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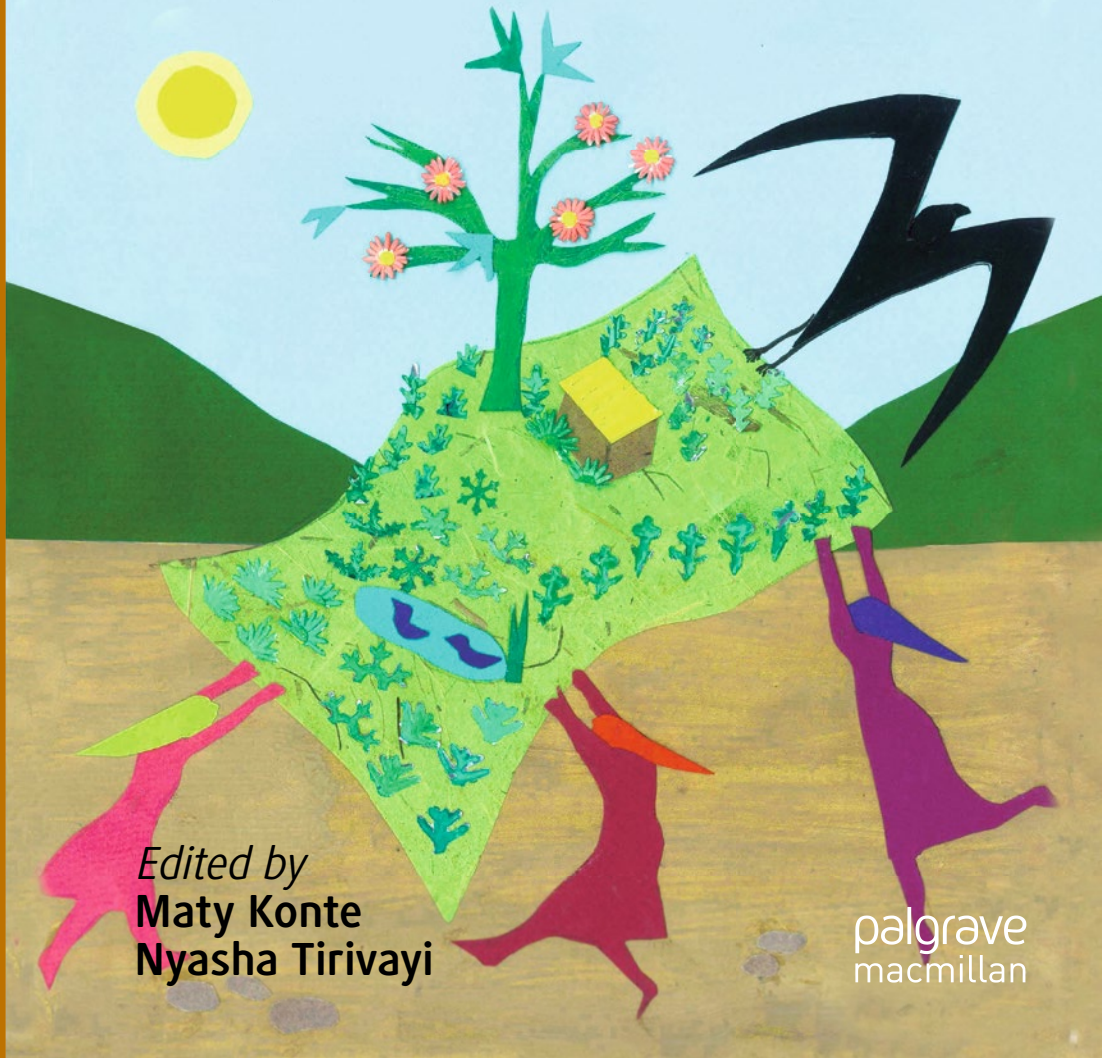
Women and Sustainable Human Development

Empowering Women in Africa



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Gender, Development and Social Change

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The *Gender, Development and Social Change* series brings together path-breaking writing from gender scholars and activist researchers who are engaged in development as a process of transformation and change. The series pinpoints where gender and development analysis and practice are creating major 'change moments'. Multidisciplinary in scope, it features some of the most important and innovative gender perspectives on development knowledge, policy and social change. The distinctive feature of the series is its dual nature: to publish both scholarly research on key issues informing the gender and development agenda as well as featuring young scholars and activists' accounts of how gender analysis and practice is shaping political and social development processes. The authors aim to capture innovative thinking on a range of hot spot gender and development debates from women's lives on the margins to high level global politics. Each book pivots around a key 'social change' moment or process conceptually envisaged from an intersectional, gender and rights based approach to development.

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Series Editor's Preface

The editors of this book—Maty Konte and Nyasha Tirivayi—have put together an important and insightful set of essays with a strong pragmatic focus on gender equality in the African continent. The empirical analysis and in-depth reviews from around the continent illustrate a strong policy engagement in African development from different country entry points. The volume shows how development policy processes, specifically related to the Sustainable Development Goals (SDGs), can be important mechanisms for change if gender equality is taken seriously. The book documents how gender equality and the empowerment of women should be a central focus of intergovernmental and governmental human development agenda in sub-Saharan Africa. The focus of the book is on how to consider research and analysis of African women's experience as a necessary and core concern of the global SDG development agenda. The book's themes are as follows: climate change, land rights and agricultural productivity, maternal health and education, labour market participation and unpaid care work, bargaining power in households, and political and social representation. These core development issues are cross-cut by contemporary gender concerns such as domestic violence, migration, discriminatory social norms and harmful practices.

