



universität
wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„The Inequality Paradox: The Ambivalent Role Of Gender
Inequality In Developing Countries“

verfasst von / submitted by

Hatice Yildirim, BSc

angestrebter akademischer Grad / in partial fulfillment of the requirements for the degree of
Master of Science (MSc)

Wien, 2022 / Vienna 2022

Studienkennzahl lt. Studienblatt /
degree programme code as it appears on
the student record sheet:

UA 066 913

Studienrichtung lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Masterstudium Volkswirtschaftslehre

Betreut von / Supervisor:

Univ.-Prof. Philipp Schmidt-Dengler, PhD

Abstract

In developing countries, women's relative lower educational levels, wages and less bargaining power are associated with lower labor costs, which makes female workers attractive for certain industries and can potentially attract investments. The main objective is to assess whether initial gender inequalities can be a stimulus for GDP growth, specifically for developing countries in Africa and the Middle East. Moreover, this thesis analyzes whether countries that experience high growth rates have managed to reduce gender inequality and thus achieve stable and persistent growth rates.

In order to investigate how gender inequalities and economic growth interact over time, multiple methods have been implemented. Fixed-effects and cross-country regressions were applied to examine the impact of gender inequality in wages, labor force participation, waged workers, social institutions and education on growth between 1980 and 2019. Econometric analysis reveals positive and negative effects of gender inequality on economic growth. Certain countries are discussed more deeply with the intention to increase the practical context of the hypothesis tested econometrically. Case studies therefore complement this thesis with additional insights.

Abstract (German)

Diese Masterthesis untersucht ökonomische und soziale Ungleichheiten zwischen Frauen und Männern in ausgewählten Ländern Afrikas und des Nahen Ostens. Frauen haben im Durchschnitt ein geringeres Bildungsniveau, limitierte Verhandlungsmacht und erhalten niedrigere Löhne als Männer. Für bestimmte Industrien können diese Faktoren Vorteile darstellen, da weibliche Arbeitskräfte, im Vergleich zu ihrem männlichen Pendant, kosteneffizienter eingesetzt werden und somit Investitionen anziehen können. Das Hauptziel dieser Arbeit besteht darin, zu beurteilen, ob anfängliche Ungleichheiten zwischen den Geschlechtern, insbesondere in Entwicklungsländern in Afrika und im Nahen Osten, Anreize für Wirtschaftswachstum sein können. Darüber hinaus wird analysiert, ob es Ländern mit hohen Wachstumsraten gelungen ist, die Geschlechterungleichheit zu reduzieren und somit stabile und anhaltende Wachstumsraten zu erzielen.

Um zu untersuchen, wie geschlechterspezifische Ungleichheiten und Wirtschaftswachstum zusammenhängen, werden quantitative und qualitative Methoden eingesetzt. Im ökonometrischen Teil werden länderübergreifende Regressions- und Paneldatenmodellen mit fixen Effekten verwendet. Die Analyse von Ungleichheiten bei Löhnen, Erwerbsbeteiligung, bezahlter Arbeit, sozialen Institutionen und Bildung zeigt positive sowie negative Effekte auf das Wirtschaftswachstum im Zeitraum 1980-2019. Sieben afrikanische Länder werden vertieft diskutiert, um den praktischen Kontext der ökonometrisch getesteten Hypothese zu erweitern. Diese Fallstudien ergänzen die Arbeit daher mit zusätzlichen Erkenntnissen.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS.....	i
LIST OF TABLES.....	ii
LIST OF FIGURES	ii
1. Introduction	1
1.1 Research Question, Purpose and Outline.....	1
2. Literature Review	4
2.1 The Gender Wage Gap	4
2.2 Gender Inequality in Education	6
2.3 The Role of Institutions.....	8
2.4 Summary	9
3. Background	10
3.1 The Agenda 2025 and its SDG	11
3.2 The Many Faces of Gender Inequality	12
3.3 Best Practice? Special Economic Zones and the Role of Women.....	14
3. The Augmented Neoclassical Growth Model	21
4. Empirical Section.....	26
4.1 Data Description and Descriptive Statistics.....	26
4.2.1 Panel Regression Model	31
4.2.2 Cross-Section Regression Model.....	32
4.2.3 Cross-Section with Period Averages	33
5. Results	34
5.1 Panel Regressions	35
5.2 Cross-Section Regressions.....	36

5.3 Cross-Section Regressions with Period Averages	36
6. Case Studies	38
6.1 Motivation	38
6.2 Uganda	42
6.3 Rwanda	43
6.4 Mauritius	45
6.5 Ethiopia	47
6.6 Botswana	48
6.7 Kenya	50
6.8 Zimbabwe	51
6.9 Summary	53
7. Conclusion	55
References	58
APPENDIX A: Regression Results	65
APPENDIX B: Descriptive Data of Selected Variables	72
APPENDIX C: Descriptive Data for Case Studies	78

LIST OF ABBREVIATIONS

FDI	Foreign direct investment
FLF	Female labor force
FLFP	Female labor force participation
GDP	Gross domestic product
GGGI	Global gender gap index
GGGR	Global gender gap report
ILO	International Labour Organisation
LFP	Labor force participation
MENA	Middle East and Northern Africa
MLFP	Male labor force participation
RED	Female to male ratio of years of schooling
RLFP	Female to male ratio of labor force participation rate
RWAGE	Female to male ratio of shares of waged and salaried workers
SDG	Sustainable development goals
SEZ	Special economic zones
SIGI	Social institutions and gender index
SSA	Sub-Saharan Africa
UN	United Nations
WEF	World Economic Forum

LIST OF TABLES

Table 1. Literature Review: The Impact of Gender Inequality on Growth	9
Table 2. Seven Faces of Gender Inequality	12
Table 3. Economic Outcomes of SEZ	16
Table 4. Static and Dynamic benefits of SEZ	16
Table 5. Variables and Sources Used for Panel Data Regression	27
Table 6. Variables and Sources Used for Cross-Section Analysis	28
Table 7. Variables and Sources Used for Cross-Section Analysis with Period Averages	29
Table 8. Mean Values of Selected Variables	30
Table 9. Mean values of Selected Variables (Case Studies)	39
Table 10. Mean values of Female and Male LFP Rates	40
Table 11. Development of RED	40
Table 12. Global Gender Gap Index (GGGI)	40
Table 13. Mean Values for Selected Variables for the 1st Period	41
Table 14. Mean Values for Selected Variables for the 2nd Period	41

LIST OF FIGURES

Figure 1. Regional gender gaps in %, Evolution in scores, 2006 and 2021	13
Figure 2. FDI Net Inflows in % of GDP	44
Figure 3. Development of the Female to Male Ratio of Hourly Wages in Mauritius	46

1.Introduction

1.1 Research Question, Purpose and Outline

The thesis in hand highlights the ambivalent role of gender inequalities on economic growth for countries in Africa and the Middle East. The main hypothesis predicted in this study is: In the beginning of the economic transformation from a low (and lower middle) income to a middle income country, high gender inequality in wages could be beneficial. Low relative wages lead to first available formal labor market opportunities for many women. The female labor force (FLF) increases as a result and the kind of labor shifts from informal agricultural to formal manufacturing and services. The structural transformation process of the economy generates opportunities for women to take a formal part and make use of their human capital. As a consequence women have fewer children, population growth slows down and human capital levels increase, seen as the active labor force spends more time in productive — rather than in reproductive — occupations. Higher human capital leads to higher savings and investments, which contributes to stable economic growth.

Whether gender inequalities have a positive or negative impact on growth is tested via several methods: different measures of gender inequality and gender disaggregated data are used in fixed effects panel regressions to investigate effects on growth. Furthermore, cross-country analysis is applied to investigate the long-term implications of gender inequalities on growth. The regressions show ambivalent results: the panel regressions illustrate that an increase in gender equality in terms of education has a negative and significant effect on economic growth in the sample. However, cross-sectional analysis find that reducing gender inequality in education raises economic growth. Furthermore, higher gender inequality in social institutions (through the social institutions and gender index (SIGI)) appear to have a positive and significant impact on growth in cross-sectional analysis. Observing these results lead to the following hypothesis, which was tested in a second step: since women have less bargaining power than men and are on average the cheaper workforce (reflected and proxied by several gender inequality measures), firms take advantage and therefore, the proportion of women in the labor force will increase over time. Period averages for two time periods are applied to test whether gender inequalities

have different impacts on growth in these two stages. This thesis argues that gender inequalities can be drivers for economic growth in the short term and in specific stages, since hiring women is more (cost-) efficient. Nevertheless, to ensure long term competitiveness, increasing investments in human capital, especially for girls and women, is necessary.

The empirical literature on the role of gender inequalities on growth studied has developed in two directions: the vast majority finds that inequalities in education or labor force participation negatively influence economic growth (Klasen, 2002; Klasen and Lamanna, 2011). Paradoxically, some researchers find that gender inequality in wages have a positive impact on growth (Blecker and Seguino, 2002; Seguino, 2000).

There are several measures for gender inequality, including gender wage gap, gender inequality in education, labor force participation, life expectancy, rights, literacy, opportunities, etc. (Sen, 2001; OECD, 2001; Schober and Winter-Ebner, 2009; Klasen and Lamanna, 2011). This study applies gender inequality indicators, measured as female to male ratios of years of schooling (RED), the share of waged and salaried workers (RWAGE) and labor force participation (RLFP), which are used as human capital variables to investigate whether gender inequalities affect growth. In addition to these two indicators the SIGI is applied in the cross-sectional analysis. The analysis covers the time period 1970-2019. To test whether the impact of gender inequalities on growth differs in time and development stages, period averages are used. Possible measures for this analysis were highly restricted due to the missing availability of data, especially for African countries.

For reasons of consistency with the current state of research and the advantages of the neoclassical production function, a growth accounting strategy is applied. The relationship between gender inequality and economic growth is analyzed by using the augmented neoclassical growth model with human capital. Human capital is defined as “the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” (OECD, 2001). Economic research has identified several measures of human capital: educational attainment, training, school enrollment rates, health, individual income or public investments in education (Barro and Sala-i-Martin, 1995, Mankiw et al., 1992, OECD, 2001). A growing share of research uses

gender disaggregated human capital indicators to address the impact of gender inequalities on economic growth (Seguino, 2002; Klasen, 2002; Balamoune-Lutz, 2007).

In its 2030 agenda, the United Nations (UN) presented the so-called Sustainable Development Goals (SDG), which support measures for ecological sustainability, economic progress and social development. 193 UN member states agreed on 17 goals for sustainable development and the implementation of the so-called “global goals” (UN, 2015). Especially goal 5 “achieve gender equality and empower all women and girls” and goal 8 “sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” and the implementation of these goals in Africa and the MENA region are of particular interest for this study. The focus is on Africa: until recently, it has been the forgotten continent — but its role is swiftly changing. While China is increasing its influence in African countries, Europe’s development aid policies are often criticized for their imperialistic tendencies. This thesis contributes to a better visibility and awareness of gender related issues and recommends new political measures to increase economic, social and ecological development in Africa and the Middle East.

Special Economic Zones (SEZ) play a particular role in this analysis because they represent a political measure to boost exports and economic growth. Furthermore, women play a significant role in SEZ: a study conducted by the International Labour Organization (ILO) found that women make on average 70% of the total labor force in SEZ (ILO, 2016). The relationship between female participation, SEZ and growth is analyzed quantitatively and qualitatively.

Section 2 discusses empirical and theoretical literature on the role of gender inequalities for economic growth and highlights the state of scientific knowledge. Section 3 gives relevant background information about the Agenda 2030, SDGs, gender inequality and SEZ. In section 4 the underlying theoretical model is described in detail. Section 5 depicts empirical methods and qualitative statistics. Regression results are presented in section 6. In section 7 seven country case studies are highlighted and section 8 summarizes the findings and concludes with policy recommendations.

2. Literature Review

The chapter in hand discusses the wide range of scientific research concerned with human capital, gender inequality and the influence on economic performance. In the first part, definition and characteristics of gender inequality and the role of human capital are highlighted. The next part discusses empirical evidence and its ambivalent results on the impact of gender inequality on economic measures, like growth and exports. The last part summarizes these findings.

Economic research is traditionally concerned with GDP and its growth as a catalyst for development and wealth. Human capital enters the mainstream economic theory and the associated neoclassical growth accounting strategy as an important production factor, apart from physical capital, technology and labor. This study uses human capital disaggregated by gender to differentiate effects of female and male human capital on growth.

The term gender inequality is used as an umbrella term for disparities between women and men. Gender is defined as “socially learned behaviors and socially constructed roles and expectations associated with females and males” (OECD, 2001). In research and data collection, differences are based on gender binaries — men and women, boys and girls. Gender inequality can take different forms and the literature on the economics of gender inequality is quite diverse, whereby the ethical and moral importance of gender equality is in general accepted (Plantega and Doneva, 2015).

2.1 The Gender Wage Gap

Economic, political and social sciences use gender gaps to explain inequalities in different categories. The best-known economic measure is the gender wage gap, which measures the difference between female and male earnings. Although the differences between female and male earnings diminished over time and the circumstances for women improved, there is still big concern about this issue in both politics and economics. It is a well-known fact that average earnings rates of women are still lower than those of men. The gender wage gap results from various reasons. Determinants identified by economic

research are work experience, career interruption, motherhood, industry sector, occupation, human capital development, health insurance, overtime work and other fringe benefits. The main factor accounting for the gender wage gap is differences between occupations in which men and women typically work (Boraas and Rodgers, 2003).

Until the 1970s women's earnings remained stable, relative to men. Since the late 1970s there has been a substantial increase in women's relative earnings. The change in earnings has been prevalent across a wide spectrum, where much of the female gains were centered on younger women. Yet now, the wage gap between women and men of all ages has narrowed. Furthermore, the wage gap between less-educated women and less-educated men diminished over time. The same holds true for highly educated women and men (Blau and Kahn, 2001; Boraas and Rodgers, 2003; Bowler, 1999).

Weichselbaumer and Winter-Ebmer (2003) cumulate and review empirical research on the gender wage gap in a meta-analysis. The investigated studies show that in most countries women experience wage discrimination, although methods and variables drift apart. In many industrialized countries, there is a large occupational segregation by gender, and women are usually more likely to have interrupted work careers and to work part-time, compared to men.

A similar pattern emerges in Africa: Arbache et al. (2010) analyse gender disparities and find several causes for gender gaps at the labor market level. Their results suggest that gender wage gaps in 18 African countries can be explained by differences in human capital variables. Education, vocational training and years of experience are individual characteristics and account for most of the gender wage gap, which is in line with the above-mentioned studies et al. (Blau and Kahn, 2001; Weichselbaumer and Winter-Ebner, 2003; Klasen, 2002). African women on average have lower educational opportunities than men and spend less time at work due to unpaid responsibilities like household and care work. The cross-country comparison also finds that in Africa labor force participation rates are decidedly gender-specific. Men are far more likely to have paid work than women. In Africa, half of the women are employed, many of them still affected by poverty. Low-paid work is related to gender in this region, for which comparable data is available (Abrache et al., 2010).

Since women's wages tend to be lower than men's, it is reasonable to argue that companies lower their costs when hiring women instead of men. In labor-intensive segments like the manufacturing sector, labor costs in general need to be competitive. Hence, one direction of economic literature addresses the impact of gender wage gaps as an indicator for the human capital stock on economic growth and investments.

According to some researchers (Blecker and Seguino, 2002; Seguino, 2000) low wages for women increase competitiveness in countries with export strategies. Furthermore, Ertürk and Cagatay (1995) also state that the feminization of the labor force leads to lower unit labor costs and therefore stimulates investments and, indirectly, growth. Industries benefit particularly from female workers as the costs of employing women are lower than those of male workers.

Seguino (2000) analyzes gender inequality and economic growth in export-oriented economies where women make a large share of the labor supply in the export sector. She applies the neoclassical Solow-Swan growth model and reports a positive correlation between economic growth and gender wage inequality. Furthermore, her study presents evidence of a causal relationship where gender inequality positively affects investments. Countries with export-oriented growth in labor-intensive industries and industrialization strategies therefore benefit from gender wage inequalities, according to Seguino's analysis. Schober and Winter-Ebmer (2011) replicate Seguino's (2000) analysis using other data sources and do not find evidence for a positive relationship but rather a negative impact of gender inequality in wages on growth.

2.2 Gender Inequality in Education

An important strand of literature examines gender inequality in education and its effects on economic growth. Barro and Sala-i-Martin (1995) find that higher gender gaps lead to higher growth. They use female primary and secondary education levels in a neoclassical production function framework and estimate a negative effect on economic growth. Dollar and Gatti (1999) and Klasen (2002) claim that the analysis of Barro and Sala-i-Martin (1995) is not convincing, as the findings may be related to a missing dummy variable for Latin America and multicollinearity.

In many countries, female and male educational attainment levels are highly correlated, meaning individual effects can not be easily detected (Klasen, 2002). Dollar and Gatti (1999) include a dummy variable for Latin America and the results show that the negative link between female education and growth disappears. Klasen (2002) and Klasen and Lamanna (2009) find that in the long run, gender inequalities in education have a negative effect on economic growth and development. They argue that the average level of human capital is reduced and therefore reduces the level of output. This is especially the case for Sub-Saharan Africa: the region shows the slowest progress regarding the level of education accompanied by a poor growth performance (there are many factors determined by economic research that explain Africa's poor growth experience, like low investment ratios and high population growth rates, for example as stipulated by Hoeffler 2000).

Morrisson et al. (2007) use the efficiency argument, that providing women with the same opportunities as men (education, employment, career, decision-making position) will lead to a more beneficial output, as the selection would be based on qualification, not gender. This type of research finds positive correlations in developing countries, but the findings fail to explain causality between gender equality and growth or development. The study describes links between gender equality and growth or poverty reduction through several channels. Increasing equality in rights, resources and voice lead to better access to markets (labor, education, etc.) and therefore increases women's labor force participation, productivity and earnings. Women tend to have better education levels and are often healthier. In addition they seem to gain greater control in paid and unpaid work as well as yielding great decision-making power. An increased female labor force also increases income, consumption and expenditure, which reduces poverty and boosts economic growth (Morrisson et al., 2007). Furthermore, Cavalcanti and Tavares (2008) highlight that if barriers to female participation in the labor market increase, income per capita decreases via two channels: women work fewer hours (output decreases for the same population) and, because discouraging women as a result of discrimination leads to lower household income, fertility increases.

