

Official Development Assistance and Social Capitals

Impact on Economic Growth

Thomas D. Hanley^a

Abstract:

This study intends to increase the understanding of the impact social capital has on economic growth in countries that receive official development assistance. By analyzing these relationships further, it may be possible to develop strategies to increase economic growth and prosperity in these regions. The results show that economic growth is not contingent upon high levels of trust but trust rich environments conditions the effectiveness of oda in stimulating growth.

JEL Classification: C23, F35, O20, O40, N15, N16, N17

Keywords: Economic development, development assistance, economic growth, social capital, econometric models, Latin America, Africa, Asia

^a Undergraduate Department of Economics, Bryant University, 1150 Douglas Pike, Smithfield, RI 02917. Phone: (959) 929-4728. Email: thanley1@bryant.edu

The author appreciatively recognizes Dr. Allison Kaminaga whom without her countless meetings and guidance this study would not be possible.

1.0 INTRODUCTION

Official Development Assistance (oda) has impacted the growth of nations in Latin America, Africa, and Asia. This topic has been analyzed by various studies but with this subject being of intense research, there is still much to be learned about oda and its effect on economic growth. Past studies have added to this debate by incorporating the impact of political and social institutions and relationships on the effectiveness of oda.

This study intends to increase understanding of the impact social capital has on economic growth in countries that receive oda. From a policy perspective, this analysis is important as (Neira et al., 2016) describes that, “the existing stock of social capital in a region has to be identified in advance because it may leverage or hinder the effectiveness of oda in furthering the growth process.” By better understanding this, those who manage projects stemming from oda can in a more efficient manner execute projects and policies to further economic growth and prosperity in these regions. Specifically, economists recently have become more aware of how connections between people have clear and important economic consequences (Robinson, 1996).

Oda is one of main tools that policy makers and project managers have at their disposal to combat poverty. According a World Bank report, “An estimated 766 million people, or 10.7 percent of the world’s population, lived in extreme poverty in 2013 (2018). In sub-Saharan Africa alone, it is estimated that one out of every 10 people lives on less than \$1.90 per day, which is considered extreme levels of poverty (United Nations, 2015). With poverty being a global far reaching issue, it is imperative that those responsible for decision making on oda allocation to have better information about how to potentially use oda funds to increase economic growth which could lead to reduced poverty. Given the scope and importance of oda and social capital, especially of those in developing nations, it is imperative that further study be conducted to attempt to measure the how the levels of social capital and oda impact economic growth.

This paper was guided by three research objectives that differ from other studies: First it analyzes social capital from a multi-regional and multi country approach; Second, it incorporates Polity IV data into an economic growth model to examine the isolated influence of how measures of a governments effectiveness impacts economic growth without accounting for the levels of trust in a country; Last, it unitizes world values survey

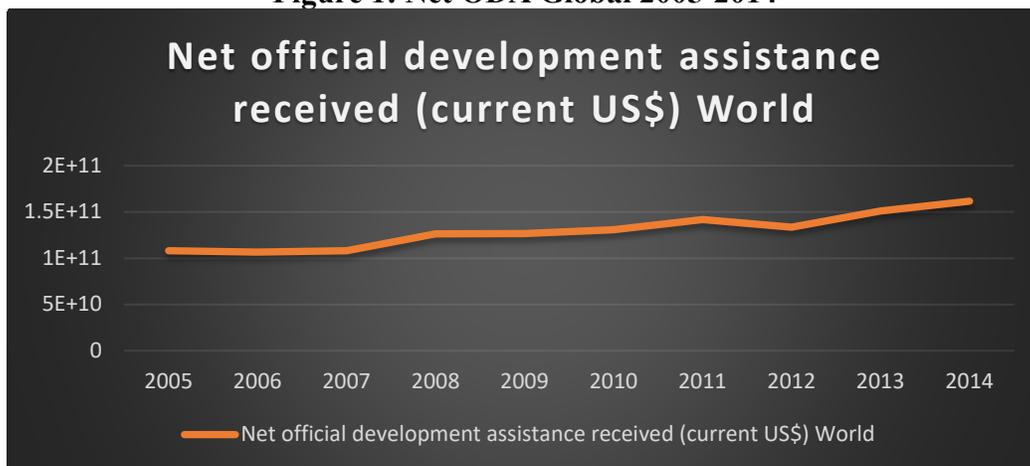
data about trust in an effort to better understand how social capital impacts economic growth in countries that receive oda from 2004 to 2014. There is little empirical work in the literature concentrating on how trust, as a proxy for social capital, can impact economic growth in countries that receive oda. Further, there is a lack of empirical work in the literature examining this concept from a multi-regional approach.

