



LUND UNIVERSITY

School of Economics and Management

Master's Programme in Economic Growth, Population and Development

The Effect of Foreign Aid on Gender Equality

A Study of Sub-Saharan Africa

by

Elsa Kyander

el1141ky-s@student.lu.se

Foreign aid allocated to projects aimed at enhancing gender equality has grown rapidly and amounted to \$45 billion in 2017, with the largest share allocated to countries in sub-Saharan Africa. Despite the large amounts, the effectiveness of aid to gender equality has received little scholarly attention. This thesis studies the impact of foreign aid aimed at gender equality on a range of indicators of gender equality in sub-Saharan Africa between 2002 and 2016. Using data on foreign aid allocation from the OECD, the thesis employs a range of econometrical approaches to test the effect of gender equality aid on four indicators of gender equality: female labour force participation, the ratio of female to male life expectancy, the share of seats in national parliaments held by women and the ratio of female to male school enrolment rates. The results of the empirical investigation suggest that the effect of gender equality aid is sensitive to the type of gender inequality indicator. Gender inequality aid is found to have a positive effect on the school enrolment ratio and on the share of female parliamentarians. The results for the two remaining indicators were more inconclusive. The differing results between the various indicators suggests a need for great care to be taken both when defining gender equality and when discussing the effectiveness of foreign aid.

Keywords: Foreign aid, gender equality, sub-Saharan Africa

EKHS21

Master's Thesis (15 credits ECTS)

June 2019

Supervisor: Jutta Bolt

Examiner: Faustine Perrin

Word Count: 15 885

Acknowledgements

I would like to express my gratitude to Jutta Bolt, my supervisor, for invaluable help and support during the process of researching and writing this thesis.

Table of Contents

1	Introduction	1
1.1	Research problem and definitions	1
1.2	Aim, objectives and scope	2
1.3	Outline of the thesis	4
2	Background	5
2.1	Gender equality as a development issue	5
2.2	Foreign aid to gender equality	6
2.3	Gender equality and aid in sub-Saharan Africa	7
3	Theoretical Framework	12
3.1	The structure of aid organisations	12
3.2	Principal-agent theory and foreign aid	13
4	Literature Review	16
4.1	Macroeconomic studies	16
4.2	Microeconomic studies	18
4.3	Issues in studying aid efficiency	20
5	Methodology	21
5.1	Baseline Specifications	21
5.2	Additional specifications	22
6	Data	24
6.1	Aid data	24
6.2	Gender equality indicators	27
6.3	Control variables	28
7	Results	30
7.1	Life expectancy ratio	30
7.2	Labour force participation	32
7.3	Parliament seats	34
7.4	School enrolment ratio	36
7.5	IV Regressions	38
7.6	First differences	40
7.7	Checks for robustness	43
8	Discussion	44
9	Conclusion	47
	References	49
	Appendix A	54
	Appendix B	56

List of Tables

Table 6.1 Summary statistics	25
Table 7.1 Life expectancy ratio.....	31
Table 7.2 Labour market participation	33
Table 7.3 Parliament seats held by women.....	35
Table 7.4 School enrolment	37
Table 7.5 IV regressions	39
Table 7.6 First differences	41
Table 7.7 First differences and IV	42
Table A.1 List of countries	54
Table B.1 Life expectancy ratio.....	56
Table B.2 Labour market participation.....	57
Table B.3 Parliament seats held by women.....	58
Table B.4 School enrolment.....	59

List of Figures

Figure 2.1 Gender equality aid to developing countries 2002 – 2017	7
Figure 2.2 Gender Inequality Index Score.....	8
Figure 2.3 Gender equality indicators for sub-Saharan Africa.....	9
Figure 2.4 Aid to gender equality projects 2002 - 2017.....	10
Figure 2.5 Gender equality aid as share of total aid to sub-Saharan Africa 2002 – 2017.....	11
Figure 3.1 A framework for aid delivery.....	12
Figure 3.2 Relationships between aid actors	14
Figure 6.1 Distribution of aid to gender equality 2002 - 2016	25

List of Abbreviations

GII – Gender Inequality Index

ILO – International Labor Organization

NGO – Non-Governmental Organisation

SIGI – Social Institutions and Gender Index

OECD – Organisation for Economic Cooperation and Development

ODA – Official Development Assistance

OECD CRS - OECD Common Reporting Standard

OECD DAC – OECD Development Assistance Committee

UN – United Nations

UNDP – United Nations Development Program

1 Introduction

1.1 Research problem and definitions

In 2015-2016, the amount of foreign aid targeting gender inequality in developing countries reached an all-time high and amounted to on average 37% per year of all bilateral aid from the OECD (OECD, 2019a). Gender equality is frequently referred to as a fundamental human right, however, increased equality between men and women can also have large beneficial effects on the economy (UN, 2002; World Bank, 2012). For example, higher gender equality has been found to be associated with improved economic growth and productivity (Cuberes & Teigner, 2014). As a result, gender inequality is increasingly seen as an important development objective (World Bank, 2011). Sub-Saharan Africa was in 2017 the region receiving the largest amounts of aid that targets gender inequality globally (OECD, 2019b). Nevertheless, the level of gender inequality in the region has remained at a high level (OECD, 2014; OECD, 2019b). More than half of the countries in the region are classified as having high or very high levels of gender inequality, with violence against women and restricted socio-economic rights and opportunities as particularly pressing issues (OECD, 2014).

Despite the combination of large amounts of aid allocated to gender equality projects and the importance of gender equality for women and for the economy in developing countries, there is a lack of studies of the impact of gender equality aid. Although there is a large literature on aid effectiveness on both the macro and micro level (e.g. Mosley, 1986; Tarp & Hansen, 2000; Dollar & Burnside, 2000) there is only a small number of studies focusing on the relationship between aid and gender equality. One of the few papers explicitly analysing the effect of foreign aid on gender equality is Pickbourn and Ndikumana (2016). The paper finds no effect of aid on gender equality measured by an inequality index but do find a beneficial effect of aid to the health and education sectors on gender inequality, when maternal mortality rates and female literacy rates are used as indicators of gender equality. However, the study evaluates the effect of total aid on indicators of gender inequality rather than the impact of aid allocated to gender equality projects. The findings are therefore less relevant for understanding the effect of aid with gender equality as a specific objective. In another study of gender equality and aid, Balamoune-Lutz (2016) find that aid with gender equality as an objective increased women's political participation. Nonetheless, the external validity of the study might be compromised due to the emphasis on only one aspect of gender equality and focus on countries in Northern Africa and the Middle East only. There is thus a lack of studies evaluating the impact of aid to gender equality projects on a wider range of indicators and with a focus on sub-Saharan Africa, the region that receives the largest amounts of aid to

gender equality. This thesis will therefore attempt to contribute to closing this gap in the literature.

Gender equality can refer to fairness or justice in the society's treatment of women, also known as equity, or alternatively indicating that men and women are fundamentally the same (Richey, 2000). The most common definition in the development literature is the former, which suggests that women and men should be equal in terms of their rights and opportunities but also responsibilities (Richey, 2000; UN Women, 2001). Hence, hereafter the term gender equality will be used to describe the aforementioned definition of gender equality. Moreover, Official Development Assistance (ODA), commonly referred to as foreign aid, is defined by the OECD as "government aid that promotes and specifically targets the economic development and welfare of the developing countries" (OECD, 2019c). ODA is concessional and delivered by official organisations, e.g. states and local governments, with the purpose of enhancing economic development (OECD, 2019c). In this thesis, the terms foreign aid and aid will be used interchangeably based on this definition of ODA. In addition, the term gender equality aid will be used to describe aid allocated with gender equality as a key objective.

1.2 Aim, objectives and scope

The aim of the thesis is to evaluate the effect of gender equality aid on the level of equality between men and women in sub-Saharan Africa. In order to achieve this aim, the thesis has the following objectives. Firstly, the thesis explores factors in aid organisations and in the aid delivery process that might have an effect on the effectiveness of foreign aid. Secondly, it evaluates whether there are disparities in the effect of gender equality aid on different indicators of gender equality. In order to achieve these aims and objectives, I use a range of econometrical approaches to analyse data on aid to countries in sub-Saharan Africa that specifically targets gender equality. This quantitative approach allows me to estimate the effect of gender equality aid on a range of indicators of gender equality. The reason for studying sub-Saharan Africa is twofold. Firstly, as previously mentioned, the region receives a large share of the foreign aid that targets gender inequality (OECD, 2019b). In 2017, gender equality aid to sub-Saharan Africa amounted to \$13 billion, which corresponded to 30% of all aid to the region (OECD, 2019b). Moreover, in the same year 30% of the total amount of gender equality aid was allocated to countries in sub-Saharan Africa (OECD, 2019b). Secondly, the level of gender equality in the region has stagnated over the past decade and sub-Saharan Africa is lagging behind other developing regions in terms of performance in the UNDP's Gender Inequality Index (UNDP, 2019). According to the World Bank (2019a), sub-Saharan Africa was in 2015 the region in world with the highest level of maternal mortality rate, lowest level of literacy for girls aged 15-24 and level of progression to secondary schools for girls. Data on gender equality aid is only available from 2002 and onwards, which limits the time period of analysis. The thesis will thus study the effect of aid aimed at gender equality between the years 2002 and 2016 on a range of measurements of gender equality, such as the ratio of female to male school enrolment rates and the share of seats in the

parliament occupied by women. A key issue in the literature on aid effectiveness is the lack of a theoretical foundation for the empirical studies (Paul, 2006). However, over the past decade the principal-agent theory has become increasingly used in order to address issues of asymmetric information in aid delivery processes. This thesis will therefore use the principal-agent theory as a framework for understanding the potential sources of ineffectiveness in aid delivery and to obtain an understanding of which explanatory variables are important to understand aid effectiveness. Though, it is important to note that the aim of the thesis is not to test the theory empirically.

The purpose of the study is thus to contribute to the understanding of the effect of gender equality aid in sub-Saharan Africa between 2002 and 2016. An enhanced understanding of the impact of gender equality aid is important for improving the effectiveness of foreign aid, although the intention of this thesis is not to provide a policy recommendation. Moreover, by studying the effect of aid on several different indicators of gender equality, the thesis will be able to clarify potential variations in the effect on various aspects of gender equality. The thesis complements the existing literature in several ways. Firstly, to the best of my knowledge, it is the first study to analyse the effect of aid with gender equality as a specific objective on a range of indicators of gender inequality in sub-Saharan Africa. Secondly, it extends the analysis of previous studies of aid and gender equality by using additional approaches to control for an endogenous relationship between aid and gender inequality. Finally, in contrast to previous studies on aid and gender equality, it acknowledges the statistical issue of a unit root in the data and discusses the steps necessary to control for this.

There are some potential limitations to the analysis. Firstly, due to the limited availability of data on aid with a gender equality focus, the analysis might not be able to fully observe the long-term effects of aid on gender equality. Still, the analysis can provide useful insights into which aspects of gender equality that might be affected within a relatively short time frame and which might require a longer perspective. Furthermore, section 2.2 will discuss gender inequality in sub-Saharan Africa over the past decades. It therefore provides an outline of the background of gender inequality in the region prior to when it became an explicit objective for foreign aid. Secondly, the allocation of aid might be endogenous to gender equality. Two commonly mentioned reasons for an endogenous relationship is reversed causality, i.e. that the level of gender inequality affects the amount of aid with a gender equality objective, or that donors allocate aid based on their own interests rather than on the interests of the recipients (Williamson, 2008). This study controls for this issue by using two different statistical approaches in addition to the baseline specifications: a generalised moments method (system-GMM) and an instrumental variable approach. The methods will be discussed in more detail in section 6.

1.3 Outline of the thesis

The thesis is structured in the following way. Section 2 provides a context for the study by discussing gender as a development issue and gender equality aid. In addition, it outlines the trends and developments in gender equality and aid in sub-Saharan Africa over the past decades. Section 3 discusses the principal-agent theory as an analytical framework for studies of aid effectiveness. Section 4 reviews the literature on aid effectiveness on the macro and micro level and examines issues in studying aid effectiveness. Sections 5 and 6 describe the methodology and data used in the thesis. Section 7 presents the results of the empirical analysis. Section 8 discusses the findings and section 9 concludes.

2 Background

2.1 Gender equality as a development issue

Over the past decades, gender equality has emerged as an important development objective (World Bank, 2011). Gender equality is of outmost importance in developing countries, first and foremost as a means to improve women's human rights but also as an economic objective, since increased gender equality has the potential to lead to higher productivity and economic growth (World Bank, 2011). Firstly, gender equality is commonly seen as a fundamental human right and the importance of achieving gender equality is emphasised the UN's Sustainable Development Goals (UN Women, 2016). Although more than 140 countries worldwide recognise the importance of gender equality in their constitutions, vast differences can be observed in the rights and opportunities for men and women (UN Women, 2016). Gender inequalities can be found in a wide range of areas across the world. For example, in 2014 women earned on average 22% less than men and a third of all women worldwide has experienced physical or sexual violence (UN Women, 2016). The challenges faced by women across the world has led to that gender equality has been a part of the development agenda since the 1950s, although the motives for including gender as a development issue has varied (Richey, 2000). One of the earliest approaches to gender and development was for women's welfare, and the approach was predominantly concerned with aid to family planning and reducing fertility rates (Richey, 2000). The focus on reducing fertility rates was motivated by the correlation between high fertility rates and gender inequality (Blackden, Canagarajah, Klasen & Lawson, 2006). This issue has been, and remains, a particularly pressing issue in sub-Saharan Africa due to the high fertility rate in the region and rapid population growth (UN, 2015). In subsequent approaches, the focus shifted from welfare to economic objectives, primarily on the integration of women into the overall development efforts in order to improve developing countries' economic performance (Richey, 2000). Over the last few decades, gender equality has been incorporated into international development through the so-called gender mainstreaming approach, which is defined as including concerns for the effect on women as well as men into policies and legislation in all areas of development (UN, 2002). In contrast to earlier approaches to gender equality and development, which predominantly focused on specific issues for women, gender mainstreaming emphasises the need to integrate the relations between men and women and the institutional structures that reinforces gender inequality into the debate (UN, 2002). Although gender mainstreaming has been criticised for its lack of distinction between the idea of gender equality and practical strategies to reach the goals and for a failure to address other inequalities such as racial or socioeconomic discrimination, it has prevailed as the key approach to gender equality in development practices (Walby, 2005; UN Women, 2014).

Secondly, in addition to being of immense importance in its own right, an additional frequently mentioned objective for increased gender equality is its economic dimension (UN, 2002; World Bank, 2012). There are several mechanisms through which gender inequality could hamper economic growth and productivity. For example, a gap in employment rates between men and women could lead to a sub-optimal stock and allocation of talent in the labour market which could have an adverse effect on productivity (Cuberes & Teigner, 2014). In addition, Cuberes and Teigner (2012) present a model where gender inequality limits women's access to managerial positions which in turn reduces both total productivity and per capita incomes in a society. Moreover, in a study of developing countries in South Asia, North Africa and the Middle East, Klasen and Lamanna (2009) conclude that gender inequalities in employment and education has resulted in lower economic growth rates compared to regions with higher levels of gender equality. Dollar and Gatti (1999) come to a similar conclusion and suggest that lower investment in girls' education and health relative to boys lead to lower per capita incomes and slower economic growth rates. It is important to note that the links between gender equality and economic growth might be sensitive to context and the type of economy. Conversely, some studies do instead indicate a positive relationship between gender inequality and economic growth later on the process of industrialisation (Seguino, 2000). Nevertheless, the bulk of the literature of gender inequality and economic performance in developing countries suggest that increased gender equality is beneficial for economic growth (Cuberes & Teigner, 2014). Moreover, in addition to the potential for improved gender equality to have a beneficial effect on economic growth, gender equality is also imperative in order to transform decision making processes and make them more representative of the general population (World Bank, 2011). Thus, gender equality can be argued to be of utmost importance for developing countries, not only in order to improve the lives for women and girls but also as a means for developing countries to increase productivity and incomes.

2.2 Foreign aid to gender equality

Based on the importance of gender equality, both from a humanitarian and an economic aspect, gender equality has increasingly become the focus for development aid (OECD, 2018). The OECD screens all aid allocated by countries in the Development Assistance Committee (DAC) based on whether gender equality is a principal, significant or not an objective of the allocated aid (OECD, 2018). For aid to be classified as targeting gender equality, the OECD (2019a) states that the aid has to be explicitly aimed at reducing "social, economic or political power inequalities between women and men, girls and boys and ensure that women benefit equally with men from the activity". Examples of activities that would be classified as targeting gender equality as a principal objective could be projects focused on reducing violence against women, increasing literacy among women and girls or introducing gender equality as an objective in national development policies (OECD, 2019a). Projects with gender equality as a significant objective could be activities that are not aimed specifically at women but incorporates women's needs into the project, for example

improving the access to drinking water for a rural community and ensuring that women can access the facility safely (OECD, 2019a). In 2017, the amount of aid with gender equality as a principal or significant objective amounted to \$45 billion, which corresponds to almost 25% of the total amount of bilateral aid from the OECD member states (OECD, 2019a). Most of the aid was allocated to projects with gender equality as significant objective (OECD, 2018). Figure 2.1 shows the amount of aid to developing countries with gender equality as a principal or significant objective between 2002 and 2017. As stated above, aid with gender equality as an objective has increased rapidly over the time period, although primarily for aid with gender equality as a significant objective.