What is particularly welcome for the series is that the book is focused on African women's lives and how to build on what has worked so far in development, and to overcome the barriers to future development. The book is based on solid empirical evidence, framed by the SDG agenda, while also looking at how difficult it is to change individual beliefs, social norms and institutions, which fail to recognize the importance of gender

power relations. The research shows how development policy has to acknowledge the evasion and exclusion of girls and women in development processes due to traditional customary and informal rules and practices such as early and forced marriage, unfair inheritance and parental authority, and restrictions on access to resources and formal finance. The chapters in the book tackle these issues squarely by looking at how to analyse and track the impact of these socio-cultural issues in order to provide nuanced and effective policy strategies to eliminate gender disparities.

Given the authors' considerable experience, the chapters offer a compelling record of what policies have worked and what have not, suggesting how to establish fairer economic and financial services, along with the need for ownership of land, and how to deal with poverty and conflict. In its direct engagement with the SDG agenda, the book also shows how outside interventions impact contemporary African policy in ways that can help ease gender discrimination, while at the same time showing how complex that goal can be. The detailed surveys provide quantitative and qualitative evidence, along with secondary and primary data, to show why it is important to achieve gender equality in many, if not all, of the SDG goals and targets.

In short, the book provides an insightful and detailed policy analysis and shows the impact of development processes on African women's lives, along with a summary of efforts undertaken to reduce gender disparities. It is a welcome and important addition to the series.

The Hague, The Netherlands Wendy Harcourt

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PART I

Introduction

CHAPTER 1

Introduction

Maty Konte and Nyasha Tirivayi

[…] In many African countries there has been progress. Women have access to education, professional careers, even political life. But the progress has been slow. Women are 50 per cent of the population, so they should make up 50 per cent of business leaders, for example.
(Graça Machel, October 2011, News Metro International*)*

1 Objective of the Book

This book sheds light on the progress made in empowering women in Africa over the last decade and the challenges that remain. It contributes to the discourse on women empowerment in Africa by providing a fresh perspective and strong multidisciplinary research evidence on diverse, timely, and relevant gender issues in various (and contextually different) African countries. The book is a collection of literature reviews, empirical studies, and policy discussions that inform policymakers and academics who are interested in the fifth Sustainable Development Goal (SDG), which promotes gender equality and the empowerment of women and

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girls; this is an issue that was not fully addressed during the era of the Millennium Development Goals (MDGs).

The following questions are answered in some of the chapters: What policies have worked and not worked during the MDGs era? What can be said about the effect of climate change on gender equality? What role does access to resources such as land and financial services, and migration play in determining the empowerment of women in Africa? What are the global and continental trends influencing the gender debates and action in contemporary Africa? Other chapters use new data and/or innovative methods to (re)examine the determinants of observed gender differences in specific areas and identify individual socioeconomic characteristics and hard-to-remove societal barriers that constrain women from realizing their full potential. In addition, other chapters assess the benefits that could be attained through women's economic, social, and political participation and empowerment. Policy recommendations are made based on quantitative and qualitative evidence obtained using secondary and primary data.

Expert African scholars and non-African scholars who understand the contextual and societal drivers of gender inequality in Africa have prepared the chapters. Most importantly, a significant number of the contributors are African women scholars—more than 98 per cent have PhD degrees—and they are based in either the continent or in the diaspora (but with strong links to their home countries). We believe that these women are well positioned to understand the causes and the meaning of the discriminatory norms that negatively shape the economic and political potential of many African women. The diversity of expertise and experience among these high-profile scholars provides a unique opportunity for the book to go beyond anecdotal and data-based evidence and capitalize on contextual perspectives. Although we study and discuss in the book's chapters various facets of women's economic, political, and social empowerment in Africa, the discourse itself is not intended to be exhaustive, given the breadth of the subject matter. Further research is still needed to build a comprehensive evidence base that informs the policies and actions aimed at enhancing gender equality.

The scope of the book is a large one—although not all issues can be covered in one volume—with a focus on the following issues: (1) climate change and gender, (2) women's land rights and agricultural productivity, (3) maternal health and education, (4) labour market participation and unpaid care work, (5) women's bargaining power and their households' well-being, and (6) women in politics and society. Crosscutting issues such

as domestic violence, migration, discriminatory social norms, and harmful practices are also addressed in some of the chapters.

2 Progress and Challenges During the MDGs Era: What Have We Learnt about Women Empowerment in Africa?

The third goal of the MDGs was dedicated to gender equality and the economic, social, and political empowerment of women. The *Africa Human Development Report 2016* (UNDP 2016) finds that many African countries responded positively to the MDGs by crafting a number of policies aimed at enhancing gender equality and empowering women and girls. One such success is the increased number of girls enrolled in primary education, thereby equalizing access to this level of education across the two genders in many countries. In addition, between 1990 and 2013, the maternal mortality ratio decreased by 49 per cent in sub-Saharan Africa and 57 per cent in Northern Africa (United Nations [UN] 2015). In the same period, the proportion of women using contraception increased from 13 per cent to 28 per cent in sub-Saharan Africa and from 44 per cent to 61 per cent in Northern Africa. It is worth noting that the share of women involved in non-agricultural wage employment in sub-Saharan Africa also increased by ten percentage points (from 24 per cent to 34 per cent), whereas it remained stagnant at 19 per cent in North Africa (UN 2015). Likewise, many African governments have promoted women's political participation and increased their opportunities to attain leadership positions. Rwanda, Seychelles, and Senegal are among the countries that have recorded the highest levels of representation of women in their national assemblies, surprisingly surpassing many of the Organization for Economic Cooperation and Development (OECD) countries.