The rest of the paper is organized into different sections. Section 2 discusses the trends surrounding this topic and Section 3 is the literature review. The data and empirical methodology are outlined in section 4. Finally, section 5 presents and discusses the empirical results. This is followed by a conclusion in section 6.

2.0 TREND

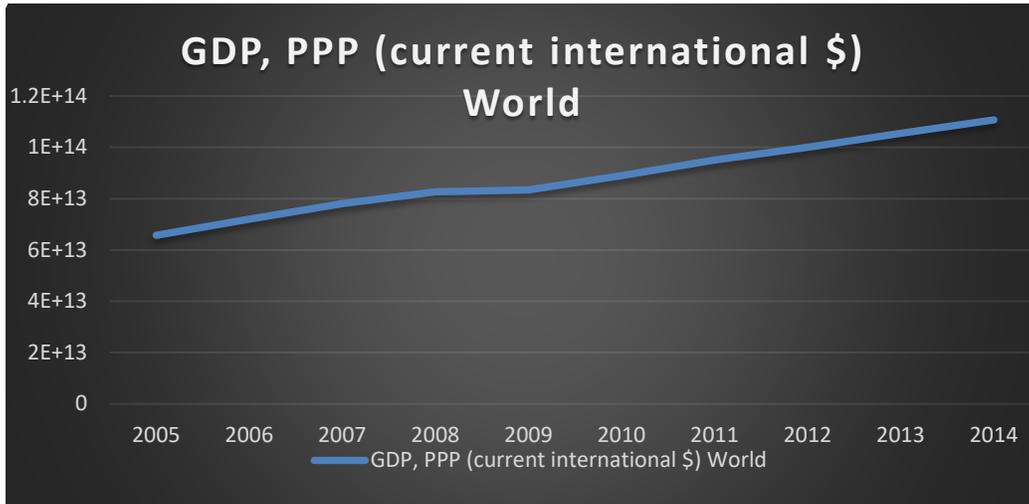
Figure 1 shows that global net oda has been increasing from 2005 to 2014. Looking at this trend from 1980 to 2004 similar observations are made. Correspondingly, Figure 2 shows that global net gdp has been increasing, around the same percentage yearly as global net oda. It is also important to look at the trend of the levels of trust during this period. Looking at the average percentage of individuals who answered yes to the question, “Do you trust others?” from The World Values Survey, from 2004-2009 to the period 2009-2014, the levels of trust based on a global average has been marginally decreasing. Figure 3 and Figure 4 confirm globally how this trend is occurring on a country basis. Figure 5 demonstrates how the level of poverty as measured by those living on less than \$1.20 per day in 2011 globally.

