure. This variable standing for democracy is obtained by averaging the political rights and civil liberties indices obtained from Freedom House (2021). This index takes a value between 1 and 7, with 1 being the best situation in terms of the democracy level and 7 the worst.

I use *Life* as the control variable, which indicates how many years a newborn will live if the mortality patterns at birth remain the same throughout its lifetime. The population variable, *LnPop*, stands for the total population, and it is included in the model by calculating the logarithm of the relevant variable. *Inf*, Inflation rate, indicates the annual inflation rate

measured using the consumer price index. *Gros*, Gross domestic savings show the growth rate of savings in GDP as a percentage over the years. *Sch*, the gender equality index of the gross enrollment rate in university education represents the ratio of females enrolled in tertiary education in public and private schools to males. All control variables are obtained from the World Bank (2021b) World Development Indicators (WDI) database.

Table 1 represents the analysis results of the descriptive statistics of variables used in the empirical analysis. The lowest value of the Aid variable in the sample countries between 2000-2019 is -9,318 million USD, while the highest is 35,016.9 million USD. A negative Aid value of countries means that they pay more than the amount they receive. LnGDP, which is used as a growth indicator, is 2,539.7 USD on average. The lowest value of the Gov variable used as an indicator of the institutional structure is -1.95, while the highest is 0.63. Dem, another institutional variable, is recorded as 1 as the lowest and 7 as the highest.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Aid	962.063	1482.372	-9318	35016.9
GDP	2539.7	2353.407	194.873	15068.98
Gov	-0.590	0.476	-1.957	0.630
Dem	4.150	1.531	1	7
Life	64.697	8.984	39.441	78.875
Pop	3.93e+07	1.38e+08	247315	1.37e+09
Inf	3.933	8.113	-18.108	96.094
Gros	11.158	19.504	-141.973	74.620
Sch	0.9035	0.347	0.064	1.576

Source: Prepared by the author based on OECD, WB, and Freedom House Data Base

Table 2 presents the correlation matrix of the variables used in empirical analysis. The correlation results reveal a negative correlation between LnAid and LnGDP and Gov, and a positive correlation between LnAid and Dem.

Table 2. Correlation Matrix

	LnAid	LnGDP	Gov	Dem	Life	Lnpop	Inf	Gros	Sch
LnAid	1.0000								
LnGDP	-0.0454	1.0000							
Gov	-0.0408	0.4711	1.0000						
Dem	0.0400	-0.2822	-0.6828	1.0000					
Life	0.0637	0.6526	0.3324	-0.1584	1.0000				
LnPop	0.7247	-0.1086	-0.2666	0.1334	0.0052	1.0000			
Inf	0.0990	-0.0773	-0.2376	0.0969	-0.0897	0.1342	1.0000		
Gros	0.1705	0.2736	-0.0117	0.0958	0.1213	0.3445	0.0166	1.0000	
Sch	-0.1811	0.6638	0.3756	-0.2574	0.6273	-0.2604	-0.0353	-0.0038	10000

Source: Prepared by the author based on OECD, WB, and Freedom House Data Base

3.2. Empirical results

In the panel data analysis scope, I first use the Hausman test to choose the appropriate models from fixed effects (FE) and random effects (RE) methods. I also evaluate the possibility of heteroscedasticity, autocorrelation, and cross-sectional dependence to obtain efficient estimators in the data. Table 3 presents the panel data analysis estimation results of the models in which the per capita growth in Eq (1) is used as the dependent variable. According to the Hausman test results, FE is the most suitable model for Model number (1), (2), and (3), but RE is the most proper for Model number (4). Furthermore, in the regression model, it is necessary to test the deviations from the hypothesis to obtain effective estimators. Therefore, I estimate whether there is a cross-sectional dependence, heteroskedasticity, or autocorrelation. I apply the Pesaran CD test to all models to determine whether there is a correlation between series. According to the test results, in the case of $p<0.05$, H0: "*There is no correlation between the units*" hypothesis is rejected. So, I conclude that there are correlations between units in all models.

