The Effectiveness of Education Aid

A panel data study in Sub-Saharan Africa

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Abstract:
This thesis investigates the impact of aid allocated into education on economic growth in Sub-Saharan Africa. Our study includes 37 countries within the region during the time period 2005-2018, with intentions to follow up on Elizabeth Asiedu's (2014) study 1990-2004. Using trade, inflation, government consumption and corruption as explanatory variables we come to the findings that education aid has no significant impact on economic growth, which we observe as per capita GDP. Also, we examine a negative and significant effect of government consumption on economic growth in this region.

Keys-words: Education, Aid, Corruption, Growth, Sub-Saharan Africa

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List of Abbreviations & Acronyms

CDC	Central for Disease Control and Prevention
CERF	Central Emergency Response Fund
CPI	Corruption Perception Index
DAC	Development Assistance Committee
EU-15	Countries in EU before expansion 2004
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GMM	General Method of Moments
ICB	International Competitive Bidding
IDA	International Development Association
NGO	Non-Government Organization
NMS-12	New Member States in EU 2007-2013
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
PWT	Penn World Tables
QOG	Quality of Governance
SSA	Sub-Saharan Africa
UN	United Nations
WDI	World Development Index

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1. Introduction

Whether aid is effective or not has been studied extensively throughout the years. In a developing world, education has been proven to spur economic growth and the factor is considered to be monumental towards developing a durable society. This has led to large numbers of studies on the specific effects of education, aid and its impact on economic growth. Following Elisabeth Asiedu and her work on examining the impact of education aid's effectiveness on economic growth, we have continued on her study in a more modern time frame.

A tweak we have made on Asiedu's study is a sharper focus on the corruption issue, seeing as our region in question is highly affected by it. We therefore strive towards eventual findings on whether corruption influences the impact of education aid on economic growth. It is important to keep in mind that results may differ from Asiedu, since the variables are not identical. Moreover, exogenous events and changes in the past years within the region could also make our results differ.

In *Theoretical Framework* (Section 2) we cover the evolution of aid and the different types of aid there are. We also present the connection between aid and economic growth, and how corruption might influence the relationship negatively. Furthermore, we discuss the aspect of counterfactuals and how it might affect the results we obtain. As previously mentioned, there have been a large number of studies conducted regarding this subject. In *Literature Review* (Section 3) we present works examining how aid, education aid and corruption might affect economic growth. There is no definite answer to whether or not aid and education aid is beneficial in terms of initiating economic growth and the opinions and findings differ greatly from study to study. We review the works of both advocates and critics. For example, Burnside & Dollar (2000) find that aid could promote growth while Boone (1996) argues the opposite.

When analyzing economic growth in developing countries one must take into consideration that governments might not be perfectly constructed. This is especially important when examining Sub-Saharan Africa. It has been proven that the region has a high level of corruption. Coup's, epidemics and natural disasters are also frequent contributors to a slowing economic development in the region.

Within this field of research, we the authors find the human capital aspect to be highly interesting. Therefore, our attention was focused on the education sector, and how aid to this sector might affect economic growth. Regarding education aid and its impact on economic growth, this is a narrower field of research. However, we found among others Asiedu who examined the impact of education aid to Sub-Saharan countries. We saw the opportunity to conduct a similar study in a more modern timeframe.

In Section 4, *Methodology*, we present our choice of variables and how we used them to conduct our model testing. We summarize the variables in Table 1 and briefly explain their meaning and source of origin in *Data Collection*. Under *Research Hypothesis* we speculate about outcomes of our variables. Moreover, we present our econometrical equation under *Model*, where we run robust fixed effect regressions. In *Estimation Procedure* a run-through of Stata tests is presented, that was applied on our dataset before running regressions. Section 5 covers *Results*, where these are presented as well as analyzed. In this section we refer to regression tables, which can be examined in *Appendix*. Under *Discussion* (Section 6) we look into our results and propose eventual reasons and explanations to them. In Section 7 we conclude.

There are a number of reasons why we wanted to follow Asiedu (2014) on examining the impact of education aid on economic growth in the SSA region. Not only is it interesting to modernize her study, factors like unemployment and literacy rate makes up for exciting research on this region. Comparing the unemployment rate of countries in SSA with the World, we can see that SSA has around a percentage unit higher level of unemployment during our time frame (Graph 1). Furthermore, the literacy rate of SSA countries is relatively low, which can be seen in Graph. 2. Not only are most countries in this region in developing stages, but their education level is also behind. Asiedu (2014) points towards a higher level of focus on improving literacy rates in the SSA region than in other regions of the world. Another reason for choosing the SSA region is due to the high level of corruption, where countries averaged 32 points on a 1-100 index[1], where 1 indicates a high level of corruption. This also goes beyond the scope of Asiedu's study, where she used a variable for institutional quality rather than a corruption variable.

Using a panel data set with three-year moving averages on a 14-year time frame, we aim to answer the question: *Does aid allocated to the education sector promote economic growth in Sub-Saharan Africa?* Also, *how does our results compare to those found by Asiedu (2014) during the previous time frame 1990-2004?*

1 The Quality of Governance presents a corruption index with a 1-100 scale. Can be found at https://qog.pol.gu.se/data/datadownloads/qogstandarddata

2. Theoretical Framework

In this section we present the concept of aid, the different types of aid there are, its historical impact as well as its evolution. Furthermore, we will introduce various significant events that may have had an impact on our study. We define these as counterfactuals. Additionally, we discuss the complication of corruption which is widespread throughout Sub-Saharan Africa. We define corruption and consider the effect corruption has on economic growth and aid.

2.1 An Overview of Foreign Aid

Kenton (Investopedia, 2019) defines aid as money willingly transferred from one nation to another. The transfer can be done in different ways, like via loans or gifts. He also mentions that aid can be given not only by governments, but also through transfers from organizations like NGO's (Non-Government Organizations). According to OECD (2019), aid has since 1961 mainly been referred to as Official Development Assistance (ODA). The Development Assistance Committee, DAC, (OECD 2019) defines aid as resource transfers to developing countries. Also included in ODA is the money and resources given to multilateral agencies whose main target is to enable development and promote welfare. These agencies sometimes combine money flows with relevant assistance, such as technical support. Notable is that military aid is not included in ODA.

OECD (2019) brings up two ways of giving aid; bilateral or multilateral. The first mentioned occurs when an aid donor transfers money to a recipient, for example between governments. The latter is done by agencies such as the World Bank. Also, we can divide aid into tied and untied aid. Tied aid means aid is given under certain conditions. A recent example of tied aid is highlighted by Hungary Today (2019), where the country created a program in Kenya, providing 50 million USD for among other things the construction of two hospitals. Untied aid has no conditionality and is according to OECD (2019) less costly than its alternative. OECD argues that he limitation of tied aid is supposedly the reason why untied aid has proven to be more successful, enabling the recipient to independently choose how to allocate the resources received.