Yet progress towards gender equality is not just about metrics; it is also about mind-set, requiring changes in individual beliefs, social norms, and institutions—aspects that still hinder women empowerment. Therefore, many African countries have formalized and implemented laws against those customary and informal rules and practices that affect women's and girls' daily lives and deprive them of autonomy inside and outside the home. Some of these laws have, for instance, targeted early and forced marriage, unfair inheritance and parental authority, and restrictions on access to resources and formal finance.

Despite these achievements and gains in gender equality and women empowerment during the MDGs era, Africa is far from closing the persistent gender gap. Girls and women remain disadvantaged in terms of access to income and non-income opportunities. African women lag far behind, achieving only 87 per cent of their male counterparts' human development level (see UNDP [2016]). An examination of the widely known Gender Inequality Index (GII), which measures gender inequality based on reproductive health, empowerment, and economic activity, shows that among the 45 African countries for which data are available, the best score is 0.4 for Rwanda (see UNDP [2016]). The GII is measured on a scale ranging from 0 to 1, with the higher value indicating more gender inequality. The poor performance of African countries on the GII indicates that most of the countries in this region have not yet achieved gender equality and their full potential for higher and sustainable human development.

In the education sector, the high school dropout rates for girls, coupled with low transition rates from primary to secondary education, reduce the representation of girls in secondary and tertiary education and hamper their learning achievements. Turning to the health sector, maternal mortality in Africa is still high, and barely more than half of women access skilled personnel during birth (UN 2015). There are also significant disparities in maternal health-care service delivery between rural and urban areas (UN 2015). Women's participation in the labour market is also undermined by the persistent gender gap in wages, with women in Africa earning 30 per cent less than men earn (UN 2015). In terms of political empowerment, the low presence of women in top-level local government positions can affect local service delivery. In India, studies have found that local governments with more women leaders are inclined to prioritize women's needs in public goods and service delivery (Bhalotra and Clots-Figueras 2014), and this is an issue that still needs to be researched in Africa.

Although important advances have been attained, the strong resistance against the enforcement of women-friendly laws exacerbates the gap between their *de jure* and their *de facto* successes. The road to gender equality is encumbered by discriminatory social institutions that emanate from long-lasting norms, traditions, and codes of conduct that find expression in customs, cultural practices, and informal and formal laws that guide people's behaviours and interactions (Branisa et al. 2014). Discriminatory social institutions hamper women's well-being and have negative repercussions on the economy. For instance, Ferrant and Kolev (2016) estimated

that in West Africa, income loss due to gender discriminatory social institutions is valued at USD 12 trillion.

3 Women as the Centrepiece of the SDGs

The SDGs seek sustainable and inclusive development, and therefore they prioritize gender equality and the empowerment of girls and women. The new SDGs continue the global development agenda by identifying new priorities and intensifying attention (and action) toward the outstanding gaps from the MDGs era. For instance, SGD 5 identifies harmful practices such as child marriage, female genital mutilation, gender violence, and the continued unpaid work burden for women as persistent challenges that need to be eradicated (UN 2017). Furthermore, SDG 5, target 5.C, explicitly calls for "sound policies and enforceable legislation for the promotion of gender equality." The target indicator focuses on the use of transparent measures for tracking public allocations for gender equality and, therefore, implicitly encourages gender responsive budgeting, which has not yet been efficiently executed in Africa.

Sustainability and inclusiveness are unlikely to be attained if the policies used to achieve many of the remaining SDGs do not pay particular attention to women and girls, who represent about half of Africa's population. For instance, the actions of SDG 13 on climate change issues would be questionable if they fail to take into consideration the challenges faced by the many women who represent a significant part of the agricultural workforce sector, a sector that is highly vulnerable to the consequences of climate change.

Promoting gender equality in political and leadership positions while neglecting the number of girls attending secondary and tertiary education may not be efficient because the achievement of parity in political office is significantly dependent on women attaining advanced levels of education. Certainly, actions promoting SDG 4 on the quality of education need to address the poor quality of facilities in schools, which exacerbates absenteeism among girls. Policies aligned with SDG 4 also need to address harmful practices such as forced marriage because they reduce school completion and transition rates for girls in many African countries. In like manner, efforts to expand social protection coverage to end poverty will not have sustainable impacts if women are not targeted. Women are also central to the achievement of the targets for ensuring healthy lives and well-being (SDG 3), given the goal's focus on reproductive, maternal, and

child health; HIV/AIDS; access to medicines and vaccines; and universal health coverage.

The SDGs era also faces a number of risks and threats. Armed conflicts have been identified as a serious threat to the achievement of gender equality and human development, and they not only cause displacement but also increase poverty rates and gender-based violence. Climate change and environmental degradation also threaten livelihoods and can reverse any gains in gender equality and human development. Yet there are opportunities that can be leveraged to accelerate the empowerment of women and achieve many of the SDGs. One example involves innovations that enable financial inclusion and access to information and communication technologies.

The achievement of gender equality and women empowerment remains a top policy priority within the global development agenda, as reflected in the SDGs, as well as in the African Union's Agenda 2063. Therefore, research that deepens understanding of the achievements and challenges in attaining gender equality and women empowerment in Africa remains vital for tracking progress during the SDGs era and for guiding the development of policies and strategies that eliminate gender disparities. This book contributes to this overall objective by providing timely and compelling insights on the status of gender equality and the empowerment of African women during the early stages of the SDGs era.