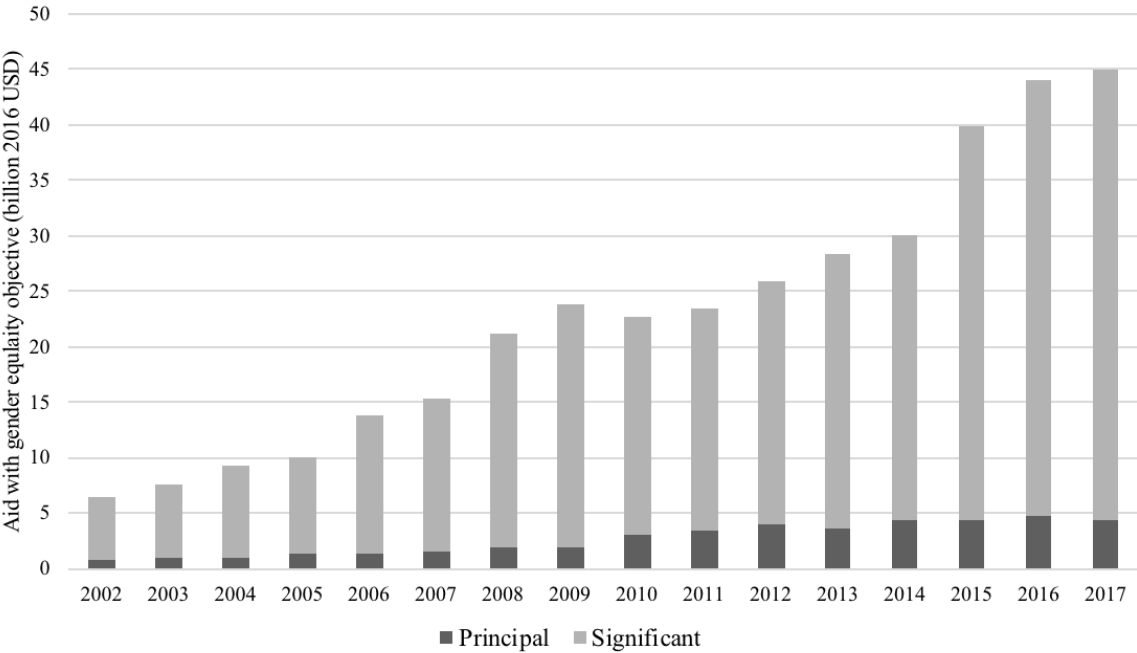


Figure 2.1 Gender equality aid to developing countries 2002 – 2017 (billion 2016 USD). Author’s graph based on data from OECD (2019b)

2.3 Gender equality and aid in sub-Saharan Africa

As stated in the Introduction, the region of analysis for this thesis is sub-Saharan Africa. This subsection will outline the trends in gender equality and aid with gender equality as an objective in the region over the past decades. Figure 2.2 shows trends in the UNDP’s Gender Inequality Index (GII) between 1995 and 2017 for regions receiving bilateral aid from the OECD DAC. The index is constructed based on several indicators of gender inequality reflecting women’s status in the labour market and women’s health and empowerment (UNDP, 2018b). A higher score in the index indicates a higher level of inequality between men and women in the society. The graph indicates that although the Middle East, Northern

Africa and Oceanian regions had levels of gender inequality that was similar to Sub-Saharan Africa in the mid-1990s, these regions have experienced drastic falls in the score in the GII. On the other hand, it is evident that after a period of improvement in the 1990s and early 2000s, the level of gender inequality as measured by the GII in sub-Saharan Africa has subsequently stagnated at a high level.

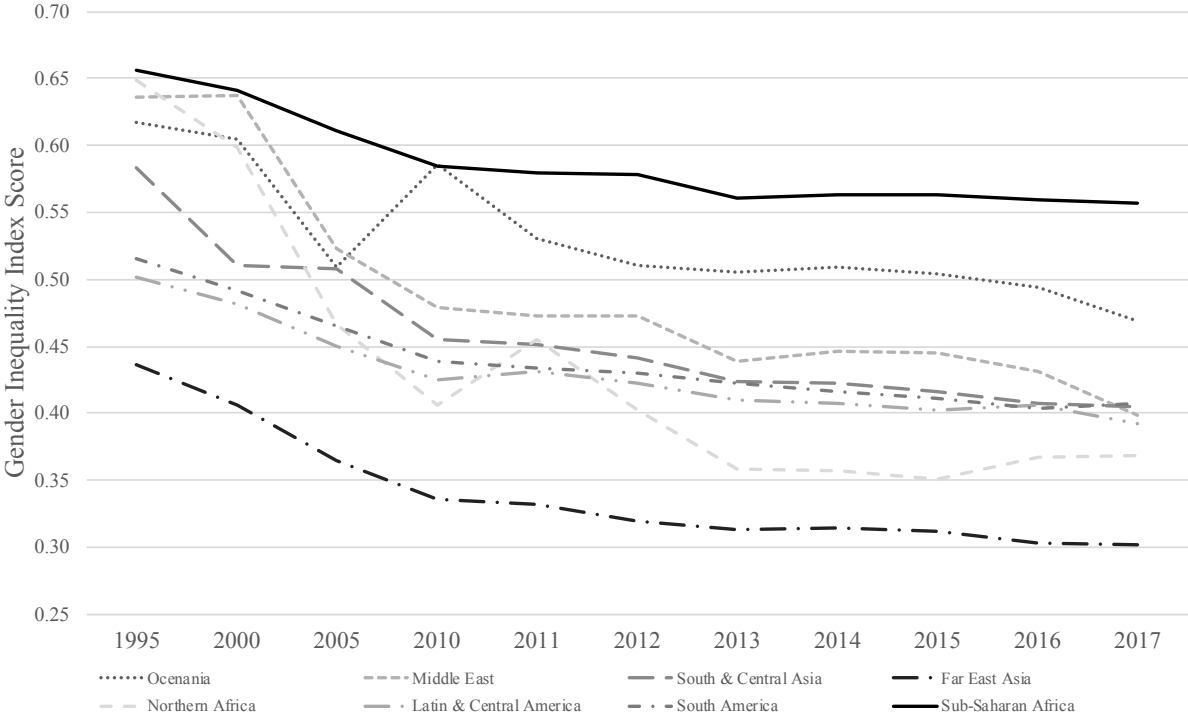


Figure 2.2 Gender Inequality Index Score. Author’s graph based on data from UNDP (2018a)

The OECD’s (2014) Social Institutions and Gender Index (SIGI) provide a similar picture of the situation in sub-Saharan Africa. Although there have been improvements, more than half of the countries in the region are still found to have a high or very high level of gender inequality (OECD, 2014). Sub-Saharan Africa is also the worst performer globally in terms of securing women’s access to resources and assets and freedom of physical movement (OECD, 2014). However, it is important to note that there are vast intra-regional differences in gender equality. For example, whereas the number of females holding seats in the parliament in Rwanda places the country among the top performers worldwide, Swaziland is at the very bottom in the world in terms of number of women’s political participation (OECD, 2014). Moreover, there are also large variances within countries, where women in the lowest income quintiles are more adversely affected by gender inequality (World Bank, 2011).

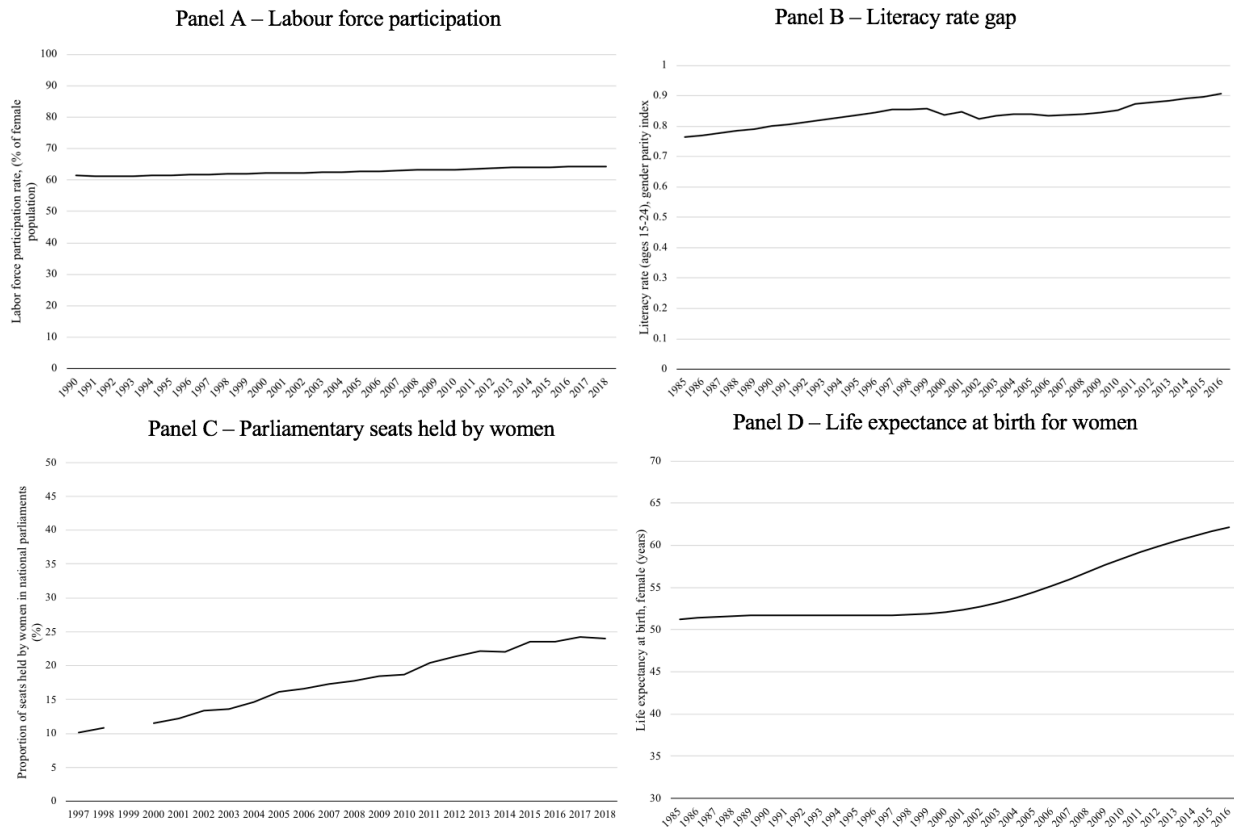


Figure 2.3 Gender equality indicators for sub-Saharan Africa. Author's graphs based on data from the World Bank (2019)

As previously mentioned, the Gender Inequality Index in figure 2.2 is composed by several different indicators. Although it might appear as if gender inequality in sub-Saharan Africa has stagnated at a high level from the mid-2000s and onwards, there might be trends in the individual indicators that outweigh each other. Figure 2.3 (panel A-D) shows the trends in sub-Saharan Africa in four different frequently used indicators of gender inequality (see for example Dollar & Gatti, 1999 and Pickbourn & Ndikumana, 2016): life expectancy at birth for women, female participation in the labour market, the ratio of literate girls to boys between the ages of 15 to 24 and the share of seats in the national parliament held by women. The disaggregated indicators from the World Bank (2019) suggest that there have been improvements in some areas of gender equality in sub-Saharan Africa, although they have been fairly moderate. Panel A shows that between 1990 and 2018, share of women participating in the labour market (both the formal and informal) was fairly stable and increased from just above 60% of the female population to around 64%. Panel B suggests that the literacy rate gap between boys and girls diminished between 1985 and 2016. In 1985, the ratio of girls to boys who were able to read and write a short sentence was below 0.8. In 2016, the ratio had increased to above 0.9. The number of seats in the national seats occupied by women more than doubled between 1997 and 2018. However, this increase was from a very low level and in 2018 on average less than 25% of parliamentarians in sub-Saharan Africa were female (see panel C). Finally, panel D indicates that the average life expectancy at birth for women was stagnant throughout the 1980s and 1990s but increased from 52 years in 2000

to 62 years in 2016. The graphs imply that there is a discrepancy between the stagnating performance on the aggregate level and the moderate improvements in specific indicators of gender equality. This finding might suggest that there are important differences between performance in specific aspects of gender equality, as well as potential intra-regional differences within sub-Saharan Africa. This clearly indicates a need to study a range of specific measures of gender inequality, especially since it is common that a country has made advancements in some areas of gender equality, whilst lagging behind in others (Dollar & Gatti, 1999).

Simultaneously with the modest improvements in gender equality improvements in sub-Saharan Africa, aid to gender equality projects in region rose sharply (see figure 2.4). Figure 2.4 shows the total amount of gender equality aid, thus both aid with gender equality as the principal objective and as a significant objective. In 2017, the amount of aid to gender equality projects in sub-Saharan Africa amounted to over 13 billion dollars, almost twice as much as the aid allocated to gender equality projects in South and Central Asia, the region receiving the second largest amount of aid to gender equality. In addition, in 2015-2016 sub-Saharan Africa was also the main recipient of bilateral foreign aid with gender equality as its principal objective (OECD, 2018).

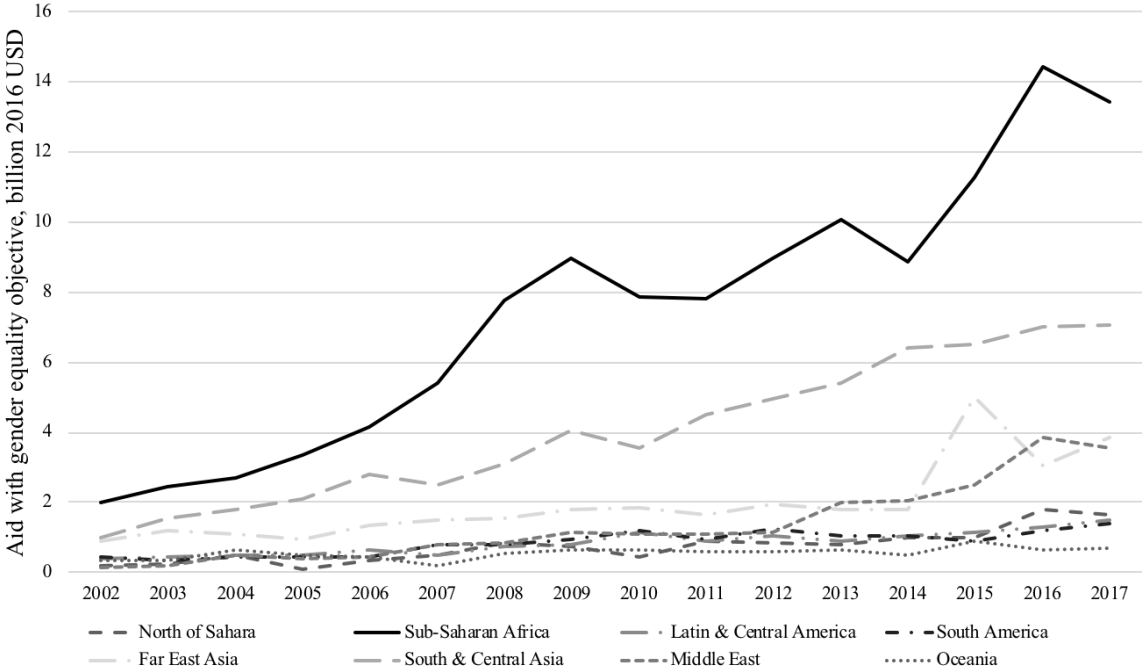


Figure 2.4 Aid to gender equality projects (billion 2016 USD). Author’s graph based on data from OECD (2019b)

According to the OECD (2018), 7 out of the 10 countries receiving the largest amounts of bilateral aid with gender equality as the principal objective are located in the region. In addition, gender equality aid as a share of the total amount of bilateral aid to sub-Saharan Africa increased from a level below 10% in 2002 to accounting for almost 30% of all aid to the region in 2017 (see figure 2.5).