According to De Janvry and Sadoulet (2016, p.677-678), the world has since the 1950's experienced both convergence and divergence between countries, with examples like South Korea proving a convergence towards OECD countries is possible. This refers to "conditional convergence", where a poorer country experiences a quicker growth rate, leading it to catch up to richer countries. Divergence points on the opposite, meaning the gap between countries increases. De Janvry and Sadoulet intones that the inequalities between the most and the least prosperous have grown. Aid to developing countries could be a factor to poor countries convergence, and a decrease in people living in extreme poverty.

So far, it has been difficult to make causal claims regarding aid's impact on growth, which has led to diverse opinions on whether aid should be given or not.

Traveling back in time, the footprints of aid as we know it today can be found in the nineteenth century (De Janvry and Sadoulet 2016 p. 677-678). Back then, it is not believed aid was meant to help countries prosper, but to use the countries and extract attractive resources. This occurred in Africa by the European colonialists. Modern aid, however, is said to have been a way to help Europe during the aftermaths of World War II. Many countries found themselves in devastation, needing to rebuild what was destroyed. This included their financials. From this situation the Marshall Plan derived. The US had intentions to keep their part as a big player on the global trade market, which led them to create this extensive initiative, corresponding to a value of 88 billion US dollar in 1997 currency index. The plan targeted industries in many European countries, providing capital and technical support in order to stimulate production. The Marshall Plan took place 1948-1953 and succeeded in helping each targeted country exceed their prewar economical level. [2]

Looking at the colonized countries in Africa, De Janvry and Sadoulet (2016 p. 677-678) means that the Marshall Plan helped develop modern aid methods. The World Bank created in 1960 a branch institution, IDA, whose main target was to aid the most underdeveloped countries with resources through so called soft conditions such as grants. By this time regions in Africa already collected aid from the colonizing countries, United Kingdom and France.

2.1.2 The Evolution of Aid

Since the 1970's, De Janvry and Sadoulet (2016) distinguish that an accumulated sum of around USD$3 trillion has been donated as aid from developed countries to receiving states. Due to a continuous global change and development, there have been many changes in aid in order to reach effective results. A common discussion is whether there are causal effects between the aid itself and outcomes in the area aid has been implemented. Often outcomes on a micro level are easier to link to aid projects in comparison to macro level changes within a country.

Throughout the years, the objective of aid has varied and De Janvry and Sadoulet (2016) brings up goals such as GDP growth, poverty reduction and development that has led to a variation of projects and strategies to achieve these targets. For example, during the 1970's loans to developing countries became a usual way of supporting them. A common way of doing this was through conditionality. When a donor country or organization provides money to a country, certain standards related to

[2] Austria, Belgium, Denmark, France, West Germany, Great Britain, Greece, Iceland, Italy, Luxembourg, the Netherlands, Norway, Sweden, Switzerland and Turkey were among the participating countries.

economics and policies are frequently appointed. The recipient country is bonded to conditions in order to effectively use the aid received.

In modern times FDI has grown to be a major source of capital transfers to developing countries (De Janvry and Sadoulet 2016, p. 676-681). Due to globalization, the effectiveness of aid has become an important matter. Regarding this, De Janvry and Sadoulet (2016) highlights the essentials of having an attractive investment environment. Private investments, that could provide aid on elements like property rights and public goods, are indeed dependent on the investment climate.

Also, they mention the vast change of aid allocation, with major parts of Asia being a large area of focus in the 1960's and 1970's. During the 1960's Asia's share of the world's total ODA (Overseas Development Assistance) was roughly 46 percent. While this decreased to 29 percent by 2010-12, Sub-Saharan Africa's share increased from 17 to 43 percent. Not only has the allocation of aid moved between continents, but a sectoral allocation has also been observed. Since the 1970's aid to production has decreased from 31 percent of total ODA to around 10 percent in 2010. This decrease can be motivated by the increase in the social sectors, such as health care and education, with an increase from 37 to 48 percent during this time.

2.1.3 Different types of Aid

Foreign aid

A simple definition for what foreign aid is according to Kenton (Investopedia, 2019) would be the act of voluntary transfer of resources. Generally, the transfer occurs from a developed country to a developing country. There are several different reasons for a donor country to provide foreign aid to a developing country. In some cases, there are significant levels of politics involved, where a donor country might want to encourage a developing country to act in a manner which is beneficial for the donor country. Other reasons may include assistance with establishing proper infrastructure in order to support the recipient country's development.

Bilateral aid

Kenton (Investopedia 2019) describes bilateral aid as capital transferred directly from one government to another. It is the most common method of donating aid when political or humanitarian incentives are the key motivational factor. When the goal is to establish long-term economic growth, stability or democracy, bilateral aid is most often the most used approach.

Multilateral aid

In the case of aid being distributed through a large organization such as the World Bank, United Nations etc. Agarwal (Intelligent Economist, 2019) states that it is commonly referred to as multilateral aid. Organizations such as these gather funds and capital from most developed countries and dispense the funds in form of aid to developing countries.

Tied aid

According to OECD (2019) tied aid refers to a specific type of aid which only allows the recipient country to spend the received aid in the donor country's market, alternatively markets in countries which the donor country allows. This type of conditional aid has been proven inhibitory for development in the donor country, as costs of development projects can increase by up to 15 to 30 percent. It is therefore beneficial for the recipient country to receive aid which is untied.

Untying aid

According to Clay, Matthew and Luisa (2009) the OECD DAC made a recommendation in 2001 that all tied aid should be untied in order to increase aid effectiveness as a result of lowering transaction costs for the recipient country. In 2009, the committee delivered an evaluation of what impact the efforts had had. Most of the donor countries that had formally untied their aid and thereby removed legal and administrative barriers of their goods and services had contributed to a positive impact regarding aid effectiveness. When untying aid, responsibility transfers from the donor countries to the recipient countries. Local businesses get larger possibilities to compete for contracts and countries are less concerned over removing biases among donor countries. However, due to the powerful manufacturer ability of the donor countries, formally untied aid is in most cases de facto tied. Since local businesses generally lack capability to compete at larger markets, the majority of a recipient country's procurements is still performed in developed country markets. There is also a large rate of participation in the chain of distribution from donor countries in the form of consulting, managing and other technological assistance. In an attempt to both formally and de facto untie aid, the World Bank implemented ICB in order to strengthen local business opportunities to compete for contracts.

Clay et al. (2009) claims untied aid is the most cost-effective approach to assist developing countries with capital. Untying aid has amplified local business possibilities to compete with international market prices. Subsequently, strengthening local businesses has a positive causal effect on a recipient country's development. However, the interconnection is in some cases vague, mainly because of the slow-paced development of local markets. Untying aid is not just beneficial at a cost-effective level, it is also vital in order to increase aid effectiveness.

Central Emergency Response Fund

In order to rapidly assist in humanitarian crises, the UN founded the central emergency response fund. The purpose of the organization is to facilitate responders in their work in different crises. In 2019 CERF (2020) published a list of the financial contributions they received from 54 UN member states, a total accumulation 831.4 million USD. CERF is managed by the emergency relief coordinator, who operates closely to the UN Secretary-General. The relief coordinator is also assisted by a secretariat, a group that assures that the funds are allocated in a transparent manner. Throughout the years 2006-2020, the CERF allocated 24.1% of its total fund, 1.1 billion USD towards Food Assistance. The second largest sector to receive aid from the CERF was the health sector, where 646 million dollars was dispensed.