I analyze whether there is autocorrelation in the models using Locally Best Invariant (LBI) tests of Bhargava, Franzini and Narendranathan, Durbin Watson, and Baltagi Wu. If the test results obtained are less than 2, it indicates the presence of autocorrelation. Accordingly, all models have an autocorrelation problem. I exploit Modified Wald in FE models, and I use Levene's, Brown's, and Forsythe's tests in RE models to test the presence of Heteroscedasticity. The probability value obtained from the Modified Wald test is less than 0.05, indicating that there is a Heteroscedasticity problem in the models. Levene Brown and Forsythe test statistics w0, w50, w10 (5.54) degrees of freedom compared using Snedecor F table. If $p<0.05$, H_0: "*The variance of the units is equal*" is rejected, and there is Heteroscedasticity. Therefore, I conclude there is a Heteroscedasticity problem detected in the models.

In the case of Heteroscedasticity, autocorrelation, or cross-sectional dependence problems in the estimated panel data models, we should correct standard errors without touching the parameter estimates or estimate using appropriate methods (Tatoğlu, 2012). In this sense, I obtained the estimation results in the study using the robust estimation method proposed by Driscoll and Kraay (1998).

Column (1), in Table, presents the effect of LnAid on LnGDP, which is positive and statistically significant at a 10% level. According to this finding, ODA positively affects economic growth in the countries in the sample. This result is consistent with the findings of Cungu and Swinnen (2003), Karras (2006), Adamu (2013), Moolio and Kong (2016), and Golder et al. (2021). According to the results of the control variables, there is a positive relationship between Life and Gros and LnGDP. On the other hand, there is a negative relationship between Inf and LnGDP. In this model, there is no correlation between LnPop and LnGDP.

Column (2) of Table 3 reports estimates for the impact of Gov and Dem on LnGDP. There is a positive and statistically significant relationship between Gov and LnGDP, at a 1% level. There is no relationship between the Dem and LnGDP. Also, there is no significant relationship between development assistance and growth in the presence of institutional structure. This finding is consistent with the results of Akramov (2012) and Ogundipea and Ola-Davida (2014), who showed that the institutional structure does not significantly affect the effectiveness of aid.

In Column (3) and (4) of Table 3, the institutional variables are included in the model one by one. Column (3) shows that there is a negative and statistically significant relationship between LnGDP and Dem, which is used as an indicator of democracy, at a 1% level. This finding can be interpreted as the increase in democracy positively affecting economic growth since high values correspond to worse results in the calculation of the Dem. This finding is parallel to the results of Maruta et al. (2020). According to Column (4), there is a positive and statistically significant relationship between Gov and LnGDP. This result is consistent with the findings of Emara and Jhonsa (2014), Awan and Mustafa (2015), and Bayar (2016).

Table 3. Estimation Results

VARIABLES	(1) FE LnGDP	(2) FE LnGDP	(3) FE LnGDP	(4) RE LnGDP
LnAid	0.0199*	0.0112		
	(0.0107)	(0.0114)		
Gov		0.246***		0.241***
		(0.0383)		(0.0332)
Dem		0.00552	-0.0305***	
		(0.00623)	(0.00243)	
Life	0.0395***	0.0323***	0.0402***	0.0404***
	(0.00283)	(0.00196)	(0.00315)	(0.00252)
LnPop	0.107	0.266***	0.131**	0.0832
	(0.0644)	(0.0380)	(0.0539)	(0.0495)
Inf	-0.00239***	-0.000826	-0.00158*	-0.000944
	(0.000678)	(0.000579)	(0.000814)	(0.000576)
Gros	0.00250***	0.00233**	0.00237***	0.00231***
	(0.000774)	(0.00108)	(0.000668)	(0.000734)
Constant	2.959***	0.999*	2.778***	3.578***
	(0.836)	(0.489)	(0.684)	(1.014)
R^2	0.50	0.53	0.50	0.40
F stat	223.32	2230.07	323.61	5517.32
	[0.000]	[0.000]	[0.000]	[0.000]
Hausman Test	24.23	17.04	151.91	2.48
	[0.000]	[0.017]	[0.000]	[0.779]
Wald Chi2	74986.53	1.3e+05	1.4e+05	
	[0.000]	[0.000]	[0.000]	
Levene's, Brown, and Forsythe Test				W0=9.853 [0.000] W50=5.364 [0.000] W10=8.895 [0.000]
Pesaran CD Test	8.981	6.673	8.280	13.487
	[0.000]	[0.000]	[0.000]	[0.000]
Durbin-Watson	0.151	0.280	0.129	0.274
Baltagi-Wu LBI	0.400	0.758	0.384	0.760

Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Numbers in square brackets are probability values.