2.3 The Role of Institutions

Another interesting relationship between gender inequality and growth may occur by the effect of institutions on development. Acemoglu, Johnson and Robinson (2001) evaluate the consequences of differences in institutions on economic performance in 64 countries that are ex-colonies. In their study, the relationship between European colonialization, settlements and the development of institutions is prevalent. They find that Africa is poorer than the rest of the world because of worse institutions. The main reason for the establishment of better economic and political institutions depends on whether European colonialists were affected by high mortality rates in consequence of diseases. Several studies indicate that European settlers had much higher mortality rates than indigenous peoples in Africa because of a lack of immunity (Curtin, 1998). The theory of Acemoglu et al. (2001) states that the potential mortality rate of settlers influences the establishment of settlements, which is the reason behind early institutions and therefore the basis for current institutions and current economic performance.

It is arguable that the similarity of social institutions and institutions in the above-mentioned study is obvious and that a relationship to economic growth exists as well. Discriminatory social institutions are described as “formal and informal laws, attitudes and practices that restrict women’s and girls’ access to rights, justice and empowerment opportunities” (Branisa et al., 2009).

All over the world, women experience discrimination in social dimensions, which lead to exclusion from the labor market, wage discrimination and lower education. Gender inequality in social institutions are the highest in Africa and MENA. Women in Sub-Saharan Africa and MENA marry at earlier ages compared to other regions of the world (World Bank, 2006). Gender inequalities in education, occupation, wage, labor force participation, etc. can be the consequence of differences in social institutions, which evolve over time and under different circumstances.

2.4 Summary

The brief review presented in this study highlights empirical research that attempts to analyze the relationship between gender inequalities and growth. The considered literature exemplifies that gender inequality is an important issue and can affect growth and development. Great emphasis is put on cross-sectional analyses rather than on longitudinal studies. Most studies show a negative correlation between indicators of gender inequality and macroeconomic measures. Few scholars find that in some special cases gender inequality in wages has a positive impact on growth and exports. Table 1 summarizes the main findings.

Table 1. Literature Review: The Impact of Gender Inequality on Growth

Gender Inequality in Education	Gender Inequality in Wages	Gender Inequality in Labor Force Participation	Gender Inequality in Social Institutions
Most studies show negative effects on growth	Some studies show positive effects on growth	Most studies show negative effects on growth	Most studies show negative effects on growth
-Positive impact of reducing the gender education gap on growth via reduction of fertility, increase of productivity (paid and unpaid work), broader pool of talents	-Positive impact of reducing the gender wage gap on growth via reduction of fertility, increase of bargaining power (family), independency, higher household income ... - Positive impact of the gender wage gap on growth: lower costs of employment, competitiveness	-Positive impact of reducing the gender employment gap on growth via increase of pool of talents, increase of paid formal employment, lower costs of employment	-Positive impact of reducing the gender social gap on growth via increasing opportunities, health, education, rights, lower fertility rates... - Positive impact of the gender social gap on growth: less strength, less union power

Furthermore, the literature on gender inequality shows that gender gaps tend to be larger in low income and lower middle income countries (World Bank, 2001; Weichselbaumer and Winter-Ebner, 2003; Klasen and Lamanna, 2009; Klasen, 2002; Jütting et al., 2006). Since growth is a driver for development and human capital is a core driver for growth, the importance of narrowing gender inequalities in the human capital stock, especially

regarding low income countries, is obvious. Economic research detects distinct strategies to ensure sustainable growth for countries in distinct stages of development. Aiginger (2014), for example, illustrates that industrialized countries should promote a “high-road competitiveness” industrial policy, which is based on “advanced skills, innovation, supporting institutions, ecological ambition and an activating social policy”. African countries rank among the poorest and are therefore far away from a “high-road”. Low income countries are not capable of implementing a “high-road competitiveness” strategy, but a step towards higher quality and more sophisticated products is necessary, since the “low-road” can turn out to be a development trap. Countries in Sub-Saharan Africa experience moderate economic growth rates, low levels of income and dependence on natural resources for decades. Furthermore, Africa faces four development traps: the conflict trap, the corruption trap, the primary commodity trap and the fractionalized society trap (Collier, 2006).

In this stage of development possible strategies to overcome this obstacles are: take advantage of low wages and cheap female labor and create investment possibilities and manufacturing industries (by means of SEZ, for example). Nevertheless, export-oriented industries in the manufacturing sector may profit from gender inequalities only in the short run. In the long run, as economic literature recommends, a broader industrial policy concept with improvements in the business climate and upgrading skills, amongst others, are necessary (Aiginger and Rodrik, 2020; Gelb et al., 2017).

3. Background

Chapter 3 is divided into three subchapters. The first subchapter shortly presents the Agenda 2030 and the Sustainable Development Goals (SDG), showing that increasing gender equality is an obligatory and universal goal. Subchapter 3.2 exhibits the broad definition and the many faces of gender inequalities. The last subchapter describes SEZ and the possibilities to use zones to increase welfare, growth and female empowerment.

3.1 The Agenda 2025 and its SDG

The 2030 Agenda presented the so-called Sustainable Development Goals (SDG), which were addressed by the United Nations (UN) in September 2015. The SDG support environmental protection, as well as economic and social development. 193 UN member states agreed on 17 goals for sustainable development and the implementation of the so-called „global goals“. The global goals consist of 169 associated targets which address the challenges of our modern times. Especially goals 5 “achieve gender equality and empower all women and girls” and 8 “sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all” are of particular interest for this study. Incidentally, all 17 goals and 169 targets should be of interest, but unfortunately this is beyond the scope of this thesis. The UN 2030 Agenda states: *“Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. (...) Providing women and girls with equal access to education, health care, decent work, and representation in political and economic decision-making processes will fuel sustainable economies and benefit societies and humanity at large. Implementing new legal frameworks regarding female equality in the workplace and the eradication of harmful practices targeted at women is crucial to ending the gender-based discrimination prevalent in many countries around the world.”*

The UN defined 9 targets for SDG 5 with a set of 14 gender specific indicators that measure gender equality with regard to the targets. SDG 5 targets that need to be implemented by all countries are:

- Target 5.1: End all forms of discrimination against women and girls
- Target 5.2: End all violence against and exploitation of women and girls
- Target 5.3: Eliminate forced marriages and genital mutilation
- Target 5.4: Value unpaid care and promote shared domestic responsibilities
- Target 5.5: Ensure full participation in leadership and decision-making
- Target 5.6: Universal access to reproductive rights and health
- Target 5.a: Equal rights to economic resources, property ownership and financial services
- Target 5.b: Promote empowerment of women through technology
- Target 5.c: Adopt and strengthen policies and enforceable legislation for gender equality

3.2 The Many Faces of Gender Inequality

Inequalities between women and men have been a broadly discussed topic for decades. In many disciplines, like sociology, political science, literature or medicine, the analysis of sex and gender-specific differences increased over time and attracted public attention. As Amartya Sen denoted it in his article as “The Many Faces of Gender Inequality”, there are different forms of inequality in different parts of the world and different social classes (Sen, 2001). He listed various forms of gender inequalities (summarized in table 2), particularly to show that “gender inequality is not one homogeneous phenomenon, but a collection of disparate and inter-linked problems”.

Table 2. Seven Faces of Gender Inequality

Mortality Inequality	Higher mortality rates for women, preponderance of men.
Natality Inequality	Boys are preferred over girls. The possibility of sex-selective abortion is common in many Asian countries.
Basic-facility inequality	Girls have less opportunities for schooling than boys, less fair participation in social functions in general.
Special-Opportunity Inequality	The access for women to special opportunity, like higher education, is reduced. Women's rights for occupational choices or spaces are unequal. Historically not appropriate for women: war, commerce, politics, military, philosophy, science.
Professional inequality	Workplace barriers, old boys networks, sexual harassment, working hours, etc.
Ownership Inequality	Property ownership differs for women and men, still in many countries
Household Inequality	Women often work in the unpaid caring sector, no recognition, have to work often in paid and unpaid work, double burden

Source: Sen A. (2001)

The World Economic Forum (WEF) exhibits the wide range of gender inequalities with its Global Gender Gap Report, which has been published on a yearly basis since 2006 for

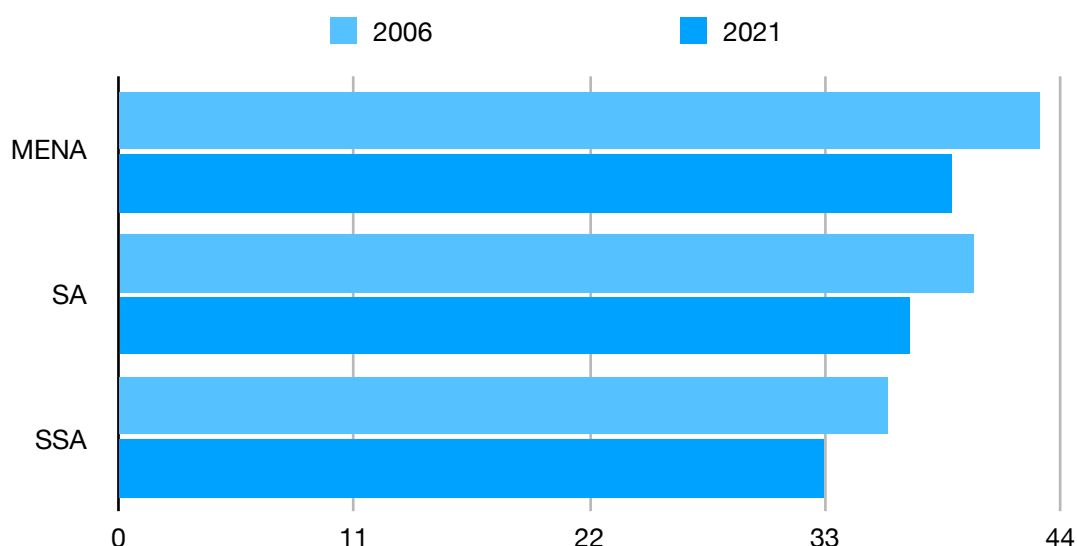
between 115 and 156 countries (2021). The Global Gender Gap Report (GGGR) offers an index (Global Gender Gap Index, GGGI) that reflects the differences between women and men in four dimensions:

- (1) Economic participation and opportunity
- (2) Educational attainment
- (3) Health and survival
- (4) Political empowerment

According to the GGGR (2020 and 2021), Rwanda is the only African country within the top 10 countries in the ranking of the Global Gender Gap Index. Rwanda stands out due to its progress in economic and political participation possibilities for women and men. The gender gap is continuously narrowing in earnings and ministerial positions. Furthermore, Rwanda has the highest share of female parliamentarians in the world (61%) and it has closed the gender gap in health and survival.

Countries in Middle East and North Africa (MENA), Sub-Saharan Africa (SSA) and South Asia (SA) are usually the worst performing regions since the inception of the GGGI in 2006.

Figure 1. Regional gender gaps in %, Evolution in scores, 2006 and 2021



Source: World Economic Forum, GGGR (2006) and GGGR (2021)

Likewise, the Social Institutions and Gender Index (SIGI) is a multidimensional measure that combines five dimensions (Branisa et al., 2009):

- (1) Family code
- (2) Civil liberties
- (3) Physical integrity
- (4) Son preference
- (5) Ownership rights

The SIGI measures “discrimination against women in social institutions” across 180 countries (OECD, 2020). The OECD describes discriminatory social institutions as: “Formal and informal laws, attitudes and practices that restrict women’s and girls’ access to rights, justice and empowerment opportunities.” A low value indicates low discrimination. This Index is used for the presented thesis to investigate the relationship between the role of women in social institutions and economic growth.

3.3 Best Practice? Special Economic Zones and the Role of Women

Special Economic Zone (SEZ) is an umbrella term for a limited area with certain economic characteristics. Economic policies in SEZ are different to those of the country in which it is located — usually they are more liberal. The comprehensive disparities among SEZ disallow a consistent definition. This thesis uses the term Special Economic Zones as a universal notion for all types of zones (Free Zones, Free Economic Zones, Free Trade Zones, Export Processing Zones, Industrial Parks, Science Parks, Regional Development Zones, Urban Regeneration Zones, Free Ports, Single-Enterprise Zones, also referred to as Free Points and Customs-Free Zones). The 2019 World Investment Report (WIR, 2019) states that today there are more than 5400 SEZ in more than 140 countries. The ILO (2008) reports a huge growth of SEZ since the late 1960s. More than 1000 SEZ were established in the past years (WIR, 2019).

Africa established 237 SEZ in 38 economies. Most of them are so-called multi-activity SEZ. These are non-specialized and foster general industrial development. Many zones

are located in Kenya (61), but also in Nigeria (38), Ethiopia (18), Egypt (10) and Cameroon (9).

SEZ are used in many developing and also developed economies to experiment with different policy measures. Governments usually use zone programs to offer fiscal and regulatory incentives to attract foreign direct investment (FDI), create industrial and economic development and trade opportunities (Woolfrey, 2013).

Baissac (2011) states that most SEZ are created with four goals: attract FDI, create employment, support economic reform strategies, and to serve as experimental laboratories for new policies.

The United Nations Conference on Trade and Development (UNCTAD) argues that SEZ can support industrialization, economic diversification and structural transformation. Especially the least developed countries need to extract advantages from financial and political opportunities of zones. Beyond that, the report suggests the necessity of keeping the Sustainable Development Goals in mind when governments establish zones (WIR, 2019). Another survey conducted by UNCTAD compares 100 different Export-Processing Zones (EPZ), a form of SEZ, in 21 countries all over the world. EPZ are, according to ILO (2008), defined as “industrial zones with special incentives set up to attract foreign investors, in which imported materials undergo some degree of processing before being (re-) exported again.” The study concludes that most of EPZ do not sufficiently promote social and environmental issues (UNCTAD, 2015).

Many researchers collected data on the performance of zones and investigated the impact on several economic indices. The literature and research on SEZ yield ambivalent results. The direct impact and performance of zones are usually described by the level of foreign direct investments (FDI), export-led growth and job creation. Jensen and Winiarczyk (2014) for instance evaluate the effectiveness of Polish SEZ. They estimated factors show ambitious results in terms of higher employment or income relative to other non-SEZ-regions. Positive effects are found in terms of business creation which arises through the attraction of FDI. Beyond that, the observation showed a negative impact of zones on the environment. Zaldivar and Molina (2017) and Farole (2011) classify research outcomes in the following way:

Table 3. Economic Outcomes of SEZ

1. Static economic outcomes	2. Dynamic economic outcomes	3. Socioeconomic outcomes
FDI, employment, exports and economic growth	technology transfer, economic integration and structural change	quality of employment, wages and genderdifferentiated imports

Source: Zaldivar and Molina (2017) and Farole (2011)

Farole (2011) detects that successful zones embark on a systematic strategy, the functioning of regulatory and governance framework and a value proposition for investors. Policy objectives are:

- SEZ are often used to implement policies that are politically impracticable in the operating country.
- In SEZ governments experiment with types of reforms. If the effects of a new policy is uncertain, the governance body can trial policy measures in the limited territory of the zone.
- Infrastructure is necessary for SEZ to attract manufacturing firms, to stimulate industrial development and diversification.

A World Bank study divides benefits of SEZ in static and dynamic benefits (table 4):

Table 4. Static and Dynamic benefits of SEZ

1. Static benefits	2. Dynamic benefits
direct employment creation, income generation, export growth, export diversification, foreign exchange earnings, foreign direct investment, government revenues	indirect employment creation, skills upgrading, female employment, technology transfer, „demonstration effect“ arising from application of „best practices“, regional development

Source: FIAS (2008)

SEZ succeed in terms of economic performance if they offer good linkages and strong economic ties to the broader economy. The functioning of a regulatory framework makes zones a competitive place to establish businesses. Low taxes and easy registration methods encourage investors to invest and to be flexible in adapting by changing environments (Farole 2011).

Farole (2011) argues that African zones underperformed against measures of success. The results for static economic, dynamic and socio-economic outcomes are heterogeneous. He points out the importance of socioeconomic outcomes as follows:

“...(1) the quality of employment generated; (2) the extent to which workers’ rights are protected in the zones; and (3) the gender-differentiated impacts of zones (given that a large majority of workers in most zone programs are female). These social issues should not be viewed as completely segregated from the economic issues discussed earlier; over time, social and economic outcomes are closely entwined. Zone programs that fail to offer opportunities for high-quality employment and upward mobility of trained staff, that derive their competitive advantage from exploiting low-wage workers, and that neglect to provide an environment that addresses the particular concerns of female workers are unlikely to be successful in achieving the dynamic benefits possible from zone programs and are likely to find themselves in a “race to the bottom.” By contrast, zone programs that recognize the value of skilled workers and seek to provide the social infrastructure and working environment in which such workers thrive will be in a position to facilitate upgrading.” (Farole 2011)

This thesis argues that SEZ can work as areas for the promotion of women’s social and economic independency, ensuring social progress and economic efficiency. Politicians create opportunities for women to enter formal employment when building export-oriented strategies like SEZ. A study conducted by the World Bank finds that women make on average 70% of the total labor force in zones (WB, 2011). At the same time, in sub-Saharan Africa more than 60% of female workers have a low-paid and labor-intensive job in the agricultural sector and perform the most of caring and unpaid household (ILO, 2016).

Tejani (2011) investigates the relationship between female participation in zones, gender inequalities and economic performance for a set of Asian, African and Latin American countries. She explains that it is not export-orientation per se that leads to the feminization of the labor force, but rather the type of manufacturing in certain sectors. In the past decades, women were drawn from informal and agricultural work into paid employment in manufacturing sectors in many countries all over the world. Tejani moreover emphasizes

that women are overrepresented in export-oriented production because they provide cheap labor and succumb to certain gender stereotypes. It is argued that specific characteristics are therefore attributed to women — such as dexterity, docility and submissiveness. Feminization of labor is followed up by a defeminization of employment in some countries, which raises the question, whether low wages and flexibility are sustainable features or rather oppose female independencies. Tejani (2011) lists the following reasons for the defeminization:

- Female employment is procyclical, they are hired when required and dismissed otherwise.
- Industrial upgrading is negatively correlated with female intensity of employment. As capital intensity and manufacturing labor productivity increases, female intensity of manufacturing employment decreases. There is evidence for a defeminization of export labor in some countries where the gender wage gap diminished.
- Cost pressures on suppliers lead to a greater informalization of work and outsourcing to home-based work.