2.1.4 Aid and Growth

There are dissents regarding the relationship between foreign aid and economic growth. De Janvry and Sadoulet (2016 p. 685) asserts that these disagreements primarily originate from the growing faith in markets, and dubiousness towards governments and large institutions or agencies. De Janvry and Sadoulet refers to a study conducted by Boone (1996), where Boone concludes that aid does not work in terms of promoting economic growth in a recipient country. He claims that the largest effect of foreign aid is that it increases the size of the governments but does little for growth. Based on Boone's conclusions, Burnside and Dollar (2000) conducted a study where they analyzed 56 countries for the years 1970 to 1993. Their findings were partially contradicting Boone's, concluding that foreign aid does in fact affect a country's economic growth under certain conditions. Circumstances where foreign aid is most beneficial includes prosperous policies such as balanced budgeting, a low level of inflation and trade openness.

Education is according to De Janvry and Sadoulet (2016, p. 384) considered to be a major key for economic growth and development. The general assumption is that improving education will lead to an increase in productivity of labor and quality of entrepreneurship. Improving the status of education is beneficial for a country in several ways. On an individual level, a worker can broaden his or her possibilities through improved capability. A robust educational system is valuable for a society in human capital aspects. The effect of educating an individual will also affect people associated with said individual.

2.2 Corruption

Corruption is a large problem in Sub-Saharan Africa. According to Transparency International (2020) the region averages 32 on a CPI (Corruption Perception Index) scale of 1-100 where 100 is less corrupt, and 1 is more corrupt. Because of the large size of the region, and the many number countries there are large discrepancies in reported CPI values. Countries like the Seychelles, Botswana and Cabo Verde have a significantly higher value of CPI with 66, 61 and 58 respectively. Whereas other countries, such as Somalia and the Sudan's, ranks as the worst countries with a CPI value of 9, 12 and 16.

The organization *Transparency International*, which has the purpose of measuring corruption and a desire of eliminating corruption as a factor in the world, also reports declining values of CPI in the region. Despite efforts attempting to decrease corruption in the area, several countries have experienced a decline in reported CPI value, meaning corruption has increased.

2.3 Counterfactuals

When examining for causal relationships in economics it is important to not neglect the counterfactual aspect. There have occurred several significant events in Sub-Saharan Africa that have affected both the economic growth, as well as numerous policy decisions made by governments in the region. These events may also have affected the incentives for donor countries to contribute financial aid to the region. In order to not disregard the importance of what would have happened otherwise, it is important to highlight some of the events.

"If we lack the means for interpreting counterfactual conditionals, we can hardly claim to have any adequate philosophy of science". – Nelson Goodman (Goodman, 1947 p. 113)

In 2014, the western part of Africa was struck by Ebola, a highly infectious virus disease. According to the Center for Disease Control and prevention (CDC) the first cases were discovered in Guinea, but the disease spread quickly throughout the region (CDC 2019). Neighboring countries Sierra Leone and Liberia were also highly affected. The epidemic hurt the region severely, not only in human capital aspects but also economically. Foreign investments, productivity levels and trade all decreased significantly during the years of the Ebola epidemic. When the outbreak formally came to a halt in 2016 the total costs of the epidemic were estimated at total of 4.3 billion US dollars. This is one example of significant outlying events that have had an effect on GDP growth in Sub-Saharan Africa.

One could assume that a vast epidemic, such as Ebola, has had a negative impact on the economic state of the region but we cannot tell for sure. It is however, important to consider the effect it has had on economic growth.

Sub-Saharan Africa is a region plagued by a recurrence of civil wars, coup d'états and a general unrest. Some examples of this are the civil war in Sudan, coup d'états in Niger in 2010, Mali in 2012 and Zimbabwe in 2017. Among these successful coupes, there have also been a number of attempted ones, throughout the years of our research. It is not farfetched to assume that these events have had a significant impact on economic growth in the affected countries, and they must therefore be accounted for in our analysis.

3. Literature Review

The purpose of this section is to present previous research regarding the different aspects we deem to have an impact on our study and subject. We have aspired to collect literature presenting different and opposing views of every matter in order to try avoiding any potential bias. All previous work included in this report has been conducted by renowned authors and published in prominent forums.

3.1 Does Foreign Aid promote Growth?

There are dissents regarding the relationship between foreign aid and economic growth. De Janvry and Sadoulet (2016 p. 685) asserts that these disagreements primarily originate from the growing faith in markets, and dubiousness towards governments and large institutions or agencies. De Janvry and Sadoulet refers to a study conducted by Boone (1996), where Boone concludes that aid does not work in terms of promoting economic growth in a recipient country. He claims that the largest effect of foreign aid is that it increases the size of the governments but does little for growth. Based on Boone's conclusions, Burnside and Dollar (2000) produced a study where they analyzed 56 countries for the years 1970 to 1993. Their findings were partially contradicting Boone's, concluding that foreign aid does in fact affect a country's economic growth under certain conditions. Circumstances where foreign aid is most beneficial includes prosperous policies such as balanced budgeting, a low level of inflation and trade openness.

Burnside and Dollar (2000) study aid effectiveness and establish the fact that the impact of aid differs substantially depending on the state of the country's policies. They conclude that stable policies regarding the economy enables aid to help development in a poor country. The opposite can be said about states with unhealthy economic policies, where aid mostly ends up in unprosperous government spending.

Rajan and Subramanian (2005) uses cross sectional and panel data to find little to no proof that aid given to a country is related to their economic growth. They also test for a difference in the impact of aid on better/worse policies and geographical areas. No evidence was found that a better policy helped the country use aid to increase growth in a more efficient way. They also criticize current aid methods and suggest that in order for future aid to work the strategies of giving aid must be rethought.

In an extensive study from Rajan and Subramanian (2007) the relationship between aid and growth on a cross-country basis in order to analyze what the evidence shows is examined. Their results were contradictory to what global aid organizations believed at the time. According to their analysis, there is no positive (or negative) relationship between economic growth of a recipient country and received financial aid. Furthermore, their study concluded that there is no distinctive difference between the various types of aid.

Juselius, Møller and Tarp (2014) argue that, since studies showing different impact of aid on economic growth use the same or similar data retrieved from the same databases (WDI, DAC and PWT), the ambivalent results derive from how they combine the data and how they assemble the econometric models. They also suggest that variable adjustments could alter the results. For example, a variable could be logged in one study and not in another.

Regarding aid dispensed to educational sectors, there are previous studies showing a positive correlation with development. Asiedu (2014) suggests that aid going into primary education spurs growth. Moreover, she highlights the importance of policymakers to enable educated people to use their skill in order to further increase growth. This finding is supported by Asongu and Tchamyou (2015), using a time frame between 1996-2010 to find that educational aid is specifically effective in improving primary education. Another study, made by Dreher, Nunnenkamp and Thiele (2008), focuses on the impact of educational aid on school enrollment. Results point to a positive correlation, and also that disaggregating aid into sectors is essential in finding its actual impact.