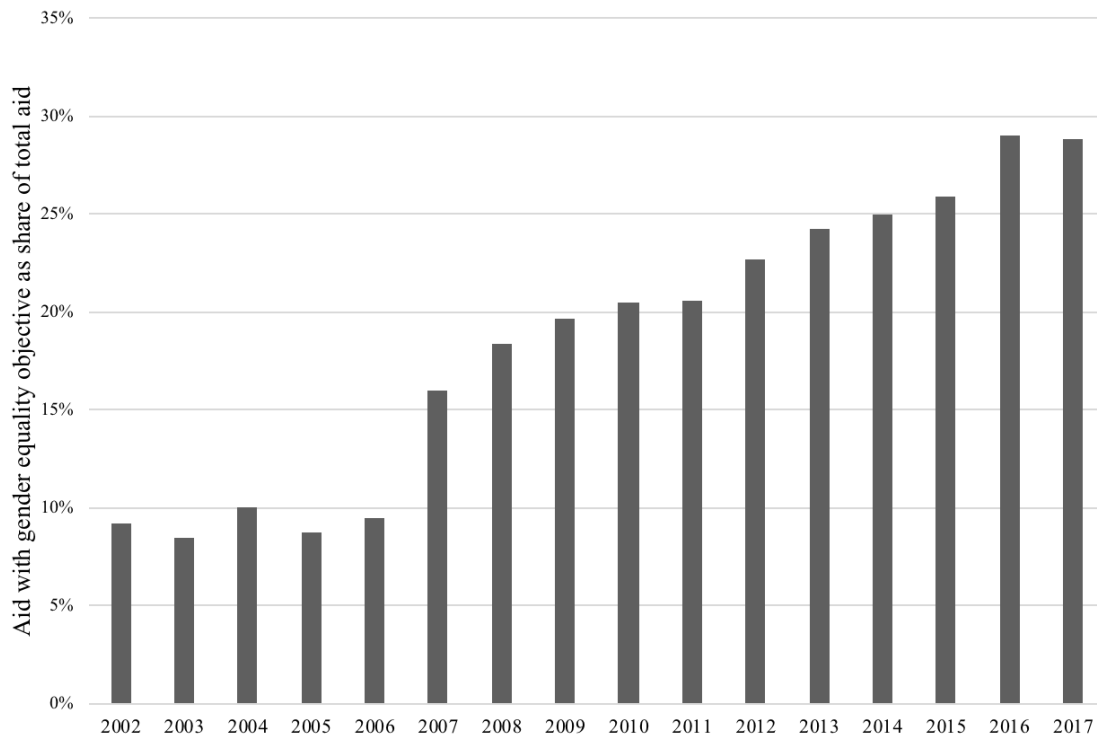


Figure 2.5 Gender equality aid as share of total aid to sub-Saharan Africa (2002 – 2017). Author’s graph based on data from OECD (2019b)

The evidence outlined in this section implies that there has been a simultaneous increase in foreign aid to gender equality projects in sub-Saharan Africa and lack of significant improvements in aggregate measurements of gender equality on the regional level. Nevertheless, measuring gender equality is complicated and faces a variety of conceptual issues as well as measurement problems (Klasen, 2004). As an example, absolute gender equality might not always be the intended or desired outcome due to for example biological reasons, which affect life expectancy and nutritional needs (Klasen, 2004). Furthermore, several aspects of gender equality, such as female empowerment, are notoriously difficult to conceptualise (Moser, 2007). Attempts to study gender equality therefore require a careful consideration of the indicators used and of the interpretation of changes in the indicators (Moser, 2007). This study will thus use a range of indicators in order to capture the effect of aid on gender equality, which will be discussed in greater detail in section 6.2. The persistent level of gender inequality and large amounts of aid aimed at gender equality flowing into sub-Saharan Africa indicates that the region is suitable for studying the relationship between aid to gender equality and the observed outcomes. Nevertheless, one could argue that the high level of gender inequality and large amounts of aid might indicate that countries with high level of gender inequality receives larger amounts of aid with gender equality as an objective and thus cause an endogenous relationship between the variables. The methodological steps taken to mitigate this issue will be further elaborated on in section 5. Regardless, the situation outlined above provides a substantial foundation for studying the effect of aid to gender equality projects in the context of sub-Saharan Africa.

3 Theoretical Framework

3.1 The structure of aid organisations

In order to understand the mechanisms of aid delivery and efficiency, it is important to comprehend the actors involved in foreign aid. Figure 4.1 shows a simplistic model of the relationship between the various actors in foreign aid implementation. The source for the revenue is commonly taxes in the donor countries, which is channelled to the official aid organisations in the donor country (Kharas, 2007). The intermediate actor (the contractor) could for example be multilateral organisations, non-governmental organisations and private consultancies (Murrell, 2002). In turn, the contractor undertakes the task together with the recipient agent, for example the government in a developing country (Kharas, 2007). The end users in the chain is the intended beneficiaries in the recipient country (Kharas, 2007). With a growing number of donors, contractors and recipients, the aid delivery process becomes increasingly complex (Kharas, 2007). This intricate structure of the governance of foreign aid might cause several issues that compromise the efficiency of aid, such as a lack of predictability surrounding delivery times, coordination problems among aid agencies and donors and fragmentation of aid in the recipient countries (Deutscher & Fyson, 2008).

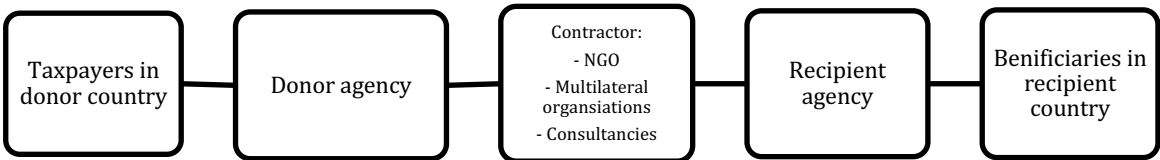


Figure 3.1 A framework for aid delivery. Author’s graph, adapted from Murrell (2002) and Kharas (2007)

Moreover, aid organisations face different organisational issues compared to for example private firms, which might have implications for the efficiency of aid. Firstly, aid organisations primarily work for the benefit of people who live outside of the constituency from where their revenues are collected (Martens, 2002; Seabright, 2002). The aid donors are thus both geographically and politically separated from the beneficiaries of the aid (Martens, 2002; Seabright, 2002). This separation complicates the evaluation process and forces the aid agency to rely on various performance indicators, which frequently vary between different suppliers of aid, in order to obtain an understanding of the beneficiaries’ opinions of the aid delivery process (Seabright, 2002). Martens (2002) label this structure as a “broken

information feedback loop". As a consequence, information becomes costlier and the benefits of the available information decline (Martens, 2002). Therefore, Martens (2002) argues that the decision process is dominated by the agencies with access to less costly information, such as consultancies, and that this skewed power structure in the decisions making process exacerbates incentive biases in aid delivery.

Secondly, aid organisations frequently have multiple objectives as well as multiple principals (Martens, 2002). Whereas a private firm's main objective is to generate a profit, the objectives of an aid organisation might be highly diverse and may for example vary from infrastructural improvements to financing of small-scale businesses (Martens, 2002). Furthermore, compared to a private firm where there might be several principals sharing the same objective (making a profit), the principals in official aid agencies (such as politicians and parliamentarians) frequently have differing objectives (Martens, 2002). Martens (2002) suggests several implications of the multiple principals and objectives on aid performance. For example, he argues that the multiplicity of objectives problematizes the use of performance-based salaries, which could aggravate already weak performance incentives in the public sector. Furthermore, he proposes that multiple principals could cause a bias in public organisations where the principals aim to be re-elected to their position. In order to do so, it is in their interest to maintain control over the project and to implement complex bureaucratic procedures in order to mitigate the risks of the project and to reduce the exposure to criticism (Martens, 2002). These complicated structures might have a significant impact on the potential for aid organisations to achieve their objectives (Martens, 2002). The following subsection will further discuss how the principal-agent theory might be able to explain the interactions between actors in foreign aid and how it might affect the effectiveness of foreign aid.

3.2 Principal-agent theory and foreign aid

A key issue for the literature on the effectiveness of aid has been a lack of economic theory underpinning the empirical findings (Easterly, 2003; Paul, 2006). However, the principal-agent theory has increasingly been applied in the aid literature in order to explain the potential constraints of aid delivery (Paul, 2006). In its most basic form, the principal-agent theory explains the relationship between a principal (for example an employer) and an agent (for example a worker). As an example, when the employer (principal) hires the worker (agent), there is an aspect of asymmetric information due to the employer's inability to fully observe the worker's effort since a part of the worker's observed output might be due to external factors (Bourguignon & Sundberg, 2007). When applied to foreign aid, the principal-agent theory can provide an explanation of the relationship between donors and recipients and for example clarify why the donor might be unable to monitor the actual effort of the recipient to realise reforms (Bourguignon & Sundberg, 2007). Paul (2006) suggests that the principal-agent theory might be particularly applicable to developing countries, since these often are prone to have a significant amount of information asymmetries. There are multiple adaptations

of the principal-agent theory to the process delivery of foreign aid. The following models are examples of how principal-agent theory might be applied to various aspects of foreign aid and should not be considered a complete review of the available theoretical literature.

Azam and Laffont (2003) develop a simplistic model for aid delivery between the rich North and the poor South. In this case, the aid donors in the North are the principals and the receiving governments in the South are the agents (Azam & Laffont, 2003). The donors in the North are assumed to be averse to poverty and obtain higher utility from poverty reduction in the South (Azam & Laffont, 2003). The Azam and Laffont (2003) model further assumes that the government in the South (the agent) has a preference towards helping particular groups of the poor, and the nature of the preference is unknown the donor in the North. Thus, the authors suggest that there is asymmetric information in the donor-agent relationship which affects the effectiveness of the aid. When the level of favouritism is unknown to the donor, they are likely to extract information rents from governments that in reality have low levels of favouritism (Azam & Laffont, 2003). Azam and Laffont (2003) suggest that if the preferences of the recipient government can be revealed, the donor is able to reduce the rents extracted from more equitable governments. Moreover, by introducing conditionality of the aid the authors propose that it is possible to incentivise governments with a previously high level of favouritism to increase their efforts to increase equity.

Moreover, Murrell (2002) proposes a model based on the principal-agent theory to explain the interactions between donors, contractors and recipients of foreign aid. Figure 3.2 is an extension of figure 3.1 and outlines the relationships between the various actors involved in foreign aid. The donor and recipient principals can be interpreted as the superiors to the official aid organisations (the donor and recipient agents) in the bureaucratic hierarchy. The relationship between the principal and agent is characterised by a principal-agent relationship in both the donor and recipient country (Murrell, 2002).

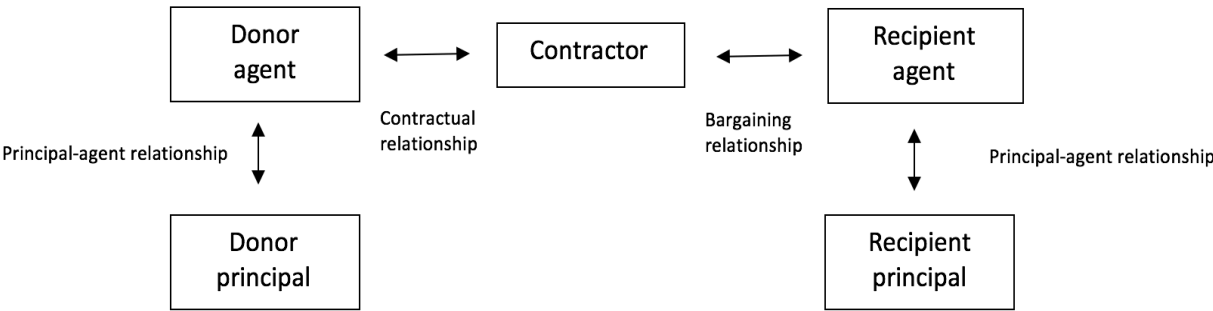


Figure 3.2 Relationships between aid actors. Author’s graph, adapted from Murrell (2002)

The emphasis of the model is on the role of the contractor and in particular the effects of the contractor’s flexibility in the relationships with the donor and recipient agents. This flexibility stems from the asymmetric information between the donor agent and the contractor regarding the implementation of the project, which the contractor can use to its advantage (Murrell,

2002). Furthermore, the nature of the relationship between the contractor and the agent in the recipient agent has a central role in the model and is assumed to have a large impact on the outcome of the aid project (Murrell, 2002). Murrell (2002) draws several conclusions from the model that have implications for the effectiveness of aid. Firstly, he argues that the potential effectiveness of an aid project is primarily based on the division of control of the project across the actors. Secondly, the nature of the contractor, e.g. whether it is a profit-maximising consultancy or a non-profit organisation, has an impact on the outcome (Murrell, 2002). Finally, it is important to take the past relationship between the various actors into account in order to understand the outcomes of aid projects (Murrell, 2002).

The aim of this thesis is not to empirically test the models outlined above. Rather, the models based on the principal-agent theory should be regarded as frameworks for understanding the complexity of the interactions between stakeholders in foreign aid processes. Furthermore, it is important to note that the principal-agent theory for development aid delivery is not specifically aimed at the impact of aid to gender equality projects. Nevertheless, the principal-agent theory can provide a useful analytical framework for understanding the potential issues of implanting aid projects aimed at for example gender equality, and the reasons for why the outcome might not be the expected one.

4 Literature Review

As discussed in the previous section, there are several ways in which the structure of aid organisations and the relationships between various agencies involved in aid delivery might compromise the efficiency of aid. To understand the context for the analysis of the relationship between aid to gender equality projects and the observed level of gender inequality, one should take into account the scholarly debate on aid efficiency. There is a large and growing literature on the potential for foreign aid to achieve its intended outcomes, and no clear consensus. The literature is very diverse but can broadly be divided into studies of macroeconomic outcomes such as GDP growth rates and microeconomic studies analysing the relationship between foreign aid and for example educational attainment. Although the empirical analysis in this thesis is not directly related to the effect of aid on economic growth, it is worthwhile to briefly explore this important branch of the literature in order to comprehend the complicated debate on the effectiveness of foreign aid. Given the size of the literature, the following subsections should not be considered a comprehensive review of the literature but rather a broad overview of the topic and of key studies of the impact of aid on the macro and micro level. A first key issue is the definition of aid effectiveness. The literature review will discuss aid effectiveness in the sense of the ability of foreign aid to achieve its intended objectives as well as how the findings might be related to the principal-agent theory. Following this brief overview of the scholarly literature, the subsequent subsection will consider issues in evaluating aid effectiveness and how aid efficiency is measured.

4.1 Macroeconomic studies

There is a large and highly ambiguous literature on the impact of foreign aid on macroeconomic variables such as GDP, savings and investment (Hansen & Tarp, 2000). Whereas early papers in the decades following the emergence of the aid literature in the 1950s emphasised the link between aid and economic performance via its effect on savings and investment, more recent studies predominantly focus on the effect of aid on growth in GDP (Hansen & Tarp, 2000). In a survey of the literature on the macroeconomic impact from the 1950s to the late 1990s, Hansen and Tarp (2000) conclude that a majority of the studies support the hypothesis that foreign aid is beneficial to macroeconomic performance in developing countries. Regardless of the authors' firm opinion on the beneficial effect of aid on growth, Hansen and Tarp's (2000) conclusions have not been unchallenged. In one of the most influential papers in the literature on aid and growth, Burnside and Dollar (2000) argue that aid does lead to higher GDP growth rates, but only in the presence of "good" economic

policies in the recipient country. Although Burnside and Dollar's (2000) findings have had a major impact on aid policy (Easterly, 2003), the findings have been heavily contested. For example, it has been argued that the results are sensitive to sample selection and time period and that the findings thus cannot be interpreted as evidence of a positive impact of aid on economic growth (Lensink & White, 2000; Easterly, 2003). In addition, Easterly (2003) shows that the findings rely on a series of specific assumptions regarding the key variables in the analysis. For example, whereas Burnside and Dollar (2000) only use the component of foreign aid that consists of grants in their analysis, Easterly (2003) argues that it is equally plausible to utilise other measurements of aid, but that the findings of Burnside and Dollar (2000) do not hold when using an alternative definition of aid. Lensink and White (2000) propose an additional critique against the "good policy" argument by suggesting that the definition of "good" policies is highly subjective. Furthermore, a potential issue with the methodology of Burnside of Dollar (2000) is the use of four-year long periods, which could cause the results to be influenced by cyclical factors (Rajan & Subramanian, 2008). The potentially ambiguous relationship between aid and growth is further corroborated by other influential papers. In a study including both cross-sectional and panel analysis, Rajan and Subramanian (2008) conclude that there is no systematic impact of foreign aid on economic growth. The authors suggest that one reason for the lack of a consistent relationship between aid and economic growth might be that the effect of aid is cancelled out by "noise" in the data used cross-country analyses. This issue will be further discussed in section 4.3. Moreover, some authors are even harsher in their critique of aid and claim that aid is not only ineffective for inducing higher growth rates but might also be directly harmful for the economies of developing countries by creating a dependency on aid or be a hindrance for institutional improvement in developing countries (Moss, Petterson & van de Walle, 2006; Moyo, 2009).

In the macroeconomic literature on aid effectiveness, the principal-agent theory is primarily used to analyse the conditionality of aid allocations (Killick, 1997; Nissanke, 2008). Burnside and Dollar's (2000) policy suggestions imply that there should be an element of selectivity in the donors' decisions regarding which recipients that aid should be allocated to. As they argue that aid is effective only under the influence of certain policy environments, the authors further suggest that aid should thus be conditional to policy reform (Burnside & Dollar, 2000; Nissanke, 2008). Such conditionality in aid delivery can be thus be used to promote the donors' objectives, which has had a significant impact on the nature of donor-recipient relationship (Nissanke, 2008). As it is the donors who decide on the conditions of the allocated aid, they remain in charge of the aid project which reduces the sense of ownership in of the project in the recipient country (Nissanke, 2008). Conditionality of aid increased in popularity among donors in the 1980s (Killick, 1997), and the principal-agent theory can thus be used to explain the relationships between donors and recipients in the subsequent decades. Easterly (2003) questions the potential of conditionality to achieve its intended reforms, since the selectivity might be based both on existing polices and the potential for a country to implement new economic policies. As a consequence, he argues that countries that have performed well will selectively receive foreign aid, however, as will countries that do not have the perceived "good" institutions and that have exhibited weak past performance. Easterly (2003) concludes his argument by stating that "the imposition of conditions is no

more than a wistful hope, rather than a policy with consequences”. On the other hand, Paul (2006) reemphasises the connection between the principal-agent theory and conditionality, and further suggests that conditionality might be a suitable tool to overcome issues such as conflicting interests in the relationship between donors and recipients.

It is evident from this brief review of the literature of the relationship between aid and economic growth that the opinions on the effectiveness are highly diverse and range from regarding aid as being beneficial to economic performance in developing countries to considering it to be ineffective or having adverse effects on economic development. The polarisation in the aid debate could partly be due to an influence of ideology on the opinions of aid, as Guljrani (2011) argues. Guljrani (2011) suggests that the participants in the aid debate broadly can be divided into “aid radicals”, who predominantly are opposed to aid as a means of achieving development objectives, and “aid reformers”, who argue that aid has the potential to be beneficial for developing countries but that aid delivery processes need to be fundamentally reformed. According to Guljrani (2011), these underlying beliefs have a strong impact on the perception of the effectiveness of aid. One could therefore argue that the vast diversity in the findings in the literature on aid effectiveness is a result of a combination of varying samples and definitions as well as the scholars’ ideologies.