4 Structure of the Book

This book is a collection of reviews of the literature, empirical evidence, and policy discussions that inform policymakers and academics who are interested in achieving the fifth SDG on the empowerment of women and girls. There are 20 chapters grouped into six parts, in addition to the introduction in Part I and the conclusion in Part VIII.

Part II addresses the relationship between climate change challenges and gender in Africa and comprises three chapters. It is vital that readers understand how women are affected by climate change, appraise the actions that have been taken, and learn from the key takeaway messages for the discourse on climate change and women empowerment in Africa. Archibong, in Chap. 2, examines the role of climate-induced diseases in widening the gender gap in human capital investment and identifies the mechanisms through which the effect occurs in Niger. In Chap. 3, Mbaye provides a literature review that extends our understanding of how

income-shocks induced by extreme weather events negatively affect the empowerment of women and girls. Mbaye also considers different measures of economic and social empowerment, including marriage and fertility decisions, exposure to violence, and economic independence. In Chap. 4, Schwerhoff and Konte's literature review focuses on women's vulnerability to climate change, gender differences in attitudes and behaviour towards climate change, and gender differences in climate change adaptation.

Part III focuses on women's land rights, which is a key element of SDG 5. Gender discrimination in access to and control over land is generally pervasive in Africa, but it is more pronounced in some regions/countries than in others. For instance, East Africa is one of the regions where land tenure is male dominated and cultural and religious norms and beliefs retard the acceptance of policies that promote the equal distribution of land titles to men and women. Mwesigye, Guloba, and Barungi, in Chap. 5, focus on Uganda and examine the status of women's land rights and their implications for agricultural productivity. In Chap. 6, Melesse and Awel examine evidence on the gender differential effects of land tenure security on productivity in Ethiopia and Tanzania.

Part IV explores areas related to the health of women and children and discusses gender gaps in education. Chapter 7 takes stock of the current gaps and challenges in achieving universal maternal health coverage (SDG 3); Sidze, Mutua, and Donfouet analyse women's access to quality maternal health-care and the financing mechanisms for maternal health-care provided by governments in 11 countries with high maternal mortality rates in sub-Saharan Africa. In Chap. 8, Tirivayi focuses on the reproductive health of girls who married early, which is an issue the MDGs did not address. Early marriage remains a challenge that has adverse effects on not only reproductive health outcomes and gender equality but also on poverty, hunger, education, and economic growth (Girls Not Brides 2018). This chapter particularly identifies the barriers to and facilitators of contraceptive use among married adolescent girls in six countries with the highest rates of early marriage in sub-Saharan Africa (Burkina Faso, Guinea, Mali, Mozambique, Niger, and Nigeria). Education was a key element of the MDGs, and it remains a priority in the global development agenda, as evident in SDG 4. Despite the positive progress achieved, there are still barriers that prevent women and girls from reaching their full potential in learning. In Chap. 9, Koissy-Kpein examines the progress achieved and challenges encountered in the education sector and discusses the social

and economic factors driving the gender gap in schooling between girls and boys during the MDGs era and the current SDGs era. In Chap. 10, Daffé and Diallo analyse gender inequality in access to information and communication technologies (ICTs) in Senegal. They also examine the gender disparities in access to and use of ICTs such as mobile phones, the internet, email, and computers and the role of literacy and level of education.

In Part V, the authors tackle the issue of gender gaps in labour markets. The labour force participation of women in Africa is a complex situation with many drivers (and constraints). Although the existing gender gap in education significantly contributes to the persistence of the gender gap in the labour market, there are other formidable challenges that prevent many women from accessing decent jobs and earning wages equal to those of their male counterparts. Three different chapters discuss the labour market situation of women in Africa. In Chap. 11, Ntuli and Kwenda review the literature on gender gaps in wages and employment in sub-Saharan Africa. They identify the strengths and weaknesses of the existing evidence, as well as the research gaps, to guide future studies. In Chap. 12, Simo Fotso, Somefun, and Odimegwi investigate how child health affects the labour force participation of family members in South Africa. Most interestingly, they test whether a child's serious illness/disability results in a gendered effect on labour force participation and whether the effect varies among married parents. Among the various factors that affect the participation of women in the labour market, a strong constraint is the considerable amount of unpaid care provided by women across African countries. Using the case of Senegal, Baldé, in Chap. 13, examines the effects of unpaid care work inequality on women's employment outcomes. Pickbourn, in Chap. 14, discusses the challenges faced by rural–urban women migrants in Ghana. She shows how the stigmatization of rural–urban migration and urban informal employment limits the potential of rural–urban migration to empower women.

Part VI explores autonomy in decision-making within the household and whether households benefit from empowering women through financial inclusion. Chapter 15, by Chisadza, Yitbarek, and Nicholls, examines how maternal empowerment through employment or autonomy in decision-making affects overweight or obese children in Comoros, Malawi, and Mozambique. Rates of overweight and obese children are

rising in sub-Saharan Africa, and at the same time, the prevalence of undernutrition remains high, which has resulted in the added burden of malnutrition. The issue of overweight and obese children is now explicitly targeted in SDG 2. Using data from Zambia, Nanziri, in Chap. 16, analyses the gender gap in access to and use of financial services and assesses the effects on the welfare and quality of life of households. In Chap. 17, Kponou analyses the effect of women's participation in household decisions on the standard of living of households in Benin, Mali, and Togo.