Michaelowa and Weber (2007) compares aggregated aid going into education with disaggregated aid, dividing it into primary, secondary and tertiary education. They find that with the disaggregated approach, significant but small effects are shown. Using accumulated educational aid, the effects are larger but still limited. Some positive impacts could be found in all three education groups, primary in particular. Dreher et. al. (2008) discuss that an improvement in educational sectors should be beneficial to economic growth in the long run. They argue that this, however, is difficult to show using econometric approaches.

3.2 Aid and Corruption

Whether or not foreign aid has any effect on corruption in a recipient country has been studied excessively throughout the years. It is also interesting to examine the relationship in a reverse manner - does corruption in a country affect the flow of foreign aid into a country? What are the determinants, and what are the incentives of donor countries?

In Bauhr, Charron and Nasiritousi (2013) the authors conclude that if a donor country perceives the recipient country as corrupt, this will cause aid fatigue. However, the situation differs from case to case and is in most cases dependent on the context of the relationship between the countries. They bring up one common problem that occurs in similar circumstances, namely that the countries with the highest level of corruption often are the ones in most need of foreign aid. A situation like this is referred to as the *aid-corruption-paradox.* In regard to the aid-corruption-paradox, Bauhr et al. (2013) claim that there are three different dynamics that affect the support for aid within relationships that are burdened by a corrupt recipient country; moral, pragmatic and strategic values. It is suggested that for EU-15 countries, the moral aspect is the most regarded dynamic, whereas in NMS-12 countries, the decision on donating aid is mostly based on pragmatic and strategic reasons such as national interests.

Okada, K. and Samreth, S., (2012) studied the issue using a quantile regression approach. Their findings were that foreign aid reduces corruption in a recipient country. However, the effect is larger in countries with a lower level of initial corruption and the effect is not correlated. Again, the situation is mostly dependent on the relationship between the donor and recipient countries.
Simplice Asongu (2012) followed up this study in 2012 where he invalidated Okada and Samreth's results. With updated data, Asongu shows that there is a positive correlation between aid and corruption.

José Tavares (2003) examined the relationship between foreign aid and corruption by implementing geographical and cultural distances between a donor and recipient country as instrumental variables in order to evaluate causality. Using the International country risk guide indicator of corruption from 2001 and measuring five-year averages on countries not members of the OECD he concludes that foreign aid decreases corruption in recipient countries. When discussing the reasons underlying the phenomenon, Tavares suggests that the conditional motives from donor countries may be of great significance. When dispensing aid, a donor country expects to see results and is often thoroughly invested in the specific transaction. This creates smaller opportunities for officials to behave in a corrupt manner, consequently countries experienced less corruption within the state's finances.

In Banerjee and Duflo's book *Poor Economics: A Radical Rethinking of the Way to fight Global Poverty*[3] they present findings from different researchers. For example, Jeffery Sachs (Banerjee & Duflo, 2011 p. 385) claims that corruption could be seen as a poverty trap, where corruption creates poverty which in turn leads to a higher rate of corruption. Corruption within a country can do extreme harm to the development of said country. For instance, Ritva Reinikka and Jakob Svensson (Banerjee & Duflo, 2011 p. 386) conducted a survey in Uganda in 1996 in order to examine how much of government-funded money to schools were actually allocated to the schools. Their findings were quite shocking, as only 13 percent of the money dispensed from the government actually reached the schools. This creates a legitimate question of how implementing foreign aid can have a substantial effect.

> *"There is no point to figuring out the best way to spend a dollar on schools, if 87 cents will never reach the school anyway."* - *William Easterly* (Banerjee & Duflo, 2011 p. 384)

Jeffery Sachs (Banerjee & Duflo, 2011 p. 385) presents a solution to this issue. He claims that the optimal approach should be to dispense aid to specific programs which can be easily monitored, such as disease control, sanitation programs and food production. According to Sachs, implementing a protocol according to these premises would empower citizens and help maintain rule of law in official offices.

Daren Acemoglu (Banerjee & Duflo, 2011 p. 387) shares the view of importance regarding institutional significance for development. He claims that countries cannot develop until the country's institutions are thoroughly fixed. Acemoglu continues describing the importance of properly functioning institutions as a necessary instrument in order to empower citizens to control politicians. Since developing countries with poor institutions often are the same ones that receive financial aid, it creates a scenario which is similar to the aid-corruption-paradox. William Easterly (Banerjee & Duflo, 2011 p. 392) suggests that foreign aid is not beneficial for developing countries, since the financial aid often is aligned with political incentives from the donor country. If the incentives from the donor country are not favorable for the developing country combined with a high level of corruption, the problem is set to escalate.

3 We retrieved this book from https://www.academia.edu/8579777/Abhijit_Banerjee_Esther_Duflo_Poor_Economics_A_Radical_Rethinking_of_the_Way_to_Fight_Global_Poverty_2011?email_work_card=view-paper May 2 2020.

4. Methodology

In this section we aim to present our approach for conducting this study. We will present and discuss our different variables, as well as their source of origin. We summarize our variable in Table 1. Furthermore, we speculate on the pending outcome from regressing on said variables. We conclude chapter 4 with our estimation procedure.

4.1 Choice of Variables

The basis for our research and thesis is Elizabeth Asiedu's study *Does Foreign Aid in Education Promote Economic Growth? Evidence from Sub-Saharan Africa* (2014). Our aim is to continue her research in a more modern time frame. With this in mind, we aim to use the same variables as she did as much as possible in order to retrieve the same focus area and be able to compare our results.

Like Asiedu (2014) we use data on SSA countries and conduct a panel data approach. Her research is based on the time period 1990 to 2004. We elected to continue from the year 2005 to 2018. This timeframe is one year narrower than hers, but since 2019 lacked data on some countries and variables we decided to exclude it. Due to lack of measure points some of the SSA countries have been removed from the study. Asiedu (2014) includes 38 countries, whereas our study was conducted on 37 countries after removing insufficient observations and countries lacking some of the variables.[4] Her reason for not including all countries was also due to lack of data during her time period, 1990-2004. Similar findings can be observed in other studies, like Burnside & Dollar (2000) and Juselius et. al. (2014). Regarding our panel data approach, we use fixed effect robust regressions, testing multiple different combinations of our variables. All our variables have between 342-443 observations, with exception of corruption, in which we were able to collect 248 observations for our time period. This is because our corruption variable has data on every other year, leaving out half of the years in our time frame. The variable is available for the same countries as our other variables.

Concerning data, we could not find quarterly or monthly data, which could be interesting in our case. Like Asiedu (2014), we use data on a yearly basis. When using annual data, other studies compute averages over many years. For example, Birchler and Michaelowa (2016) use five-year periods to capture slow moving variables. Asiedu (2014) is using three-year periods, which we would do as well. However, due to lacking data on 2019, we only have 14 years, leading us to use three-year averages on the first 12 years. 2017-2018 is computed as a two-year average instead. We have decided to use moving averages during the time period, leaving out the first two years for every country. Here you could argue it would be wise to include 2003 and 2004, but due to time constraints and lack of available data we decided to start with the year 2005.