Table 4 presents the results of Eq (2), in which the institutional factors are dependent variables. According to the result of the Hausman test, I determine that the most suitable method for Model (5) and Model (6), respectively, FE and RE. According to the Heteroscedasticity test results, I conclude that Heteroscedasticity exists in both models. Autocorrelation test results reveal the presence of autocorrelation in both models. Pesaran test results indicate the presence of cross-sectional dependence for Model (5). In Model (6), since p> 0.05, there is no correlation problem between units. Therefore, I exploit Driscoll-Kraay's robust estimators in Model (6). Moreover, I estimate Model (6) using both the Heteroscedasticity and Clustering Standard Errors method, which gives effective and consistent results in the case of autocorrelation.

Table 4. Estimation Results

	(5) FE	(6) RE
VARIABLES	Gov	Dem
LnAid	0.0243***	-0.0938**
	(0.00575)	(0.0430)
LnGDP	0.307***	-0.241
	(0.0936)	(0.193)
Life	0.0180*	0.0234
	(0.00975)	(0.0163)
LnPop	-0.895***	0.334***
	(0.179)	(0.120)
Sch	0.0649	-0.863**
	(0.0569)	(0.384)
Constant	10.37***	0.282
	(2.789)	(1.957)
R^2	0.21	0.12
F stat	57.83	18.50
	[0.000]	[0.000]
Hausman Test	91.40	0.77
	[0.000]	[0.979]
Wald Chi2	2.0e+31	
	[0.000]	
Levene's,		W0=13.332
Brown, and		[0.000]
Forsythe Test		W50= 4.652
		[0.000]
		W10= 12.071
		[0.000]
Pesaran CD Test	3.044	0.951
	[0.000]	[0.342]
Durbin-Watson	0.460	0.513
Baltagi-Wu LBI	0.939	0.831

Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Numbers in square brackets are probability values.

According to Column (5), where the Gov variable is a dependent variable, there is a positive and statistically significant relationship between LnAid and Gov, at a 1% level. In other words,

the increase in development assistance positively affects the governance of the sample countries. Similarly, the rise in LnGDP affects the Gov positively. This result is consistent with the findings of Emara ve Jhonsa (2014). According to the findings of the control variables, while there is a positive relationship between Life and Gov, there is a negative relationship between LnPOP and Gov. Column (6) of Table 5 shows a negative relationship between LnAid and Dem. This finding can be interpreted as the increase in development assistance positively affecting democracy since high values correspond to worse results in the calculation of the Dem. This result is consistent with the findings of Altunbaş and Thornton (2014). In the model, I conclude that the increase in higher education schooling rate also positively affects democracy. In short, development assistance has a positive effect on governance and democracy.

4. Conclusion

Lack of savings, which is common in developing countries, causes problems in financing the investments required for sustainable economic growth. That is why foreign aid from high-income countries plays a key role in the growth and prosperity of nations. Aid is used to reduce poverty and achieve income equality around the world by supporting development in low-income countries. Although the size of aid to low-income countries increases with each passing year, there are different opinions about its contribution to economic growth in host countries. Moreover, there have been opinions arguing that host countries should support these aids with good policies, institutional quality, and good governance to increase their effectiveness in recent years.

Considering these discussions, this study investigated the relationships between foreign aid, institutional structure, and economic growth for 80 developing countries located in Europe, America, Africa, and Asia. I exploit the ODA data obtained from OECD as foreign aid indicators in the study. I use the World Governance Index and the Democracy Index as an indicator of the institutional structure. There are different findings obtained as a result of the analysis. Accordingly, I find a positive relationship between official development assistance and growth. However, when I include institutional variables in the model, the effect of aid on growth becomes insignificant. Model results examining the effects of democracy and governance variables on growth point to a positive effect. On the other hand, model results investigating the effects of foreign aid and economic growth on institutions show that foreign aid positively affects institutional structure and growth.