Challenges and issues highlighted need to be addressed and women's economic empowerment through zones should be one of many strategies implemented by governments in charge. WB (2011), for example, suggests a scheme for monitoring and evaluation of zones to ensure program sustainability regarding social development and competitiveness.

The World Investment Report 2019 highlights that modern SEZ implement gender equality regulations, like child care and anti-discrimination rules (WIR, 2019). For example, the SEZ “Flower Farm Enterprise” in Naivasha, Kenya could improve the situation of female workers through the introduction of gender sensitive committees. The committees were introduced in 2004 to challenge unplanned pregnancies, HIV/AIDS infections and sexual harassment. The challenges of this cut-flower farm were recognized by its management and addressed through investments aimed at training the committee members. The members were trained in communication, running effective meetings, leadership (especially empowering women and encouraging them to take up higher positions), rights and responsibilities, and more. Female workers experienced less unplanned pregnancies,

reduction of sexual harassment, awareness of HIV/AIDS and an increase in condom use since the committees began dealing with this issues. Furthermore, the increased participation in workplace policies improved stability, productivity and worker-management relations (World Bank, 2011).

Another successful example of a SEZ that could increase the female and male workers situations is the “Africa apparels factory” in collaboration with the KCB Bank in Nairobi, Kenya. The apparels factory established a partnership with the Kenyan Bank KCB, to offer its workers checking and saving accounts at lower deposit minimums. Before the partnership was established, workers drew the salary on a monthly payroll day. The factory had to cater to administration associated with the payroll system, the security and hire police when the salary was disbursed. Now the factory pays salaries through deposits, which is safer for the workers and cheaper for the factory. Women can use the bank account to build savings, especially before marriage and reduce dependencies on spouses. The intervention lowered the risk of having wages stolen, increased security and the likelihood of savings. The factory decreased costs through changing into the system for disbursing wages through bank accounts compared to high costs of security associated with a cash payroll system.

As Baissac (2011) notes, Mauritius benefited from its SEZ program in the long run. He claims that SEZ contributed to political stability and social development (in zones where mainly female workers are employed). Female waged and salaried workers in the formal sector increased as opportunities were set up by diversifying the economy through structural reforms. But, as Kasseeah and Tandrayen-Ragoobur (2016) highlight, there is evidence that this development is reversing for garment workers since the expiration of the multi-fibre arrangement (MFA). Women that were employed in the garment sector lost their jobs as a consequence, and had to shift to self-employment. The authors find that most of these women only have basic primary education and experiences only in textile and clothing industries (Kasseeah and Tandrayen-Ragoobur 2016).

Aggarwal (2007) discusses whether SEZ have a positive impact on employment, poverty and human development. Evidence for Kenya and Ethiopia suggests that at a macro perspective overall employment did not increase substantially through the establishment of

SEZ. But zones might benefit labor-intensive industries with unskilled workers like the textile sector disproportionately. The author draws a picture of pros and cons regarding the role of SEZ for female empowerment. Many women get an opportunity to enter the formal labor market for the first time, which leads to reductions in poverty. At the same time, female workers are exploited and are subject to sexual harassment.

3. The Augmented Neoclassical Growth Model

This study uses a growth accounting methodology to examine the relevance of gender inequalities to explain economic growth. The neoclassical production function framework is used to be in accordance with the current state of research and because it offers a simple framework (Seguino, 2000; Knowles et al., 2002). The model used in this thesis is based on the Solow-Swan growth model. It basically describes that in the long run, an economy's savings determine the capital stock and therefore the level of output. Solow (1956) and Swan (1956) independently developed the basis for the so-called neoclassical growth model. Mankiw, Romer and Weil (1992) derived the so-called augmented Solow growth model, which is described in the section below.

The augmented Solow growth model, which sets the framework for this study, is described as follows (Mankiw et al., 1992):

$$(1) \quad Y = Af(K, H, L)$$

Output is a function of the physical capital stock, human capital, labor and technological progress. The Cobb-Douglas production function for the augmented growth model is:

$$(2) \quad Y_t = K_t^\alpha H_t^\beta (A_t L_t)^{1-\alpha-\beta} \quad \alpha + \beta < 1,$$

where K_t is the physical capital stock, α is the share of physical capital in output, H_t is the stock of human capital, β is the share of human capital of output, A_t is the level of technology and L_t is the level of labor input, the subscript t represents the time period. $(A_t L_t)$ represents effective labor in the economy and $\alpha + \beta < 1$ means decreasing returns to scale for investments to output Y_t .

Equation (3) shows the production function in the intensive form (or in per capita terms), where $k = K/AL$, $h = H/AL$ and $y = Y/AL$ are defined as the stock of physical capital, human capital and level of output per effective unit of labor, respectively.

$$(3) \quad y_t = k_t^\alpha h_t^\beta$$

A constant fraction s of output is invested, thus the rate of saving is sY_t and savings are used in the economy as investment $I = sY$. Investment is used to accumulate physical capital K and human capital H , both depreciate exogenously at rate δ .

Because the sum of aggregate consumption and investment cannot exceed output, we get the constraint $c_t + i_t = y_t$, with $c = C/AL$ and $i = I/AL$ per capita terms. s_k and s_h are defined as the fraction of income invested in physical and human capital, respectively.

The law of motion for physical and human capital, respectively, is described as follows:

$$(4) \quad \begin{aligned} \dot{K} &= I^K - \delta K \\ \dot{K} &= s_K Y - \delta K \end{aligned}$$

$$\frac{\dot{K}}{(AL)} = s_K \frac{\dot{Y}}{(AL)} - \delta \frac{K}{(AL)}$$

$$(5) \quad \frac{\dot{K}}{(AL)} = s_K y - \delta k$$

$$(6) \quad \dot{H} = I^H - \delta H$$

$$\dot{H} = s_H Y - \delta H$$

$$\frac{\dot{H}}{(AL)} = s_H \frac{\dot{Y}}{(AL)} - \delta \frac{H}{(AL)}$$

$$(7) \quad \frac{\dot{H}}{(AL)} = s_H y - \delta h$$

L and A grow exogenously in the model at the rates n and g , where $dL/dt = \dot{L}$ and $dA/dt = \dot{A}$:

$$(8) \quad L_t = L_0 e^{nt} \text{ and } \dot{L} = nL$$

The same holds true for:

$$(9) \quad A_t = A_0 e^{gt} \text{ and } \dot{A} = gA$$

Net investment is described as the increase of the capital stock $dk/dt = \dot{k}$:

$$(10) \quad \dot{k} = \frac{\dot{K}(AL) - K(\dot{A}L + A\dot{L})}{(AL)^2}$$

$$(11) \quad \dot{k} = \frac{\dot{K}}{(AL)} - \left(\frac{\dot{A}}{A} + \frac{\dot{L}}{L}\right)k$$

$$(12) \quad \dot{k} = \frac{\dot{K}}{(AL)} - (n + g)k$$

Plugging (3) into (5) and then into (12) gives the law of motion for k :

$$(13) \quad \dot{k} = s_k k^\alpha h^\beta - (n + g + \delta)k$$

Similarly for h :

$$(14) \quad \dot{h} = s_h k^\alpha h^\beta - (n + g + \delta)h$$

With $h = H/AL$ as human capital per effective unit of labor and s_k and s_h are fractions of capital invested in physical and human capital, respectively.

Equations (13) and (14) imply that k and h converge to the steady-state values k^* and h^* defined by $s_k k^{*\alpha} h^\beta = (n + g + \delta)k^*$ and $s_h h^{*\beta} k^\alpha = (n + g + \delta)h^*$, or

$$(14) \quad k^* = \frac{s_k^{1-\beta} s_h^\beta}{(n + g + \delta)^{\frac{1}{1-\alpha-\beta}}}$$

$$(15) \quad h^* = \frac{s_k^\alpha s_h^{1-\alpha}}{(n + g + \delta)^{\frac{1}{1-\alpha-\beta}}}$$

Substituting (14) and (15) into the production function and taking logs shows that steady state income per capita is:

$$(16) \quad \ln \frac{Y_t}{L_t} = \ln A_0 + gt - \frac{\alpha + \beta}{1 - \alpha - \beta} \ln(n + g + \delta) + \frac{\alpha}{1 - \alpha - \beta} \ln(s_k) + \frac{\beta}{1 - \alpha - \beta} \ln(s_h)$$

The model assumes that the preliminary level of technology $\ln A_0$ reflects country specific characteristics, like climate, institutions, resources etc. and can be written as:

$$\ln A_0 = \gamma + \varepsilon,$$

where γ is a constant and ε is a country-specific technology shift.

The final growth equation takes the following form, the subscript i denotes the country:

$$(17) \quad \ln \frac{Y_{it}}{L_{it}} = \gamma + gt - \frac{\alpha + \beta}{1 - \alpha - \beta} \ln(n + g + \delta) + \frac{\alpha}{1 - \alpha - \beta} \ln(s_{ik}) + \frac{\beta}{1 - \alpha - \beta} \ln(s_{ih}) + \varepsilon_i,$$

where income per capita depends on the preliminary level of technology $\ln A_0$, the rate of technological advancement g , population growth n , depreciation δ and accumulation of physical and human capital with saving rates s_k and s_h and capital shares α and β , respectively. Mankiw et al. assume that the rate of technological advancement g is a constant, since it reflects global technological progress.

The econometric model based on equation (17) takes the following form:

$$(18) \quad \ln y_{it} = \beta_0 + \beta_1 \ln(s_k) - \beta_2 \ln(n + g + \delta) + \beta_3 \ln(s_h) + \varepsilon_i$$

where
$$\beta_0 = \gamma + gt, \beta_1 = \frac{\alpha}{1 - \alpha - \beta}, \beta_2 = \frac{\alpha + \beta}{1 - \alpha - \beta}, \beta_3 = \frac{\beta}{1 - \alpha - \beta}$$

and with the assumption that s_k , n and s_h are independent of ε . The dependent variable y is measured as real GDP per capita (GDP divided by the working age population (15-64)), n is the average rate of growth of the working age population (15-64) and $g + \delta$ is assumed to equal 0.05 (Mankiw et al., 1992). The saving rate of physical capital s_k is captured by the share of gross capital formation k and human capital savings rate s_h is captured by a set of variables (average years of schooling, gender inequality measures and gender disaggregated variables). The final basic equation is illustrated by equation (19):

$$(19) \quad \ln y_{it} = \beta_0 + \beta_1 \ln k + \beta_2 \ln(n + g + \delta) + \beta_3 \ln s_h + \beta_4 X + \varepsilon_i$$

where the basic model is extended by including X variables: SEZ, SIGI and variables that usually effect economic growth, like openness.

4. Empirical Section

Chapter four gives a description of the data, the variables used and the regression equations. Subchapter 4.1 describes data and variables used for this analysis, as well as highlighting descriptive statistics. In 4.2, the panel and cross-section regression equations applied are exposed.

4.1 Data Description and Descriptive Statistics

The extensive search for data led to the conclusion, that there is a lack of gender disaggregated data for many regions in the world. Furthermore, there is no institution which comprehensively collects gender disaggregated wage data on a global scale, and especially not for African countries. Some studies analyzed wage disparities between women and men on a national level, some did so for cross-country analysis. There are several different methods applied by researchers to calculate gender wage gaps, which reduces the comparability of the data. Still, data on earnings and gender wage gaps only exist on a national level (at least for African countries) and only for a short period of time. Due to these challenges, the thesis in hand concentrates on obtainable data from various sources. The variables used are restricted to those with free and open access. Because of the above-mentioned reasons, unfortunately gender wage data could only be found for a small sample. Measurement problems generally occur, for instance because the investment rate in human capital is difficult to measure. Gender inequality in social institutions and reproductive activities are insufficiently captured as there are only a few systematic measures and only for short periods.

The data used in this paper stems from Penn World Table (PWT), the Organization for Economic Cooperation and Development (OECD), World Development Index (WDI, World Bank), Education Statistics World Bank (WB), Barro and Lee Educational Attainment Dataset (Barro-Lee), the International Labour Organisation (ILO) and the United Nations Conference on Trade and Development (UNCTAD). Physical capital is measured as investments (share of gross capital formation times real GDP at constant 2017 national prices (PWT, 2021)).

The human capital and population variables used in this analysis take different forms. Female, male and ratios between the two are included in addition to total measures. This approach offers the opportunity to investigate whether differences between women and men indicate an influence of gender differences on economic growth.

Annual data for panel regression covers the period 1980-2019 and is unbalanced, due to missing observations. To deal with this issue interpolation of missing data is applied. The data set for cross-sectional analysis with period averages covers three periods, namely 1980-2019, 1980-1999 and 2000-2019. Tables 5, 6 and 7 summarize variables used and their sources.

Table 5. Variables and Sources Used for Panel Data Regression¹

Variable	Definition	Data Source
lny	GDP per capita (real GDP at constant 2017 national prices divided by the working age population)	PWT WDI
lnk	investments (share of gross capital formation times real GDP at constant 2017 national prices)	PWT
ln(n+g+δ)	growth of working age population (15-64) + 0.05	WDI
lnhc	average years of total schooling	Barro-Lee
lnwagef	wage and salaried workers, female (% of female employment)	WDI
lnwagem	wage and salaried workers, male (% of male employment)	WDI
lnrwage	female to male ratio of wage and salaried workers	WDI
lnmed	average number of years of total schooling, age 15+, male (5-year averages:1980-2010)	Barro-Lee
lnfed	average number of years of total schooling, age 15+, female (5-year averages:1980-2010)	Barro-Lee
lnred	female to male ratio of years of total schooling (5-year averages:1980-2010)	Barro-Lee
lnlff	labor force, female (% of female population age +15)	WB
lnmlf	labor force, male (% of male population +15)	WB
lnrlfp	female to male ratio of labor force participation rate (%)	WB

¹ ln= natural logarithm

Variable	Definition	Data Source
open	share of exports + share of imports	PWT
oilexp	Fuel exports (% of merchandise exports); fuels comprise mineral fuels, lubricants and related materials	WDI

Table 6. Variables and Sources Used for Cross-Section Analysis²

Variable Name	Definition	Data Source
lny	GDP per capita (real GDP at constant 2017 national prices divided by the working age population)	PWT
lnk	investments (share of gross capital formation times real GDP at constant 2017 national prices)	PWT
ln(n+g+δ)	growth of working age population (15-64) + 0.05	WDI
lnrlfp	female to male ratio of labor force participation rate (%)	WB
lnrwage	female to male ratio of wage and salaried workers	WDI
lnred	female to male ratio of years of total schooling (5-year averages: 1980-2010)	Barro-Lee
oilexp	Fuel exports (% of merchandise exports); fuels comprise mineral fuels, lubricants and related materials	WDI
SEZ17	Numbers of SEZ established by law in 2017	UNCTAD
SIGI	Social Institutions and Gender Index in 2014	OECD
SSA	Dummy variable for Sub-Saharan countries	WB
LIC	Dummy variable for low and lower middle income countries	WB
open	share of exports + share of imports	PWT
lng80	natural log of GDP in 1980	PWT

² Variables are presented as averages of the period (1980-2019), unless otherwise specified

Table 7. Variables and Sources Used for Cross-Section Analysis with Period Averages³

Variable Name	Definition	Data Source
lny	GDP per capita (real GDP at constant 2017 national prices divided by the working age population)	PWT
lnk	investments (share of gross capital formation times real GDP at constant 2017 national prices)	PWT
ln(n+g+ δ)	growth of working age population (15-64) + 0.05	WDI
lnhc	average years of total schooling	Barro-Lee
lnred_total	female to male ratio of years of total schooling	Barro-Lee
lnred_prime	female to male ratio of years of primary schooling	Barro-Lee
lnred_sec	female to male ratio of years of secondary schooling	Barro-Lee
lnred_ter	female to male ratio of years of tertiary schooling	Barro-Lee
lnwage	female to male ratio of hourly wages (%). Data is available only for few years in the second period. Observations are treated as proxy for the second time period.	ILO

The data set consists of 45 countries, a list of the countries with selected variables can be found in appendix B (table XI). Out of these 45 countries, 31 are located in SSA and 21 are defined by the World Bank as low or lower middle income countries (table XI labels countries in SSA and LIC). Some countries managed to change the status from low to lower middle income in the course of time. The ones that were low income countries in the initial time period (1980-1999) and changed their status to a lower middle income country are summarized as LIC (low income countries). Table 8 below shows descriptive statistics of variables that were used for the panel regression and are sorted by group.

³ Variables are presented as averages of period 1 (1980-1999) and 2 (2000-2019), unless otherwise specified

Table 8. Mean Values of Selected Variables⁴

	TOTAL	MENA	SSA	LIC
<i>y</i>	15075.18	33741.44	6645.26	5902.21
<i>k</i>	2.62e+10	6.82e+10	7.28e+09	9.66e+09
(<i>n+g+δ</i>)	7.80	8.02	7.71	7.68
<i>hc</i>	1.80	2.11	1.66	1.62
<i>flf</i>	49.49	23.89	61.05	64.48
<i>mlf</i>	75.19	74.99	75.28	77.36
<i>femed</i>	4.08	5.35	3.50	3.17
<i>maled</i>	5.30	6.72	4.66	4.51
<i>wagef</i>	39.42	73.20	24.16	20.67
<i>wagem</i>	47.62	72.22	36.51	32.07
<i>red</i>	71.48	73.58	70.55	65.90
<i>rlfp</i>	65.35	31.72	80.53	82.80
<i>rwage</i>	69.37	99.38	55.82	54.41
<i>open</i>	-5.67	-5.54	-5.73	-4.09
<i>oilexp</i>	23.29	48.93	11.32 (30 Obs.)	14.02 (20 Obs.)
<i>N</i>	45	14	31	21

Note: Variable *y* is GDP per capita (real GDP divided by working age population, total), *k* is investments (share of gross capital formation time real GDP, total), (*n + g + δ*) is working age population growth + 0.05, the human capital variable *hc* measures average years of total schooling, *flf* is the share of female labor force participation (in %), *mlf* is the share of male labor force participation (in %), *femed* and *maled* are female and male average years of schooling, respectively. *wagef* and *wagem* are shares of wage and salaried female and male workers (in %), respectively. *red* is female to male ratio of years of total schooling (in %), *rlfp* is female to male ratio of labor force participation (in %), *rwage* is female to male ratio of wage and salaried workers (in %). *open* is the share of exports + share of imports (in %) and *oilexp* is defined as fuel exports (in % of merchandise exports).