[4] See Appendix for List of Countries included

Asiedu (2014) presents a list of her variables, including four aid variables as her explanatory variables. These are primary education aid, post-primary education aid, primary education aid as a share of total education aid and total education aid. Moreover, she uses a variable for GDP per capita growth rate as her dependent variable. Regarding her control variables she uses a logged initial per capita GDP variable, trade, investment, government consumption, institutional quality, a logged inflation variable and a variable for institutional quality. Her education aid variables are all collected from OECD[5], while her logged GDP per capita, investment, inflation, trade and government consumption variables are retrieved from the World Bank database. The same is said about the per capita GDP growth rate variable. Regarding her variable for institutional quality, she retrieved it from the *International Country Risk Guide* (ICRG).[6]

Our dependent variable is the same as the one used by Asiedu (2014): GDP per capita growth rate. We imitated Asiedu and collected this data from the World Bank Data Bank (2020). This databank is called *World Development Indicators* (WDI) and allows you to observe a vast range of variables on most of the world's countries. This variable presents an annual percentage growth rate for the countries within the SSA region.

4.1.2 Aid Variable

According to OECD, aid to education is broken down level-wise into different sectors. Asiedu (2014) disaggregates educational aid received into primary and secondary school in her variables.[7] Michaelowa and Weber (2006) also try to disaggregate education aid but conclude that this strategy could show misleading results. An aggregated sum of educational aid is thus looked upon. Using OECD's Aid ODA disbursements to countries and regions (OECD 2019) we collected data on aid given to education to countries in the SSA in constant 2017 USD. With the help from a simple GDP in constant 2010 USD variable collected from the World Bank (2020), together with a currency converter, we computed education as a percentage of total GDP (**education aid/GDP**).

Asiedu presents an alarming issue with the variable retrieved from OECD; it only covers the aid given by DAC countries. However, this was and still is the only available data on aid given to education. Also, according to Asiedu (2014) aid from DAC countries account for more than 85% of total aid given to countries in our region of study. She also highlights the possible issue of only collecting

5 She retrieved it from the "5-CRS/Aid Activities-Disbursements" database, available at OECD data bank.
6 This was done by Burnside & Dollar (2000), and the data can be found on http://www.prsgroup.com/icrg/icrg.html
7 This requires a larger timeframe than the one allocated to us

observations from 15, in our case 14, years. Since we wanted to follow her study this was the amount of years we were able to use.

4.1.3 Explanatory Variables

When choosing control variables for our regression we had a desire to follow Asiedu's regression as closely as possible. However, in the case of controlling for quality of governance we could not find data measuring institutional quality. In order to satisfy the deficiency caused by the lack of measurements needed we instead chose to control for level of corruption. When a donor country provides financial aid to a recipient country with a goal to develop school systems, the funds are allocated to the country's government, or other political institutions. It is therefore necessary to measure for the level of corruption of a certain recipient country. Since we are researching for financial aid to the education system and the effect it has on economic growth, it is vital for us to understand how well the funds are being utilized.

Asiedu (2014) argues that it is important to consider recipient countries' policy environment. She bases her choice of policy variables on the findings by Burnside and Dollar (2000), who concluded that aid is effective in developing countries with well-functioning policies. They form a policy index consisting of trade openness, inflation and a budget surplus. Asiedu (2014) bases her variables on this but chooses trade as a share of GDP (%), government consumption as a share of GDP (%) and inflation. As mentioned by De Janvry and Sadoulet (2016) trade is supposed to promote growth. Evidence seems to point to the state and characteristics of countries as determinants on trade's impact on growth. If there is a high rate of trade openness, this usually spurs growth. It can also be worth mentioning that trade alone usually does not get the positive results you might expect. Other governmental engagements such as investments in education help convert trade into growth. We collected our trade variable from the World Bank (2020), which gives us trade as a percentage of total GDP.

Government consumption is according to Burnside and Dollar (2000) not directly correlated with economic growth. However, they argue through their findings that some aid does have a positive correlation with government consumption. In order to follow up on Asiedu (2014) we chose to include this variable. It was also possible to find data during the chosen time period for all the selected countries. This data was also collected from the World Bank (2020) and indicate the annual government consumption in constant 2010 USD.

Inflation was also a variable easy to collect and it is used by Burnside and Dollar (2000) to represent a country's monetary policy. It is considered one of the most important variables in their growth regression and does well in indicating the quality of a country's policy. We follow Asiedu's choice of

using this as a logged [(1+log) x inflation] in our regression.

On the World Bank Database (2020) we also found a variable including government expenditure on education as a percentage of total GDP. Even though this variable will not be in our main model, we consider this an interesting variable to keep in mind related to education aid and its impact on economic growth. We did not find any recent studies using this variable. Nonetheless this might be a relevant variable to this kind of regression.

Regarding Asiedu's way of including the measurement of quality of institutions, she uses an indicator from the International Country Risk Guide, called "rule of law". The price for acquiring this data was considered too high for this study, leaving us to choose an alternative variable. Due to the importance of corruption presented by recent studies[8], we considered this to be a relevant variable to include. The anti-corruption policy variable describes a country's ability to contain corruption and gives a value between 1-10 where 10 indicates the best possible capability to suppress corruption. If the index shows a low number, it means the state is inclined and capable of, to a minimum extent, restrain corruption. The index also reflects the government's ability to use integrity mechanisms effectively. While retrieving this variable from the Quality of Government standard time-series dataset (QoG 2020) we found other corruption-related variables. For example, the Bayesian Corruption Indicator, shows an index between 1-100 on the level of corruption. This index is based on surveys and gives an average value of all survey answers within a country. Apart from the issue that we could not find sufficient data for our time frame on this variable, we also believe it is hard to answer how corrupt your own country is without having experienced living in nations with different institutional quality, level of democracy and corruption. Another variable we found interesting that, however, contained insufficient data, was Corruption Perception: Education. This variable gives a survey-based index on how affected you believe the education sector is by corruption. We decided to pick the Anti-Corruption Policy index, since it covers the entire time frame for all countries of interest. Worth mentioning is that the data on this variable is accessible every second year for our time period, leading to a smaller number of observations.

Asiedu also included two more variables: Investment and initial per capita GDP. The first mentioned we could not find enough data on, and with the latter we experienced difficulties in including it in our regressions. This might have been due to insufficient knowledge of the usage of Stata. Below is a table of the presented variables with their three-year averages, except for corruption. This led to a slight drop of observations. Note that the highest corruption index level in SSA is 8, where 10

[8] See the section 'Aid and Corruption'

indicated the lowest level of corruption. Also, the mean is slightly under 4, showing similar results as the CPI mentioned earlier.[9]

Table 1. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
tGDPgrowth	443	2.137691	2.418444	-8.152756	8.470363
teducperc	443	.0120644	.0181719	.0000101	.1159951
ttrade	426	75.56019	36.36169	22.83902	286.2854
tlogin	342	2.728021	.7725184	-.3575088	4.373756
tgovcon	380	5.36e+09	1.42e+10	7.16e+07	8.65e+10
tcorr	248	3.979839	1.409768	1	8