Figure 1: Net ODA Global 2005-2014



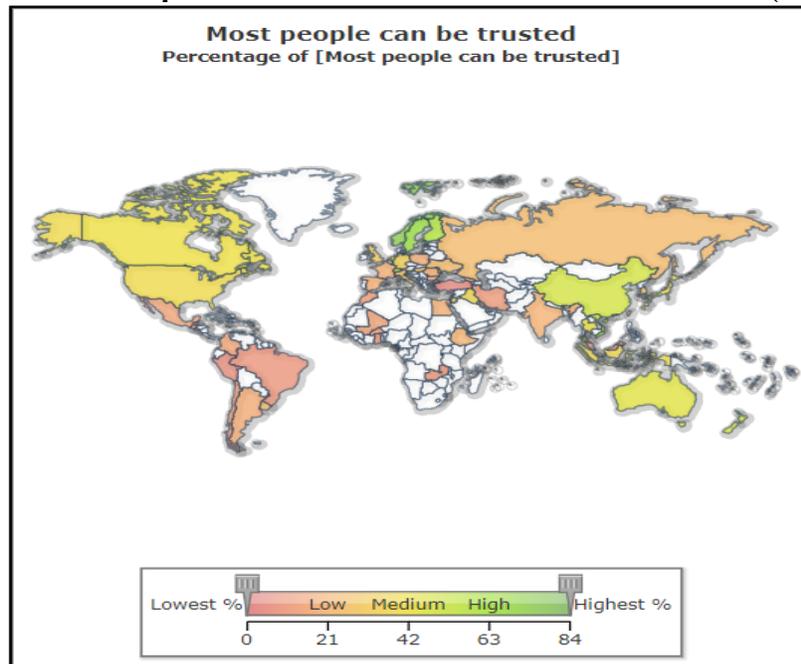
Source: World Bank Database

Figure 2: Net GDP, PPP Global 2005-2015



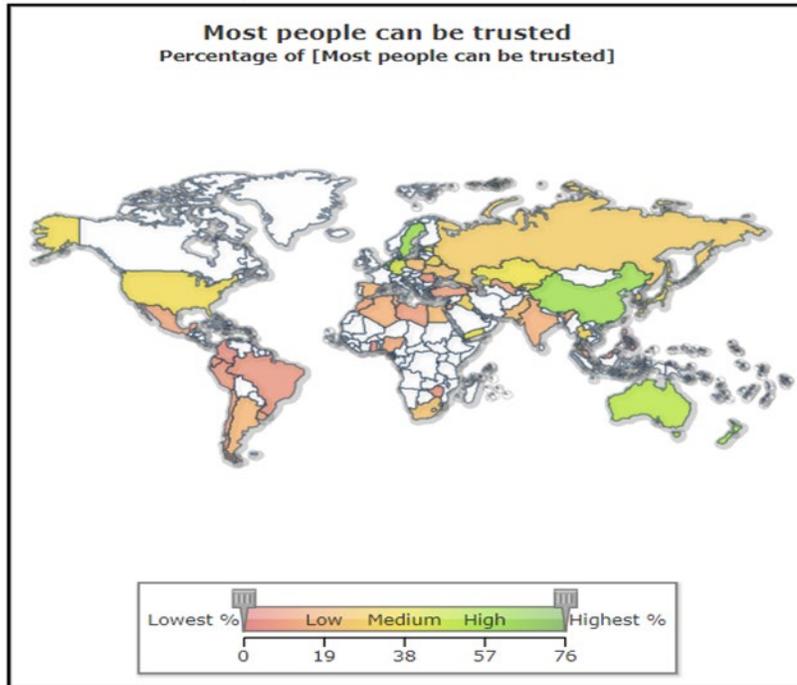
Source: World Bank Database

Figure 3: “Most People Can be Trusted” 2004-2009 World Wide (Percentage)



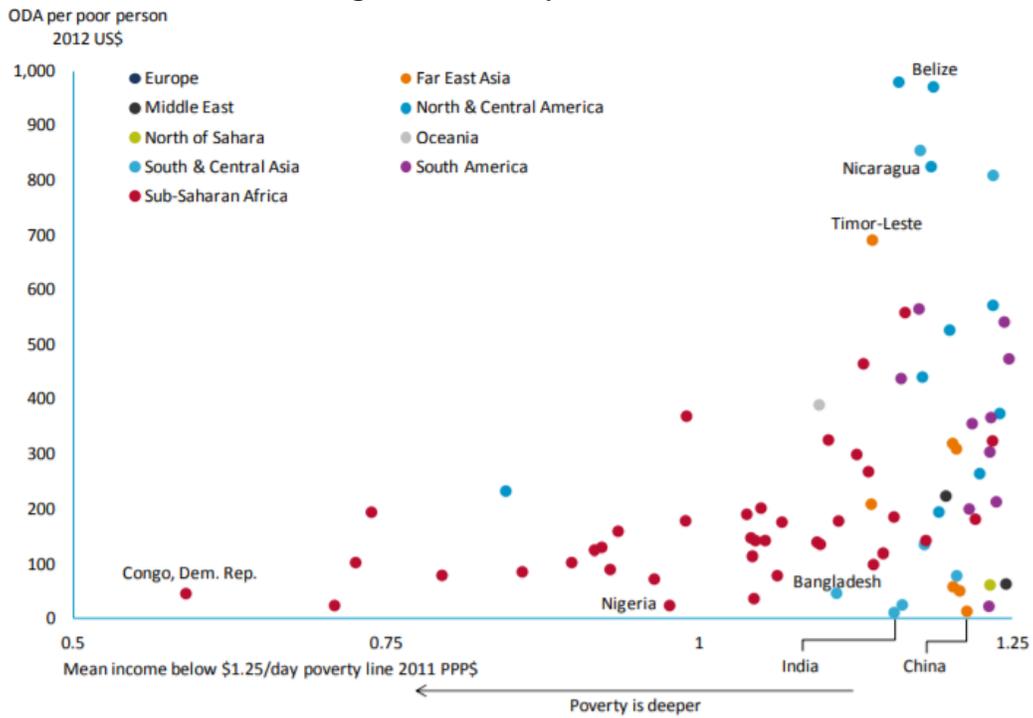
Source: World Values Survey

Figure 4: “Most People Can be Trusted” 2010-2014 (Percentage)