4.2 Microeconomic studies

In addition to the literature on foreign aid and economic growth, the focus is increasingly shifting from economic outcomes to human development (Williamson, 2008). Consequently, there is a growing branch of the aid literature emphasising the impact of aid on microeconomic outcomes such as education and health in developing countries. Although studies in the late 20th century coined the term “micro-macro paradox” for foreign aid and argued that the evidence for the effectiveness of aid on micro outcomes were stronger than for the effect on economic growth, recent studies find the relationship to be more ambiguous (Mosley, 1986; Williamson, 2008). A large part of the literature is devoted to the impact of aid on health in developing countries. Whereas some studies find a lack of correlation between foreign aid and improvement in health outcomes in developing countries (Williamson, 2008), other studies conclude that foreign aid is beneficial both for reducing infant and adult mortality, although the effect is small (Mishra & Newhouse, 2009; Afridi & Ventelou, 2013). One explanation for the stark differences in results could be the variation in data used by the studies. Whereas Williamson (2008) uses data for more than 200 countries, even for countries where health aid is reported to be zero, Afridi and Ventelou (2013) and Mishra and Newhouse (2009) use a smaller sample of countries. In addition, Afridi and Ventelou (2013) control for heterogeneity across donors and recipients of foreign aid by differentiating between different types of aid programs. Furthermore, in terms of the effect of aid on education, Riddell and Nino-Zarazúa (2016) survey the literature and argue that aid has had a positive impact on education in the developing world and has been especially successful in increasing enrolment in primary education. Notwithstanding the positive findings, the

authors suggest that the outcomes of educational aid are below its full potential, most notably regarding the quality of education.

Although the literature on aid and human development is growing, there is a striking lack of studies analysing the relationship between foreign aid and gender equality. In one of the few papers with gender equality as its main focus, Pickbourn and Ndikumana (2016) study the impact of total foreign aid and aid allocated to the health and education sectors on various measurements of gender equality. Although the authors conclude that aid to the health and education sectors does have a beneficial impact on gender inequality measures such as maternal mortality rate (a proxy for women's access to healthcare) and the literacy gap between girls and boys, the effect of total aid to a country on gender equality was contingent on the country's initial level of income and human development. Although this study has made a landmark contribution to the literature on aid and gender equality by empirically assessing the effect of foreign aid on gender equality in developing countries, the main limitation of the authors' approach is that they study the effect of all aid allocated to health and education, rather than aid specifically aimed at enhancing gender equality. In a study of the Middle East and Northern Africa, Baliaoune-Lutz (2016) analyses the impact of aid to organisations advocating for gender equality on empowerment of women in the region. The author concludes that aid to such organisation does result in an increase in women's political participation, although the results are offset in case the country is ruled by an autocratic regime.

The principal-agent theory is not explicitly referred to in the above reviewed literature. An exception is Afridi and Ventelou (2013), whom to some extent incorporate the principal-agent theory into their analysis by allowing for heterogeneity among recipients and donors and by acknowledging that the type of aid program has a potential impact on the outcome. Furthermore, Pickbourn and Ndikumana (2016) suggest that the effect of aid on gender equality is dependent on initial conditions, which can be argued to be indirectly related to the principal-agent theory and conditionality of aid. The authors' findings imply that aid is more effective in countries that have previously performed well in human development, which is clearly connected to Dollar and Burnside's (2000) argument that countries with "good" policies experience a positive correlation between aid and growth. Although Pickbourn and Ndikumana (2016) do not discuss whether foreign aid should be selectively allocated as Burnside and Dollar (2000) suggest, it could be argued that there are several similarities in the findings of the two studies. Moreover, one reason for the lack of focus on the relationship between donors and recipients could be the difficulties in empirically testing the principal-agent theory, predominantly due to a lack of available data (Martens, 2002). Nevertheless, the lack of references to the impact of the relationship between donors and recipients in the microeconomic literature on aid effectiveness indicates a need for future research to incorporate the principal-agent theory into the analysis to a larger extent.

To conclude, studies of the microeconomic impacts of aid are to a larger extent finding a positive correlation between aid and human development compared to macroeconomic aid literature, although some authors suggest that the observed results fall short of the potential

outcomes. A crucial issue in the literature on gender equality and aid is the lack of focus on the outcome of aid specifically allocated to gender equality projects. Thus, this thesis will be able to contribute to the literature by specifically studying the effect of aid aimed at enhancing gender equality on a range of indicators of gender equality.

4.3 Issues in studying aid efficiency

The above review of the literature on aid efficiency on macro and micro outcomes has revealed an ambiguous relationship between aid and various outcome variables. In the light of these indefinite findings, it is crucial to discuss how efficiency in aid is studied and the potential limitations of the literature on aid effectiveness. Bourguignon and Sundberg (2007) argue that it should not be a surprise that there are large variations in the findings of empirical studies of the efficiency of aid, considering the vast differences in objectives, motives and delivery processes among aid projects. Furthermore, when various types of foreign aid are merged into one aggregate variable, the difference between the varieties of aid are to a large extent ignored (Bourguignon & Sundberg, 2007). For example, it is unlikely that foreign aid aimed at disaster relief or aid allocated on military or political grounds will have a profound effect on development outcomes (Bourguignon & Sundberg, 2007). Moreover, studies of aid efficiency might also be limited by the multiplicity of objectives of foreign aid, potential reverse causality between foreign aid and economic growth and the failure to account for country-specific contexts (Bourguignon & Leipziger, 2006). Due to these issues, Bourguignon and Sundberg (2007) argue that empirical cross-country studies of aid might not be able to reveal the true impact of aid on development outcomes. Moreover, it is crucial to clarify the meaning of “aid effectiveness”. A common interpretation is the extent to which aid is able to achieve the intended outcomes or objectives (Kindornay & Morton, 2009). However, Carlsson, Somolekae and van de Walle (1997) argue that a more correct explanation of the term requires an analysis of what the outcome would have been without the impact of the foreign aid. Thus, the authors suggest that aid effectiveness cannot be determined by simply studying the relationship between foreign aid and outcome variables, since this fails to account for changes that would occurred in the absence of foreign aid. Despite the above criticism of studies of the efficiency of foreign aid, the empirical part of this thesis will attempt to evaluate the relationship between foreign aid and measurements of gender equality. Bourguignon and Sundberg’s (2007) key concerns, namely the multiplicity of objectives and lack of differentiation between various types of aid, are acknowledged by the use of data on aid allocated specifically to gender equality projects and by analysing the impact on a range of different indicators of gender equality. The methodology and data will be outlined in greater detail in section 5 and 6, but one could argue that the use of this methodology might lead to an improvement in the accuracy of the results.

5 Methodology

5.1 Baseline Specifications

The methodology in this thesis follows the approach used in Pickbourn and Ndikumana (2016). The reason for this is twofold. Firstly, Pickbourn and Ndikumana (2016) is one of the few papers explicitly analysing the effect of gender equality aid. By following the same methodology, the comparability between the two studies is increased. Secondly, Pickbourn and Ndikumana's (2016) approach includes controls for the quality of governance. Controlling for the quality of governance could be argued to be one way to capture the role of government and asymmetric information and is therefore of outmost importance. This will be discussed in more detail in section 6. The baseline specification is shown in equation 1.

Equation 1.

$$Equality_{it} = \beta_0 + \beta_1 GenderAid_{it} + \beta_1 X_{it} + \varepsilon_{it}$$

Where $Equality_{it}$ is one of the four measurements of gender equality (the ratio of female to male life expectancy, labour force participation and the number of female parliamentarians and the ration of female to male school enrolment rates) in country i in year t , $GenderAid_{it}$ is gender equality aid as a share of total aid in country i in year t . X_{it} is a vector of control variables, including the share of the population with access to sanitation and drinking water, the country's score in the UNDP's Human Development Index, GDP per capita in PPP-adjusted international 2011 dollars, public expenditure on health and education and the ratio of dependants to the working age population and controls for the quality of governance. The choice of control variables is done accordingly to the original specification in Pickbourn and Ndikumana (2016) and will be discussed further in section 6.3.

In addition to the baseline OLS regression, an additional set of specifications are estimated. Firstly, a fixed effects model is used to control for unobservable time invariant country characteristics. A fixed effects model uses only variables that varies over time and excludes those that are constant (Wooldridge, 2016). Thus, unobservable factors that might have an effect on the level of gender inequality are eliminated. A drawback of the fixed effects method is the requirement that the sample is sufficiently large (Barro, 2012). In sample with a small number of time periods, such as the one used in this thesis, using fixed effects might be problematic as the fixed effects estimators tend to be biased downwards (Barro, 2012). A second issue is that the exclusion of time invariant variables affects the estimation of the independent variables more than other dependent variables (Barro, 2012).

In addition to the OLS and fixed effects estimations, Pickbourn and Ndikumana (2016) use a system generalised method-of-moments (system-GMM) approach to control for endogeneity. System-GMM is used for panel data estimations with endogenous independent variables, a dynamic dependent variable (i.e. a variable that is dependent on its own lagged values) and individually fixed effects (Roodman, 2009). Furthermore, the method is particularly suitable when there is a large number of individuals and a small number of time periods (Roodman, 2009). In this particular sample the number of years is smaller than the number of countries, which implies that the system-GMM is a suitable method. The system-GMM method estimates a set of equations and allows the instruments to vary across time periods (Baum, 2013). By doing so, it is able to exploit all available information and should, in theory, provide more efficient coefficients in a panel data context (Baum, 2013). However, the coefficients obtained from the system-GMM estimation should be interpreted with great care, since system-GMM is a complicated method and there is a risk that the estimates are invalid or difficult to interpret (Roodman, 2009).

Lastly, a Wooldridge test for autocorrelation in panel data rejects the null hypothesis that there is no first order autocorrelation for the specifications with labour force participation, female parliamentarians and the school enrolment ratio as the dependent variables. In order to control for the autocorrelation, the standard errors will be clustered and will thus be robust to autocorrelation and heteroscedasticity (Wooldridge, 2016).

5.2 Additional specifications

In addition to the methodology outlined above, this thesis will employ an additional set of specifications in order to obtain a more comprehensive analysis. Firstly, although Pickbourn and Ndikumana (2016) use the system-GMM approach to control for endogenous variables, the issues and causes of endogeneity in foreign aid allocations are only briefly mentioned in the paper. However, there are strong reasons to believe that the aid variable indeed is endogenous. A potential cause for endogeneity is reversed causality, i.e. that the dependent and independent variables influence each other (Williamson, 2008). Thus, one could argue that gender equality aid might be allocated to countries where gender inequality is a particularly pressing issue. Moreover, aid might be allocated based on the interests of the donors rather than on the needs of the recipients (Williamson, 2008). Studies have shown both vast heterogeneity in the behaviour of donors as well as a tendency to allocate aid based on self-interests (Berthélemy, 2006; Hoeffler & Outram, 2011). Therefore, in order to further address the issue of endogeneity and to mitigate the risk of relying on potentially invalid coefficients from the system-GMM estimations, I will extend Pickbourn and Ndikumana's (2016) analysis and use an instrumental variable approach to control for endogenous variables.

Instruments such as income and population have previously been used in the literature on aid and economic growth (Burnside & Dollar, 2000; Djankov, Montalvo & Reynol-Querol,

2008). However, in this particular case one could suspect that such instruments could be correlated with the level of gender equality or other aspects of human development which would invalidate them as instruments for this particular purpose (Williamson, 2008). Furthermore, one could argue that it is unlikely that the aforementioned instruments would be correlated with the underlying reasons for allocation of gender equality aid (Williamson, 2008). On the other hand, another frequently used instrument in the aid literature in lagged periods of aid (Boon, 1996; Williamson, 2008). In theory, two periods of lagged aid should be correlated with the relatively permanent factors that might have an impact on the allocation of aid, such as strategic or political reasons, as well as current levels of aid (Boone, 1996). Furthermore, lagged periods of aid should be uncorrelated with observed levels of human development, such as gender inequality which would make it a valid instrument (Boone, 1996; Williamson, 2008). Thus, in this thesis lagged aid will be used as an instrument for the aid variable.

Secondly, Pickbourn and Ndikumana (2016) do not discuss the implications of a time trend and might incorrectly ignore its existence. The aid data will be described in more detail in section 6, but there are strong reasons to believe that the data on aid and gender equality are subjects to a time trend. I will therefore use an additional specification where time dummies are included in order to control for a time trend. Thirdly, a Fisher unit root test of the key dependent variables fails to reject the null hypothesis that none of the panels include a unit root. Thus, there is evidence for the presence of a unit root in at least some of the panels. A potential approach to correct for the unit root would be to transform the variables to first differences (Wooldridge, 2016). By generating first-differences, the unit root is eliminated, and the series become an identically and independently distributed sequence (Wooldridge, 2016). Furthermore, differencing eliminates time trends and there is thus no need to include time dummies in the first difference analysis (Wooldridge, 2016). While this approach solves the statistical problem, it might not provide useful estimates for the purpose of this thesis. The aim of the study is to analyse the relationship between aid with gender equality as an objective and observed levels of gender inequality in sub-Saharan Africa. In a first difference analysis, the coefficients indicate the effect of changes in the explanatory variable on changes in the dependent variable (Wooldridge, 2016). Thus, the estimated coefficients reveal little information about the relationship between the variables of interest. Nevertheless, controlling for a unit root is important from a statistical viewpoint. Thus, I will perform an additional analysis using a first difference approach. By doing so, it will be possible to compare the results from the main specifications with the statistically more robust results from the first difference specifications. Lastly, the robustness of the results will be tested by using an alternative measurement of gender equality aid. The various ways of measuring aid will be further discussed in the subsequent section.

Thus, although the methodology of this thesis follows the one outlined in Pickbourn and Ndikumana (2016), this thesis extends the analysis in several ways. Firstly, it uses lagged aid as an instrumental variable in order to further control for endogenous variables. Secondly, time dummies are included to control for a time trend. Finally, an additional analysis is performed using a first difference approach in order to control for a unit root.

6 Data

6.1 Aid data

The panel data set is compiled from a variety of sources for the purpose of this study and covers 44 countries in sub-Saharan Africa between 2002 and 2016. A list of the countries and average values for the dependent and key independent variables for each country can be found in Appendix A.

The data on aid with gender equality is obtained from the OECD CRS data base (OECD, 2019b). The data base classifies aid allocated by OECD DAC countries based on whether gender equality is a principal, significant or not an objective for the aid (OECD, 2018). In this study, the total amount of aid allocated with a gender equality objective, i.e. both aid with gender as a principal and a significant objective, will be used in the analysis. The summary statistics for the variable on aid with a gender equality focus in table 6.1 show that there is large variation in the share of aid allocated to gender equality enhancing causes as a share of the recipient country's total amount of foreign aid. On average across the region and the time period, 16.6% of the total amount of foreign aid was allocated with gender equality as a principal or significant objective. Though, there are vast differences across countries. For some countries in the sample, such as Mali, Rwanda and South Sudan, gender equality aid amounted to on average close to a quarter of all aid allocated annually over the years 2002 to 2016 (see Appendix A). On the other hand, in other countries, the amount of gender equality aid was negligible and only accounted for 0.03% of the total amount of foreign aid. Figure 6.1 shows the distribution of aid with gender equality as an objective over the time period. There is vast variation within each year across the region, and the graph indicates positive, although a relatively weak, trend over time.