Part VII goes beyond the economic aspects of women empowerment to look at women's political empowerment and explore societal factors and trends that shape the achievement of full gender equality in Africa. It is worth noting that many African countries have increased the number of women in political and leadership positions, and anecdotal evidence suggests there have been positive economic and social benefits from this action. In Chap. 18, Konte empirically assesses the effects of women holding more seats in the national assembly on the provision of policies that are favourable to women's well-being—this is measured at the local level across 50 African countries. In Chap. 19, Maloiy uses data from face-to-face interviews with female politicians to shed light on factors that have empowered and enabled women to attain political leadership positions in Kenya. Chapter 20, by Merkle and Wong, explores the relationship between unfavourable attitudes towards female political leadership and the acceptance of corrupt behaviour using perception surveys from five sub-Saharan African countries. Finally, in Chap. 21, Moreno Ruiz utilizes a sociological approach to examine how the focus and framing of actions pushing for gender inequality have changed since the nineteenth century and how they vary across regions. The author also discusses how intersectionality between gender inequalities and other inequalities, such as the rural–urban divide and the wealth gaps, affects gender equality. The chapter concludes by identifying the emerging global and continental trends shaping the discourse on gender equality.

The final and concluding part of the book summarizes the findings of the chapters and links them to the targets of SDG 5 and the other SDGs that require the empowerment of women and girls to meet their goals and objectives by 2030.

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PART II

Climate Change and Gender

CHAPTER 2

Climate Change, Disease and Gender Gaps in Human Capital Investment

Belinda Archibong and Francis Annan

1 Introduction

What is the impact of climate-induced health shocks on gender inequality? In almost every country in the world, negative shocks to society disproportionately harm women. Women often make up the most vulnerable populations in their societies, lacking the same legal, social and economic protections as their male counterparts (UN Women, United Nations 2015). While there is a robust literature on the science and economic impacts of climate change, much less work has been done to understand how this market failure will affect social inequality by worsening gender gaps in human capital

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investment. The literature is also thin on understanding the relationship between climate-induced disease and gender gaps in human capital investment (Glewwe and Miguel 2007). Given the vast literature on the positive economic impacts of investment in education and the fact that in many countries notable gender gaps in educational attainment still remain, the potential economic gains and improvement in world welfare from educating girls are significant (Schultz 2002; Barro and Lee 2013). While the gains are significant, health costs from worsened disease environments due to global warming might impose significant costs on households, which might lessen relative investment in girls' education, particularly if parents expect lower returns from investing in girls' human capital.

A contribution of this chapter is to bridge the climate change, health and education literatures to estimate the social and economic costs of climate-induced disease, particularly through its effect on worsening the gender gap in human capital investment. When female children are viewed as tradable assets, coping strategies of households can include marrying female children off at earlier ages in exchange for a bride price or transfer of wealth from the groom's family to the bride's family to smooth consumption following a contraction of the budget constraint in the aftermath of a disease or health shock. This chapter reviews the literature on climate change, disease and gender gaps, and highlights evidence from a particular disease context: the meningitis belt in sub-Saharan Africa (SSA). It discusses results from previous and ongoing work on this issue (Archibong and Annan 2017, 2018).

This chapter presents a simple conceptual framework[1] and uses data from the meningitis belt, which runs across SSA and consists of 23 countries from Senegal to Ethiopia, and is frequently subject to meningitis epidemics driven by seasonal/climate factors (LaForce et al. 2009). Combining data from the National Aeronautics and Space Administration (NASA), the World Health Organization (WHO) and the Demographic and Health Surveys (DHS), the predictions of the simple model are tested in order to understand the impact of climate-induced health shocks on gender inequality. Following Archibong and Annan (2017) and Archibong and Annan (2018), the study uses evidence from Niger's 1986 meningitis epidemic and estimates the impact of sudden exposure to the epidemic on girls' education relative to boys. Results from the study indicate that increases in meningitis cases during the epidemic years significantly reduce years of education for schoolgoing aged girls in areas with higher meningitis exposure, with no significant effect for boys of the same cohort and no effects in non-epidemic years.

One important mechanism is that the health shock is a negative income shock to households, and households "sell" their female children (available tradable "assets") in exchange for a bride price in marriage arrangements typical in this region. The results of this research have significant policy implications and highlight the need for a multipronged economic policy addressing climate change, health and education to address gender inequality.

The rest of this chapter is structured as follows. Section 2 reviews the literature on the links between climate change, disease and gender gaps in human capital investment, explaining the science linking climate and disease with a focus on the meningitis belt and highlighting current knowledge gaps. Section 3 presents a simple framework of parental investment in education by child gender in the presence of shocks and discusses the role of marriage markets in smoothing household consumption in the aftermath of shocks. Section 4 presents results on the impact of climate-induced meningitis epidemics on the gender gap in educational attainment using evidence from Niger's 1986 meningitis epidemic. Section 5 discusses possible mechanisms and provides evidence for the role of the bride price system in explaining the empirical results. Section 6 concludes with a summary of the findings and suggestions for future research.

2 Literature on Climate Change, Disease and Gender Gaps

2.1 Climate Change and Disease: The Meningitis Belt

The 2014 Ebola epidemic that ravaged many countries in West Africa, resulting in over 11,000 deaths,[2] is believed by some scientists to have had a climate driver. This relationship between disease and climate may provide insights into the potential future of epidemics, particularly in the tropics, in the presence of climate change (Cho 2014). There is a robust literature on how climate change increases the incidence of infectious diseases and epidemics (Cho 2014; Wu et al. 2016).