Source: World Values Survey

Figure 5: Poverty Levels 2011



Source: United Nations

3.0 LITERATURE REVIEW

Official development assistance is one of the most important factors that impact economic growth especially in developing nations. ODA can be defined as capital flows to countries that are listed on the DAC list of oda recipients and to multilateral development institutions which are: i. provided by official agencies, including state and local governments, or by their executive agencies; and each transaction of which is administered with the promotion of the economic development and welfare of developing countries as its main objective; and is concessional in character and conveys a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent) (OECD, 2018). Reportable oda does not include aid and welfare from military aid, peacekeeping, civil police work, social and cultural programs, assistance to refugees, research, and counter terrorism (OECD, 2018).

The main explanatory variable that will be used in this paper is trust, being used as a measure of social capital in a given country. Social capital is a concept that is often difficult to quantify and one proxy for this is trust. The World Bank (1998) defines social capital as, “The social capital of a society includes the institutions, the relationships, the attitudes and values that govern interactions among people and contribute to economic and social development.” Many different definitions exist as it pertains to social capital. While this definition given by The World Bank is larger in scope, social capital can be defined more narrowly as “a society’s set of norms, institutions and organizations (ECLAC, 2002).” For this paper, social capital will be measured as trust. According to Weil (2013), “Economic interactions often involve reliance on a person keeping his word.” Our understanding of how important trust is to economics is not a new idea. John Stuart Mills (1909) wrote, “The advantage to mankind of being able to trust one another, penetrates into every crevice and cranny of human life; the economical is perhaps the smallest part of it.” Robinson even goes as far as to suggest that the main reason for many economic failures stems from the lack of social capital in a country (1996).

Theories regarding official development assistance and its impact on economic growth have been analyzed by various studies. The results of these studies have resulted in varied results. Burnside and Dollar (2000) suggest that for oda to have a positive impact on economic growth sound policies must be in place. These policies include fiscal,

monetary, and trade. What this study demonstrates is that oda only works in democracies that have high marks for being a good policy environment (Burnside and Dollar, 2000). Studies have contrasted the results found by Burnside and Dollar (2000). Hansen and Tarp (2001) find only a positive causal relationship between oda and economic growth. Further it was found that this growth was not contingent upon a good, strong policy environment. Echoing these results include Lensink and White (2001) investigate whether there are any negative returns on oda. They suggest that only to a small extent is the effectiveness of oda determined by how effective the policy environment is where oda is being received. Further backing results that oda is not conditional upon a good policy environment is Rajan and Subramanian (2008). The authors find that oda has no impact on economic growth, even in good policy environments. Neira et al. (2016) define a good policy environment as one that scores high on the Polity IV data which measures the level of a democracy.

Multiple studies have looked at how social capital impacts economic growth, especially in countries that receive oda. One example of a study that aims to further understand social capital and oda is Knack (2001) which finds that regions standing social capital levels as a factor for growth is important in the implementation of policies and projects associated with oda. One of the first theorists to analysis this topic more empirically is Balamoune-Lutz and Mavrotas (2009). Their study attempts to analyze whether social capital levels in a country have any impact on success of oda, measured by economic growth. Results of this study find evidence that both social capital and institutions increase the effectiveness of oda (Balamoune-Lutz and Mavrotas, 2009). These results especially in terms of institutions disagrees with the results by Burnside and Dollar (2000). Further studying the concept of the impact social capital has the effectiveness of oda in terms of growth is Neira et al. (2016) whom make the argument that higher levels of trust in a country have a positive impact on growth and a negative effect in countries where trust is low. The results additionally show that trust is a more important factor than democracy in heightening the effectiveness of oda. These discoveries relate to those by Balamoune-Lutz and Mavrotas (2009). Neira et al. (2016) claims that, “The decision to use oda for productive investment, along with its subsequent effect on growth, may be influenced by the levels or quality of a given country’s social capital.”