Table 6.1 Summary statistics. Data from OECD (2019b) and World Bank (2019a)

VARIABLES	(1) Obs.	(2) Mean	(3) Std. dev.	(4) Min	(5) Max
Gender aid/total aid	727	0.166	0.104	0.000256	0.477
Gender aid/GDP	705	0.0143	0.0183	3.79e-06	0.159
Parliament seats held by women (%)	688	17.47	11.22	0	63.80
Life expectancy at birth (female)	721	59.21	6.897	41.82	80.20
Life expectancy at birth (male)	721	56.01	6.104	39.52	71.19
Female labour force participation (% of working age population)	708	59.65	16.63	17.37	87.75
Female/male school enrolment ratio	434	0.903	0.117	0.537	1.086
Access to sanitation (% of population)	672	31.98	21.19	3.639	100
Human Development Index	684	0.480	0.104	0.263	0.793
GDP/cap (PPP, 2011 \$)	687	4,453	6,064	545.7	40,016
Public health expenditure/GDP	639	5.638	2.388	0.839	19.73
Public education expenditure/total pub. exp.	422	16.74	5.900	0.846	37.52
Age dependency ratio	716	84.24	14.31	41.28	111.8
Access to clean water (% of population)	672	59.47	17.57	17.02	99.87
Government effectiveness	721	-0.785	0.626	-2.446	1.049
Corruption	721	-0.647	0.621	-1.869	1.217
Accountability	721	-0.620	0.754	-2.226	0.986

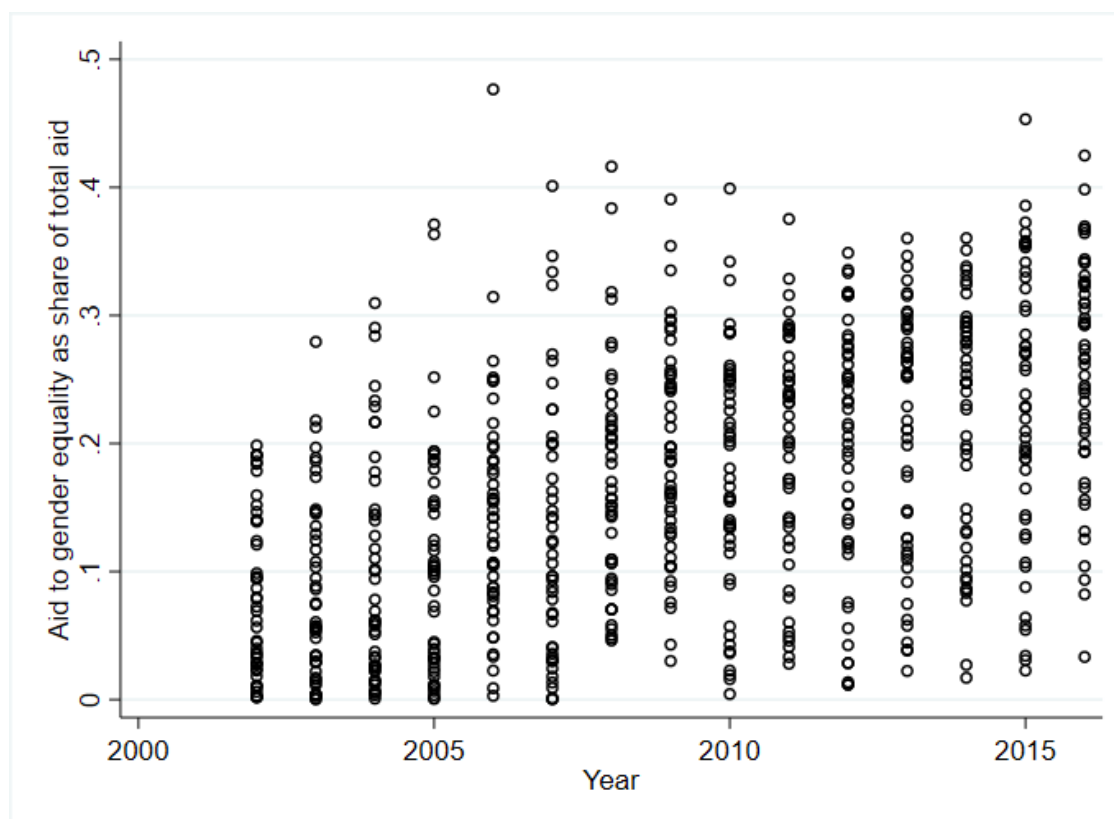


Figure 6.1 Distribution of aid to gender equality 2002 - 2016. Author's graph, data from OECD (2019b)

There are several limitations to the data. Firstly, the data only covers aid from the OECD DAC member states. Thus, it might not include all foreign allocated to gender equality purposes in the region, which has caused concerns regarding the completeness of the data base (Tierney, Nielson, Hawkins, Roberts, Findley, Powers, Parks, Wilson & Hicks, 2011). This issue might be mitigated by the fact that the OECD DAC member states include the majority of the donors of foreign aid and the data base is thus likely to be a comprehensive source (Pickbourn & Ndikumana, 2016). Secondly, the aid is screened by the donors themselves and is thus not verified by an external body. Despite detailed guidance from the OECD on which types of aid projects that qualifies for the different classifications (OECD, 2018), this could lead to discrepancies between the screening processes of different donors. Lastly, the data on aid is an aggregate of all aid with a gender equality focus allocated to a country, regardless of which sector the aid was allocated to. For example, some of the aid might be allocated to educational projects and other parts to infrastructural development. Although the OECD provides sectoral breakdowns of aid with a gender equality focus, the amounts of gender equality focused aid in the different sectors are relatively small and only amount to a minor share of overall bilateral aid. In addition, it might be difficult to plot sectors to the outcome variables. As an example, female labour force participation might be affected by improved access to education as well as better infrastructure. Thus, to be able to perform a meaningful analysis, I have decided to use the aggregate data. Moreover, the issue is mitigated by the fact that the aid with gender equality as a significant objective is allocated evenly across sectors (OECD, 2018).

Aid is commonly measured either as a share of total aid, as a share of GDP or in absolute values (Pickbourn & Ndikumana, 2016; Balamoune-Lutz, 2016 & OECD, 2011). In contrast to Pickbourn and Ndikumana's (2016) analysis, where total aid and aid to the education and health sectors are measured as a share of GDP, this thesis will use aid with gender equality as an objective as a share of total bilateral aid as the independent variable of interest. The reason for this is twofold. Firstly, there is less variation in the amount of gender equality aid as a share of GDP across countries and years compared to when gender equality aid is measured as a share of total aid. Little variation in the key independent variable could have compromised the statistical analysis. Secondly, the aim of the study is to evaluate the effectiveness of aid with a gender equality focus. It is therefore of interest to study the impact of changes in the share of total aid with a gender equality focus on gender inequality and thus suitable to use this measurement as the key independent variable. Nonetheless, I will use the measurement of aid as share of GDP as a check for robustness of the results in section 7.

6.2 Gender equality indicators

There are a range of indicators of gender equality and it is highly probable that a country has made advancements in some areas while is lagging behind in other, which creates a need to study various aspects of gender equality (Dollar & Gatti, 1999). This study will use the range of indicators outlined in Dollar and Gatti (1999) in order to evaluate the impact of aid with a gender equality focus on the observed level of gender equality. The four indicators are the number of seats occupied by women in the national parliament, the female to male life expectancy at birth, the share of the female population participating in the labour market and the female to male ratio of primary and secondary school enrolment. The data on the four dependent variables are obtained from the World Bank (2019a). Together the four dependent variables create a multifaceted understanding of gender inequality in sub-Saharan Africa as they indicate women's position in society in various aspects. Firstly, the share of female parliamentarians indicates women's ability to participate in the political life and can thus be seen as a proxy for women's empowerment (Kabeer, 2005). Table 6.1 indicates that the average percentage of seats in the national parliament occupied by women across the sample and time period is 17%.

Secondly, although women on average on a global level have a higher life expectancy than men, partly due to biological reasons, the difference is smaller in developing countries (Dollar & Gatti, 1999; Medalia & Chang, 2011). Table 6.1 does indeed show that the expected duration of life is on average approximately three years longer for women than for men in the sample of countries between 2002 and 2016. In addition, table A1 in Appendix A shows the average life expectancy for females and males in each country over the sample period. The data indicates that in all countries in the sample women live on average longer than men in all countries in the sample. However, higher gender equality should in theory lead to an increase in life expectancy for women due to for example greater educational attainment and improved reproductive health (Medalia & Chang, 2011). As a consequence, higher gender equality has been found to be associated with an increasing gap in life expectancy between men and women in developing countries (Medalia & Chang, 2011). This thesis will therefore use the ratio of female to male life expectancy at birth as an indicator of gender equality where a higher ratio indicates a higher level of gender equality.

Thirdly, female labour force participation is an indicator of women's access to paid employment. Fewer opportunities to obtain a paid job might lower women's status and bargaining power in the household (Duflo, 2012). Studies have shown that higher labour force participation leads to improved outcomes for women and the indicator thus proxies for women's status in the society (Duflo, 2012). It is sometimes suggested that gender disparities in labour force participation could be a result of a sexual division of labour, based on informed decisions regarding spouses' different comparative advantages in the labour market and in household activities (Becker, 1985). Klasen (2004) contests this claim and argues that females comparatively lower labour force participation primarily is a result of obstacles for women in accessing the labour market, although it is important to take into account that

sexual division of labour might partly explain females' labour force participation rates. The data on labour force participation used in this thesis includes both paid employment and self-employment and all sectors of the economy (ILO, 2019). Thus, the indicator includes both females in the formal and informal labour market and therefore provides an indication of the potential for women to earn an income, regardless of the type of work (ILO, 2019). The share of the female population participating in the labour market varies significantly in the sample, from a low of below 18% to a high of almost 88% (see table 6.1).

Lastly, a crucial aspect of gender equality is women's opportunities to obtain an education (Dollar & Gatti, 1999). The indicator used to capture differentials between men and women in educational attainment is the ratio of the enrolment rates for females to males in primary and secondary school. Table 5.2 indicates that women in sub-Saharan Africa are on average less likely to be enrolled in primary and secondary school compared to men. The average ratio across the countries in the sample and the time period is 0.9, which suggests that for every 10 boys enrolled in school, 9 girls are enrolled. The data though shows vast cross-country differences. Table A1 in Appendix A shows in some countries, such as Somalia, the ratio is as low as 0.5. On the other hand, a handful of countries have an average ratio above 1, which indicates that on average between 2002 and 2016 more girls than boys were enrolled in school.

6.3 Control variables

The control variables included in the analysis are based on the ones used in Pickbourn and Ndikumana (2016) and are intended to control for factors that might have an impact of gender equality, other than aid. The data for the control variables on GDP per capita in PPP adjusted 2011 international dollars, public expenditure on health as a share of GDP, public expenditure on education as a share of total government expenditure, the ratio of dependants aged 0-14 and above 65 to the population aged 15 – 64 and the share of the population with access to basic sanitation and drinking water facilitates are all obtained from the World Bank (2019a). The variable on the country's score in the human development index is obtained from the UNDP (2018a) and is included in order to control for the country's overall level of human development. The index is constructed from a range of indicators, covering the health, educational attainment and standard of living of the population (UNDP, 2018b). A higher score in the index indicate a higher level of human development. Countries with a score below 0.55 are classified as having a low level of human development, whereas countries with a score between 0.55 and 0.699 have a medium level of human development (UNDP, 2018b). A score above 0.7 indicates high or very high human development (UNDP, 2018b). The theoretical background in section 3 highlights the role of asymmetric information and of the governance in the recipient country, such as in the Azam and Laffont (2003) model. To control for these factors, I have included three indicators of the quality of governance in the recipient country. All three indicators are obtained from the World Governance Indicators database (World Bank, 2019b). Summary statistics for the variables can be found in table 6.1.

Firstly, government effectiveness indicates the quality of governance and of the civil service and the credibility of the government's formulation and implementation of policy (World Bank, 2019b). Corruption reflects how well the governments controls corruption, such as exercise of power for private advantages on both smaller and larger scale (World Bank, 2019b). Finally, accountability indicates the extent to which the population can hold the government accountable for its action, for example through freedom of speech and free media, as well as the extent to which the citizens are able to participate in the political life and select the government (World Bank, 2019b). All three indicators range from -2.5 to 2.5, where a higher score indicates a stronger governance performance (World Bank, 2019b).

7 Results

7.1 Life expectancy ratio

Table 7.1 presents the results for the regressions using the ratio of female to male life expectancy as the dependent variable. Columns 1 - 3 present the results for the specifications used in Pickbourn and Ndikumana (2016). For the OLS and fixed effects regressions, the results indicate a negative and statistically significant relationship between gender equality aid then life expectancy ratio. In other words, proportionally more aid allocated with gender equality as an objective reduces the ratio of female to male life expectancy. However, when the regression is estimated by system-GMM to control for endogeneity, the coefficient on gender equality aid becomes positive and statistically insignificant. In column 4 and 5, time dummies are added to the baseline specification in order to control for a time trend and are estimated by OLS and fixed effects methods. The coefficients on gender equality aid are once again negative, statistically significant and similar in magnitude to the OLS and fixed effects estimations without time dummies. The coefficients on public health expenditure and education expenditure vary between positive and negative but are very small and insignificant across all specifications. The coefficient on the ratio of dependants to the working population is negative across all specifications with the exception of when estimated by system-GMM. The coefficients are statistically significant for the two fixed effects estimations in column 3 and 5. Access to sanitation has a positive effect on life expectancy ratio, whereas access to clean water has a negative effect. For both variables, the coefficients are statistically significant across all coefficients with the exception for the results obtained by the system-GMM estimation. The score in the Human Development Index has a large, positive and statistically significant effect on the female to male life expectancy ratio, once again with the exception of the system-GMM estimation. Per capita GDP has a negative impact on life expectancy which is statistically significant in the fixed effects specifications. A majority of the coefficients on the quality of governance indicators are statistically insignificant, with the exception for the estimations controlling for country fixed effects (column 2 and 5).

Table 7.1 Life expectancy ratio

Dependent variable: Female/male life expectancy ratio					
VARIABLES	(1) OLS	(2) FE	(3) GMM	(4) OLS	(5) FE
Gender equality aid/total aid	-0.0148*** (0.00471)	-0.0166*** (0.00514)	0.00572 (7.628)	-0.0129*** (0.00498)	-0.0157*** (0.00519)
Public health exp./GDP	4.12e-05 (0.000512)	-6.68e-05 (0.000331)	0.000339 (0.126)	6.73e-05 (0.000577)	-6.68e-05 (0.000336)
Public education exp./total exp.	-2.93e-05 (0.000119)	-5.43e-05 (0.000111)	6.67e-05 (0.0321)	-1.93e-05 (0.000116)	-4.15e-05 (0.000111)
Age dependency ratio	-0.000291 (0.000296)	-0.000436*** (0.000167)	0.000259 (0.0940)	-0.000288 (0.000295)	-0.000413** (0.000168)
Access to sanitation	0.000642*** (0.000199)	0.000381* (0.000196)	0.000348 (0.0551)	0.000652*** (0.000207)	0.000374* (0.000200)
Access to water	-0.000827*** (0.000238)	-0.00102*** (0.000231)	-0.000587 (0.196)	-0.000853*** (0.000237)	-0.00107*** (0.000238)
Human Development Index	0.141*** (0.0302)	0.181*** (0.0285)	0.101 (20.27)	0.158*** (0.0369)	0.162*** (0.0462)
GDP/capita (PPP)	-0.00128 (0.000829)	-0.00230*** (0.000652)	0.00138 (0.155)	-0.00125 (0.000843)	-0.00229*** (0.000682)
Government effectiveness	0.00181 (0.00383)	-0.000404 (0.00336)	-0.00125 (2.852)	-4.71e-05 (0.00355)	-0.00137 (0.00360)
Corruption	0.00373 (0.00403)	0.00683** (0.00296)	0.00183 (3.071)	0.00325 (0.00404)	0.00595** (0.00302)
Accountability	-0.00385 (0.00261)	-0.00673** (0.00263)	-0.00214 (1.897)	-0.00353 (0.00269)	-0.00628** (0.00273)
Lagged dependent variable			0.494 (52.24)		
Constant	1.053*** (0.0336)	1.070*** (0.0206)	0.479 (46.92)	1.048*** (0.0346)	1.080*** (0.0284)
Observations	369	369	345	369	369
R-squared		0.212			0.253
Number of countries	44	44	44	44	44
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

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

7.2 Labour force participation

Table 7.2 presents the results for the specifications using labour force participation as the indicator for gender equality. The coefficient on the gender equality aid variable are negative for all specifications with the exception for the system-GMM. The coefficients are statistically insignificant across all specifications. Public health expenditure has a negative effect on labour force participation. The coefficients are similar in magnitude and statistically significant when estimated by OLS and fixed effects (with and without time dummies). The exception is the system-GMM estimation, which provides a statistically insignificant positive coefficient. Expenditure on education has a positive effect on labour market participation, although the coefficients are statistically insignificant. Again, the coefficient obtained from the system-GMM method has the opposite sign compared to the other specifications. The coefficients on access to sanitation and water, age dependency ratio and GDP per capita indicate a positive relationship between the variables and female labour market participation. However, the coefficients are only statistically significant for the specifications using fixed effects. All specifications, with the exception of system-GMM, yield a negative coefficient on the Human Development Index variable. The coefficients are statistically significant for the two specifications using fixed effects. The controls for governmental quality yield statistically significant results for all specifications except the system-GMM model. A lower level of corruption is positively related to female labour force participation, whereas higher accountability and effectiveness have a negative effect.

Table 7.2 Labour force participation

Dependent variable: Female labour force participation					
VARIABLES	(1)	(2)	(3)	(4)	(5)
	OLS	FE	GMM	OLS	FE
Gender equality aid/total aid	-0.729 (1.258)	-1.733 (1.624)	0.832 (147.8)	-1.024 (1.241)	-1.600 (1.658)
Public health expenditure/GDP	-0.178 (0.148)	-0.227** (0.103)	0.00110 (5.721)	-0.208 (0.161)	-0.250** (0.106)
Public education exp./total exp.	0.0331 (0.0408)	0.0363 (0.0344)	-0.00620 (2.485)	0.0382 (0.0409)	0.0345 (0.0350)
Age dependency ratio	0.147 (0.199)	0.155*** (0.0518)	0.0502 (1.908)	0.165 (0.202)	0.163*** (0.0530)
Access to sanitation	0.0823 (0.125)	0.119* (0.0608)	0.0284 (1.667)	0.0705 (0.124)	0.128** (0.0629)
Access to water	0.0986 (0.288)	0.261*** (0.0721)	0.00512 (1.748)	0.0591 (0.284)	0.254*** (0.0752)
Human Development Index	10.32 (17.25)	-7.339 (9.015)	1.198 (312.8)	-17.52 (25.88)	-5.446 (14.85)
GDP/cap (PPP)	0.625* (0.321)	1.028*** (0.234)	-0.0283 (11.78)	0.534* (0.296)	1.021*** (0.245)
Government effectiveness	-3.091** (1.503)	-2.176** (1.043)	0.339 (27.16)	-2.182 (1.807)	-2.139* (1.134)
Corruption	2.578** (1.098)	2.404*** (0.923)	-0.309 (19.70)	2.295* (1.212)	2.312** (0.955)
Accountability	-4.333** (1.845)	-4.115*** (0.820)	-0.154 (25.46)	-4.561** (2.152)	-4.507*** (0.860)
Lagged dependent variable			0.935 (1.615)		
Constant	30.44 (31.92)	25.24*** (6.403)	-2.232 (258.3)	43.53 (33.75)	23.86*** (8.933)
Observations	363	363	340	363	363
R-squared		0.250			0.259
Number of countries	43	43	43	43	43
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

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

7.3 Parliament seats

Table 7.3 presents the results from the regressions with the proportion of seats in the national parliament occupied by women as the dependent variable. Across all specification, the coefficients are positive. Thus, the coefficients on the gender equality aid variable suggest that a higher share of total aid that has gender equality as an objective is positively related to the number of female parliamentarians. The positive relationship is robust across the specifications controlling for unobserved country characteristics, a time trend and for aid to be endogenous. The coefficients are statistically significant when equation 1 is estimated by the baseline OLS method, by the system-GMM specification and by fixed effects and a time trend. Furthermore, compared to column 1 and 3, the magnitude of the coefficient falls drastically when controlling for country fixed effects and a time trend.