In line with the study's findings, various policy recommendations can be made for policymakers in the sample countries. Firstly, the positive impact of foreign aid on growth proves that these countries should receive aid to achieve sustainable development. Additionally, the improvement of the institutional structure will positively affect the growth process.

This study contributes to the aid-growth debates in the literature and the role of institutional structure in this connection. However, for future studies, I can make various suggestions can be; Accordingly, we can use different components of the institutional structure to estimate the effects. Furthermore, we can exploit different channels other than the institutional structure to increase the effectiveness of foreign aid.

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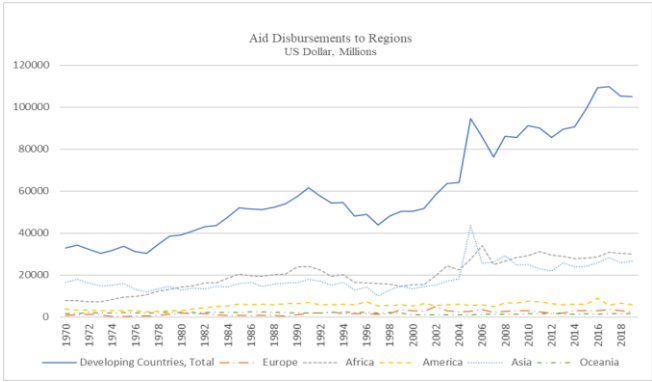
Appendix

Figure A1. Aid Disbursements to Regions



Source: OECD, 2021b (https://stats.oecd.org).

Table A1. Sample of Countries

Europe (6)	Africa (38)	America (15)	Asia (21)
Bosnia and Herzegovina	Algeria	Belize	Cambodia
North Macedonia	Egypt	Cuba	Lao People's Democratic
Moldova	Libya	Dominican Republic	Republic
Serbia	Morocco	El Salvador	Timor-Leste
Turkey	Tunisia	Guatemala	Viet Nam
Ukraine	Benin	Haiti	Afghanistan
	Burkina Faso	Honduras	Armenia
	Burundi	Jamaica	Azerbaijan
	Cabo Verde	Mexico	Bangladesh
	Cameroon	Nicaragua	Bhutan
	Central African Republic	Bolivia	Georgia
	Chad	Colombia	India
	Côte d'Ivoire	Ecuador	Kyrgyzstan
	Ethiopia	Guyana	Myanmar
	Ghana	Paraguay	Nepal
	Guinea		Pakistan
	Kenya		Tajikistan
	Lesotho		Uzbekistan
	Liberia		Iraq
	Madagascar		Jordan
	Malawi		Lebanon
	Mali		West Bank and Gaza
	Mauritania		
	Mozambique		
	Namibia		
	Niger		
	Nigeria		
	Rwanda		
	Senegal		
	Sierra Leone		
	South Africa		
	Sudan		
	Eswatini		
	Tanzania		
	Togo		
	Uganda		
	Zambia		
	Zimbabwe		

Source: OECD, 2021b (https://stats.oecd.org).

Table A2. Variables Description

Variable	Description	Source
LnAid	Total official development flows by country and region (US Dollar, Millions, 2018. Constant Prices)	OECD Statistics
LnGDP	GDP per capita (constant 2010 US$)	WB, WDI
Gov	Worldwide Governance Indicators (average score)	WB, WGI
Dem	Political Rights and Civil Liberties (average score)	Freedom House
Life	Life expectancy at birth, total (years)	WB, WDI
LnPop	Population, total	WB, WDI
Inf	Inflation, consumer prices (annual %)	WB, WDI
Gros	Gross domestic savings (% of GDP)	WB, WDI
Sch	School enrollment, tertiary (gross), gender parity index (GPI)	WB, WDI

Source: Prepared by the author from OECD, WB, and Freedom House Data Base.
OECD: Organization for Economic Cooperation and Development,
WB: World Bank,
WGI: Worldwide Governance Indicators,
WDI: World Development Indicators.