4.0 DATA AND EMPIRICAL METHODOLOGY

4.1 Empirical Model

This study utilizes three models, all variations of base Model 1. Model 2 incorporates the variable Trust and Model 3 Democ. The models are as follows:

$$(1) \text{Log(GDP)}_{it+1} = \beta_1 \text{GdpPerCapita}_{it-1} + \beta_2 \text{Log(Oda)}_{it} + \beta_3 \text{Log(Gcf)}_{it} + \beta_4 (\text{Log}) \text{Emp}_{it} + \beta_5 \text{Edu}_{it} + \beta_6 \text{Log(Popu)}_{it}$$

$$(2) \text{Log(GDP)}_{it+1} = \beta_1 \text{GdpPerCapita}_{it-1} + \beta_2 \text{Log(Oda)}_{it} + \beta_3 \text{Log(Gcf)}_{it} + \beta_4 (\text{Log}) \text{Emp}_{it} + \beta_5 \text{Edu}_{it} + \beta_6 \text{Log(Popu)}_{it} + \beta_7 \text{Trust}_{it}$$

$$(3) \text{Log(GDP)}_{it+1} = \beta_1 \text{GdpPerCapita}_{it-1} + \beta_2 \text{Log(Oda)}_{it} + \beta_3 \text{Log(Gcf)}_{it} + \beta_4 (\text{Log}) \text{Emp}_{it} + \beta_5 \text{Edu}_{it} + \beta_6 \text{Log(Popu)}_{it} + \beta_7 \text{Democ}_{it}$$

4.2 Definition of Variables

Appendix A summarizes the dependent variable, explanatory variable, main variables, and the control variables. The dependent variable Log(GDP)_{it+1} is the net gdp, ppp in current international dollars from the years 2006 to 2015. This was done to account for the time it takes for oda to have an impact, positive or negative, on economic growth. The main explanatory variable $\text{GdpPerCapita}_{it-1}$ is lagged gdp, ppp per capita in current international dollars. This variable is lagged one year to account for the persistence of economic growth over time. This was modeled after the empirical model Neria et al. (2016).

The main variables in this study are Trust_{it} and Log(Oda)_{it} . Trust is measured as the percentage of individuals who answered yes to the question, “Do you trust others?” (World Values Survey, 2018). Trust is survey data and is conducted in waves of years. For this study incorporated waves 2004 to 2009 and 2010 to 2014. The variable log oda is based on the variable net oda in current international dollars from 2004 to 2015. Current international dollars would buy in the country measured an equivalent quantity of goods and services a U.S. dollar would buy in the United States (World Bank, 2018). This term

is often used in conjunction with Purchasing Power Parity (PPP) data. This variable is taken from the World Development Indicators from the World Bank Database.

The control variables for this study consist of **Edu_{it}**, measuring the total years of schooling required by the government. **Log(Emp)_{it}** is in log form and is derived from the employment to population ratio 15+ and is measured as a percentage. Also, in log form is the control variable **Log(Gcf)_{it}** measured in net current international dollars. **Log(Popu)_{it}** is included as a control variable, in log form, and is the total population of a given country. **Democ_{it}** comes from the Polity IV dataset and measures the level of a democracy based on several different factors on a scale from 0 to 10, 0 being the worst possible and 10 being the best possible score. These factors, “Examine concomitant qualities of democratic and autocratic authority in governing institutions, rather than discreet and mutually exclusive forms of governance. The Polity scheme consists of six component measures that record key qualities of executive recruitment, constraints on executive authority and political competition. It also records changes in the institutionalized qualities of governing authority (Polity IV, 2016). All control variables, aside from **Democ_{it}**, come from the World Development Indicators via the World Bank Database, from years 2005 to 2014. All data from all sources is publicly accessible.

Appendix A: Variables, Descriptions, Units, and Sources

Variable	Description	Units	Source
Dependent Variable:			
Log GDP	Log of GDP, PPP (Current)	International dollars	World Development Indicators
Explanatory Variables:			
GDP per Capita Lagged	Persistence in economic growth over time GDP PPP Per Capita (Current)	International dollars	World Development Indicators
Main Variables:			
Log ODA	Log of total net oda (Current)	International dollars	World Development Indicators
Trust	Trust	Percentage of persons	World Development Indicators
Control Variables:			
Edu	Total years of schooling	Years	World Development Indicators
Log Emp	Log of Employment to population ratio (ages 15+)	Percentage of persons	World Development Indicators
Log Gcf	Log of Gross capital formation	International dollars	World Development Indicators
Log Popu	Log of total population	Number of persons	World Development Indicators
Democ	Democracy index	0-10	Polity IV