A majority of the control variables are statistically insignificant, with the exception of the coefficients on the variable capturing access to sanitation and the HDI score. The coefficients on these variables indicate a positive relationship with the share of females in the parliament and are significant for three of the five specifications. For the remaining variables, the coefficients vary between indicating a positive or negative relationship across the different specifications.

Table 7.3 Parliament seats held by women

Dependent variable: Seats in national parliament held by women (%)					
VARIABLES	(1)	(2)	(3)	(4)	(5)
	OLS	FE	GMM	OLS	FE
Gender equality aid/total aid	9.501*** (3.181)	3.341 (3.220)	10.47*** (3.957)	5.251* (3.082)	3.374 (3.272)
Public health expenditure/GDP	0.0297 (0.217)	-0.298 (0.209)	0.0969 (0.199)	-0.0758 (0.225)	-0.284 (0.216)
Public education exp./total exp.	-0.0547 (0.114)	-0.0417 (0.0711)	0.0668 (0.0670)	-0.0453 (0.114)	-0.0478 (0.0721)
Age dependency ratio	-0.142 (0.134)	-0.180* (0.104)	-0.0487 (0.139)	-0.113 (0.153)	-0.154 (0.106)
Access to sanitation	0.210 (0.152)	0.148 (0.124)	0.137** (0.0650)	0.250* (0.140)	0.114 (0.127)
Access to water	-0.357** (0.140)	0.0570 (0.147)	-0.173* (0.0961)	-0.338** (0.144)	0.0237 (0.153)
Human Development Index	92.69*** (24.33)	67.14*** (17.97)	43.94*** (14.45)	17.06 (25.05)	53.05* (29.17)
GDP/cap (PPP)	-0.375 (0.532)	0.835** (0.401)	-0.486 (0.313)	-0.0414 (0.467)	0.782* (0.425)
Government effectiveness	-3.848 (3.412)	-3.633* (2.139)	-1.048 (2.859)	-1.212 (3.389)	-4.200* (2.321)
Corruption	0.843 (3.063)	0.865 (1.887)	-2.356 (2.568)	1.226 (3.140)	1.264 (1.935)
Accountability	0.635 (2.513)	2.545 (1.719)	2.493 (1.645)	1.162 (2.744)	3.095* (1.807)
Lagged dependent variable			0.687*** (0.0737)		
Constant	-0.595 (17.86)	-9.978 (12.92)	-7.261 (17.11)	26.95 (20.00)	-4.460 (17.89)
Observations	352	352	324	352	352
R-squared		0.421			0.437
Number of countries	44	44	44	44	44
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

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

7.4 School enrolment ratio

Table 7.4 presents the results when the ratio of female to male school enrolment is used as the indicator of gender equality. Across all specifications, with the exception of the system-GMM estimation (column 3), the coefficient on the gender equality aid variable is positive and statistically significant on the 5% or 1% level. The results indicate that a proportionally higher share of aid with a gender equality objective increases the ratio of girls to boys who are enrolled in primary and secondary education. Public health expenditure is negatively related to the ratio of enrolment rate, in addition, the coefficients are statistically significant for the specifications using fixed effects. Higher public expenditure on education leads to a higher ratio. The effect is statistically significant across all specifications, with the exception of the system-GMM estimation. The signs of the coefficients the variables on access to sanitation and clean water vary from positive to negative across the specifications. However, the coefficients are very small in magnitude and are in general statistically insignificant. As might be expected, a higher level of human development increases the ratio of female to male school enrolment. The results are statistically significant across all specifications, with the exception of the system-GMM estimation in column 3 and are large in magnitude. Similarly, a higher ratio of dependants to the working age population decreases the enrolment rate ratio. On the other hand, higher income per capita is found to be negatively related to the enrolment ratio. The coefficients are statistically significant on the 1% level for the OLS and fixed effects specification.

Table 7.4 School enrolment

Dependent variable: Female/male school enrolment ratio					
VARIABLES	(1)	(2)	(3)	(4)	(5)
	OLS	FE	GMM	OLS	FE
Gender equality aid/total aid	0.0682** (0.0300)	0.0667*** (0.0226)	0.0534 (0.110)	0.0637** (0.0300)	0.0561** (0.0227)
Public health expenditure/GDP	-0.00319 (0.00328)	-0.00601*** (0.00184)	-0.00183 (0.0108)	-0.00339 (0.00359)	-0.00524*** (0.00188)
Public education exp./tot. exp.	0.00166* (0.000849)	0.00111* (0.000631)	-0.000601 (0.00569)	0.00162* (0.000846)	0.00127** (0.000640)
Age dependency ratio	0.00273** (0.00127)	0.00281*** (0.000746)	0.000491 (0.00360)	0.00283** (0.00133)	0.00276*** (0.000743)
Access to sanitation	0.000817 (0.00118)	-6.13e-05 (0.000962)	0.000266 (0.00405)	0.000777 (0.00124)	-0.00198* (0.00109)
Access to water	0.00113 (0.00107)	0.000393 (0.00122)	-0.000272 (0.00396)	0.00117 (0.00113)	-0.000571 (0.00123)
Human Development Index	1.154*** (0.224)	1.282*** (0.139)	0.179 (0.910)	1.080*** (0.226)	0.503* (0.260)
GDP/capita (PPP, 2011\$)	-0.0123*** (0.00347)	-0.0117*** (0.00259)	-0.00220 (0.0252)	-0.0123*** (0.00370)	-0.0176*** (0.00310)
Government effectiveness	0.0207 (0.0221)	0.00821 (0.0161)	0.00601 (0.111)	0.0227 (0.0224)	0.0318* (0.0183)
Corruption	-0.00467 (0.0167)	-0.0128 (0.0138)	0.00518 (0.122)	-0.00236 (0.0174)	-0.0129 (0.0141)
Accountability	0.00138 (0.0119)	-0.000645 (0.0134)	0.00803 (0.154)	0.00181 (0.0126)	0.00249 (0.0142)
Lagged dependent variable			0.769 (0.780)		
Constant	0.0648 (0.135)	0.0833 (0.0941)	0.124 (0.563)	0.0804 (0.138)	0.559*** (0.165)
Observations	242	242	194	242	242
R-squared		0.691			0.718
Number of countries	40	40	37	40	40
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

Clustered standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

7.5 IV Regressions

In table 7.5, twice lagged gender equality aid is used as instrumental variables. The specification is estimated with and without fixed effects. The sign on the coefficients on the gender equality aid variable are in general consistent with the findings from the baseline specifications in table 7.1-7.4, with two exceptions. Gender equality aid is found now to increase labour force participation and to decrease the school enrolment ratio when estimated by fixed effects (columns 4 and 8). Compared to the baseline specifications, the magnitude of the coefficients has increased considerably. However, the coefficients are only statistically significant for one of the specifications.

A Hansen-Sargan test of overidentifying restrictions provides insignificant statistics, thus, fail to reject the null hypothesis that the instruments are valid. This indicates that the instruments are not correlated with the error term (De Blander, 2008). Nevertheless, the first stage F-statistics vary across the different specifications. An F-statistic below 10 could be an indication of a weak instrument which could provide unreliable coefficients under a two-stage least squares estimation (Wooldridge, 2016). Thus, the overall findings in terms of the signs of the coefficients in general hold when controlling for endogeneity in aid and the size of the effect increases. However, the coefficients on gender equality are not statistically significant and there is evidence indicating that the instruments might be weak, at least for some of the specifications.

Table 7.5 IV regressions

VARIABLES	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		
	Life expectancy	Life expectancy	Labour force participation	Labour force participation	Parliament seats	Parliament seats	School enrollment	School enrollment	Parliament seats	Parliament seats	School enrollment	School enrollment	School enrollment	School enrollment	School enrollment	School enrollment	
Gender equality aid (of total aid)	-0.0182 (0.0196)	-0.155 (0.105)	5.776 (15.09)	-3.044 (15.98)	33.62 (36.23)	0.231** (0.0988)	0.636 (0.488)	-0.0182 (0.0196)									
Public health exp. (share of GDP)	8.77e-05 (0.000348)	-0.00192 (0.00133)	-0.0821 (0.191)	-0.239 (0.203)	-0.0133 (0.476)	0.00145 (0.00197)	-0.00440 (0.00417)	8.77e-05 (0.000348)									
Public educ. exp. (share of tot. exp.)	-6.52e-05 (0.000119)	-0.000130 (0.000223)	0.0158 (0.0391)	0.0120 (0.0365)	-0.0602 (0.0908)	0.00235*** (0.000792)	0.00116 (0.00143)	-6.52e-05 (0.000119)									
Age dependency ratio	-0.000310*** (0.000149)	-0.000765*** (0.000375)	0.158*** (0.0636)	0.164*** (0.0603)	-0.177 (0.147)	0.00182** (0.000762)	0.00348* (0.00178)	-0.000310*** (0.000149)									
Access to sanitation	0.000710*** (0.000109)	0.000450 (0.000448)	0.107 (0.0698)	0.169*** (0.0722)	0.125 (0.172)	0.00129** (0.000580)	0.000262 (0.00232)	0.000710*** (0.000109)									
Access to water	-0.000875*** (0.000127)	1.15e-06 (0.000753)	0.0205 (0.0958)	0.240*** (0.112)	-0.148 (0.289)	0.000432 (0.000695)	-0.00265 (0.00335)	-0.000875*** (0.000127)									
Human Development Index	0.132*** (0.0301)	0.298** (0.119)	4.375 (20.83)	-7.916 (19.64)	40.82 (41.38)	0.880*** (0.158)	0.551 (0.733)	0.132*** (0.0301)									
GDP/cap (PPP)	-0.000681 (0.000698)	-0.00422* (0.00219)	0.631 (0.388)	1.035*** (0.346)	0.571 (0.815)	-0.0105*** (0.00326)	-0.00247 (0.0106)	-0.000681 (0.000698)									
Government effectiveness	0.00313 (0.00329)	0.00804 (0.00774)	-2.836** (1.244)	-1.554 (1.243)	-7.865*** (2.976)	0.0129 (0.0176)	-0.0119 (0.0375)	0.00313 (0.00329)									
Corruption	-0.00158 (0.00289)	0.00808 (0.00681)	1.850 (1.142)	1.879* (1.091)	0.668 (2.625)	0.0193 (0.0151)	-0.0278 (0.0362)	-0.00158 (0.00289)									
Accountability	-0.000382 (0.00238)	-0.0158 (0.00971)	-3.290** (1.497)	-3.770** (1.540)	6.686* (3.481)	0.00807 (0.0131)	0.0670 (0.0555)	-0.000382 (0.00238)									
Constant	1.058*** (0.0210)		35.12*** (11.11)		9.887 (25.38)	0.236*** (0.116)		1.058*** (0.0210)									
Observations	322	320	318	316	312	312	211	205									
R-squared		-1.196		0.144				-0.232									
Number of countries	44	42	43	41	44	44	40	34									
Country FE	No	Yes	No	Yes	No	Yes	No	Yes									
First stage F-stat excl. inst.	11.6	1.60	2.81	1.80	8.26	1.95	8.57	1.02									
P-value for Sargan-Hansen test (H ₀ : instruments are valid)	0.5609	0.8485	0.9892	0.7316	0.3495	0.4764	0.1740	0.1905									

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

7.6 First differences

To control for the presence of a unit root, equation 1 is estimated by a first difference method and subsequently by a combination of first differences and instrumental variables. The results are presented in table 7.6 and table 7.7. Although the coefficients themselves are relatively uninformative since they indicate the effect of changes in the explanatory variable on changes in the dependent variable (Wooldridge, 2016), the signs of the coefficients on the gender equality aid variable remains similar to the ones obtained in the baseline specifications. The coefficients are now statistically insignificant from zero, with the exception of the specification with parliament seats held by women as the dependent variable and with time dummies included (column 7) and for both specifications with school enrolment ratio as the indicator of gender equality. When a first difference approach is used in combination with using lagged aid as an instrumental variable, the sign of the estimated coefficients on the gender equality aid variable are similar to the ones obtained from the previous specification. The exception is the specification with education enrolment ratio as the dependent variable where the sign is now negative. Across all specifications, the coefficients are statistically insignificant. The first-stage F-statistics are large, which indicates that weak instruments is not an issue. Thus, when the unit root is controlled for by using a first difference methodology, the effect of gender equality aid on the indicators of gender inequality in sub-Saharan Africa is statistically insignificant across all indicators of gender equality, with the exception of on specification using female parliamentarians and school enrolment ratios.

Table 7.6 - First differences

VARIABLES	First difference			
	(1) Life expectancy ratio	(3) Labour force Participation	(5) Parliament seats	(7) School enrolment ratio
Gender equality aid (of total aid)	-0.00135 (0.00305)	0.274 (0.338)	2.247* (1.339)	0.0209** (0.00917)
Public health exp. (share of GDP)	-4.16e-05 (0.000191)	-0.0264 (0.0183)	-0.0193 (0.179)	-0.000197 (0.00312)
Public educ. exp. (share of tot. exp.)	-2.46e-05 (4.22e-05)	-0.00469 (0.00728)	0.0958* (0.0543)	-3.03e-05 (0.000432)
Age dependency ratio	-0.000347 (0.000325)	0.157 (0.133)	-0.418 (0.257)	0.00291** (0.00158)
Access to sanitation	0.000368 (0.000248)	-0.0677 (0.108)	-0.204 (0.262)	-0.00258 (0.00231)
Access to water	-0.00112*** (0.000428)	0.0419 (0.221)	-0.275 (0.435)	0.00950** (0.00392)
Human Development Index	0.0238 (0.0627)	-8.816 (10.24)	18.97 (45.77)	-0.0158 (0.327)
GDP/cap (PPP)	-0.00376** (0.00172)	0.235 (0.285)	-2.186** (1.008)	0.00500 (0.00542)
Government effectiveness	0.00161 (0.00117)	-0.00582 (0.264)	-0.187 (1.213)	0.0121 (0.00945)
Corruption	-0.000468 (0.00163)	0.268 (0.189)	1.103 (1.971)	-0.00507 (0.00834)
Accountability	-0.000906 (0.00107)	-0.419 (0.276)	2.713 (2.145)	-0.00209 (0.00820)
Constant	0.00110* (0.000611)	0.219*** (0.0848)	0.873* (0.448)	0.00277 (0.00383)
Observations	279	276	261	160
Number of countries	41	40	41	34

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7.7– First differences and IV

VARIABLES	First difference & IV			
	(1) Life expectancy ratio	(2) Labour force participation	(3) Parliament seats	(4) School enrolment ratio
Gender equality aid/total aid	0.000899 (0.00435)	0.356 (0.314)	1.244 (2.553)	-0.00909 (0.0154)
Public health expenditure/GDP	0.000268 (0.000458)	0.00430 (0.0331)	-0.603** (0.259)	0.00162 (0.00193)
Public education exp. /total exp.	-0.000150 (0.000127)	-0.00101 (0.00922)	0.132* (0.0746)	3.89e-05 (0.000496)
Age dependency ratio	0.00165 (0.00210)	0.0806 (0.153)	0.0365 (1.233)	0.00491 (0.00759)
Access to sanitation	0.0162* (0.00900)	-0.510 (0.654)	-7.475 (5.033)	0.00972 (0.0315)
Access to water	-0.0191 (0.0140)	-0.539 (1.050)	-7.646 (7.852)	0.0140 (0.0440)
Human Development Index	0.244* (0.139)	17.42 (10.73)	-30.64 (81.08)	-0.304 (0.498)
GDP/cap (PPP)	-0.0166*** (0.00390)	-0.0669 (0.314)	-8.016*** (2.203)	0.0235** (0.0110)
Government effectiveness	0.00187 (0.00334)	0.0640 (0.241)	-0.436 (1.888)	0.00932 (0.0129)
Corruption	-0.00309 (0.00411)	0.122 (0.297)	1.278 (2.412)	-0.0118 (0.0170)
Accountability	0.000725 (0.00339)	0.145 (0.244)	0.976 (2.170)	-0.0266* (0.0155)
Constant	0.000552 (0.000539)	0.0105 (0.0390)	-0.123 (0.311)	-0.000522 (0.00209)
Observations	201	199	189	96
R-squared	0.132	0.034	0.099	0.079
Number of countries	38	37	38	28
First stage F-stat on excl. inst.	259.07	260.3	228.28	169.33

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

7.7 Checks for robustness

As mentioned in section 6.1, an alternative way to measure aid is as a share of GDP. In order to test the robustness of the results reported above, I will use aid with gender equality as an objective as a share of GDP as an alternative explanatory variable. To reduce the scope of the additional analysis, only the specifications used in table 7.1 to 7.4 will be re-estimated. The specifications with gender equality aid as a share of GDP as the dependent variable in general yield more inconsistent results in terms of the effect of aid on gender equality. The results are presented in Appendix B To limit the scope of the discussion, only the coefficients on the gender equality aid variable will be considered.