The region MENA shows the lowest value of female labor force participation (*flf*), while in LIC female labor force is almost three times as large. Countries in SSA and especially LIC show low levels of education (*femed* and *maled*). The opposite is the case for countries in MENA: years of schooling are on average 2 years higher for women and men compared to SSA and LIC. The share of waged and salaried workers is three times as big in MENA as

⁴ Variables are stated as mean values (1980-2019) over the set of countries

in SSA and LIC. Measures of gender inequality show that the MENA region outperforms SSA with regard to education and waged work. The opposite is the case for gender inequality in labor force participation: women are on average about 70% less active in the labor force than men in MENA.

The regression models are described in subchapters 4.2 and 4.3. Results are presented in chapter 5.

4.2.1 Panel Regression Model

This study uses panel data fixed effects analysis to investigate the effect of gender inequalities on economic growth. The estimation of the production regression function is based on the Solow-Swan model that Mankiw et al. (1992) augmented as described in chapter 3.

The econometric equations are extended to include variables which typically affect the level of output. Detailed regression results of the following equations can be found in Appendix A. The subscript “i” stands for a country and “t” for time. Data used is annual for the time period 1980-2019.

Equation (1):

$$\ln y_{it} = \beta_0 + \beta_1 \ln k_{it} + \beta_2 \ln(n + g + \delta)_{it} + \beta_3 \ln hc + \beta_4 \ln open_{it} + \beta_5 \ln oil exp_{it} + \alpha_i + \varepsilon_{it}$$

In equation 1, the dependent variable is $\ln y$ (GDP per capita) and the independent variables are investments $\ln k$, growth of working age population (including $0.05 = (g + \delta)$) $\ln(n + g + \delta)$, average years of total schooling hc , openness $open$ and fuel exports $oil exp$. The letter variable is included to examine the effect of oil exports on GDP. α_i captures the country specific fixed effect that is time-invariant and ε_{it} is the error term.

Equation (2):

$$\begin{aligned} \ln y_{it} = \beta_0 + \beta_1 \ln k_{it} + \beta_2 \ln(n + g + \delta)_{it} + \beta_3 \ln wage f_{it} + \beta_4 \ln wage m_{it} \\ + \beta_5 \ln flf + \beta_6 \ln mlf + \beta_7 \ln fed_{it} + \beta_8 \ln med_{it} + \alpha_i + \varepsilon_{it} \end{aligned}$$

Equation 2 substitutes the human capital variable hc by including gender disaggregated measures of human capital savings as independent variables: female wage and salaried workers $lnwagef$, male wage and salaried workers $lnwagem$, female labor force $lnflf$, male labor force $lnmlf$, average years of schooling of men $lnmed$, average years of schooling of women $lnfed$.

Equation (3):

$$lny_{it} = \beta_0 + \beta_1 lnk_{it} + \beta_2 ln(n + g + \delta)_{it} + \beta_3 lnred_{it} + \beta_4 lnrwage_{it} + \beta_5 lnrlfp_{it} + \alpha_i + \varepsilon_{it},$$

In equation 3, the following independent variables are included as human capital savings variables: female to male ratio of years of total schooling $lnred$, female to male ratio of wage and salaried workers $lnrwage$ and female to male ratio of labor force participation rate $lnrlfp$.

4.2.2 Cross-Section Regression Model

This model treats the time period 1980-2019 as one observation and runs a cross-country regression for the total sample of 45 countries. The dependent variable and independent variables are measured as averages over the period 1980-2019. The subscript “i” denotes a particular country.

Equation (4):

$$lny_i = \beta_0 + \beta_1 lnk_i + \beta_2 ln(n + g + \delta)_i + \beta_3 lnhc_i + \beta_4 lnred_i + \beta_5 lnrwage_i \\ + \beta_6 lnrlfp_i + \beta_7 SIGI_i + \beta_8 SEZ17_i + \beta_9 X_i + \varepsilon_i$$

In equation 4, the dependent variable lny represents GDP per capita and the independent variables are physical capital lnk , working age population growth $ln(n + g + \delta)$, female to male ratio of years of total schooling $lnred$, female to male ratio of wage and salaried workers $lnrwage$ and female to male ratio of labor force participation rate $lnrlfp$. $SIGI$ represents the Social Institutions and Gender Index and $SEZ17$ is the number of special economic zones established by law in 2017. X_i are other regressors, including $open$, the

average share of exports and imports relative to output, *oil* is the average share of fuel exports to merchandise exports and *SSA* and *LIC* are dummies for Sub-Saharan and low and lower income countries.

4.2.3 Cross-Section with Period Averages

To analyze the hypothesis, whether the effect of gender inequality in education on growth changes over time, the data set is divided into two periods. The first data set covers the period 1980-1999 and the second 2000-2019. Cross-country regressions are applied for both period averages, the total sample (ALL= 45 countries), a subsample of countries in Sub-Saharan Africa (SSA= 31 countries) and for low and lower middle income countries in SSA (LIC= 21 countries). In equation 5 a basic regression is applied. Furthermore, gender inequality in education is divided into levels of education (equation 6). This procedure is applied to investigate whether gender inequalities in different levels of education affect growth to different extents.

Equation (5):

$$\ln y_i = \beta_0 + \beta_1 \ln k_i + \beta_2 \ln(n + g + \delta)_i + \beta_3 \ln h c_i + \varepsilon_i$$

Equation (6):

$$a) \quad \ln y_i = \beta_0 + \beta_1 \ln k_i + \beta_2 \ln(n + g + \delta)_i + \beta_3 \ln red_prime_i + \varepsilon_i$$

$$b) \quad \ln y_i = \beta_0 + \beta_1 \ln k_i + \beta_2 \ln(n + g + \delta)_i + \beta_3 \ln red_sec_i + \varepsilon_i$$

$$c) \quad \ln y_i = \beta_0 + \beta_1 \ln k_i + \beta_2 \ln(n + g + \delta)_i + \beta_3 \ln red_ter_i + \varepsilon_i$$

$$d) \quad \ln y_i = \beta_0 + \beta_1 \ln k_i + \beta_2 \ln(n + g + \delta)_i + \beta_3 \ln red_total_i + \varepsilon_i$$

The dependent variable is denoted *lny* (natural logarithm of GDP per capita) and the independent variables are: *lnk* (natural logarithm of investments), *ln(n + g + δ)* (working age population growth), *lnhc* (average years of schooling, total), *lnred_prime* (female

to male ratio of years of primary schooling), *lnred_sec* (female to male ratio of years of secondary schooling), *lnred_ter* (female to male ratio of years of tertiary schooling), *lnred_total* (female to male ratio of years of total schooling).

Equation 7 tests whether gender inequality in wages affect economic growth for a small sub-sample of Sub-Saharan countries (N= 15) :

$$\ln y_i = \beta_0 + \beta_1 \ln k_i + \beta_2 \ln pop_i + \beta_3 \ln wage_i + \varepsilon_i,$$

where *lnwage* is the female to male ratio of hourly wages.

5. Results

Improvements in government policies are expected to raise economic growth rates and increase the level of output in the long run. The variable SEZ17 is therefore expected to have a positive effect on growth. Likewise, the model predicts a positive relationship between economic growth and the quality of social institutions and female empowerment, which is reflected by the variable SIGI14. The majority of economic research papers investigated for this thesis indicate a negative relationship between growth and measures of gender inequality. Oil exports and openness are expected to have a positive influence on growth.

Panel regression results show a negative relationship between average years of schooling (female, male and total), male labor force participation (not significant) and gender inequality in education and economic growth. The opposite is the case in cross-sectional analysis: a reduction of gender inequality in education raises economic growth as expected. The impact is largest for the female to male ratio of years of primary schooling and in the second period. On the other hand, the social institutions and gender index (SIGI) (significant) and gender equality in wages (insignificant) appear to have a negative impact on growth in cross-sectional analysis. The coefficient for SEZ is positive but insignificant.

5.1 Panel Regressions

Panel data analysis is applied with a fixed effects model to handle unobserved heterogeneity between the countries in the sample. Due to missing observations, the panel regression has been implemented with an interpolated fixed effects model. Because of multicollinearity issues in the regression model, the panel regressions were run with testing the explanatory variables individually. Omitted variable bias might appear if output per capita, physical and human capital are correlated with unobservable variables, that may vary across countries such as institutions or property rights. There is also the problem of reverse causality when population growth and savings (physical and human) are a function of GDP.

For all three equations 1-3 (Appendix A, tables I-III) the coefficients of investments $\ln k$ always take positive and significant values. Working age population growth $\ln(n + g + \delta)$ coefficients are in almost every case negative and insignificant. As expected, openness has a positive and significant impact on economic growth. The coefficient for fuel exports is different than expected, it is negative and significant, although very small. Female labor force participation $\ln flf$ turned out to be positive but insignificant. The estimated coefficient for male labor force participation $\ln mlf$ is negative and insignificant. The coefficient of average years of schooling for men and women ($\ln med$ and $\ln fed$) turned out to be negative and significant. Furthermore, equation 2 yielded positive and significant values for $\ln wagef$ (female wage and salaried workers, elasticity of 0.174) and $\ln wagem$ (male wage and salaried workers, elasticity of 0.306). In equation 3 the coefficients of $\ln red$ (female to male ratio of years of total schooling) and $\ln rwage$ (female to male ratio of wage and salaried workers) are significant, where $\ln red$ has a negative and $\ln rwage$ a positive impact on growth. The coefficient of $\ln rlf p$ (female to male ratio of labor force participation) is positive and did not turn out to be significant.

5.2 Cross-Section Regressions

Table IV in Appendix A shows regression results of equation 4. As described in chapter 5.1 the cross-sectional regression is applied by testing the explanatory variables individually due to multicollinearity issues. The elasticities of investment lnk are positive and significant, as expected. Working age population growth $ln(n + g + \delta)$ coefficients are positive but insignificant in almost every case. The coefficients for the human capital variables $lnhc$, $lnred$ and $lnrwage$ are positive and significant. The coefficient of the ratio of the female to male labor force participation rate $lnrlfp$ is negative though insignificant. The social institutions and gender index $SIGI$ is positive and significant. Openness appears to be negative and fuel exports positive, the coefficients are very small and insignificant. Dummy variables for Sub-Saharan countries (SSA) and low income countries LIC result in negative coefficients.

5.3 Cross-Section Regressions with Period Averages

Table V in Appendix A shows results of equation 5: investment lnk takes always positive values, the coefficients are significant for the total subset in both periods and for LIC in the second period. The coefficients for $ln(n + g + \delta)$ show a mixed picture: they are always positive except for low and lower middle income countries in the first period and for Sub-Saharan countries in the second period. Positive and significant values are estimated for the human capital variable $lnhc$ for all three groups and both periods. Furthermore, comparing the two time periods shows that the coefficient of $lnhc$ is largest in the second period and the total sample. The effects of investment on GDP are far greater in the total sample than in the subsamples and in the first period. In the second period the positive effect of investment is largest in low and lower middle income countries. The effects of working age population growth on GDP are far greater in the first period than in the second for the total data set.

In equation 6 (tables VI-IX, Appendix A), all coefficients of gender inequality variables ($lnred_prime$, $lnred_sec$, $lnred_ter$ and $lnred_total$) are positive and always significant. These results indicate that an increase in the female to male ratio of years of schooling leads to an increase in GDP. The coefficients for $lnred_prime$, female to male

ratio of years of primary schooling, take the highest values and are higher in the second than in the first period.

Comparing the two time periods leads to the assumption that the coefficient for female to male ratio of years of schooling is largest in the second period for the total sample, they are higher in low and lower middle income countries than in SSA and for primary schooling. Working age population growth shows a positive effect on GDP in the first period. The effect reverses in the second period.

The coefficient for gender inequality in wages is negative but insignificant (table X).

6. Case Studies

6.1 Motivation

Literature draws different pictures of the role gender inequality plays for economic development. Studies analyzed for this thesis reveal several channels through which gender inequality and economic performance interact. But quantitative analysis often has constraints regarding causality assessment of interdependent variables, as well as due to endogeneity issues. Also, hypotheses tested in this thesis yield ambiguous results. Due to possible measurement errors, the lack of long-term data and missing values for some variables a complete econometric analysis is difficult to achieve. To overcome all these obstacles, address the research question more deeply and supply additional evidence that supports causal links between gender inequality and economic growth, a case study approach is applied.

The aim of this chapter is to highlight evidence that initial gender inequality can have a positive effect on growth for a subset of the sample. The underlying hypothesis claims that certain countries benefit from gender gaps in the first stage of development. Furthermore, the hypothesis argues that in the second stage, with sufficient investments in female human capital and reductions in gender inequality measures, stable growth rates can be achieved.

The focus is therefore on a handful of countries which are of peculiar interest. The countries chosen for this analysis are Ethiopia, Rwanda, Kenya, Botswana, Uganda, Zimbabwe, and Mauritius. These countries show specific characteristics: initially they were low or lower middle income countries (defined by the World Bank) and all are located in Sub-Saharan Africa (with the exemption of Mauritius, an island that became a high-income country in July 2020; World Bank). They exhibit low initial values of female educational attainment and high initial gender inequality in education, wage and salaried work and labor force participation (LFP). Furthermore, data on average wages for females and males are available from the ILO databank. Unfortunately, data on average wages are only available on an irregular basis from 1999 onwards and not for the earlier stage. Data for educational attainment levels are available from 1970 (Barro-Lee), wage and salaried work from 1980 and for labor force participation from 1990 onwards (WDI and WB). These criteria hold for all countries in the case study with the exemption of Ethiopia, which is

treated as a special case — neither data for educational attainment (Barro-Lee) nor average wage data from the ILO databank are available. This study instead uses empirical findings from scientific papers and educational attainment data from Wittgenstein Projection⁵ to overcome data issues. For reasons of comparability data is subdivided into two periods of time. Descriptive tables 9 and 10 divide data for the selected countries into the first (1980-1999) and second (2000-2019) periods. Variables are measured as averages for both periods. Table 11 depicts the development of the female to male ratio of years of total schooling (RED) and table 12 shows rankings and scores of the Global Gender Gap Index (GGGI) for two points in time (earliest and latest possible points in time). In the next sub-chapters, the selected countries are described in detail. Sub-chapter 5.7 synthesizes the findings and summarizes experiences.

Table 9. Mean values of Selected Variables (Case Studies)⁶

	1st Period				2nd Period				
	GDP Growth	RED	RWAGE	RLFP	GDP Growth	RED	RWAGE	RLFP	wage-ratio
Botswana	8.97	99.91	95.31	65.85	4.26	97.72	94.28	80.38	72.63
Ethiopia	2.53	33.69*	82.60	75.22	8.90	58,74*	67.20	82.89	66.00**
Kenya	3.21	62.68	39.71	92.87	4.95	81.82	59.88	89.84	93.85
Mauritius	5.55	80.50	111.81	48.27	3.89	89.04	109.58	56.61	83.05
Rwanda	3.28	64.88	34.38	95.64	7.72	90.48	46.70	98.97	65.77
Uganda	5.29	56.03	29.97	81.72	6.28	79.63	46.30	86.66	69.35
Zimbabwe	3.13	76.12	36.29	81.76	4.50	91.32	52.52	86.82	85.37

* Wittgenstein Projection and ** Kolev and Robles (2010); wageratio = female to male ratio of hourly wages (Source: ILO)

⁵ “Mean number of years spent in school by age group and gender. Projections are based on collected census and survey data for the base year (around 2010) and the Medium Shared Socioeconomic Pathways (SSP2) projection model. The SSP2 is a middle-of-the-road scenario that combines medium fertility with medium mortality, medium migration, and the Global Education Trend (GET) education scenario. For more information and other projection models, consult the Wittgenstein Centre for Demography and Global Human Capital's website: <http://www.oew.ac.at/vid/dataexplorer/>” World Bank, June 3 2021

⁶ Variables are presented as mean values for the first (1980-1999) and second (2000-2019) periods; Data originates from ILO, PWT, WDI, Barro-Lee; see also appendix B for per capita GDP growth

Table 10. Mean values of Female and Male LFP Rates⁷

	1st Period		2nd Period	
	FLFP	MLFP	FLFP	MLFP
Botswana	48.54	73.79	57.82	71.78
Ethiopia	67.61	89.87	73.37	88.51
Kenya	70.05	75.44	67.05	74.59
Mauritius	39.03	80.87	42.37	75.02
Rwanda	86.28	90.25	84.09	84.98
Uganda	63.2	77.33	65.78	75.91
Zimbabwe	73.46	89.85	76.84	88.50

Table 11. Development of RED⁸

	Botswana	Ethiopia	Kenya	Mauritius	Rwanda	Uganda	Zimbabwe
1970	97.63	25,97*	46.23	68.31	36.99	40.71	72.90
1980	101.51	29,66*	56.94	78.20	54.43	49.90	72.18
1990	98.31	37,71*	68.44	82.80	75.33	62.15	80.06
2000	98.15	49,79*	76.69	87.62	86.30	74.52	88.29
2010	97.29	67,68*	86.95	90.46	94.67	84.75	94.34

Table 12. Global Gender Gap Index (GGGI)⁹

	in 2006 (Rank)	in 2006 (Index Score)	in 2020 (Rank)	in 2020 (Index Score)
	out of 115 Countries		out of 153 Countries	
Botswana	34	0,690	73	0,709
Ethiopia	100	0,595	82	0,705
Kenya	73	0,649	109	0,671
Mauritius	88	0,665	115	0, 633
Rwanda	N.A. - earliest value 2014 = 7	N.A. - earliest value 2014 = 0,785	9	0,791
Uganda	47	0,680	65	0,717
Zimbabwe	76	0,646	47	0,730

⁷ Variables are presented as mean values for the first and second period; Data originates from WDI

⁸ RED (female to male ratio of years of total schooling); Variables are presented as mean values for decades; Data originates from Barro-Lee and * Wittgenstein Projection

⁹ The GGGI is published in the same-named report (GGGR) by the World Economic Forum (WEF) on a yearly basis since 2006, where the number of countries increases from year to year. The index ranges from the highest possible score 1 (equality) and the lowest possible score 0 (inequality).