4.3 Data

This study utilizes panel data from 2005 to 2014, involving 24 countries, from three regions. These regions are Latin America, Africa including the Middle East, and Asia and the Pacific Islands. Each region was weighted equally accounting for seven countries each. These countries were chosen because each was in the top 10 averages receiving oda on average, by region, from 2005 to 2014. Moreover, the countries had to take part in the World Values Survey to be able to measure the levels of trust within the countries. By using panel data, this study can with more reliability estimate any relationships that may occur between the variables over time. Summary statistics for the data are include in Table 1.

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	240	1,390,000,000,000.00	2,910,000,000,000.00	1,400,000,000.00	19,800,000,000,000.00
Gcf	240	189,000,000,000.00	595,000,000,000.00	115,000,000.00	4,720,000,000,000.00
Edu	240	9.54	2.57	0.00	15.00
Emp	240	57.36%	12.74%	33.80%	83.50%
Oda	240	1,120,000,000.00	2,090,000,000.00	-950,000,000.00	22,100,000,000.00
Trust	240	20.94%	14.43%	2.83%	62.69%
Democ	240	4.99	3.62	0.00	10.00
Popu	240	164000000.00	341000000.00	3325612.00	1360000000.00

5.0 Empirical Results

As presented in the introduction, oda is thought to have different impacts on economic growth, especially when looking at the levels of trust. The results of regression 1 show that even when not accounting for trust or democracy, oda still has a positive impact on gdp. In this regression the all variables are positive and significant at 1% aside from **Log(Emp)_{it}** resulting in a negative sign and significant at 1%. For this variable the same results are found in regressions 2 and 3. **Log(Oda)_{it}**, is positive and significant at 5%, and **Edu_{it}** with a positive sign but no significance. This result for **Edu_{it}** holds steady though all three regressions using the different empirical models. **Log(Oda)_{it}** in this study differs from the results that Neira et al. (2016) found. However, even with the

variable being positive at 5% significance, the coefficient of the variable is so small as that the result is not very large. Additionally, in Neira et al. (2016) results the variable education are significant and this varieties from the results of this study. It is important to note that the variable **Log(Oda)_{it}** is robust and significant at 5% across all regressions, however the impact changes when variables are added as regression 2 and 3 demonstrate. All regressions were conducted under fixed effects.

Results by both Neira et al. (2016) find that economic growth is contingent upon on a trust rich environment. This study finds similar results to their study in this aspect; economic growth is greater when accounting for a high level of trust in a country, as demonstrated by the positive variable **Trust_{it}**, which is significant at the 5% level in regression 2. The coefficient is greater in regression 2 than regression 1 and amounts to a greater increase and ultimately a greater positive impact on net gdp, ppp. Regression 2 has several variables that are significant including **Log(ODA)_{it}** at the 5% level. All other control variables, with the exception for **Edu_{it}** which was not significant at any level, are significant at the 1% level.

Regression 3 which incorporated the variable **Democ_{it}** lacks significance which makes it difficult to make any reasonable assumptions about the impact the level of democracy has on economic growth in nations that receive oda. In this regression all variables except **Democ_{it}** and **Edu_{it}** were positive and significant at 1%. These two outliers were negative and positive respectively and did not have any level of significance. The negative sign, which differs from the study by Burnside and Dollar (2000), implies that oda still has a positive impact on growth even when accounting for the policy environment. The correlation matrix for this study can be found in Table 2. All empirical estimations results are obtainable in Table 3

Table 2: Correlation Matrix

Table 1: Correlation Matrix								
	Log gdp	Log gcf	Log edu	Log emp	Log oda	Trust	Democ	Log popu
Log gdp	1.0000							
Log gcf	0.9410	1.0000						
Edu	0.1050	0.2146	1.0000					
Log emp	-0.0873	-0.0515	0.1408	1.0000				
Log oda	0.1815	0.1255	0.0099	-0.2016	1.0000			
Trust	0.2941	0.2012	-0.1754	-0.1519	0.3616	1.0000		
Democ	-0.0488	0.0673	0.4598	0.1373	-0.1032	-0.3868	1.00000	
Log popu	0.8811	0.7601	-0.0672	0.0771	0.2662	0.3381	-0.1997	1.0000