4.1.4 Data Collection

"*tGDPgrowth*" is our per capita GDP growth variable and is an annual percentage growth rate. This variable was retrieved from the World Bank WDI. "*teducperc*" denotes education aid given to a country as a percentage of that country's GDP. This variable was retrieved from OECD Aid ODA. "*ttrade*" represents annual trade as a percentage of GDP, "*tlogin*" is a logged inflation variable and "*tgovcon*" corresponds to annual government consumption in constant 2010 USD. These three variables were all gathered from the World Bank WDI. The corruption variable (*tcorr*) is an index between 1 to 10 where 1 indicates a high level of corruption and 10 indicates a low level of corruption. Data on this variable was available on QoG standard time-series data set.[10]

[9] See 'Aid and Corruption'

[10] As seen in Table 1, no countries exceeded 8 in the corruption index

4.2 Research Hypothesis

Based on literature studies and background information previously presented we expect aid to have a positive impact on economic growth. One of the most important purposes of aid is to inject financial funds into a state government in order to enable investments in different projects. Asiedu (2014) points towards the importance of literacy and education as pieces of building economic success. With this in mind, we find it highly likely that investments in that sector will have a positive impact on the GDP growth of SSA countries. However, it is possible that the effects of these investments might not come to fruition for a longer period of time than we are examining. Nonetheless, we still expect the variable to be positive against GDP growth.

Regarding our trade variable (*ttrade*), we expect it to show a positive impact on per capita GDP growth. From our education in economics, one recurring statement is that trade spurs growth. The same could be said about our variable for total government consumption. However, we expect this impact to be smaller, as some effects from this variable might linger. When looking at our inflation variable (*tlogin*), we are uncertain whether the impact is positive or negative. For example, if a country experiences hyperinflation, it would probably affect GDP growth negatively. Otherwise it could give us ambiguous outcomes.

We expect corruption (*tcorr*) to have a negative effect on GDP growth per capita. Corruption is the collective term for embezzlement of funds for private reasons, which naturally results in a smaller aggregated fund for the state. A smaller financial fund for the state means smaller opportunities to invest, produce and develop as a country, which we assume has a negative impact on the GDP growth in specific countries. Our corruption variable consists of an index which ranges from 1 to 10. (1 meaning high level of corruption, 10 meaning low level of corruption). For every unit of decrease in the corruption index, we expect a higher negative coefficient on GDP growth.

Since our research is based on Asiedu´s, we predict similar results. We have to the best of our ability attempted to apply the same datasets and variables, and in cases when not possible, tried to replicate in a close manner. With regards to the time-series difference between Asiedu's and our research, we do not expect a significant difference. There have been significant events in Sub-Saharan Africa that may have affected GDP growth throughout the years of our research, as discussed in *Counterfactuals.* However, due to the vastness of the region and our 3-year-averages, none of these events should have an effect substantial enough to create significant discrepancies between ours and Asiedu's results. It is also likely that events similar to the ones discussed in *Counterfactuals* occurred during the period of Asiedu's research. Sub-Saharan Africa is commonly known as a region affected by unrest and these events are impossible to disregard independent of the timeframe discussed. Nevertheless, we do not exclude the option that our study shows different results than Asiedu's. For example, results could,

like Juselius, Møller and Tarp (2014) mentioned, differ due to how we combine our data. Regarding variable adjustment we also logged the inflation variable and created three-year averages. Even these small differences, or leaving out variables, could lead to different results which we will keep in mind. Asiedu (2014) received significant results in some of her regressions. Although this is something we strive towards, it would be naive to expect our regressions to be perfectly conducted. Therefore, we believe our results could lack significance, or only be significant at the higher levels, meaning at a five or ten percent level. The usual levels are one, five and ten.

4.3 Estimation procedure

4.3.1 Model

We needed to merge variables, since we collected them from different databases. Then we checked our data for duplicates to ensure none existed. We arranged our data as panel data, since this is the approach we want to use. Also, this is what Asiedu (2014) uses as well. Following her method, we created three-year moving averages. This method was applied in order to take significant events into consideration.[11] Using this method meant discarding the first two years of observations for each country. When conducting our estimation, we define our model as follows:

$$\textbf{tGDPgrowth} = C + \beta_1 x_1(\textbf{teducperc}) + \beta_2 x_2(\textbf{ttrade}) + \beta_3 x_3(\textbf{tlogin}) + \beta_4 x_4(\textbf{tgovcon}) + \beta_5 x_5(\textbf{tcorr}) + \varepsilon$$

Where C is the constant and the β's are coefficients for each variable. ε is the error term, i.e. the unobserved component.

11 See section 'Counterfactuals'

4.3.2 Testing

We tried testing our data on skewness and kurtosis. This test is called "Skewness and kurtosis test for normality". Using the command **sktest variable name/names** for all variables used in this study, we find no major irregularity. The only variable indicating a skewness is Corruption, with a probability of 0.0048. Regarding kurtosis, Corruption is once again the only variable indicating any sign of kurtosis, with a probability of 0.0701. We dismiss this, as the probability is very low.

Even though it would be essential to follow Asiedu's choice of variables, the institutional quality index will be affected by aid. Asongu (2012) state that development assistance is, to some extent, dependent on the donor country's institutional quality. This could lead to a situation where endogeneity could lead to a reverse causality and OV-bias.[12] The author presents the Hausman test as a possible solution for this.

We used the Hausman test for fixed effects. Our results points towards not rejecting the null hypothesis "difference in coefficients not systematic", meaning that there is no significant difference in using fixed or random effects in the regression. Considering our choice of panel data, fixed effects have been recommended by our supervisor as well as by PhD students within the field of economics.

We use two tests for correlation; a standard correlation test and a pairwise correlation test. Both of them indicate existing yet small correlations between variables.

Checking for multicollinearity, we first used the "variance inflation factor" (command: **vif**), where according to Utah Stata Support (2020) a VIF-value larger than 10 should be troublesome regarding multicollinearity. Our yearly variables gave a range of VIF-values between 1.06-1.41, with a mean of 1.23. These numbers should, according to Stata-help, not be troublesome and we can expect no multicollinearity within the model. Using the three-year moving average variables, we get vif-values between 1.04 and 1.11. Again, there seem to be no signs of multicollinearity.

Regarding heteroscedasticity, we conducted two tests, both indicating our data were homoscedastic. One method was done by plotting residuals, giving us a graph showing a homoscedastic pattern on both annual and three-year variables. The other one was done by installing a test called "xttest3" on Stata. This test gave us a null hypothesis saying the data were heteroskedastic. We could reject this hypothesis, ensuring our data had no trouble regarding this.

[12] Subsuming relevant variables into the error term can cause the exogeneity assumption to fail

5. Results

After gathering research and conducting our regressions, it is now time to interpret our results. We summarize our outputs and present them in a more elaborate manner. Furthermore, we try to compare our results with relevant previous studies conducted by notable researchers.