Much of the literature on the impact of climate change, and associated warming, on infectious disease and epidemics in African countries where some of the world's poorest populations reside, has focused on one disease in particular: malaria. This focus is understandable given the prevalence of malaria in the region and the wealth of scientific knowledge around its vector of transmission (Wu et al. 2016). For water-borne diseases like malaria and yellow fever, also prevalent in the region, there is a large litera-

ture examining how changes in precipitation, temperature, wind and daylight duration—all associated with global warming and climate change—can worsen epidemic risk by affecting the timing and intensity of disease outbreaks (Epstein 1999, 2000; Wu et al. 2016). Yet, far less attention has been given to understanding the links between climate change and one of the most virulent infectious diseases in the region, meningococcal meningitis (LaForce et al. 2009).

Meningococcal meningitis is so endemic in parts of SSA that an entire swathe of 23 countries from Senegal to Ethiopia, comprising over 700 million individuals, has been termed the "meningitis belt." The epidemic[3] form of the disease is caused by the bacterium Neisseria meningitides and is characterized by an infection of the meninges or the thin lining covering of the brain and spinal cord. The infection is associated with fevers, pain, reduced cognitive function, and in the worst cases, permanent disability and long-term neurological damage and death. The WHO reports that about 30,000 cases of the disease are reported each year, with figures rising sharply during epidemic years.[4]

The WHO also reports that meningococcal meningitis can have high fatality rates, up to 50% when left untreated.[5] Young children and adolescents are particularly at risk of infection from the epidemic form of the disease. Though vaccines have been introduced to combat the spread of the disease since the first recorded cases in 1909, the effectiveness of the vaccines has been limited due to the mutation and virulence tendencies of the bacterium (LaForce et al. 2009). The epidemic form of the disease is also believed to have a significant climate driver (LaForce et al. 2009; Perez Garcia Pando et al. 2014b).

The epidemiology of the disease is complex and the mechanisms of transmission are not yet fully understood. The incidence is often associated with higher wind speeds, dust concentrations, lower humidity and temperatures that come with the onset of the dry, Harmattan season in SSA. Direct transmission is through contact with respiratory droplets or throat secretions from infected individuals (LaForce et al. 2009; Perez Garcia Pando et al. 2014b). The Harmattan season generally extends from October to March, with the harshest part of the season in the first few months, from October to December (Perez Garcia Pando et al. 2014a). The season is characterized by hot, dry northeasterly trade winds blowing from the Sahara throughout West Africa. The dust particles carried by the Harmattan winds make the mucus membranes of the nose of the region's inhabitants more sensitive, increasing the risk of meningitis infection (Yaka et al. 2008).

A recent scientific paper has provided evidence that higher temperatures, lower precipitation and humidity associated with future warming and climate change might increase the incidence of meningitis epidemics in the meningitis belt (Abdussalam et al. 2014; Sultan et al. 2005). This will have potentially devastating consequences for this region, with disutility, in particular, accruing to women.

2.2 Climate Change, Disease and Gender Gaps in Human Capital Investment

The literature on the relationship between climate change, health and gender gaps in human capital investment has examined women's higher relative risk of mortality or morbidity in various scenarios including in the aftermath of natural disasters like floods or earthquakes or, more rarely, in the aftermath of climate-induced infectious disease epidemics (World Health Organization et al. 2014). Many important results on the unequal burden borne by women from climate change have come from this literature. This includes one study that finds that in the aftermath of a large-scale flood in Nepal in 1993, the mortality rate of girls was around 13.3 deaths per 1000 girls aged 2 to 9 years versus 9.4 deaths per 1000 boys in the same age cohort (Pradhan et al. 2007; Bartlett 2008). A potential explanation put forth for that result was that gender-based discrimination and male child favouritism meant rescue attempts and the distribution of food and medical resources *ex-post* were skewed towards boys (World Health Organization et al. 2014).

Similarly, another recent paper examines the costs of gender expectations surrounding women's home production and domestic labour in the context of health shocks. The paper finds that women are expected to forego outside educational and labour market opportunities to care for sick household members, following idiosyncratic shocks such as illness (Institute of Development Studies and Brody 2008; World Health Organization et al. 2014). Without a functioning credit market, increased healthcare costs for a household member may result in decreased human capital investment in female children, given the gendered expectation of females as caregivers (World Health Organization et al. 2014). With evidence suggesting climate change may increase the incidence of meningitis, female human capital investment may be affected through the above gendered expectations. In turn, this may

disproportionately reduce women's human capital accumulation, limit their access to the labour market and reduce future lifetime earnings with associated negative implications for women's independence and mental well-being (World Health Organization et al. 2014).

There is a smaller but growing literature examining yet another source of disutility for women. Climate-driven income shocks can limit women's marriage outcomes in contexts where they can be used as tradable assets to smooth consumption post shocks (Archibong and Annan 2018; World Health Organization et al. 2014; Hoogeveen et al. 2011; Corno et al. 2015; Dercon and Krishnan 2000). In many countries in Africa and Asia, marriage customs involve the exchange of a bride price or bride wealth, which is a transfer of wealth from the groom's family to the bride's family upon marriage[6] (Rajaraman 1983). Though the practice has come under criticism in African countries recently, from claims that the practice treats women as commodities, it continues to play a significant role in marriage arrangements in much of SSA (Wendo 2004). Recent studies document evidence that poorer, liquidity-constrained households in these contexts marry their daughters at earlier ages when faced with income shocks caused by an epidemic (Archibong and Annan 2018), floods and droughts (Corno et al. 2015, 2016).