Table 3: Regression Results Under Fixed Effects

Table 3: Regression with Fixed Effects			
Log of GDP PPP			
Variables:	Coefficients Model I:	Coefficients Model II:	Coefficients Model III:
Lagged gdp per capita	.0000395***	.0000417***	.0000393***
Log Gcf	.0807026***	.0768407***	.0815783***
Log education	.0456660*	.0019081	.0429843*
Log employment	-.670231***	-.7621564***	-0.6668394***
Log oda	.0172848**	.0176928**	.0164569**
Trust	-	.1703678**	-
Log population	1.848062***	1.945129***	1.874487***
Democ	-	-	-.0030281
Overall R ²	0.8712	0.8705	0.8690
# of Obs:	220	220	220

6.0 Conclusions

Prior studies attempted to understand the relationship between social capital, trust, and economic growth in countries that are oda recipients. This study demonstrates through the significance of the variables log oda and trust from model 2 that there is an increase in log gdp in the presence of greater levels of trust in countries that receive oda. The implication of this is economic growth is greater in countries when there is a high level of trust present, which leads to greater output in these countries. This is also demonstrated through the results of regression 1 show; even when not accounting for trust or democracy oda still has a positive impact on gdp. However, the impact of oda on economic growth is greater when accounting for the level of trust bases on the coefficients of the variables in the regression.

Along with these results it is important to highlight any possible limitations of this study. While the variable for trust was used to assert that there is a positive, significant relationship between trust and economic growth there are some issues with the reliability with the type of data trust is. Being survey data means it can at times be unreliable and some variation of this data could occur, possibly changing the results of the test. Additionally, there are multiple databases that measure different variables in different ways. For democracy this study uses Polity IV data but other types of data that measure the effectiveness of government could have been used such as the Global Governance Indicators from the World Bank Dataset. Conducting this study with more years, more regions, or with different countries may impact the results also. In summary, the results show that economic growth is not contingent upon high levels of trust but trust rich environments conditions the effectiveness of oda in stimulating growth. Those who manage projects stemming from oda can execute projects and policies to promote trust in nations to spur even greater economic growth, and prosperity in countries that receive oda. This could reduce poverty in regions that receive oda. By doing this, it can lower transaction costs leading to greater efficiency, which then leads to greater economic growth (Weil, 2013). When transaction costs are decreased there is a reduced amount of risk involved, and this leads to more exchanges (Robinson, 1996). This can also be applied to the idea of information exchanged which is relevant in the current times and could also lead to greater efficient and growth.

Works Cited

- Bank, T. W. (2017). *End Poverty in All its Forms Everywhere*. Retrieved from worldbank.org.
- Bank, T. W. (2018). Net GDP, PPP. Washington, DC.
- Burnside, G. and D. Dollar (2000), “Aid, policies and growth”, *The American Economic Review*, vol. 90, No. 4, Nashville, Tennessee American Economic Association.
- ECLAC (Economic Commission for Latin America and the Caribbean) (2002), Social Panorama of Latin America 2001-2002 (LC/G.2183-P), Santiago
- Hansen, H. and F. Tarp (2001), “Aid and growth regressions”, *Journal of Development Economics*, vol. 64, No. 2, Amsterdam, Elsevier. (2000), “Aid effectiveness disputed”, *Journal of International Development*, vol. 12, No. 3, Wiley.
- Lutz, M. and G. Mavrotas (2009), “Aid effectiveness: looking at the aid-social capital-growth nexus”, *Review of Development Economics*, vol. 13, No. 3, Wiley.
- OECD. (2018). Official Development Assistance (ODA). OECD.
- Polity IV (2018) [online] <http://www.systemicpeace.org/inscr/inscr.htm>.
- Rajan, R. and A. Subramanian (2008), “Aid and growth: what does the cross-country evidence really show?”, *The Review of Economics and Statistics*, vol. 90, No. 4, Cambridge, Massachusetts, The MIT Press
- Robinson. L.J. “In Search of Social Capital in Economics.” Staff paper No. 96-102, Department of Agricultural Economics, Michigan State University, December 1998
- Survey, W. V. (2018). *World Values Survey*. Retrieved from worldvaluessurvey.org.
- Nations, U. (2012). *Improving ODA allocation for a Post-2015 world*. New York: United Nations.
- Weil, D. (2013). *Economic Growth*. New York: Routledge.