Hansen and Tarp (2001) test the effect of aid on growth and explain possible reasons why results in this matter may be biased. More precisely, three factors are presented. Endogeneity of aid flows could have a joint effect leading to biasness. Also, conditional convergence, the phenomenon when poorer countries have a faster growth rate than richer countries. Lastly, the issue of unobserved features within a country. Not only do Hansen and Tarp address these properties, they are also brought up in Asiedu's (2014) study, making it relevant for us to look at them. Asiedu refers to two procedures through which these issues could be handled: "the difference GMM estimator" and "the system GMM estimator". Both are linear dynamic panels and are referred to as General Method of Moments estimators. In our case, this stretches beyond our scope of knowledge and comprises a research of model estimators requiring more time than given to this report. Nonetheless it is important to keep these possible bias-contributors in mind.

Using a detailed summarize command, we can observe that aid going to education for our time period has a mean of approximately 1.2 percent of total GDP. This could be set in comparison with trade that has a mean of over 75 percent of total GDP for the same period. Regarding our corruption variable, the countries in the region have a mean of roughly 3.97, leading the region to be placed under the middle of the corruption index (1-10). Just like Asiedu (2014) we follow what is standard in the literature and treat our aid variable as endogenous.

Including our corruption variable leads to fewer observations. If we, however, exclude this variable and it is important in measuring the impact of education aid on GDP growth we could experience a biased result. We tackle this issue by including it in some regressions while leaving it out in others. A quick glance at our tables, we can observe a negative impact on GDP growth coming from education aid. However, looking at the p-values presented, the regressions suggests insignificant results in this matter.

We examine our first two robust regressions (Table 2) where one includes trade, inflation and government consumption as independent variables (2.1). The estimated coefficient on our education aid variable is negative but not significant. When substituting government consumption with corruption (2.2), we detect similar results, suggesting the impact of our aid variable on GDP growth is not significant. Both regressions include 32 of our 37 countries. This is explained by the way we run

regressions, excluding all incomplete observations. Note that when including our corruption variable some observations were dropped (2.2).[13] In these regressions we find that government consumption is significant with a p-value lower than 0.05. The coefficient of *tgovcon* is negative, suggesting government consumption impacts GDP growth negatively.

Following the impact of the aid variable where we dropped the inflation variable (Table 3), we can see the same result on our education aid variable as in Table 2. In the regression where we include trade (3.1) we see barely no differences from when excluding it (3.2). Our aid variable is having a negative impact on GDP growth in both regressions. The number of countries remained 32 in both regressions, but observations did not differ with or without trade. Note that government consumption is negative in both regressions on a 1% significance level. Shifting our focus to regressions with fewer independent variables included (Table 4), the coefficient of our aid variable remains negative and insignificant.[14]

In all regressions our variable for education aid indicates a negative impact on per capita GDP growth, but with p-values too high to show significance.[15] However, looking at the confidence intervals, we can see the interval reaches a positive value on the far right in all regressions. Thus, we cannot dismiss the possibility of education aid having a positive impact on per capita GDP growth. Nevertheless, considering all regressions presented negative coefficients on the education aid variable, it would be bold to still assume that education aid spurs growth. We can determine that the government consumption estimation was significant and negative in all regressions, suggesting government consumption affects per capita GDP growth negatively.

13 See discussion on corruption variable under "control variables" in 4.2

14 We run regressions with only trade and corruption, as well as exchanging corruption for inflation. Our main outcome remained unchanged. In order to not be redundant we exclude to present these regression results

15 When using all variables in one regression the p-value of teducperc is 0.16 and indicates a negative impact on tGDPgrowth. Also, here tgovcon is significant, suggesting a negative effect on economic growth.

6. Discussion

In this study we aim to answer the question of whether aid to education promotes economic growth. We find some contradictive results to those in Asiedu's (2014) study, and also a few significant answers. The insignificant negative impact of education aid on GDP growth is counter-intuitive with recent studies like Asiedu's (2014) and Asongu & Tchamyou (2015). This could come of the fact that we decided not to disaggregate our aid variable. Our results are, however, consistent with several other empirical studies that find no significant effect on education aid or overall aid on growth. For example, Rajan and Subramanian's two studies (2005 & 2007) both pointed toward a zero- or negative impact of aid on growth. Regarding Asiedu's findings on the impact of post-primary on growth, our results on aggregated aid to education are aligned. That is, neither results are significant.

A reason for this negative and insignificant result could be explained by the lack of employment in the region. To be able to trace the economic growth effect of money invested in education, it is required to include educated labor in the working sector. One could thus assume the impact could linger. Moreover, an increase in education investments does not have to indicate an increase in human capital. If the level of education is at a low level, investing in the sector might not make a notable difference. Instead, money could have been invested in low-level working sectors. One could argue this might affect economic growth more effectively, especially in a short time period.

Another reason for absent effect could be the perspective of time. It is possible that the effect of investments into education is lagged. In order to contribute to economic growth, one first has to complete his or her education and acquire a job. This is of course a process that takes several years and might first come to fruition years after this study has been conducted.

Regarding our findings on a negative impact of government consumption on economic growth in this region, we consider this to be an issue specific to the region. According to our sources on corruption indexes, the states in SSA have proven to be relatively corrupt. With this in mind, what the governments consume could in fact be things of own interest rather than what is good for the country and its citizens. For example, a few high ranked individuals could drive around in expensive cars bought by the government while it could have been invested in sectors like health and education.

7. Concluding Remarks

Foreign aid donated to developing countries are intended to better the economy, situation of living and standards in these as well as helping countries in emergency situations. For many years this has been used and studied by numerous institutions and researchers. Starting with general studies on aid effectiveness, it has branched out to specific sectors and aid allocations. We have had means to contribute to the studies on the impact of education aid on economic growth. Our results present no definite answers, except for the negative effect government consumption brings on economic growth.

As can be seen in our Literature Review, there is no mutual agreement between researchers on whether aid promotes growth or not. The result of our exploratory study, together with earlier studies presented in our Literature Review, clearly point to further research within the field. For example, one could redo the study made by Asiedu with the same variables, if they can be retrieved. Also, a GMM model study would be proper to use in order to compare with Asiedu's research.

There and back again. A hobbit's tale by Bilbo Baggins.

8. Appendix

Table 2	**(1)**	**(2)**
VARIABLES	GDP growth (annual %)	GDP growth (annual %)
Education aid (% of GDP)	-2.624	-8.142
	(0.725)	(0.234)
Trade (% of GDP)	0.0128	0.0128
	(0.164)	(0.230)
(1+log) inflation	-0.0137	-0.154
	(0.981)	(0.795)
Gov. Consumption (constant 2010 USD)	-7.48e-11**	
	(0.028)	
Corruption Index (1-10)		0.0803
		(0.813)
Constant	1.833	1.243
	(0.242)	(0.569)
Observations	296	170
R-squared	0.012	0.017
Number of Countries	32	32