Table 13. Mean Values for Selected Variables for the 1st Period¹⁰

Country	Industry Sector Growth*	Agriculture Sector Growth*	Service Sector Growth*	Fertility
Botswana	8.25	1.57	10.96	4.69
Ethiopia	2.89	2.12	4.00	7.19
Kenya	2.78	2.77	N.A.	6.24
Mauritius	6.35	-0.29	5.17	2.22
Rwanda	4.57	2.35	3.60	7.23
Uganda	8.53	3.12	5.93	7.06
Zimbabwe	2.95	4.17	5.15	5.08

* Value added (annual % growth), N.A.= Not Available

Table 14. Mean Values for Selected Variables for the 2nd Period

Country	Industry Sector Growth*	Agriculture Sector Growth*	Service Sector Growth*	Fertility	SIGI (2014)**
Botswana	1.75	1.63	5.60	3.04	N.A.
Ethiopia	13.11	6.06	10.89	5.26	0.25
Kenya	4.75	3.20	6.05	4.36	0.22
Mauritius	2.01	2.95	5.20	1.64	N.A.
Rwanda	8.86	5.44	8.79	4.69	0.13
Uganda	7.76	2.72	6.33	6.03	0.22
Zimbabwe	0.91	-0.48	4.91	3.84	0.14

* Value added (annual % growth); ** The Social Inequality and Gender Index (SIGI) measures discrimination against women in different dimensions. The index takes a value between 0 (low discrimination) and 1 (high discrimination).

¹⁰ Agriculture, forestry, and fishing corresponds to ISIC divisions 1-3 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.

Industry (including construction) corresponds to ISIC divisions 05-43 and includes manufacturing (ISIC divisions 10-33). It comprises value added in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas.

Services correspond to ISIC divisions 50-99 and they include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services. Also included are imputed bank service charges, import duties, and any statistical discrepancies noted by national compilers as well as discrepancies arising from rescaling. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources.

6.2 Uganda

Uganda is a landlocked low income country located in the east of Africa. Gender inequality in education was very high in the beginning of the observed time period. At 56%, Uganda was amongst the poorest performers regarding average RED in the first period and the sample. In 1970 a woman's average educational level was only about 40% that of a man's. Since 1970 gender inequality in education decreased substantially by 45 percentage points in subsequent decades (until 2010).

LFP rates for females (FLFP) and males (MLFP) were high in the first period. In Uganda average RLFP evolved slowly from about 82% in the first period to 87% in the second period. The gender gap in LFP reduces from initially 20% in 1990 to 9% in 2019. The reduction in LFP inequality is due to higher FLFP rates and decreases in MLFP.

Ssebagala (2007) estimates a gender wage gap of about 39% in 2002 and Appleton et al. (1999) find similar results for 1992. According to the ILO the gender wage gap in 2012 was 28% and increased to 34% in 2017. Gender inequality in wages reduced over time, where the latest increase in the gender wage gap can be described by negative growth of real wages due to inflation and a slow down in economic growth in the last decade, where female workers are usually more affected than male.

The share of paid female workers of total employment increased from 30% in the first to 46% in the second period. Table 9 reveals that Ugandan women were much less likely to be in paid employment jobs than men in the first period. This difference reduced until 2019 but the gap is still very high (see table 9, RWAGE). Uganda experiences increases in gender equality in other dimensions too, which is reported through an increase in the GGGI (see table 12).

Although Uganda was and still is struggling with issues like corruption and access to financial resources it managed an average of 5.3% GDP growth in the first period. Furthermore, average GDP growth increased in the second period and reached 6.28% .

In summary, initial gender inequality in several dimensions were high in the first period and decreased substantially over time. FLFP was high in the beginning despite the fact that women's educational level was low and wage inequality high. The findings suggest that as gender equality in education, LFP and waged work increase economic growth rises as well. A reduction of gender inequality was beneficial as economic growth enhanced significantly, although the wage gap did not decrease substantially. The results support the

hypothesis that initial gender inequality and a subsequent reduction can be beneficial. Persisting levels of gender inequality in wages did not harm economic growth in the past, but may result in negative consequences in the long run.

6.3 Rwanda

Another interesting development can be seen in Rwanda. The landlocked country located in east-central Africa suffered severe civil conflicts until the mid-1990s, and culminated in a genocide against Tutsi and moderate Hutu in 1994. Rwanda started in the 1970s with a very low educational attainment level for women and men and high gender inequality in education: women had on average 0.73 and men 1.97 years of schooling, which reveals a gender gap in education of 63% . The development in education has been rather slow — in 2010, women and men in Rwanda had on average 4.25 and 4.49 years of schooling, respectively. Nevertheless, the female to male ratio of years of schooling (RED) increased from 37 in 1970 to 95% in 2010, reducing the gender education gap by 58 percentage points.

FLFP and MLFP rates were already high in the 1990s, where 88% of women and 94% of men were economically active. These rates exhibit decreasing patterns until 2019: 84 and 83% for females and males, respectively. The average RLFP increased from 95 in the first period to 99% in the second period, virtually closing the gender gap in LFP. Although FLFP rates fell, the ratio between female and male LFP increased. The reduction of the LFP gap is due to a greater reduction of the male LFP, rather than female participation rates.

Data from the ILO shows that the share of paid workers in Rwanda was very low in the first period for females and males. In 1990, only about 3% of female and 8% of male employment was waged and salaried. The majority of the working labor force worked in self-employed manner on their own farms (Malunda and Musana, 2021). Until 2019 the share of paid workers increased and reached 24% and 44% of female and male employment, respectively.

The Global Gender Gap Report (GGGR, 2006) shows that gender inequality in wages was rather high with 35%. According to data from the ILO the unadjusted gender wage gap was about 32% in 2017.

The GGGR (2020) highlights Rwanda as one of the best performers in SSA — it achieved rank 9 out of 153 countries worldwide in 2020 (see table 12). Rwanda is, according to the

report, on a good track to achieve gender equality in different dimensions. For instance, it is the only country in the world with a share of 50% women in parliament. Furthermore, it has the lowest SIGI value (27.6%) in the sample of case studies.

Rwanda has experienced stable growth rates since the 1980s (with an exemption of the mid-1990s). In the second period (2000-2019) the average annual growth rate reached approximately 8%.

In summary, Rwanda benefited from three main points: reduction of initial gender inequality, political stability since the late 1990s and structural change. The shift from unproductive agricultural to more productive service and industry sectors in the second period led to positive developments within the labor force. The increase in paid labor is due to shifts from informal, paid and self-employed agricultural work to employment in the service sector and to a little extent shifts in the industry sector. Inequalities between women and men have been reduced substantially, especially in education, and economic growth is on a stable path. Rwanda has high gender wage gaps and low gender inequality in education, which contributes to the image of a destination of interest for investments. Figure 2 shows that FDI net inflows as % of GDP in Rwanda increased substantially from 0.08 in 2000 to 3.7 in 2019. The findings suggest that reductions in gender inequality in education, stable wage gaps and peaceful environments can be amplifiers for economic growth.

Figure 2. FDI Net Inflows in % of GDP



Source: World Bank

6.4 Mauritius

Mauritius is an island state located in the Indian Ocean, with a current population of 1,3 million. It has recently become a high-income country (July 2020).

In 1970 average years of schooling for females was 4.07 and for males 5.95, resulting in a gender gap in education of 32% (table 11).

The female to male ratio of years of schooling declined; in 2010, the gender education gap reduced to 10%. This development can also be seen in table 9: average RED for the first period (80%) decreased in the second period (to 89%). An impressive development can be seen in the level of education: the share of the female population (25+) that completed at least primary education increased from 22% in 1972 to 64% in 2011. The increase in the share of the male population (25+) with at least completed primary education increased from 42% in 1972 to 71% in 2011.

The gap in primary education is closing and completion rates for lower and upper secondary education are high for women and men, especially compared to other countries in this sample, like Botswana, Ethiopia and Rwanda.

In the last decade both gender inequality in education and wages decreased substantially. In figure 3 the development of the female to male ratio of hourly wages is depicted. Data from the ILO reveals that the gender gap in wages was rather high in the beginning and reduced by 10 percentage points from 2011 to 2019.

The average female to male ratio of LFP (RLFP) and average FLFP were very low in the first period (see table 9). Similar to Uganda, in Mauritius FLFP increased slightly along with a reduction of MLFP. Average RLFP increased from initially 48% in 1990 to 57% in 2019.

Mauritius shows the highest values for female and male paid workers in this sample: in 1991 the share of female paid workers out of total employment was 88% , compared to 79% for men. These shares decreased only slightly until 2019 (86 and 77%, respectively).

The high proportion of paid workers in Mauritius implies an advanced economic development. The small proportion of own-account workers indicates a rather small agriculture sector and large formal sector.

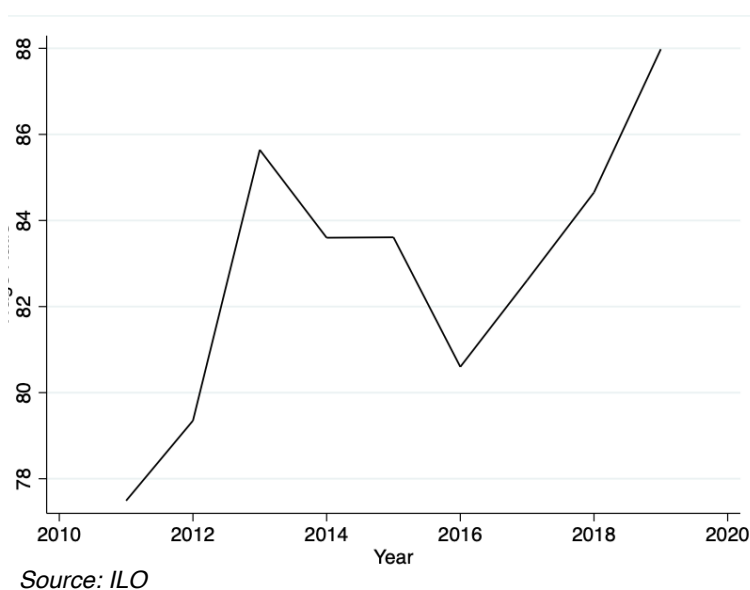
Mauritius exhibits the highest rate of female employment in industry: in 1991 about 50% of the female employment were in industry (figure E, Appendix C).

Furthermore, Mauritius managed to significantly decrease fertility rates: in 1960 total fertility was 6.2 births per woman, whereas in 2019 women birthed on average only 1.4 times.

Mauritius experienced high growth rates in the first period. Average GDP growth slowed down in the second period, but remained high and constant. According to ACR (2017) Mauritius is the most competitive economy in Africa. It is the only country listed as a transition country from stage 2 (efficiency-driven) to stage 3 (innovation-driven) of development. Until 1970 Mauritius was dependent on the agriculture sector, where output was dominated by sugar production. In the 1970s the first SEZ was created and fostered GDP and female labor participation growth. Mauritius expanded its export oriented strategies in the 1990s, which is reflected in a second wave of feminization in the labor force (Blin, 2004).

In summary, gender inequality in education and wages decreased significantly over time. FLFP was very low but increased to a small extent and the share of female paid workers was high from the beginning. Reductions in gender inequality and investment in SEZ were beneficial for high economic growth in the first and moderate growth in the second period. With the increase in women's attainment of educational, lower fertility rates and export-strategies for economic growth have been maintained. The findings support a positive relationship between reducing gender gaps, especially in primary education and economic growth.

Figure 3. Development of the Female to Male Ratio of Hourly Wages in Mauritius



6.5 Ethiopia

The low income and landlocked country in the Horn of Africa is — with about 112 million people — the second most populous country in Africa. In the first period, Ethiopia suffered from political disruption and severe civil conflicts, as it does again currently.

Gender inequality in education was very high in the beginning, since data from Wittgenstein Projection shows that in 1970 women had on average only 30% of men's educational attainment. Ethiopia was, with regard to RED, the worst performer in the sample and period. Until 2010 the mean years of schooling for females and males increased and led to a reduction of the gender gap in education by more than 40%. Still, educational levels are low, compared to the other countries in this sample, with an average of 3.7 years of schooling for females and 4.8 for males. This gives a female to male ratio of 0.77, indicating a gap in education of 23%. In 2011 only 14% of the female population (25+) had at least completed primary education, in contrast to 36% of the male population (25+).

Table 9 reveals that average RLFP was 75% in the first period and reached 83% in the second. FLFP increased from 66% in 1990 to approximately 73% in 2019, whereas male labor force participation (MLFP) rates decreased from initially 89% to 85% in 2019.

Appleton et al. (1999) analyze surveys from 1992 and find that Ethiopia's male workers earn at least 25% more than their female counterparts. Kolev and Robles (2010) calculated adjusted and unadjusted wage gaps for Ethiopia and find that women on average earn 66% of men's earnings (unadjusted wage gap).

The share of female paid workers of total employment was very low in the beginning of the first period (9% in 1980) and decreased until 2005 to its worst value of 6%. Estimates for the first period show that about one-third of all firms in Africa were owned by women and that these businesses were often in the informal sector and in agriculture (World Bank, 2000). The share of female and male paid workers (RWAGE) increased until 2019 and reached 13 and 18%, respectively. Ethiopia is also the worst performer with respect to the share of paid workers in the sample of case studies. The low proportion of paid workers indicates a large agriculture and informal sector, where the proportion of self-employed own-account workers is generally high. The World Bank stresses that they "are the most vulnerable — and therefore the most likely to fall into poverty" (World Bank, 2021). A lack

of formal work arrangements, social protection and sufficient savings exposes them to economic shocks (World Bank, 2021).

Ethiopia has experienced high and positive GDP growth rates in the last 20 years, whereas growth rates in the first period (1980-1999) were moderate. According to the World Investment Report 2019 (WIR, 2019) Ethiopia generated 50,000 jobs within few years through SEZ, where the majority of jobs are obtained by women. The Ethiopian government supported improvements in electricity access by setting up a grid for SEZ (Gelb et al., 2017) and fostered the growing apparel industry in Ethiopia (Staritz and Whitfield, 2017). Furthermore, Ethiopia's labor costs are relatively low compared to other developing countries on the African continent (Gelb et al., 2017).

In summary, evidence reported in this chapter suggests that Ethiopia benefited from gender inequality more in the second period than in the first. In the first period gender inequality in education seemed to be too high and political disruptions too frequent to foster growth. Whereas later, gender inequality in education in the second period is associated with high growth rates. More specifically, Ethiopia benefited from low wage costs, especially for women, and moderate gender inequality in education in the second period. With further strategic investments in manufacturing, especially in the textile sector, and increases in educational levels of females, Ethiopia was able to speed up development and reached the second stage characterized by reduced gender inequality and stable growth rates.

6.6 Botswana

Botswana is landlocked and located at the center of southern Africa. The country gained its independence in 1966 and was at that time one of the poorest countries in the world. Women and men had on average the same years of schooling in the beginning of the first period. Gender inequality in education was therefore very low: in table 9, the value for RED is 99.91%, indicating a gap of virtually zero, which stayed stable in the second period. Average years of schooling tripled for females and males alike from about 2.5 years in 1970 to approximately 9.5 years in 2010. Botswana stands out with the highest average years of schooling for both women and men in the sample.

A similar development can be seen in the share of paid workers out of total employment. The ratio between female and male waged workers (RWAGE) was high in the beginning

and remained stable in the second stage. From 1990 to 2019 the share of female waged workers increased from 62 to 75%.

Although gender inequality in education and waged work were insignificant, FLFP in 1990 was low (47.52%) compared to MLFP (76.12%) and resulted in high gender inequality in LFP of 38%. Labor force participation rates for females enhanced from the first to the second period by 10 percentage points and the female to male ratio of LFP (RLFP) increased from 66 to 80%.

The ILO reports a high gender wage gap in 2019 of 27% and earlier studies show that this is true for the first period as well (for example Siphambe et al., 2001) .

Botswana stands out with the greatest GDP growth rate in the sample and the first period. Alongside this progress fertility rates decreased from 6.6 births per women in 1960 to 2.8 in 2019. Moreover, Botswana is one of the fastest growing countries in the world. Average GDP growth is still high in the second period but has slowed down. However, the growth rates occur from diamond mining rather than its SEZs that were established by the government of Botswana. About 85% of exports and 20% of GDP are generated by the diamond industry (Barczikay et al., 2020).

Hillbom and Bolt (2018) argue that Botswana failed to diversify its economy properly and is still dominated “by a high-value natural resource”. However, it has an institutional framework that is of high quality, political stability and enjoys a good reputation in controlling corruption (Hillbom and Bolt, 2018).

Kotsadam and Tolonen (2016) state that industrial mines in Sub-Saharan Africa cause a decline in agriculture and an increase in services. Female labor shifts from self-employed farming to services.

Evidence collected for Botswana shows a mixed picture on how gender inequality might interact with economic growth. Gender inequality in wages was high in both periods and the level of education for women and men evolved equally, which makes the female workforce convenient. FLFP increased and MLFP decreased, seen as women are the cost-efficient alternative. GDP growth was impressive and was fostered in the service sector rather than manufacturing.

6.7 Kenya

Kenya is located at the Horn of Africa. The Indian Ocean borders Kenya in the south-east and Ethiopia in the north. The World Bank ranked Kenya as a lower income country until 2013, since 2014 it crossed the threshold of being a lower middle income country.

Kenya experienced high initial gender inequality in education; the female to male ratio of education was 46% in 1970. Although average years of schooling for females is still relatively low, the gender gap in education decreased by 41 percentage points until 2010.

In 1990 FLFP was high with 70%, but the rates fell until 2005 (60%) and then increased again to reach 72% in 2019. MLFP shows a similar pattern, although initial rates of 77% have barely been regained in 2019.

The ILO offers hourly wage data for Kenya only for 2019. The gender wage gap today is quite small: women earn on average 93% as much as men do. A study conducted by Agesa (1999) demonstrates that women earned about 48% less than men in 1986.

Although average data for the two periods (see table 9) suggests a widening of the gender gap in LFP, this was only the case until the mid 2000s. The female to male ratio of LFP (RLFP) reached its peak in 2019 with 94%.

In 1991 the share of female waged workers out of total female employment was 20%, compared to 51% for males. The share increased until 2019 for females and males and reached 43 and 58%, respectively.

Kenya experienced stable growth rates in the first period and was one of the fastest growing countries in the second half of the latest period (from 2015-2019 the average growth was approx. 6%). Kenya has the largest number of SEZ (61) in Africa and they account for 10% of its exports. The country's export strategy attracted foreign investors and focused on the low-skilled labor-intensive textile sector (WIR, 2019). According to WIR (2019) Kenya created more than 60,000 jobs through the establishment of zones, with women benefiting most from these opportunities. Kenya established its zone program in 1990 with support from the African Growth and Opportunity Act (AGOA).