In table B.1 the female to male life expectancy ratio is used as the dependent variable. Across the specifications, with the exception of the system-GMM estimation, the results indicate that a more aid with a gender equality objective relative to GDP reduces the ratio of female to male life expectancy. The findings thus corroborate the results from the baseline specifications in section 7.1. The coefficients are statistically significant for the OLS specification when a time trend is not controlled for. Table B.2 presents the results of the specifications using female labour force participation as the indicator of gender equality. In contrast to the original regressions in table 7.2, the results now indicate a positive relationship between aid as a share of GDP and the proportion of women participating in the labour market. Across all specifications, the coefficients are now statistically insignificant. When the proportion of women in the national parliament is used as the dependent variable in table B.3, the results from the OLS and fixed effects estimations in column 1 and 2 suggest that a higher amount of gender equality aid relative to GDP increases the number of female parliamentarians. However, the magnitude of the coefficient falls drastically when estimated by fixed effects and becomes statistically insignificant. When time dummies are included in the specification, the coefficients remain positive but statistically insignificant. The system-GMM estimation yields a negative relationship between aid and the number of female parliamentarians. Finally, in table B.4 the female to male school enrolment ratio is used as the gender equality indicator. Across all specifications the coefficients indicate a positive but statistically insignificant relationship between aid with gender equality as an objective and the enrolment ratio. Thus, although the signs of the coefficients remain the same regardless of whether gender equality aid is measured as a share of total aid or of GDP, the statistically significant relationships found in table 7.4 vanishes when the latter measurement of gender equality aid is used as the explanatory variable. The check for robustness therefore corroborates the positive relationships found in the baseline specifications and also indicates a positive effect of gender equality aid on labour force participation. However, the statistical significance of the results is drastically reduced.

8 Discussion

Across all baseline specifications as well as in some of the instrumental variable regressions, gender equality aid is found to have a beneficial effect on gender equality in terms of increasing the number of female parliamentarians and increasing the ratio of female to male school enrolment rates. The effect is consistently positive across the various specifications and is statistically significant for some of baseline estimations, the instrumental variable regressions without fixed effects and in the case of school enrolment rate ratio, also when estimated by first differences. On the other hand, the impact on female labour market participation and on the life expectancy ratio is more ambiguous. The signs of the coefficients on the gender aid equality vary from negative to positive for the baseline specifications and instrumental variable regression using labour market participation as an indicator of gender equality and are statistically insignificant. The results are therefore highly inconclusive in terms of the effect of gender equality aid on labour market participation. When female to male life expectancy ratio is used as a proxy for gender inequality, the baseline specifications in table 7.1 indicate a negative effect of gender equality. The results thus indicate that the ratio of women's life expectancy is falling relative to men's. Although this effect is statistically significant, the result contradicts the hypothesis of higher gender equality leading to an increase in the ratio of female to male life expectancy. Though, the interpretation of this finding requires cautiousness. As mentioned previously, the literature suggests that an increased gap would indicate higher gender equality, since women tend to live longer than men for biological reasons. However, a decreased gap does not necessarily correspond to increased gender inequality nor the that life expectancy for women is decreasing. Rather, it might be the case that life expectancy is increasing for both men and women, although at a faster rate for men which would cause the life expectancy gap to decrease. Moreover, the statistical significance of the results for all four indicators are greatly reduced when estimated by alternative methods using instrumental variables, first differences and an alternative measurement of gender equality aid.

Hence, the analysis indicates that aid with gender equality as an objective might have beneficial impact on some aspects of gender equality, whilst having a less clear impact on other gender equality indicators and that the results are sensitive to the methodology used. The results of this thesis therefore align with the findings in the literature on aid effectiveness and with the few previous studies of aid and gender equality. Both the macro and micro literature on aid effectiveness indicate an ambiguous effect of aid on its intended outcomes, just as in this thesis. The positive effect of gender equality aid on school enrolment ratios corroborates Pickbourn and Ndikumana's (2016) finding that aid to the education sector increases the ratio of literate girls to boys. Similarly, Balamoune-Lutz (2016) found that aid with a gender equality focus improved female political participation in Northern African and Middle Eastern countries, with the exception of countries with an authoritarian regime.

Similar results are found in this study, where gender equality aid has a positive effect on the number of female parliamentarians but corruption and a low level popular participation in the political life and freedom of expression decreases the effect. On the other hand, the inconclusive effects of gender equality aid on female labour force participation and on the life expectancy ratio are also in line with the lack of effect on aid on aggregate measures of gender inequality in Pickbourn and Ndikumana's (2016) study.

Unexpectedly, the regressions yield some surprising results in terms of the signs of some of the control variables. For example, in table 7.4 a higher income per capita increases the gender gap in primary school completion rates. Similarly, in table 7.2 the results indicate that higher public expenditure on health decreases female labour market participation. Finally, although the coefficients are statistically insignificant, in table 7.3 public expenditure on education decreases the share of females in the national parliament. There are several potential explanations for these surprising results. One could be misspecifications in the statistical analysis, such as omitted variable bias. It is likely that there are many factors affecting gender equality other than the ones included in this analysis and excluding these from the analysis could lead to biased estimations of the coefficients (Wooldridge, 2016). Although steps have been taken to control for omitted variables, such as the fixed effect estimations, the issue might still remain. The surprising relationships between income and public expenditure on health and education and gender equality could be also argued to indicate that increases in public expenditure and in per capita income in sub-Saharan Africa do not benefit women to the same extent as men. As the UN (2002:1) argues, "achieving greater equality between women and men will require changes at many levels, including changes in attitudes and relationships". Increasing overall public expenditure or income might therefore not be enough to reduce gender inequality in a society. The results might thus indicate a need for development policies to target women specifically, rather than aiming to increase overall expenditure or income.

The results outlined above is an indication of the complexities involved in studies of aid effectiveness and gender equality. One reason for the differences in results between the various indicators could be a time lag in gender equality improvements in sub-Saharan Africa. As stated previously, a key limitation of the study is the short time period for which data on aid with gender equality as an objective is available. The results might therefore also be influenced by whether changes in a particular indicator is plausible to achieve in a short time period. For example, improving the primary school completion rates for females might require a shorter time period compared to increasing the potential for women to participate in the labour market. The inconclusive results for some of the indicators might therefore be influenced by the nature of that particular variable. One could also argue that indicators such female primary school enrolment is to a larger extent possible to influence by individual aid projects targeting education, whereas changes in female labour force participation might reflect more general changes in the wider society.

The ambiguous findings across the different indicators highlight the importance of which measurement of gender inequality that is used when studying the effectiveness of gender

equality aid. By focusing solely on one aspect of gender equality, it is likely that the results might be misleading. Furthermore, it emphasises the need to obtain a deeper understanding of how gender equality should be measured and, potentially more important, whether some areas of gender equality that should be prioritised. Thus, a key issue is whether some aspects of gender equality are more important than others. It is not the aim of this thesis to attempt to answer this complicated question, furthermore, it is likely that the various aspects of gender equality are inter-dependent on each other. It might also be possible that in the long-run there is a "trickle-down effect" from one aspect to another. As an example, the beneficial impact of gender equality aid on women's school enrolment rates indicated by this study could in the long run be transmitted to other indicators of gender equality measures, such as labour force participation. However, a crucial issue is whether for example an increase in girls' educational attainment will be enough to overcome other issues stopping women from having access to the same opportunities in life as men, such as cultural or legal barriers.

The ambiguity of the findings might partially be a result of the issues highlighted by Bourguignon and Sundberg (2007), namely the difficulties related to the heterogeneity of objectives and incentives in aid projects. The principal-agent theory described in section 3 described the multifaceted interactions in aid delivery processes and one could argue that the complex relationships between donors and recipients affect different types of projects in different ways. This might explain why the results indicate a positive effect of gender equality aid on education enrolment ratios, whereas the effect is more ambiguous on labour market participation rates. Some aid projects might be more prone to differing objectives between donors and recipients, which might influence the observed outcome. Thus, an understanding of the relationships between donors and recipients is crucial in order to be able to fully comprehend the forces influencing the effectiveness of aid.

9 Conclusion

To conclude, the aim of this study was to evaluate the effect of aid with a gender equality objective on a range of indicators of gender inequality in sub-Saharan Africa. In order to do so, I have used data from the OECD on aid with gender equality as specific objective to analyse the effect on four indicators of gender inequality. The study found that gender equality aid increases the ratio of girls to boys who are enrolled in primary or secondary education and the share of females in the national parliament. The results are more tentative regarding the effect of gender equality aid on female labour force participation and the study found a negative effect of aid on the ratio of female to male life expectancy. Thus, the effect differs significantly between the different measures of gender equality. These findings are in line with previous research, which has found a positive effect of aid on political participation among women, female literacy rates and health but a more ambiguous relationship between gender equality aid and other indicators of gender equality. The two objectives of the thesis were to explore potential structural causes of reduced effectiveness of aid and to explore differences in the effect of gender equality of aid on different indicators. The thesis found that the unique structure of aid organisations creates complicated principal-agent relationships that might influence the effectiveness of aid. However, it was beyond the scope of the thesis to determine the exact dynamics of these relationships and how they affect aid delivery. Secondly, it is clear from the results described above that the effect on different indicators varies significantly. Thus, the thesis was able to achieve the objective to provide an understanding of the disparity in effects of gender equality aid on different indicators of gender equality.

To the best of my knowledge, this study is the first to utilise data on gender equality aid to analyse the impact of aid on a range of gender equality indicators. In addition, it has extended the analysis of previous aid effectiveness studies by utilising a range of methods, including instrumental variables and first differences, to overcome potential statistical issues with the data. Thus, this thesis contributes to the understanding of the effect of aid with gender equality as an objective and to the issues involved in aid delivery. The results of the thesis therefore add to the current level of knowledge of in which areas gender equality aid has the largest effects. However, the intention is not to provide a policy recommendation regarding how gender equality aid should be allocated.

As the literature on aid and gender equality presently is not very comprehensive, there are several important areas for further research. Studies using data which covers a longer time period would be needed in order to investigate the long-term effect of gender equality aid. Moreover, this study used the principal-agent theory as a framework to understand potential reasons for ineffectiveness in the aid delivery process. Although the intention of the study was not to test this theory empirically, case studies of the impact of specific aid project would be

useful in order to increase the understanding of the roles of the interactions between different agents in the aid delivery process.

References

- Afridi, M.A. & Ventelou, B. (2013). Impact of Health Aid in Developing Countries: The Public vs. the Private Channels, *Economic Modelling*, vol. 31, pp. 759 - 765
- Azam, J.P. & Laffont, J.J. (2003). Contracting for Aid, *Journal of Development Economics*, no. 70, pp. 25 – 58
- Baliamoune-Lutz, M. (2016). The Effectiveness of Foreign Aid to Women's Equality Organisations in the MENA, *Journal of International Development*, no. 28, pp. 320 – 341
- Barro, R.J. (2012). Convergence and Modernization Revisited, Working Paper, no. 18295, National Bureau of Economic Research
- Baum, C. (2013). Dynamic Panel Data Methods, Boston College [pdf]. Available from: <http://fmwww.bc.edu/EC-C/S2013/823/EC823.S2013.nn05.slides.pdf> [Accessed: 2019-04-23]
- Becker, G.S. (1985). Human Capital, Effort, and the Sexual Division of Labour, *Journal of Labour Economics*, vol. 3, no. 1, pp. S33 – S58
- Berthélemy, J-C. (2006). Bilateral Donors' Interests vs. Recipients' Development Motives in Aid Allocation: Do All Donors Behave the Same? *Review of Development Economics*, vol. 10, no. 2, pp. 179 – 194
- Blackden, M., Canagarajah, S., Klasen, S. & Lawson, D. (2006). Gender and Growth in Sub-Saharan Africa, Working Paper, no. 2006/37, World Institute for Development Economics Research, United Nations University
- Boone, P. (1996). Politics and the Effectiveness of Foreign Aid, *European Economic Review*, no. 40, pp. 289 – 329
- Bourguignon, F. & Leipziger, D. (2006). Aid, Growth, and Poverty Reduction: Toward a New Partnership Model, Washington, D.C.: World Bank
- Bourguignon, F. & Sundberg, M. (2007). Aid Effectiveness – Opening the Black Box, *The American Economic Review*, vol. 97, no. 2, pp. 316 – 321
- Burnside, C. & Dollar, D. (2000). Aid, Policies and Growth, *The American Economic Review*, vol. 90, no. 4, pp. 847 – 868
- Carlsson, J., Somolekae, G. & van de Walle, N. (1997). Introduction, in J. Carlsson, G. Somolekae & N. van de Walle (eds), *Foreign Aid in Africa: Learning from Country Experiences*, Uppsala: The Nordic Africa Institute, pp. 7 – 15
- Cuberes, D. & Teigner, M. (2012). Gender Gaps in the Labour Market and Aggregate Productivity, Working Paper, no. 2012017, Department of Economics, University of Sheffield

- Cuberes, D. & Teigner, M. (2014). Gender Inequality and Economic Growth: A Critical Review, *Journal of International Development*, no. 26, pp. 260 – 276
- De Blander, R. (2008). Which Null Hypothesis Do Overidentification Restriction Actually Test? *Economics Bulletin*, vol. 9, no. 3, pp. 1 – 9
- Deutscher, E. & Fyson, S. (2008). Improving the Effectiveness of Aid, *Finance & Development*, September 2008, pp. 15 – 19
- Djankov, S., Montalvo, J.G. & Reynal-Querol, M. (2008). The Curse of Aid, *Journal of Economic Growth*, no. 13, pp. 169 – 194
- Dollar, D. & Gatti, R. (1999). Gender Inequality, Income, and Growth: Are Good Times Good for Women? Working Paper, no. 1, Development Research Group, The World Bank
- Duflo, E. (2012). Women Empowerment and Economic Development, *Journal of Economic Literature*, vol. 50, no. 4, pp. 1051 – 1079
- Easterly, W. (2003). Can Aid Buy Growth? *Journal of Economic Perspectives*, vol. 17, no. 3, pp. 23 – 48
- Guljrani, N. (2011). Transcending the Great Foreign Aid Debate: Managerialism, Radicalism and the Search for Aid Effectiveness, *Third World Quarterly*, vol. 32, no. 2, pp. 199 – 216
- Hansen, H. & Tarp, F. (2000). Aid Effectiveness Disputed, in F. Tarp (ed), *Foreign Aid and Development: Lessons Learnt and Directions for the Future*, London: Routledge, pp. 103 – 128
- Hoeffler, A. & Outram, V. (2011). Need, Merit or Self-Interest – What Determines the Allocation of Aid, *Review of Development Economics*, vol. 15, no. 2, pp. 237 – 250
- ILO. (2019). Labour Force Participation Rate [pdf], Available at: https://www.ilo.org/ilostat-files/Documents/description_LFPR_EN.pdf [Accessed: 2019-05-15]
- Kabeer, N. (2005). Gender Equality and Women's Empowerment: A Critical Analysis of the Third Millennium Development Goal, *Gender and Development*, vol. 13, no.1, pp. 13 – 24
- Kharas, H. (2007). Trends and Issues in Development Aid, Working Paper, no. 1, Wolfensohn Centre for Development, The Brookings Institute
- Kindornay, S. & Morton, B. (2009). Development Effectiveness: Towards New Understandings, Issues Brief, September 2009, Development Cooperation Series, The North-South Institute
- Klasen, S. (2004). Gender-Related Indicators of Well-Being, Working Paper, no. 2004/05, World Institute for Development Economics Research, United Nations University
- Klasen, S. & Lamanna, F. (2009). The Impact of Gender Inequality in Education and Employment on Economic Growth: New Evidence for a Panel of Countries, *Feminist Economics*, vol. 15, no. 3, pp. 91 – 132
- Killick, T. (1997). Principals, Agents and the Failings of Conditionality, *Journal of International Development*, vol. 9, no. 4, pp. 483 – 495

- Lensink, R. & White, H. (2000). Aid Allocation, Poverty Reduction and the Assessing Aid Report, *Journal of International Development*, vol. 12, pp. 399 – 412
- Martens, B. (2002). Introduction, in B. Martens, U. Mammert, P. Murell & P. Seabright (eds), *The Institutional Economics of Foreign Aid*, Cambridge: Cambridge University Press, pp. 1 – 33
- Medalia, C. & Chang, V.W. (2011). Gender Equality, Development, and Cross-National Sex Gaps in Life Expectancy, *International Journal of Comparative Sociology*, vol. 52, no. 5, pp. 371 – 389
- Mishra, P. & Newhouse, D. (2009). Does Health Aid Matter? *Journal of Health Economics*, no. 28, pp. 855 – 872
- Moser, A. (2007). Gender and Indicators: Overview Report, Brighton: Institute of Development Studies
- Mosley, P. (1986). Aid-Effectiveness: The Micro-Macro Paradox, *IDS Bulletin*, vol. 17, no. 2, pp. 22 – 27
- Moss, T., Pettersson, G. & van de Walle, N. (2006). An Aid-Institution Paradox? A Review Essay on Aid Dependency and State Building in Sub-Saharan Africa, Working Paper, no. 74, Center for Global Development
- Murrell, P. (2002). The Interactions of Donors, Contractors, and Recipients in Implementing Aid for Institutional Reform, in B. Martens, U. Mammert, P. Murell & P. Seabright (eds), *The Institutional Economics of Foreign Aid*, Cambridge: Cambridge University Press, pp. 69 – 111
- Nissanke, M. (2008). Donor-Recipient Relationships in the Aid Effectiveness Debate, in A.M. Jerve, Y. Shimomura & A. Skovsted Hansen (eds), *Aid Relationships in Asia*, London: Palgrave McMillan, pp. 22 – 40
- OECD. (2008). The Paris Declaration on Aid Effectiveness and the Accra Agenda for Action, Paris: OECD
- OECD. (2011). Aid in Support of Women’s Economic Empowerment, Paris: OECD
- OECD. (2014). Social Institutions & Gender Index: 2014 Synthesis Report, Paris: OECD
- OECD. (2018). Aid to Gender Equality and Women’s Empowerment: An Overview, Paris: OECD
- OECD. (2019a). Aid in Support of Gender Equality and Women’s Empowerment: Donor Charts, Paris: OECD
- OECD. (2019b). Aid Projects Targeting Gender Equality and Women’s Empowerment (CRS), Available Online: https://stats.oecd.org/Index.aspx?DataSetCode=DV_DCD_GENDER [Accessed 2019-04-02]
- OECD. (2019c). Official Development Assistance: What is ODA?, Paris: OECD
- Paul, E. (2006). A Survey of the Theoretical Economic Literature on Foreign Aid, *Asian-Pacific Economic Literature*, vol. 20, no. 1, pp. 1 – 17