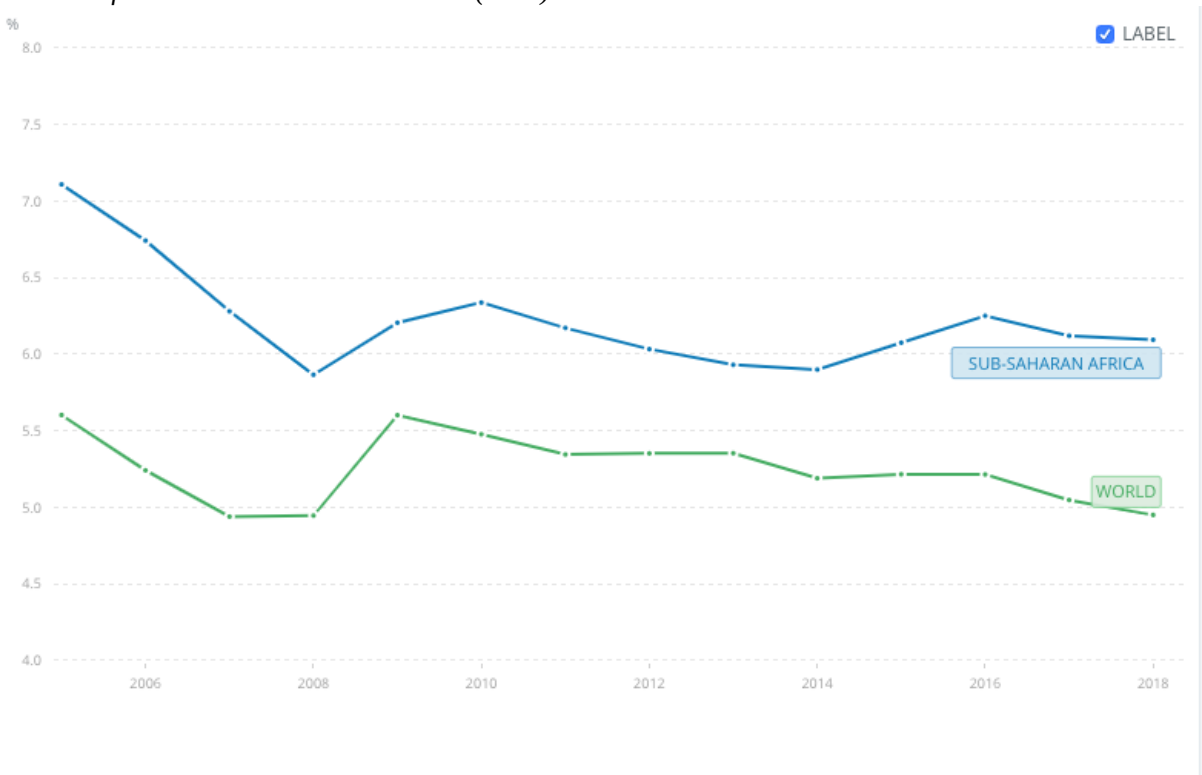
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3	(1)	(2)
VARIABLES	GDP growth (annual %)	GDP growth (annual %)
Education aid (% of GDP)	-8.695	-8.974
	(0.315)	(0.327)
Gov. Consumption (constant 2010 USD)	-1.05e-10***	-1.05e-10***
	(0.003)	(0.002)
Corruption Index (1-10)	0.0793	0.0834
	(0.823)	(0.810)
Trade (% of GDP)	0.00469	
	(0.714)	
Constant	2.065	2.394*
	(0.325)	(0.084)
Observations	194	194
R-squared	0.014	0.013
Number of ccode	32	32
	Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1	

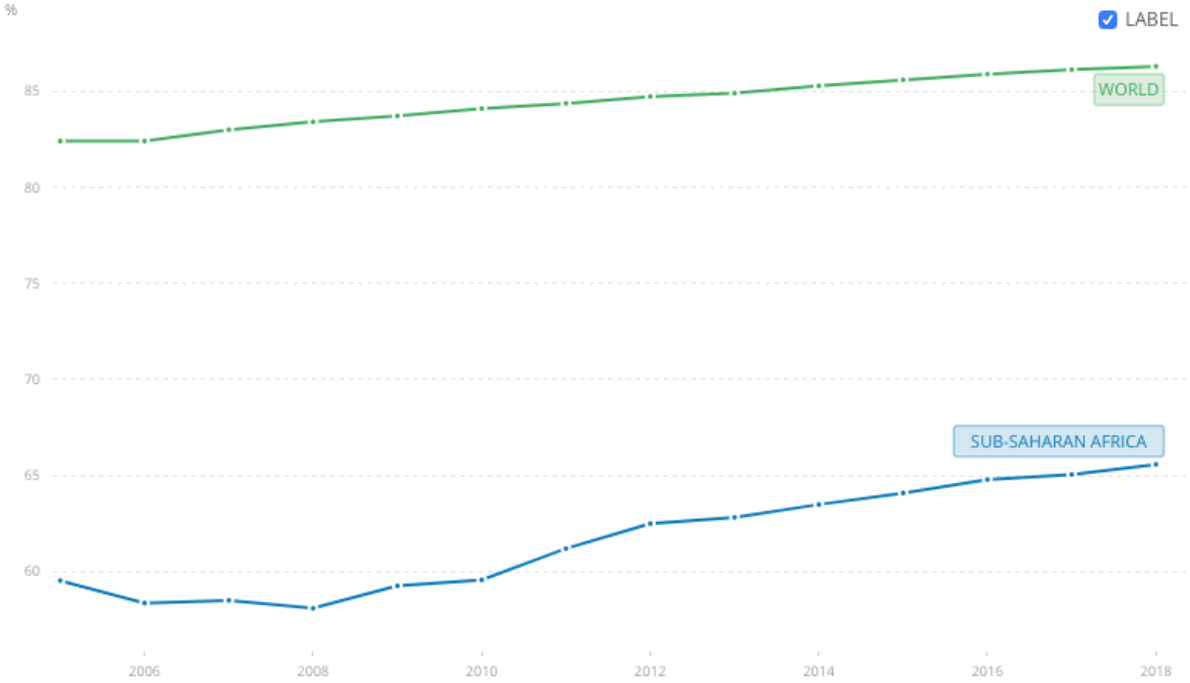
Table 4	(1)	(2)
VARIABLES	GDP growth (annual %)	GDP growth (annual %)
Education aid (% of GDP)	-11.23	-2.707
	(0.149)	(0.693)
Trade (% of GDP)	0.00776	0.0143
	(0.484)	(0.104)
Corruption Index (1-10)	0.130	
	(0.655)	
(1+log) inflation		-0.403
		(0.451)
Constant	1.019	2.251
	(0.555)	(0.118)
Observations	216	325
R-squared	0.014	0.012
Number of ccode	34	35

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Graph. 1. *Unemployment rate of SSA countries compared to the World.*
Retrieved from the World Bank DataBank (2020)



Graph. 2. *Literacy rate in SSA region and the World of people above the age of 15.*
Retrieved from the World Bank DataBank (2020).



List of Countries included

Angola	Botswana	Burundi	Cameroon
Central African Republic	Chad	Comoros	Benin
Equatorial Guinea	Gabon	Ghana	Guinea
Kenya	Lesotho	Liberia	Madagascar
Malawi	Mali	Mauritania	Mauritius
Mozambique	Namibia	Niger	Nigeria
Guinea-Bissau	Rwanda	Sao Tome & Principe	Senegal
Seychelles	Sierra Leone	South Africa	Zimbabwe
Togo	Uganda	Tanzania	Zambia
Burkina Faso			

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