In summary, gender inequality in education, wages and waged workers were high in the beginning and average economic growth was decent. The impressive increase of economic growth in the second half of the second period corresponds with a reduction in these gender inequality measures.

6.8 Zimbabwe

Zimbabwe is a landlocked country in southern Africa, which gained its independence in 1980, and the World Bank defines it as a fragile and conflict-affected state (World Bank, 2016). Political mismanagement and conflicts led to worse economic (e.g., hyperinflation and 90% unemployment) outcomes in the 90s and 2000s. The country currently has a lower middle income status and experienced high initial gender inequality in education in 1970. Zimbabwe started with an average RED value of 76% in the first period, while the ratio increased to 91% in the second period. Women had on average 2.74 years of schooling (1.02 less than men) in 1970, whereas in 2010 they had on average 7.38 and men 7.82 years of schooling. The education gap has diminished, with women's average years in schooling at about 94% that of men's. Latest data (2017) for primary education completion rates for women indicate that 80% of the female population (25+) at least completed primary education (men = 86%).

Initial gender inequality in LFP in 1990 was about 18%, FLFP increased over time from 74% in 1990 to 78% in 2019 and the gap in LFP decreased to 13%. Male labor force participation (MLFP) rates decreased from initially 91% to 89% in 2019, as was the case in Ethiopia.

Unfortunately, there are no studies available that address early gender wage gaps in Zimbabwe. The focus is therefore on data from GGGR (2006): the report points out that women on average earn 71% of men's earnings. According to GGGR (2020) the gender wage gap decreased from 29% to 27% in 2020. Zimbabwe stands out with the second highest GGGI (0.730) in 2020 and was ranked 47 out of 153 countries.

The share of female waged workers was very low but increased from 17% in 1991 to 28% in 2006, but then declined again and reached 20% in 2019. The share of male waged workers was relatively high with 52% in 1991 and declined as well (42% in 2019). The gender gap between paid workers decreased from 67% in 1991 by 19 percentage points to 48% until 2019. A report by the ILO points out that women in Zimbabwe were forced into the informal sector due to the lack of opportunities in the formal sector (ILO, 2017).

Although Zimbabwe suffered from economic and political unrest average GDP growth was positive for the first period (3.13%) and increased in the second period to 4.5%.

Zimbabwe faces political, social and economic challenges. Although gender inequality in education reduced substantially and the share of women in the labor market increased,

there is only a small part of the female working age population in waged work, indicating a large share of self-employed own account workers, especially in the agricultural sector. Furthermore, women are often in the informal sector, which causes vulnerability and fertility rates develop rather slow.

6.9 Summary

Countries studied in this chapter show different patterns and characteristics. The determinants of economic growth are diverse — besides population growth, human and physical capital accumulation, political instability and conflicts play key roles. However, all case studies have one particular aspect in common: women started in a weaker position than men and managed to substantially decrease gaps in different dimensions.

Kenya, Zimbabwe, Rwanda, Ethiopia, Mauritius and Uganda tackled high gender inequality in education and significantly reduced education gaps between women and men. In Botswana women and men had the same educational level from the outset, therefore the gender gap in education could not diminish as it did not exist. Educational levels in Ethiopia and Rwanda increased but are still weak; total years of schooling in 2010 was as low as it was in Mauritius 50 years ago.

The hypothesis that initial gender inequality and increases in female educational levels relative to men's lead to higher and stable growth rates is sufficiently confirmed for Kenya, Zimbabwe, Rwanda, Ethiopia and Uganda. Mauritius and Botswana experienced lower but still positive growth rates in the second period, although levels of education were decidedly increased. Nonetheless, both countries managed to develop diversification in employment. A majority of the female labor force in Mauritius were employed in the industry sector until the 2000s and then shifted to the service sector. At the same time, the share of exports (as % of GDP) reduced from 68% in 2000 to 30% in 2020. Alongside the growing industry in the first period, also through the establishment of SEZ, the demand for cheap workers in labor-intensive branches increased. Gender inequality in wages and education made women favorable over men in the textile industry in the case of Mauritius. Similarly, Botswana developed opportunities for women in services and industry, rather than agriculture. Both countries show impressive reductions in the fertility rate, indicating that a large agricultural sector induces fertility, as demonstrated by the other case studies (for comparison see appendix C, figures A-D). Although Mauritius reduced the gender gap in education and fertility rates, it faced only low levels of female labor force participation. High relative wages for women in the second period may counteract labor-intensive export industries and high levels of tourism (appendix c figure G), which make about 40% of total exports in Ethiopia and Mauritius, are not sufficient for long term growth. Political instability and low growth rates in the first period harmed Ethiopia's development. Gender inequality

in education was very high in the beginning and decreased over time, but is still substantial. Ethiopia benefited from low labor costs in general and a good industrial development strategy in the second period. It experienced high growth in the industry sector and high GDP growth rates.

To reduce gender inequality and therefore stimulate economic growth in the long term policy makers should target educational and employment opportunities for women. Industrialization can be a key factor, but countries in Africa struggle with high labor costs, political unrest and autocratic structures.

7. Conclusion

This masters thesis' main objective is to investigate the relationship between gender inequality and economic growth. The study applies quantitative and qualitative methods to give a comprehensive picture of the problem and concentrates on countries in SSA and MENA and the time period 1980-2019. The main hypothesis, which is that differences between women and men affect economic growth, has been partly confirmed.

The econometric findings indicate a negative relationship between economic growth and gender inequality in education, waged workers and labor force participation. The vast majority of studies produced comparable outcomes. This study also finds counter evidence for the assumption that reducing gender inequality in social institutions and wages leads to higher growth in GDP. The positive relationship between economic growth and gender inequality in wages reported here responds to only a few studies that find similar results. The role gender inequality in social institutions plays for growth has not been an object of broad investigations so far — further research is necessary to explore the topic. These two opposing outcomes can be interpreted as follows: gender inequality in wages contributes to economic growth, since female labor costs are lower than the costs of hiring men. Weak social institutions support the exploitation of female workers. Women have on average less rights and bargaining power. They are on average less educated than men and, furthermore, in low income countries levels of education for women and men are generally very low. The regression results emphasize that a reduction of gender inequality in education, the level of educational attainment and primary education, especially for females, play a significant role in LIC and SSA for enhancing economic growth. Low and lower middle income countries in Sub-Saharan Africa benefit the most from reducing gender inequality due to poor education attainment levels.

Case studies complement econometric analysis and reveal that in developing economies initial gender inequality might be beneficial, in the first place to be competitive and attract FDI. The majority of countries exhibited low gender equality measures in the first stage and modest to high growth rates. They improved with regard to gender equality and managed to increase GDP growth. There is only little information available regarding the development of gender wage gaps for African countries. Wage gaps exist and to a certain

degree persist, this is an uncontested fact. As the female workforce accumulates human capital, the productivity of women increases and female labor force becomes cheaper than men's. As a consequence, female labor force participation as well as the share of female waged workers in the formal economy grow. The gender wage gap decreases over time, i.e. male workers get cheaper relative to women. Long term demand for female workers may decrease in certain industries as technologies improve. Upgrading skills for women needs to be a political and economic target to encounter defeminization of employment and degrading women in low-paying labor-intensive sectors.

Consequently, fertility rates decrease while population growth in developing countries in SSA is still far higher than in other world regions. Africa's population will double by 2050 (from 1.3 billion to 2.6 billion) and the 10 youngest countries in the world are located in Africa. This demographic structure, a very young population, could be wasted potential if governments do not invest in education and measures that increase equality between women and men.

To ensure a transformation process Africa need to face another challenging task: political unrest, which is an issue in many African countries. Moreover, China is increasing its influence through investments in African SEZ — a step Europe could engage in as a positive counter-example. Ecological and social grievances trigger migration issues, which affect our lives directly and indirectly. Economic, environmental and societal targets should be addressed at the same time to overcome exploitation of all forms of resources.

Future research should consider the role of SEZ and alternative strategies to increase the success of zones in different dimensions. Politicians should use SEZ as testing sites for measures to increase social, political and ecological targets. Investigating best-practice and bottom-up examples can provide feasible measures for sustainable development, which leads to a progress that includes the social dimension. Kenya serves as a role model with regard to job opportunities within SEZ for women and export-led growth, which is to a certain degree attributable to zones. Gender gaps in education, wages and labor force participation diminished and some zones in Kenya managed to increase female workers' welfare and advancement. These initiatives, practices and policies can be replicated by other countries as well.

The controversial and rarely advocated hypothesis that initial gender inequalities have a positive effect on economic growth has been demonstrated, but it is important to increase gender equality to achieve sustainable growth. The long term target should include the implementation of policies, which lead to equal opportunities for women and men.

References

- Acemoglu, D., Johnson S., Robinson J. (2001), The Colonial Origins of Comparative Development: An Empirical Investigation, *The American Economic Review* (2001), 91(5), 1369-1401
- Agesa, R. U., (1999), The Urban Gender Wage Gap in an African Country: Findings from Kenya, *Canadian Journal of Development Studies/ Revue canadienne d'études du développement*, 20:1, 59-76, DOI: 10.1080/02255189.1999.9668789
- Aggarwal, A. (2007), Impact of Special Economic Zones on Employment, Poverty and Human Development, Working Paper, No. 194, Indian Council for Research on International Economic Relations (ICRIER), New Delhi
- Aiginger, K., (2014), Industrial Policy for a Sustainable Growth Path, WIFO Working Papers, No. 469, Austrian Institute of Economic Research (WIFO), Vienna
- Aiginger, K., Rodrik, D. (2020), Rebirth of Industrial Policy and an Agenda for the Twenty-First Century, *Journal of Industry, Competition and Trade* 20, 189-207
- Appleton, S., Hoddinott, J., Krishnan, P., (1999), The Gender Wage Gap in Three African Countries, University of Oxford International Food Policy Research Institute and University of Oxford
- Arbache, J. S., Kolev, A., Filipiak, E. (2010), Gender Disparities in Africa's Labor Market, Africa Development Forum, World Bank, <https://openknowledge.worldbank.org/handle/10986/2520> License: CC BY 3.0 IGO
- Baissac, C. (2011), Brief History of SEZs and Overview of Policy Debates, in Farole T. *Special Economic Zones in Africa: Comparing Performance and Learning from Global Experiences*, The World Bank, Washington
- Baliamoune-Lutz, M. (2007), Gender Inequality and Growth in Sub-Saharan Africa and Arab Countries, Working Paper No. 25, International Centre for Economic Research, Turin
- Barro, R. and Lee J., (2013), A New Data Set of Educational Attainment in the World, 1950-2010, *Journal of Development Economics*, vol 104, pp.184-198, dataset available at <http://www.barrolee.com/>

- Barro, R.J., Sala-i-Martin, X. (1995), *Economic Growth*, New York: McGraw-Hill
- Blau, F.D., Kahn, L.M. (2001), Gender differences in pay, *Journal of Economic Perspectives*, 14(4), 75-99
- Blecker, R.A., Seguino, S. (2002), Macroeconomic Effects of Reducing Gender Wage Inequality in an Export-Oriented, Semi-Industrialized Economy, *Review of Development Economics*, 6(1), 103-119
- Blin, M. (2004), Export Liberalisation and the Gender Structure of Employment in the Industrial and Service Sectors in Mauritius: Are Women Getting the Jobs? *School of Oriental and African Studies*
- Blinder, A. S. (1973), Wage Discrimination: Reduced Form and Structural Estimates, *The Journal of Human Resources* 8, 436-455
- Bodomo, A. (2017), *The Globalization of Foreign Investment in Africa*, Emerald Publishing Limited, Bingley, UK
- Boraas, S. and Rodgers, W.M. (2003), How does Gender play a Role in the Earnings Gap? An Update, *Monthly Labor Review*, March, 9-15
- Bowler, M. (1999), Women's earnings: an overview, *Monthly Labor Review* 13, 13-21
- Branisa, B., Klasen, S., Ziegler, M. (2009), *The Construction of the Social Institutions and Gender Index (SIGI)*
- Calabrese L., Papadavid P., Tyson J. (2017), *Rwanda: Financing for Manufacturing*, SET
- Cavalcanti, T., Tavares, J. (2007), *The Output Costs of Gender Discrimination: A Model-Based Macroeconomic Estimate*, Mimeograph, University of Lisbon
- Collier, P. (2006), African Growth: Why a "Big Push"?, *Journal of African Economies*, Volume 15, Supplement 2, 188-211
- CONSAD Research Corporation (2009), *An Analysis of the Reasons for the Disparity in Wages Between Men and Women*, Report for U.S. Department of Labor Employment Standards Administration, Washington, DC

Davies R.B. and Mazhikeyev A. (2016), The Impact of Special Economic Zones on Exporting Behavior, School of Economics, University College Dublin

Deyo, F. (1989), Beneath the Miracle: Labor Subordination in the New Asian Industrialism, Berkeley: University of California Press

Dollar, D., Gatti. R. (1999), Gender Inequality, Income, and Growth: Are Good Times Good for Women? Policy Research Report, Engendering Development, Working Paper (1) Washington, DC

Ebenstein, A. (2012), Winners and Losers of Multinational Firm Entry into Developing Countries: Evidence from the Special Economic Zones of the Peoples Republic of China. Asian Development Review, 29(1), 29-56

Erturk, K., Cagatay, N. (1995), Macroeconomic consequences of cyclical and secular changes in feminization: an experiment in gendered macromodelling. World Development, 23 (11), 1977-1979

Farole, T. (2011), Special Economic Zones in Africa: comparing performance and learning from global experiences, The World Bank, Washington, DC

Feenstra, R., Inklaar, R., Timmer, M. (2015), The Next Generation of the Penn World Table, American Economic Review, 105(10), 3150-3182

Flach, A., Ayboğa, E., Knapp, M. (2015), Revolution in Rojava, Rosa Luwemburg Stiftung, Hamburg

Foreign Investment Advisory Service (FIAS) (2008), Special Economic Zones. Performance, Lessons Learned, and Implications for Zone Development, World Bank, Washington, DC

Gelb, A., Meyer C., Ramachandran, V., Wadhwa, D., Kyle, N. (2020), Can Sub-Saharan Africa be a Manufacturing Destination? Labor Costs, Price levels, and the role of industrial policy, Journal of Industry, Competition and Trade 20, 335-357

Hartwell, C. A. (2018), Bringing the benefits of David to Goliath: special economic zones and institutional improvement, Regional Studies, 52:10, 1309-1321

Hoeffler, A. E. (2000), The Augmented Solow Model and the African Growth Debate, CID Working Paper Series 2000.36, Harvard University, Cambridge, MA

Hou, J., (1991), Wage Comparison by Gender and the Effect of Segregation: The Case of Taiwan, China Economic Review 2, 195-214

Human Development Research Paper (2010), Measuring Key Disparities in Human Development: The Gender Inequality Index, United Nations Development Programme

International Labour Organization (ILO) (2008), Report of the In Focus Initiative on export processing zones: Latest trends and policy developments in EPZs, Washington, DC

International Labour Organization (ILO) (2016), Women at Work: Trends 2016, Washington, DC

Jensen, Winiarczyk (2014), Special Economic Zones 20 years later, CASE Network Studies & Analyses No. 467/2014, Warsaw

Jütting, J.P., Morrisson, C. Dayton-Johnson, J., Drechsler, D. (2006), Measuring Gender (In)Equality: Introducing the Gender, Institutions and Development Data Base (GID), Working Paper No. 247, OECD, Paris

Kasseeah, H., Tandrayen-Ragoobur V., (2016), Ex-garment female workers: a new entrepreneurial community in Mauritius, Journal of Enterprising Communities: People and Places in the Global Economy 10 (1), 33-52

Klasen, S. (2002), Low Schooling for Girls, Slower Growth for All? Cross-Country Evidence on the Effect of Gender Inequality in Education on Economic Development, The World Bank Economic Review, Vol. 16, No. 3, 345-373

Klasen, S., Lamanna, F. (2009), The Impact of Gender Inequality in Education and Employment on Economic Growth: New Evidence for a Panel of Countries, in Feminist Economics 15(3), July 2009, 91-132

Knowles, S., Lorgelly, P., Owen, D. (2002), Are Educational Gender Gaps a Brake on Economic Development? Some Cross-Country Empirical Evidence, Oxford Economic Papers 54 (1), 118-149

Kolev, A., Robles, P. S. (2010), Addressing the Gender Pay Gap in Ethiopia: How Crucial is the Quest for Education Parity?, *Journal of African Economies*, Vol. 19, number 5, pp. 718-767,

Malunda D., Musana S. (2012), *Rwanda Case Study on Economic Transformation*, Institute of Policy Analysis and Research-Rwanda (IPAR)

Mankiw, G.N., Romer, D. and Weil, D.N. (1992), A Contribution to the Empirics of Economical Growth, *The Quarterly Journal of Economics*, 107(2), 407-437

Morrisson, A., Raju, D., Sinha, N. (2007), *Gender Equality, Poverty and Economic Growth*, The World Bank, Washington, DC

OECD (2001), *The Well-Being of Nations: The Role of Human and Social Capital*, OECD Publishing, Paris

OECD (2020), 1.1.2020 and 2.1.2020, <https://www.genderindex.org/sigi/>, last time 20.09.20

PWT, Penn World Table, 2021, <https://www.rug.nl/ggdc/productivity/pwt/?lang=en>

Schober, T., Winter-Ebner, R. (2011), Gender Wage Inequality and Economic Growth: Is There Really a Puzzle?—A Comment, in *World Development* Vol. 39, No.8, 1476-1484, Elsevier, Great Britain

Seguino, S. (2000), Gender Inequality and Economic Growth: A Cross-Country Analysis, in *World Development* Vol. 28, No. 7, 1211-1230, Elsevier, Great Britain

Sen, A. (2001), The Many Faces of Gender Inequality, in *The New Republic*, 9/17/2001, Vol. 225, Issue 12, p35

Siphambe, H. K., Thokweng-Bakwena, M. (2001), The Wage Gap between Men and Women in Botswana's Formal Labour Market, *Journal of African Economies*, Volume 10 (2), 127-142

Solow, R. M. (1956), A Contribution to the Theory of Economic Growth, *The Quarterly Journal of Economics*, 70(1), 65-94

Special Economic Zones, An Operational Review of Their Impacts (2017), The World Bank Group, Competitive Industries and Innovation Program (CIIP), Washington, DC

Ssebagala, R., (2007), Wage Determination and Gender Discrimination in Uganda, Research Series 150483, Economic Policy Research Centre (EPRC)