Some researchers have argued that given the potential positive correlation between education and the bride price (Ashraf et al. 2016) and the relatively higher valuation of female home production compared to their male counterparts (Hoogeveen et al. 2011), covariate shocks to the household might actually reduce early marriage as parents wait for a higher expected future bride price after the shock. In contrast, idiosyncratic shocks to households in the form of illness resulting in health costs and a contraction of the budget constraint will tend to increase the risk of early marriage, particularly for liquidity-constrained households (Hoogeveen et al. 2011; Dercon and Krishnan 2000). If we view climate-induced meningitis epidemics as covariate shocks with idiosyncratic elements (e.g. the entire community may be exposed to the epidemic, but risk factors for individual households or individuals within households might differ by age/age-composition of the household), then it is conceptually unclear what the impacts of climate-induced epidemics will be for marriage outcomes and associated human capital investment opportunities[7] of women in the meningitis belt.

3 Empirical Evidence: The Impact of Climate-Induced Meningitis Epidemics on the Gender Gap in Human Capital Investment in Niger

3.1 Climate, the Harmattan Season and Niger's 1986 Meningitis Epidemic

The West African country of Niger is one of the most severely affected of the 23 countries in the meningitis belt (Yaka et al. 2008). More than 95% of the Nigerien population resides in the meningitis belt. Niger has experienced six epidemics since 1986, with the largest gap between epidemics observed between 1986 and 1993.[8] The epidemic cycle in Niger is approximately every 8–10 years, on par with the rest of the belt where the periodicity is around 8–14 years depending on the country (Yaka et al. 2008). The 1986 epidemic was severe with 15,823 reported cases per 100,000 people and a mortality rate of about 4%.[9] Niger's population, where the median age has remained at around 15 years old for over a decade, is particularly at risk of infection during epidemic years given the heightened risk of infection for young children and adolescents. Domestic, inter-district migration is limited in Niger[10] and the population size across districts has been stable with the distribution almost entirely unchanged since 1986 and a correlation of 0.99 and 0.97 ($p < 0.001$) between 1986 populations and 1992 and 1998 populations respectively.[11] This study assesses individual exposure to the 1986 meningitis epidemic based on a geographical assignment at district level, given the low levels of inter-district migration in the country.

3.2 Data and Cohorts

As outlined in Archibong and Annan (2017, 2018), this study combines district-level data on meningitis cases per 100,000 people from the WHO and the Ministry of Public Health in Niger with individual- and district-level data on education and demographics from the Nigerien DHS. The district-level DHS data is available for two survey rounds in 1992 and 1998 and provides records for individuals living in all 36 districts across the country. The education measure is the years of education an individual has completed, and the sample is limited to the cohort born between 1960 and 1992, which includes cohorts that were of schoolgoing age during the 1986 meningitis epidemic. Using data from Niger also permits analysis that captures homogeneity in religious, ethnic and income characteristics

across individuals in the country to more cleanly capture the effect of meningitis epidemic exposure.[12] District-level data on mortality rates from meningitis are available in aggregate form only, and not available by gender.

The analysis uses birth year information to construct school-aged specific cohorts and their exposure to the 1986 meningitis epidemic. Three categories are defined: ages 0–5, 6–12 and 13–20 in 1986. These age bands reference the Nigerien school attendance requirements/context where 6–12 and 13–20 age categories correspond to primary and secondary schoolgoing ages respectively, and 0–5 are non-schoolgoing. While the mandatory schoolgoing start age is 7, age 6 is used in order to control for early schoolgoing children. The bands contain enough observations to ensure that estimations are not done on empty cells and also help to control for age misreporting in the sample. The overall results are insensitive to marginal changes in the age cutoffs. The study predicts that the largest magnitudes in the reduction of female education during the epidemic will be for primary school aged children given statistics on low secondary school enrolment rates in the country.[13] Conversely, we should see little or no effect of meningitis exposure on years of education for non-school-aged girls (between ages 0 and 5) during the epidemic year. Table 2.1 provides summary statistics on our education and meningitis exposure measures.

The data used are taken from NASA's Modern Era Retrospective Analysis for Research and Applications (MERRA-2).[14] Following the environmental health literature on the climate factors associated with meningitis incidence in Niger, the study examines district monthly mean wind speeds (measured in m/s) temperatures (Kelvin) and dust concentrations (kg/m^3). Perez Garcia Pando et al. (2014a) highlight the importance of the previous October–December cycle of these variables, and dust and wind speed, in particular, as important climatic predictors of meningitis outbreaks. The distribution of these variables against meningitis case data during the epidemic year (1985–1986) versus a non-epidemic year (1989–1990) is shown in Fig. 2.1. Consistent with the results in Perez Garcia Pando et al. (2014a), wind speeds peak in the more intense part of the Harmattan season preceding the epidemic year (October-December), falling during the less intense part of the Harmattan season (January–March) during the epidemic year. The trend is much weaker during the non-epidemic years, as shown using the 1989–1990 test case in Fig. 2.1.

To test the hypothesis that the risk of early marriage increases during meningitis epidemic years and results in lower educational attainment, data from the DHS men's and women's subsamples will be used.