- Pickbourn, L. & Ndikumana, L. (2016). The Impact of the Sectoral Allocation of Foreign Aid on Gender Inequality, *Journal of Development Studies*, no. 28, pp. 396 – 411
- Rajan, R. & Subramanian, A. (2008). Aid and Growth: What Does the Cross-Country Evidence Really Show? *The Review of Economics and Statistics*, vol. 90, no. 4, pp. 643 – 655
- Riddell, A. & Nino-Zaraguza, M. (2016). The Effectiveness of Foreign Aid to Education: What Can Be Learned? *International Journal of Educational Development*, vol. 48, pp. 23 – 36
- Roodman, D. (2009). How to do xtabond2: An Introduction to Difference and System GMM in Stata, *The Stata Journal*, vol. 9, no. 1, pp. 86 – 136
- Seabright, P. (2002). Conflicts of Objectives and Task Allocation in Aid Agencies, in B. Martens, U. Mammert, P. Murell & P. Seabright (eds), *The Institutional Economics of Foreign Aid*, Cambridge: Cambridge University Press, pp. 34 – 68
- Seguino, S. (2000). Gender Inequality and Economic Growth: A Cross-Country Analysis, *World Development*, vol. 28, no. 7, pp. 1211 – 1230
- Tierney, M.J., Nielson, D., Hawkins, D., Roberts, J.T., Findley, M., Powers, R., Parks, B., Wilson, S. & Hicks, R. (2011). More Dollars Than Sense: Refining Our Knowledge of Development Finance Using AidData, *World Development*, vol. 29, no. 11, pp. 1891 – 1906
- UN. (2002). Gender Mainstreaming: An Overview, New York: United Nations
- UN. (2015). Population 2030: Demographic Challenges and Opportunities for Sustainable Development Planning, New York: United Nations
- UNDP. (2018a). Human Development Data: Gender (1990 - 2017), Available Online: <http://hdr.undp.org/en/data> [Accessed 2019-03-31]
- UNDP. (2018b). Human Development Indices and Indicators: 2018 Statistical Update – Technical Notes [pdf] Available at: http://hdr.undp.org/sites/default/files/hdr2018_technical_notes.pdf [Accessed 2019-03-31]
- UN Women. (2001). Gender Mainstreaming: Strategy for Promoting Gender Equality [pdf] Available at: <https://www.un.org/womenwatch/osagi/pdf/factsheet1.pdf> [Accesses 2019-04-12]
- UN Women. (2014). Gender Mainstreaming in Development Programming, New York: United Nations
- UN Women. (2016). Women and Sustainable Development Goals, New York: United Nations
- Walby, S. (2005). Gender Mainstreaming: Productive Tensions in Theory and Practice, *Social Politics: International Studies in Gender, State & Society*, vol. 12, no. 3, pp. 321 – 343
- Williamson, C. (2008). Foreign Aid and Human Development: The Impact of Foreign Aid to the Health Sector, *Southern Economic Journal*, vol. 75, no. 1, pp. 188 – 207
- Wooldridge, J.M. (2016). *Introductory Econometrics*, Boston: Cengage Learning

World Bank. (2011). World Development Report 2012: Gender Equality and Development, Washington, D.C.: The World Bank

World Bank. (2019a). World Development Indicators, Available Online:
<https://datacatalog.worldbank.org/dataset/world-development-indicators> [Accessed 2019-04-02]

World Bank. (2019b). World Governance Indicators, Available Online:
<http://info.worldbank.org/governance/wgi/index.aspx#reports> [Accessed: 2019-05-03]

Appendix A

Table A1 – List of countries and averages of key statistics (2002 – 2016)

Country	Gender aid/total aid	School enrolment ratio	Life expectancy at birth (female)	Life expectancy at birth (male)	Females in parliament (%)	Labour force participation (%)
Angola	0.204	0.75	59.21	53.87	28.15	75.15
Benin	0.223	0.90	56.34	52.73	8.32	67.88
Botswana	0.125	0.78	60.19	57.25	10.50	57.78
Burkina Faso	0.217	0.86	56.79	55.35	13.61	60.72
Burundi	0.206	1.01	60.43	55.62	29.03	80.99
Cabo Verde	0.079	0.71	48.71	45.79	17.31	45.92
Cameroon	0.091	0.83	51.02	48.89	16.82	70.64
Central African Republic	0.113	0.85	55.86	53.74	10.07	63.95
Chad	0.135	0.80	57.43	54.55	9.53	64.78
Comoros	0.153	0.91	60.20	57.55	2.75	34.48
Congo	0.069	0.93	63.61	60.33	7.68	67.15
Côte d'Ivoire	0.073	1.03	73.62	70.01	9.18	48.20
Democratic Republic of the Congo	0.182	0.81	61.40	58.34	9.35	71.26
Djibouti	0.097	0.79	63.32	59.21	11.79	47.60
Equatorial Guinea	0.209	0.83	61.71	58.51	14.14	54.69
Eritrea	0.125	-	63.29	61.39	22.00	74.57
Eswatini	0.215	0.95	61.18	59.41	10.01	40.14
Ethiopia	0.205	0.72	56.38	55.31	23.25	77.34
Gabon	0.091	1.01	60.47	57.98	13.42	39.58
Gambia	0.107	-	56.13	53.45	9.53	49.69
Ghana	0.206	0.88	56.96	54.32	9.86	73.69
Guinea	0.168	0.96	62.75	58.84	20.28	62.85
Guinea-Bissau	0.147	0.88	59.09	57.34	12.35	64.75
Kenya	0.213	1.06	51.39	48.12	11.03	61.92
Lesotho	0.169	0.97	64.35	61.52	21.29	61.78
Liberia	0.157	0.79	54.95	53.66	10.70	53.43
Madagascar	0.163	0.87	55.80	52.02	12.45	85.19
Malawi	0.239	1.00	63.25	60.19	16.29	73.44
Mali	0.241	1.02	76.62	69.73	9.97	47.92

Mauritania	0.174	0.99	57.46	53.38	19.66	30.42
Mauritius	0.057	1.02	59.98	55.62	14.65	42.33
Mozambique	0.193	0.74	56.70	55.15	36.37	85.06
Namibia	0.253	0.89	50.99	49.49	27.94	54.21
Niger	0.192	1.01	62.15	58.97	11.09	67.69
Nigeria	0.210	0.90	63.76	60.39	6.11	48.89
Rwanda	0.224	0.99	64.84	61.51	53.76	85.79
Sao Tome and Principe	0.128	0.95	47.75	46.14	12.74	39.79
Senegal	0.188	0.54	55.37	52.18	28.15	39.77
Seychelles	0.069	0.67	56.52	54.55	32.49	-
Sierra Leone	0.154	1.00	67.40	63.48	13.24	61.09
Somalia	0.149	0.94	53.25	48.40	10.14	17.74
South Africa	0.192	1.04	77.85	68.52	37.68	46.20
South Sudan	0.250	0.65	50.91	48.95	26.83	70.65
Sudan	0.100	0.74	57.61	56.14	20.09	23.86
Tanzania	0.196	0.98	61.42	58.12	31.00	81.26
Togo	0.110	0.97	57.56	53.72	11.29	78.15
Uganda	0.206	1.00	59.30	53.41	30.65	65.62
Zambia	0.206	-	56.71	52.79	13.18	71.73
Zimbabwe	0.235	0.97	53.02	50.32	18.66	76.98

Appendix B

Table B.1

Dependent variable: Female/male life expectancy ratio					
VARIABLES	(1) OLS	(2) FE	(3) GMM	(4) OLS	(5) FE
Gender equality aid/GDP	-0.0609** (0.0298)	-0.0584 (0.0348)	0.0196 (7.316)	-0.0371 (0.0306)	-0.0375 (0.0349)
Public health exp./GDP	0.000195 (0.000524)	0.000128 (0.000492)	0.000301 (0.118)	0.000185 (0.000579)	0.000110 (0.000339)
Public education exp./total exp.	-3.63e-05 (0.000122)	-5.76e-05 (0.000125)	7.34e-05 (0.107)	-2.81e-05 (0.000119)	-4.48e-05 (0.000113)
Age dependency ratio	-0.000294 (0.000288)	-0.000427 (0.000349)	0.000520 (0.129)	-0.000301 (0.000294)	-0.000405** (0.000171)
Access to sanitation	0.000677*** (0.000208)	0.000439 (0.000330)	0.000522 (0.0896)	0.000660*** (0.000219)	0.000421** (0.000204)
Access to water	-0.000854*** (0.000241)	-0.00110** (0.000520)	-0.000494 (0.0469)	-0.000882*** (0.000256)	-0.00113*** (0.000241)
Human Development Index	0.124*** (0.0320)	0.166*** (0.0436)	0.0803 (9.465)	0.155*** (0.0376)	0.155*** (0.0467)
GDP/capita (PPP)	-0.00112 (0.000887)	-0.00226*** (0.000836)	0.00126 (0.208)	-0.00118 (0.000887)	-0.00216*** (0.000695)
Government effectiveness	0.00253 (0.00389)	0.000450 (0.00490)	-0.00301 (2.040)	-1.52e-05 (0.00366)	-0.00105 (0.00367)
Corruption	0.00299 (0.00414)	0.00599 (0.00503)	0.00154 (2.989)	0.00308 (0.00427)	0.00541* (0.00307)
Accountability	-0.00329 (0.00269)	-0.00630* (0.00322)	-0.00373 (1.014)	-0.00333 (0.00283)	-0.00576** (0.00276)
Lagged dependent variable			0.619 (35.42)		
Constant	1.059*** (0.0340)	1.076*** (0.0411)	0.323 (23.66)	1.050*** (0.0348)	1.082*** (0.0288)
Observations	369	369	345	369	369
R-squared		0.217			0.252
Number of countries	44	44	44	44	44
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

Clustered standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table B.2

Dependent variable: Female labour force participation					
VARIABLES	(1) OLS	(2) FE	(3) GMM	(4) OLS	(5) FE
Gender equality aid/GDP	9.390 (9.233)	6.215 (10.40)	3.082 (509.5)	12.80 (10.99)	11.09 (10.84)
Public health exp. (share of GDP)	-0.180 (0.141)	-0.220** (0.103)	0.00665 (3.658)	-0.210 (0.151)	-0.247** (0.106)
Public educ. exp. (share of tot. exp.)	0.0332 (0.0403)	0.0364 (0.0344)	-0.000946 (1.663)	0.0385 (0.0400)	0.0344 (0.0350)
Age dependency ratio	0.149 (0.201)	0.157*** (0.0519)	0.0731 (4.375)	0.168 (0.204)	0.166*** (0.0530)
Access to sanitation	0.0748 (0.123)	0.115* (0.0615)	0.0327 (1.596)	0.0618 (0.120)	0.121* (0.0634)
Access to water	0.0926 (0.287)	0.256*** (0.0720)	0.00283 (1.776)	0.0479 (0.281)	0.251*** (0.0750)
Human Development Index	9.190 (18.25)	-10.02 (8.836)	0.0889 (516.7)	-18.53 (26.07)	-7.144 (14.80)
GDP/cap (PPP)	0.652* (0.335)	1.069*** (0.236)	0.107 (7.077)	0.568* (0.313)	1.081*** (0.246)
Government effectiveness	-3.198** (1.553)	-2.227** (1.050)	0.160 (22.57)	-2.344 (1.860)	-2.289** (1.142)
Corruption	2.615** (1.113)	2.379** (0.924)	0.0900 (89.45)	2.355* (1.233)	2.337** (0.957)
Accountability	-4.254** (1.817)	-3.989*** (0.819)	-0.00531 (47.74)	-4.489** (2.142)	-4.401*** (0.858)
Lagged dependent variable			0.965* (0.577)		
Constant	31.02 (31.73)	26.22*** (6.363)	-5.487 (421.6)	44.21 (33.77)	24.23*** (8.921)
Observations	363	363	340	363	363
R-squared		0.305			0.322
Number of countries	43	43	43	43	43
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

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

Table B.3

Dependent variable: Seats in national parliament held by women (%)					
VARIABLES	(1)	(2)	(3)	(4)	(5)
	OLS	FE	GMM	OLS	FE
Gender equality aid/GDP	25.43*	7.314	-3.794	4.814	3.586
	(14.23)	(20.77)	(11.13)	(15.19)	(21.60)
Public health exp. (share of GDP)	-0.0569	-0.335	-0.236	-0.118	-0.319
	(0.223)	(0.208)	(0.165)	(0.237)	(0.215)
Public educ. exp. (share of tot. exp.)	-0.0498	-0.0412	0.0614	-0.0419	-0.0470
	(0.117)	(0.0713)	(0.0641)	(0.116)	(0.0723)
Age dependency ratio	-0.139	-0.183*	-0.108	-0.112	-0.156
	(0.142)	(0.104)	(0.151)	(0.159)	(0.106)
Access to sanitation	0.191	0.138	0.102	0.246*	0.106
	(0.159)	(0.125)	(0.0680)	(0.142)	(0.128)
Access to water	-0.335**	0.0758	-0.222***	-0.327**	0.0399
	(0.147)	(0.147)	(0.0787)	(0.147)	(0.152)
Human Development Index	103.5***	70.26***	38.30**	18.48	54.73*
	(24.84)	(17.72)	(17.69)	(25.64)	(29.18)
GDP/cap (PPP)	-0.487	0.815**	-0.566	-0.117	0.743*
	(0.575)	(0.404)	(0.391)	(0.481)	(0.428)
Government effectiveness	-4.227	-3.733*	1.363	-1.109	-4.190*
	(3.528)	(2.153)	(1.803)	(3.467)	(2.340)
Corruption	1.125	0.981	-2.880	1.291	1.327
	(3.168)	(1.893)	(2.061)	(3.188)	(1.943)
Accountability	0.359	2.455	2.155	1.008	2.988*
	(2.579)	(1.721)	(1.317)	(2.795)	(1.808)
Lagged dependent variable			0.696***		
			(0.0666)		
Constant	-4.869	-11.45	9.911	26.66	-5.092
	(18.51)	(12.85)	(18.17)	(20.93)	(17.91)
Observations	352	352	324	352	352
R-squared		0.428			0.446
Number of countries	44	44	44	44	44
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

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

Table B.4

Dependent variable: Female/male school enrolment ratio					
VARIABLES	(1) OLS	(2) FE	(3) GMM	(4) OLS	(5) FE
Gender equality aid/GDP	0.120 (0.149)	0.134 (0.141)	0.0937 (2.125)	0.0828 (0.141)	0.0953 (0.143)
Public health exp. (share of GDP)	-0.00335 (0.00372)	-0.00643*** (0.00191)	-0.000580 (0.0327)	-0.00348 (0.00400)	-0.00550*** (0.00195)
Public educ. exp. (share of tot. exp.)	0.00180** (0.000902)	0.00119* (0.000643)	-0.000580 (0.00762)	0.00174* (0.000913)	0.00134** (0.000649)
Age dependency ratio	0.00277** (0.00130)	0.00278*** (0.000761)	0.000981 (0.00999)	0.00285** (0.00136)	0.00272*** (0.000755)
Access to sanitation	0.000696 (0.00120)	-0.000292 (0.000984)	-4.54e-07 (0.00634)	0.000695 (0.00126)	-0.00228** (0.00110)
Access to water	0.00126 (0.00114)	0.000626 (0.00124)	-0.000339 (0.0133)	0.00133 (0.00119)	-0.000443 (0.00125)
Human Development Index	1.241*** (0.224)	1.368*** (0.138)	0.324 (3.378)	1.110*** (0.220)	0.520* (0.264)
GDP/capita (PPP)	-0.0131*** (0.00386)	-0.0121*** (0.00266)	-0.00231 (0.0629)	-0.0131*** (0.00405)	-0.0185*** (0.00315)
Government effectiveness	0.0167 (0.0228)	0.00391 (0.0164)	-0.000810 (0.131)	0.0232 (0.0240)	0.0311* (0.0186)
Corruption	-0.000978 (0.0179)	-0.00849 (0.0140)	0.0153 (0.193)	0.000311 (0.0188)	-0.0101 (0.0143)
Accountability	-0.00277 (0.0116)	-0.00485 (0.0136)	-0.00292 (0.234)	-0.00200 (0.0123)	-0.00137 (0.0143)
Lagged dependent variable			0.776 (1.013)		
Constant	0.0240 (0.136)	0.0473 (0.0951)	0.0166 (1.046)	0.0651 (0.141)	0.564*** (0.167)
Observations	242	242	194	242	242
R-squared		0.680			0.714
Number of countries	40	40	37	40	40
Year dummies	No	No	No	Yes	Yes
Country FE	No	Yes	No	No	Yes

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