Staritz, C., and Whitfield, L. (2017), Made in Ethiopia: The Emergence and Evolution of the Ethiopian Apparel Export Sector, Roskilde Universitet

Stiglitz, J., Sen, A., Fitoussi, J.P., Report by the Commission on the Measurement of Economic Performance and Social Progress

Swan, T. W. (1956), Economic Growth and Capital Accumulation, Economic Record, November, 334-361

Tejani, S. (2011), The Gender Dimension of Special Economic Zones, Special Economic Zones, The World Bank, Washington, DC, 247-281

Tocco, B., Bailey, B., Davidova, S. (2013), Determinants to Leave Agriculture and Change Occupational Sector: Evidence from an Enlarged EU, Center for European Policy Studies, Brussels

United Nations (UN) (2015), Transforming Our World: The 2030 Agenda For Sustainable Development, <https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (last view: 5/5/21)

United Nations Conference on Trade and Development (UNCTAD) (2015), Enhancing the Contribution of Export Processing Zones to the Sustainable Development Goals: An analysis of 100 EPZs and a Framework for Sustainable Economic Zones, New York and Geneva

Weichselbaumer D., Winter-Ebmer R., (2003), A meta-analysis of the international gender wage gap, Working Paper, No. 0311, Johannes Kepler University of Linz, Department of Economics, Linz

World Bank (2001), Engendering development : through gender equality in rights, resources, and voice World Bank policy research report, Washington, D.C. and New York: World Bank and Oxford University Press

World Bank (2011), Fostering Women's Economic Empowerment Through Special Economic Zones, Washington, DC

World Economic Forum

-(2006), The Global Gender Gap Report 2006, http://www3.weforum.org/docs/WEF_GenderGap_Report_2006.pdf

-(2017), The Global Gender Gap Report 2017, http://www3.weforum.org/docs/WEF_GGGR_2017.pdf

-(2020), The Global Gender Gap Report 2020, http://www3.weforum.org/docs/WEF_GGGR_2020.pdf

-(2021), The Global Gender Gap Report 2021, http://www3.weforum.org/docs/WEF_GGGR_2021.pdf

World Investment Report (2019), New York and Geneva, <https://unctad.org/webflyer/world-investment-report-2019>

Zaldivar F. and Molina E. (2017), Special Economic Zones and their Impact on Regional Economic Development, Working Paper, Volume 49, Universidad Nacional Autónoma de México, México

APPENDIX A: Regression Results

Table I. Fixed-Effects Panel Regression Results (Equation 1)-1

	lny	lny	lny	lny	lny
lnk	0.252*** (26.91)	0.210*** (30.33)	0.257*** (28.40)	0.261*** (28.37)	0.248*** (27.00)
ln(n+g+δ)	0.00124 (0.04)	0.0219 (0.70)	-0.00262 (-0.08)	-0.00285 (-0.09)	-0.00150 (0.05)
lnhc	-0.158*** (-6.70)		-0.182*** (-7.88)	-0.185*** (-8.01)	-0.154*** (-6.57)
open	0.000936 (1.91)			0.00110* (2.22)	
oilexp	-0.000965* (-2.62)				-0.000996** (-2.70)
_cons	3.576*** (17.29)	4.264*** (24.50)	3.424*** (17.11)	3.353*** (16.45)	3.640*** (17.83)
N	1751	1791	1791	1791	1751

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table II. Fixed-Effects Panel Regression Results (Equation 2)-1

	lny	lny	lny	lny	lny	lny	lny
lnk	0.210*** (21.24)	0.178*** (23.70)	0.170*** (21.23)	0.209*** (29.73)	0.207*** (26.19)	0.259*** (28.19)	0.253*** (29.14)
ln(n+g+δ)	0.00894 (0.29)	0.0434 (1.42)	0.00486 (0.16)	0.0236 (0.75)	0.0256 (0.81)	0.000135 (0.00)	-0.00383 (-0.12)
lnwagef	0.0872** (3.16)	0.174*** (9.68)					
lnwagem	0.206*** (4.15)		0.303*** (9.39)				
lnlff	0.119** (2.76)			0.0370 (0.83)			
lnmlf	-0.337* (-2.29)				-0.0935 (-0.70)		
lnfed	-0.0423 (-1.20)					-0.136** (-7.95)	
lnmed	-0.215*** (-3.66)						-0.228*** (-8.01)
_cons	4.635*** (6.41)	4.486*** (26.22)	4.020*** (23.40)	4.152*** (18.87)	4.738*** (6.81)	3.293*** (15.65)	3.604*** (18.99)
N	1791	1791	1791	1791	1791	1791	1791

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table III. Fixed-Effects Panel Regression Results (Equation 3)

	lny	lny	lny	lny
lnk	0.227*** (24.47)	0.244*** (28.11)	0.201*** (28.85)	0.208*** (28.35)
ln(n+g+δ)	0.0448 (1.43)	0.0119 (0.39)	0.0525 (1.68)	0.0256 (0.81)
lnred	-0.175*** (-5.16)	-0.212*** (-6.34)		
lnrwage	0.144*** (5.28)		0.170*** (6.37)	
lnrlfp	0.0626 (1.49)			0.0433 (1.02)
_cons	3.988*** (16.00)	3.413*** (15.64)	4.618*** (25.54)	4.353*** (22.35)
N	1791	1791	1791	1791

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table IV. Cross-Country Regression Results (Equation 4) with Period Averages (1980-2019)

	lny	lny	lny	lny	lny	lny	lny	lny
lnk	0.214** (2.98)	0.346*** (5.38)	0.267*** (3.57)	0.274*** (3.56)	0.317** (3.18)	0.219* (2.56)	0.419*** (4.94)	0.0663 (0.83)
ln(n+g+δ)	1.677 (1.64)	1.192 (1.15)	1.243 (1.14)	1.332 (1.30)	0.396 (0.31)	-0.379 (-0.26)	0.218 (0.16)	1.828* (2.04)
lnhc	1.255*** (5.49)					0.953*** (4.39)		1.132*** (5.47)
lnred		1.692*** (5.13)	1.686*** (4.73)					
lnrwage				1.030*** (4.10)				
lnrlfp					-0.477 (-1.72)			
SIGI						1.946* (2.49)		
SEZ17							0.00297 (0.22)	
open			-0.00698 (-0.66)					
oilexp			0.00699 (1.61)					
SSA						-0.304 (-0.96)		-0.707* (-2.45)
LIC						-0.280 (-1.33)		-0.339 (-1.60)
_cons	6.533 (1.90)	4.789 (1.39)	5.964 (1.68)	6.692 (1.70)	2.547 (0.59)	1.283 (0.26)	0.0818 (0.02)	11.05** (3.28)
N	45	45	44	45	45	35	45	45

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table V. Cross-Country Regression Results (Equation 5) with Period Averages for the First (1980-1999) and Second (2000-2019) Periods

	1st Period			2nd Period		
	ALL	LIC	SSA	ALL	LIC	SSA
	lny	lny	lny	lny	lny	lny
lnk	0.234** (2.96)	0.164 (1.15)	0.0596 (0.52)	0.217** (3.14)	0.248* (2.51)	0.167 (1.76)
ln(n+g+δ)	1.860 (1.68)	-0.359 (-0.19)	0.815 (0.56)	0.407 (0.57)	0.0333 (0.03)	-1.383 (-1.34)
lnhc	0.894*** (4.24)	0.910** (3.05)	0.930*** (3.80)	1.452*** (5.41)	0.847* (2.82)	0.936** (3.12)
_cons	7.250 (1.85)	2.821 (0.40)	8.086 (1.56)	2.593 (1.05)	1.595 (0.43)	-0.234 (-0.07)
N	45	21	31	45	21	31

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table VI. Cross-Country Regression Results (Equation 6 a) and b)) with Period Averages for the First Period (1980-1999)

	ALL	LIC	SSA	ALL	LIC	SSA
	lny	lny	lny	lny	lny	lny
lnk	0.333*** (4.65)	0.163 (1.34)	0.145 (1.41)	0.298*** (4.62)	0.125 (1.21)	0.160 (1.69)
ln(n+g+δ)	1.755 (1.62)	1.033 (0.63)	1.270 (0.94)	1.676 (1.73)	1.866 (1.33)	1.486 (1.20)
lnred_prime	1.330*** (4.51)	1.664*** (4.20)	1.406*** (4.48)			
lnred_sec				1.280*** (6.01)	1.399*** (5.66)	1.140*** (5.24)
_cons	6.609 (1.73)	8.275 (1.32)	9.170 (1.90)	7.338* (2.14)	11.38* (2.11)	9.531* (2.12)
N	45	21	31	45	21	31

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table VII. Cross-Country Regression Results (Equation 6 c) and d)) with Period Averages for the First Period (1980-1999)

	ALL	LIC	SSA	ALL	LIC	SSA
	lny	lny	lny	lny	lny	lny
lnk	0.336*** (4.49)	0.105 (0.80)	0.195 (1.66)	0.329*** (4.69)	0.154 (1.30)	0.145 (1.44)
ln(n+g+δ)	1.066 (0.93)	1.380 (0.81)	1.233 (0.78)	1.747 (1.64)	1.320 (0.82)	1.385 (1.05)
lnred_ter	0.737*** (3.89)	1.016** (3.96)	0.551** (2.84)			
lnred_total				1.298*** (4.78)	1.565*** (4.44)	1.327*** (4.65)
_cons	4.855 (1.22)	10.59 (1.60)	7.937 (1.41)	6.710 (1.79)	9.235 (1.50)	9.484 (2.00)
N	45	21	31	45	21	31

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table VIII. Cross-Country Regression Results (Equations 6 a) and b)) with Period Averages for the Second Period (2000-2019)

	ALL	LIC	SSA	ALL	LIC	SSA
	lny	lny	lny	lny	lny	lny
lnk	0.342*** (5.18)	0.264* (2.63)	0.211* (2.28)	0.288*** (4.25)	0.233* (2.58)	0.221* (2.38)
ln(n+g+δ)	-0.00988 (-0.01)	-0.763 (-0.61)	-1.374 (-1.28)	-0.195 (-0.27)	-1.003 (-0.91)	-1.770 (-1.72)
lnred_prime	2.092*** (4.28)	1.542* (2.52)	1.559** (2.84)			
lnred_sec				1.819*** (4.66)	1.451** (3.52)	1.097* (2.69)
_cons	1.638 (0.61)	0.938 (0.25)	0.689 (0.18)	2.430 (0.92)	1.091 (0.34)	-0.548 (-0.15)
N	45	21	31	45	21	31

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table IX. Cross-Country Regression Results (Equation 6 c) and d)) with Period Averages for the Second Period (2000-2019)

	ALL	LIC	SSA	ALL	LIC	SSA
	lny	lny	lny	lny	lny	lny
lninv	0.308*** (4.18)	0.235* (2.25)	0.220* (2.29)	0.317*** (4.84)	0.247* (2.56)	0.208* (2.25)
ln(n+g+δ)	-0.680 (-0.88)	-1.606 (-1.29)	-2.275* (-2.28)	-0.0833 (-0.11)	-0.855 (-0.72)	-1.481 (-1.42)
lnred_ter	0.809** (3.51)	0.607* (2.57)	0.510* (2.38)			
lnred_total				2.090*** (4.64)	1.545** (2.95)	1.430** (2.92)
_cons	0.592 (0.21)	-0.635 (-0.18)	-1.898 (-0.52)	2.051 (0.78)	1.119 (0.32)	0.502 (0.13)
N	45	21	31	45	21	31

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table X. Cross-Country Regression Results (Equation 7) with Period Averages for the Second Period (2000-2019)

	lny
lnk	0.326 (1.93)
ln(n+g+δ)	-3.867* (-2.61)
lnwage	-0.868 (-0.65)
_cons	-8.885 (-1.31)
N	15

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

APPENDIX B: Descriptive Data of Selected Variables

Table XI. Mean Values of Selected Variables for the First Period (1980-1999)

Country	GDP Growth	GDP per capita Growth	Fertility	RED	RWAGE	RLFP
1 Algeria	2.18	-0.22	4.77	56.64	97.09	15.23
2 Bahrain	3.57	-0.71	3.82	93.06	104.33	35.87
3 Benin** (SSA)	4.04	1.26	6.68	40.87	28.59	68.94
4 Botswana* (SSA)	8.97	5.65	4.69	99.91	95.31	65.85
5 Burundi** (SSA)	1.43	-0.70	7.31	50.17	123.85	101.00
6 Cameroon (SSA)	2.15	-1.70	6.34	63.64	24.17	89.95
7 Central African Republic** (SSA)	1.11	-1.04	5.77	40.99	67.54	80.78
8 Congo, Dem. Rep.** (SSA)	-1.83	0.38	6.70	68.78	25.03	98.16
9 Congo, Rep.** (SSA)	3.83	-4.84	5.29	40.64	20.51	92.85
10 Egypt, Arab Rep.	5.59	3.71	4.61	55.37	91.47	28.64
11 Eswatini (SSA)	6.73	2.15	5.31	110.75	82.67	68.48
12 Gabon** (SSA)	2.18	-0.61	5.35	160.83	58.31	61.88
13 Gambia (SSA)	3.52	0.01	6.13	46.16	33.49	65.38
14 Ghana (SSA)	3.13	0.42	5.69	55.14	44.96	93.71
15 Iran, Islamic Rep.	1.36	0.27	4.66	67.53	103.53	14.05
16 Iraq	8.62	2.62	5.86	52.02	90.85	11.11
17 Israel	3.99	2.29	2.97	95.59	112.07	69.29
18 Jordan	3.82	-0.56	5.68	71.68	114.14	17.19
19 Kenya* ** (SSA)	3.21	-0.21	6.24	62.68	39.71	92.87
20 Lesotho (SSA)	3.82	1.80	4.75	137.13	59.53	82.16
21 Liberia** (SSA)	N.A.	-2.15	6.52	36.99	37.87	85.67
22 Malawi** (SSA)	2.93	-0.78	6.93	57.81	101.51	96.21
23 Mali** (SSA)	3.24	5.68	7.11	45.72	35.65	74.68
24 Malta	4.64	3.61	1.94	88.34	111.05	39.25
25 Mauritania (SSA)	2.24	-0.53	5.92	60.73	50.46	40.46
26 Mauritius* (SSA)	5.55	4.47	2.22	80.50	111.81	48.27

Country	GDP Growth	GDP per capita Growth	Fertility	RED	RWAGE	RLFP
27 Morocco	4.02	1.43	4.20	54.21	59.98	30.49
28 Mozambique** (SSA)	3.54	1.00	6.18	36.80	18.25	107.19
29 Namibia (SSA)	2.39	-0.32	5.28	94.32	72.37	76.76
30 Niger** (SSA)	0.86	-2.28	7.79	30.44	124.66	76.62
31 Rwanda* ** (SSA)	3.28	1.05	7.23	64.88	34.38	95.64
32 Saudi Arabia	0.79	-3.21	5.87	58.56	107.14	19.47
33 Senegal (SSA)	2.94	0.52	6.50	50.28	51.18	45.01
34 Sierra Leone** (SSA)	-0.74	-3.98	6.66	47.14	32.27	96.32
35 South Africa** (SSA)	1.81	-0.76	3.97	95.66	91.80	61.43
36 Sudan** (SSA)	3.90	0.86	6.18	47.06	67.43	35.33
37 Syrian Arab Republic	4.25	0.64	5.51	60.29	85.49	25.46
38 Tanzania** (SSA)	3.31	-1.46	6.21	41.60	35.62	93.87
39 Togo (SSA)	2.62	1.94	6.30	57.63	44.99	83.26
40 Tunisia**	4.32	0.33	3.62	60.39	99.33	30.84
41 Uganda* (SSA)	5.29	2.28	7.06	56.03	29.97	81.72
42 United Arab Emirates	3.51	-2.95	4.35	107.74	102.15	33.91
43 Yemen, Rep.	5.62	3.87	8.21	21.15	53.64	25.08
44 Zambia** (SSA)	1.37	-1.59	6.51	68.16	36.90	86.07
45 Zimbabwe* ** (SSA)	4.06	0.61	5.08	76.12	36.29	81.76

Note: * Countries are described more deeply in chapter 6 (Case Studies), ** Countries are defined as low or lower middle income countries, Sub-Saharan Africa = SSA, GDP per capita = real GDP divided by total population

Table XII. Mean Values of Selected Variables for the Second Period (2000-2019)

Country	GDP Growth	GDP per capita Growth	Fertility	RED	RWAGE	RLFP
1 Algeria	3.28	1.54	2.77	82.99	107.39	20.81
2 Bahrain	4.43	-0.32	2.27	103.48	101.23	47.59
3 Benin** (SSA)	4.52	3.36	5.37	55.01	31.18	90.12
4 Botswana* (SSA)	4.26	2.30	3.04	97.72	94.28	80.38
5 Burundi** (SSA)	2.50	-0.09	6.18	73.46	75.53	103.30
6 Cameroon (SSA)	4.23	1.47	5.09	80.79	39.11	89.09
7 Central African Republic** (SSA)	1.25	-0.84	5.17	52.81	43.67	80.58
8 Congo, Dem. Rep.** (SSA)	4.77	-0.18	6.45	79.80	28.99	93.93
9 Congo, Rep.** (SSA)	2.61	1.48	4.71	51.69	24.23	94.34
10 Egypt, Arab Rep.	4.39	2.33	3.24	77.21	88.52	28.85
11 Eswatini (SSA)	2.98	2.07	3.39	93.85	82.02	80.09
12 Gabon** (SSA)	2.31	-0.80	4.18	119.30	82.55	68.06
13 Gambia (SSA)	3.18	0.20	5.57	64.84	43.21	72.24
14 Ghana (SSA)	6.07	3.54	4.30	73.28	49.98	91.44
15 Iran, Islamic Rep.	2.65	1.38	1.94	90.85	93.32	22.57
16 Iraq	5.19	1.91	4.30	71.46	97.36	16.15
17 Israel	3.47	1.69	2.99	99.83	109.33	81.98
18 Jordan	4.43	0.87	3.53	89.51	115.97	20.90
19 Kenya* ** (SSA)	4.95	2.02	4.36	81.82	59.88	89.84
20 Lesotho (SSA)	2.61	3.47	3.38	131.46	68.25	80.43
21 Liberia** (SSA)	2.42	3.11	5.03	50.34	32.67	87.24
22 Malawi** (SSA)	4.35	1.62	5.27	75.90	81.28	90.63
23 Mali** (SSA)	4.86	5.11	6.48	82.99	42.03	73.66
24 Malta	4.72	3.41	1.39	93.34	113.33	53.26
25 Mauritania (SSA)	3.54	0.64	4.98	65.90	54.57	43.10
26 Mauritius* (SSA)	3.89	3.70	1.64	89.04	109.58	56.61
27 Morocco	4.12	3.45	2.56	67.52	72.32	32.93
28 Mozambique** (SSA)	6.53	3.56	5.39	51.88	22.81	101.43
29 Namibia (SSA)	3.78	1.97	3.58	106.27	79.22	82.99

Country	GDP Growth	GDP per capita Growth	Fertility	RED	RWAGE	RLFP
30 Niger** (SSA)	5.06	1.15	7.40	47.97	66.29	74.53
31 Rwanda* ** (SSA)	7.72	4.98	4.69	90.48	46.70	98.97
32 Saudi Arabia	3.49	0.78	3.03	89.30	105.24	25.02
33 Senegal (SSA)	4.13	1.52	5.03	57.97	64.40	53.55
34 Sierra Leone** (SSA)	5.94	4.04	5.26	61.29	27.04	97.08
35 South Africa** (SSA)	2.64	1.22	2.56	98.41	99.90	74.67
36 Sudan** (SSA)	5.14	2.68	4.90	69.68	71.10	39.86
37 Syrian Arab Republic	4.78	-1.31	3.42	81.43	137.11	20.53
38 Tanzania** (SSA)	6.33	2.52	5.37	54.05	44.64	93.64
39 Togo (SSA)	3.66	2.12	4.87	80.62	33.77	88.24
40 Tunisia**	3.15	3.54	2.13	83.81	112.79	35.19
41 Uganda* (SSA)	6.28	2.99	6.03	79.63	46.30	86.68
42 United Arab Emirates	4.23	-1.63	1.90	113.70	102.24	46.50
43 Yemen, Rep.	0.08	-3.69	4.85	48.32	61.90	15.88
44 Zambia** (SSA)	5.85	2.90	5.39	88.63	39.58	86.71
45 Zimbabwe* ** (SSA)	4.50	2.73	3.84	91.32	52.52	86.82

Note: * Countries are described more deeply in chapter 6 (Case Studies), ** Countries are defined as low or lower middle income countries, Sub-Saharan Africa = SSA, GDP per capita = real GDP divided by total population

Table XIII. Values of Selected Variables for the Second Period

Country	SIGI**	SEZ***
1 Algeria	N.A.	1
2 Bahrain	N.A.	1
3 Benin	0.29	0
4 Botswana*	N.A.	8
5 Burundi	0.17	0
6 Cameroon	0.28	9
7 Central African Republic	0.33	0
8 Congo, Dem. Rep.	0.43	1

Country	SIGI**	SEZ***
9 Congo, Rep.	0.20	4
10 Egypt, Arab Rep.	0.43	10
11 Eswatini	N.A.	2
12 Gabon	0.40	2
13 Gambia, The	0.52	1
14 Ghana	0.30	4
15 Iran, Islamic Rep.	N.A.	23
16 Iraq	0.26	4
17 Israel	N.A.	1
18 Jordan	0.31	16
19 Kenya*	0.22	61
20 Lesotho	0.09	0
21 Liberia	0.38	1
22 Malawi	0.21	0
23 Mali	0.52	0
24 Malta	N.A.	1
25 Mauritania	0.40	1
26 Mauritius*	N.A.	1
27 Morocco	0.11	6
28 Mozambique	0.14	2
29 Namibia	0.12	0
30 Niger	0.44	0
31 Rwanda*	0.13	2
32 Saudi Arabia	0.42	10
33 Senegal	0.20	3
34 Sierra Leone	0.37	1
35 South Africa	0.06	8
36 Sudan	0.56	4
37 Syrian Arab Republic	N.A.	12
38 Tanzania	0.25	8
39 Togo	0.19	2

	Country	SIGI**	SEZ***
40	Tunisia	0.20	0
41	Uganda*	0.22	8
42	United Arab Emirates	N.A.	47
43	Yemen, Rep.	0.56	1
44	Zambia	0.45	6
45	Zimbabwe*	0.14	8

Note: * Countries are described more deeply in chapter 6 (Case Studies)

** SIGI (2014): a low value indicates low inequality (1= high inequality)

*** SEZ: Number of zones established in 2017

APPENDIX C: Descriptive Data for Case Studies

Figure A. Development of the Agricultural Sector¹¹

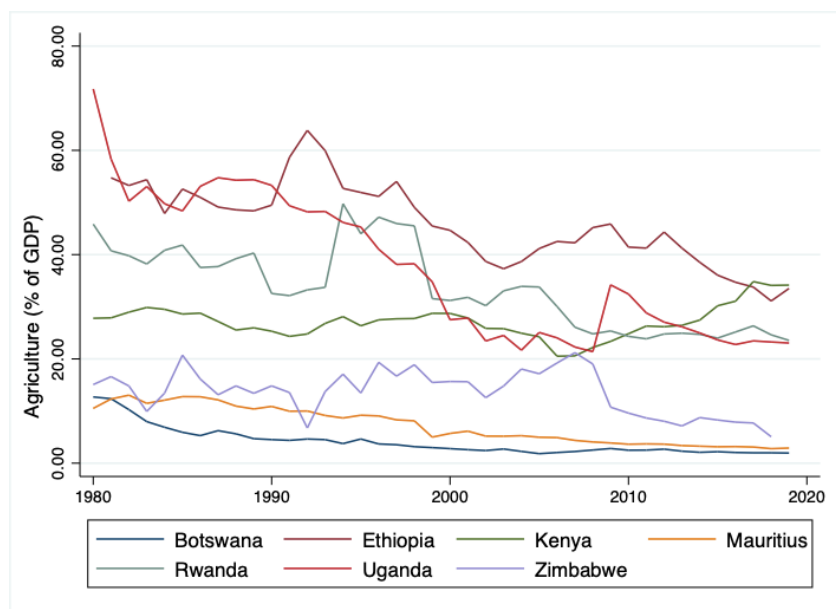
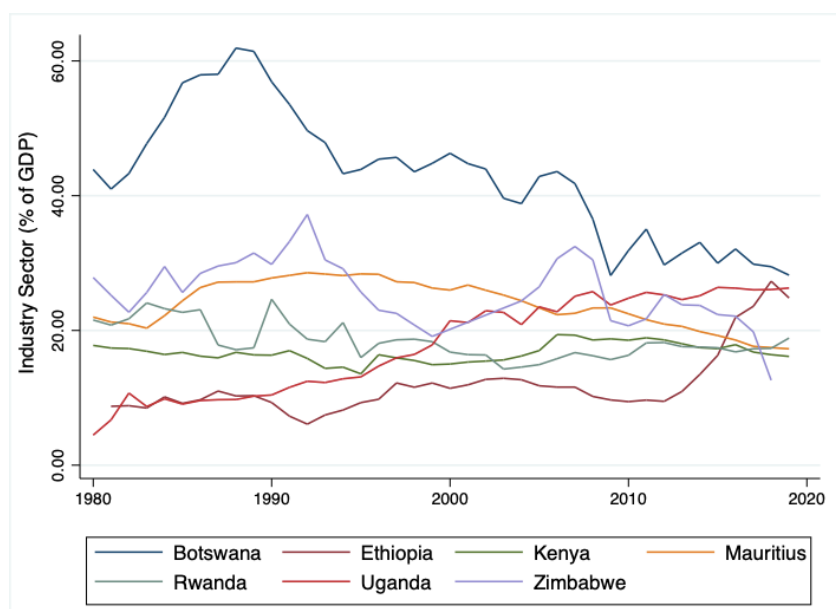


Figure B. Development of the Industry Sector¹²



¹¹ Value added (net output after adding up all outputs and subtracting intermediate inputs), Source: WB (2021); Agriculture, forestry, and fishing corresponds to ISIC divisions 1-3 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.

¹² Value added, Source: WB (2021); Industry (including construction) corresponds to ISIC divisions 05-43 and includes manufacturing (ISIC divisions 10-33). It comprises value added in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas.

Figure C. Development of the Service Sector¹³

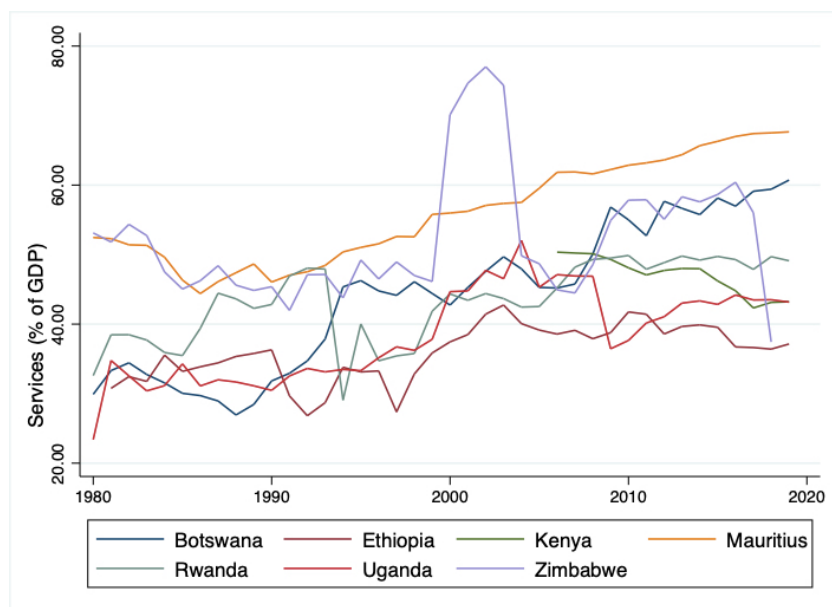
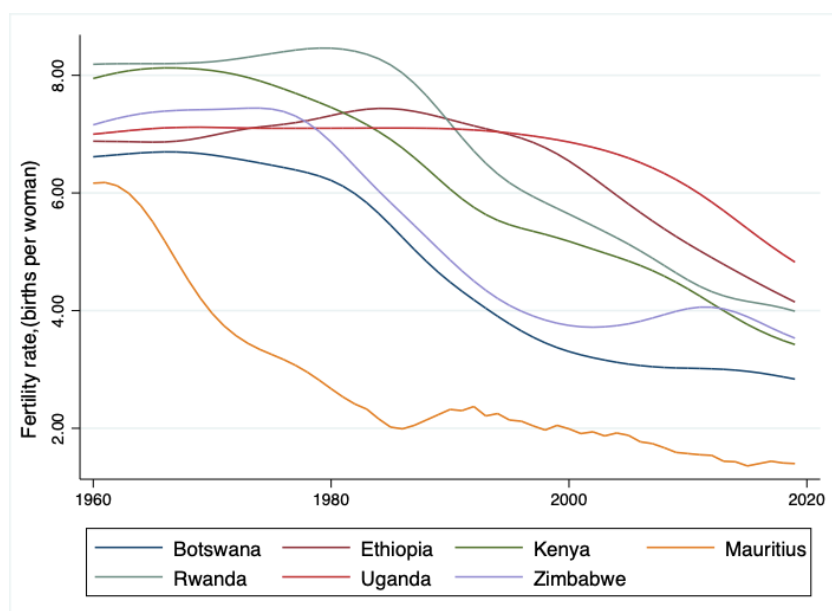


Figure D. Development of the Fertility Rate¹⁴



¹³ Value added, Source: WB (2021); Services correspond to ISIC divisions 50-99 and they include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services.

¹⁴ Source: WB (2021)

Figure E. Development of Female Employment in Industry¹⁵

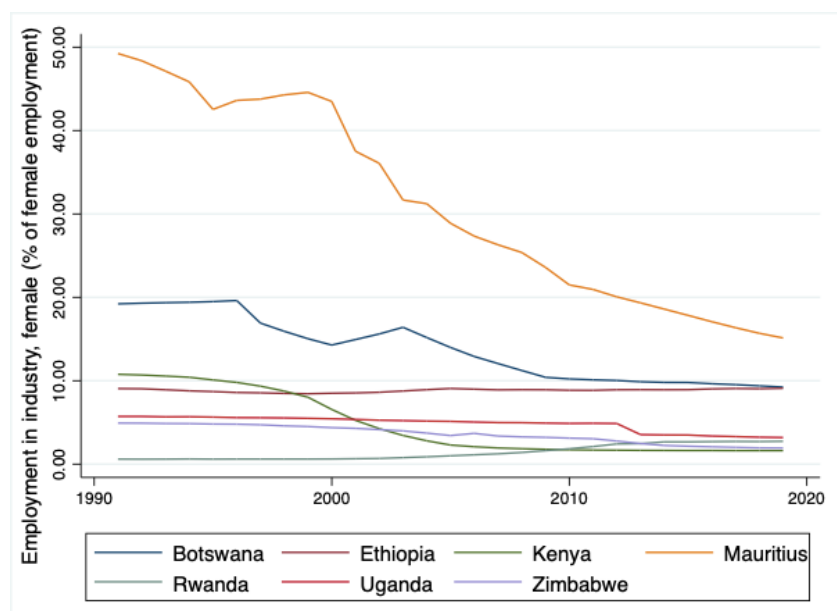
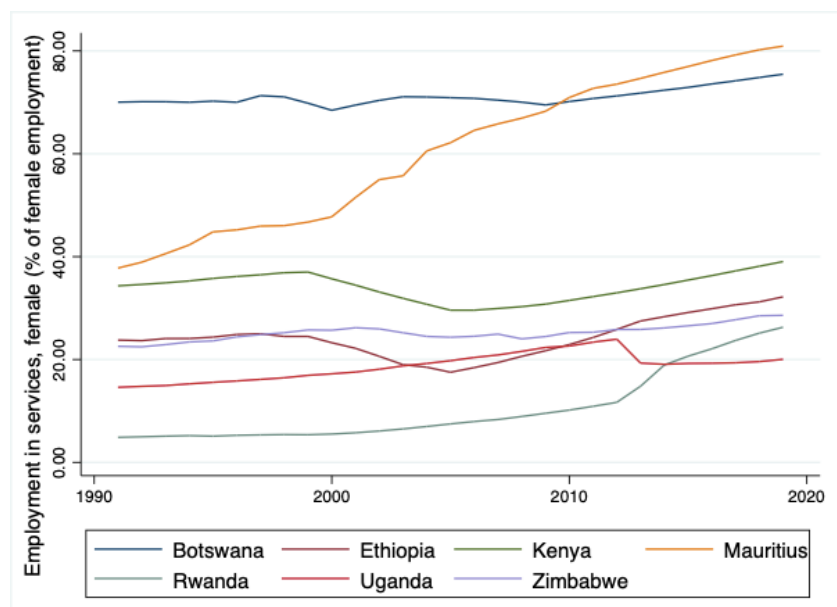


Figure F. Development of Female Employment in Service¹⁶



¹⁵ Source: WB (2021)

¹⁶ Source: WB (2021)

Figure F. Development of Female Employment in Agriculture¹⁷

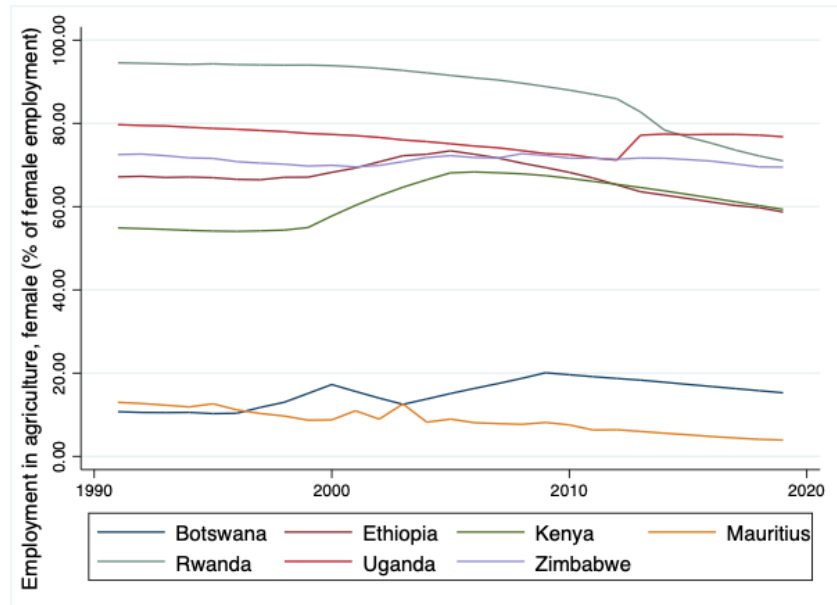
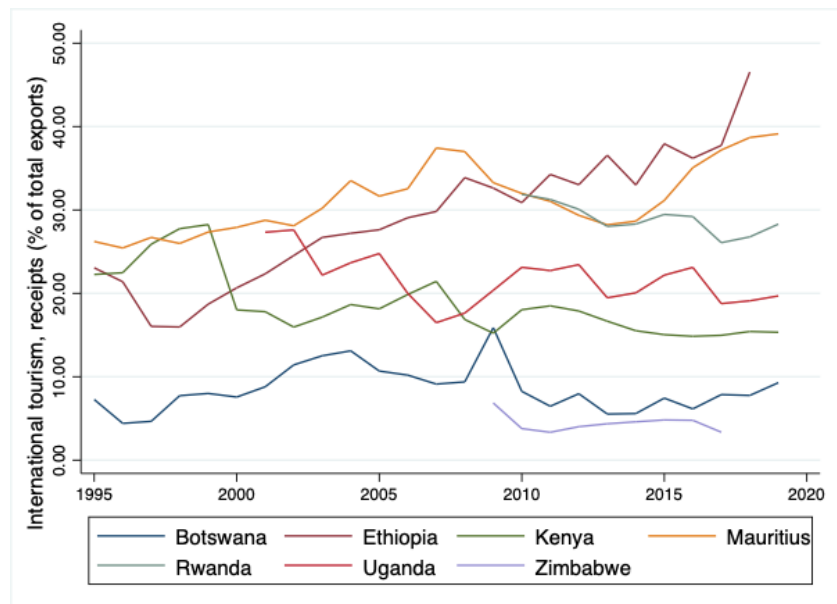


Figure G. Development of International Tourism¹⁸



¹⁷ Source: WB (2021)

¹⁸ Source: WB (2021)

Figure H. Development of Female Average Years of Schooling