3.3 Estimating Equations

For the main results, a panel regression will be estimated. The panel regression comprises school-aged specific cohorts *a* linking years of education for individual *i* in district *d* at survey round *r* to measures of meningitis exposure MENIN_{adt} that are interacted with the gender of the individual female_{ig}:

$$\text{education}_{iadrg} = \beta_g \text{female}_{ig} + \beta_a \text{MENIN}_{adt} + \gamma_{ag} \text{MENIN}_{adt} \times \text{female}_{ig} + \mu_d + \delta_r + \delta_t + \varepsilon_{iadrg}, \quad (2.1)$$

Table 2.1 Variable means

	Total population			*Males*			*Females*		
	1992	*1998*	*1992–1998*	*1992*	*1998*	*1992–1998*	*1992*	*1998*	*1992–1998*
Population									
Per cent age 0–5 in 1986	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.23	0.23
Per cent age 6–12 in 1986	0.21	0.18	0.19	0.21	0.17	0.19	0.21	0.19	0.2
Per cent age 13–20 in 1986	0.16	0.18	0.17	0.15	0.16	0.15	0.18	0.20	0.19
Meningitis cases cohort exposure									
Age 0–5 in 1986	2.47	2.54	2.5	2.51	2.67	2.58	2.43	2.42	2.43
Age 6–12 in 1986	2	1.84	1.93	2.10	1.68	1.91	1.91	1.98	1.94
Age 13–20 in 1986	1.52	1.99	1.73	1.36	1.77	1.54	1.67	2.19	1.91
Years of education									
Control cohorts: age 0–5 in 1986	0.40	1.95	1.09	0.46	2.33	1.3	0.33	1.58	0.89
Treated cohorts: age 6–12 in 1986	1.85	2.38	2.07	2.26	3.22	2.63	1.46	1.72	1.57
Treated cohorts: age 13–20 in 1986	1.99	1.83	1.91	2.69	2.58	2.64	1.43	1.32	1.37

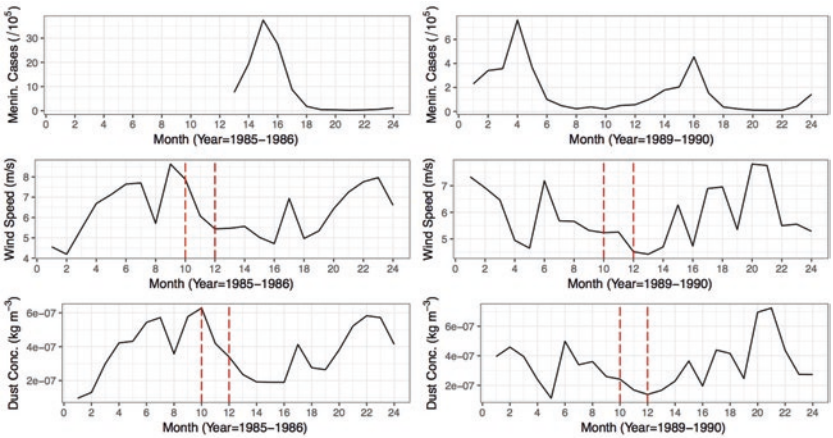

Fig. 2.1 Harmattan and meningitis response

where t and g are the birth year and gender respectively. This specification includes district fixed effects μd which capture unobserved differences that are fixed across districts. The birth year and survey round fixed effects, δ_t and δ_r respectively, control for changes in national policies (e.g. immunization campaigns), potential life cycle changes across cohorts and other macro factors. Note that the birth year fixed effect subsumes cohort specific dummies since cohorts are defined based on birth year and the meningitis reference year 1986. The model also includes un-interacted terms for gender and meningitis exposure.

The key parameter of interest is γ_{ag} and it is allowed to vary across cohorts. It measures the impact of MENIN on female respondents' education relative to their male counterparts, using variation across districts and the 1986 meningitis epidemic. It is identified based on the standard assumptions of a difference-in-differences model. MENIN is measured in two ways. In the first case, it is calculated as the average weekly cases of meningitis per 100,000 people in a district (MENIN Cases). The second case modifies the first measure by interacting it with the number of months for which meningitis incidence is strictly positive (MENIN Intensity). The implied key variable of interest is therefore constructed by interacting the MENIN measures with gender. Estimations are done using Ordinary Least Squares regression (OLS) and standard errors are clustered at the district level. Robustness checks and falsification tests on the identifying assumptions are presented in the results section.

To test hypotheses concerning age at first marriage and meningitis exposure, OLS regressions will be estimated for meningitis cases per 100,000 people on age at first marriage using district, year and year of birth fixed effects where possible.

3.4 Results

Table 2.2 reports estimates from the two specifications for the two measures of meningitis exposure (i.e. MENIN Cases; MENIN Intensity) using 1960–1992 cohorts. Columns (1a) and (1c) display results for the linkages between educational attainment, gender and meningitis exposure at cohort-level. The gender variable is negative and significant in both columns, which indicates a gender gap between males and females in favour of males. Meningitis exposure across almost all cohorts is negative and insignificant. It is barely significant at 10% and only in the MENIN Intensity measure for primary school cohorts.

The main results are in columns (1b) and (1d) of Table 2.2 where meningitis exposure is interacted with gender to examine the gender-differentiated impacts of the meningitis burden on educational investments. Gender is negative and significant. What is striking is that only interaction terms for the schoolgoing cohorts are negative and strongly significant at conventional levels. The interaction estimates are economically large in magnitude especially in the MENIN Cases measure. Interpreting the results from the MENIN Cases measure in column (1b), a case increase in the mean weekly meningitis cases per 100,000 people in each district is associated with a reduction of –0.044 years of schooling or a 3–4% decrease in years of education[15] per case exposure, relative to the mean of female respondents of primary schoolgoing age during the epidemic year.

Primary school aged female respondents in higher case exposure districts experience significant reductions in their years of education relative to their counterparts in lower case exposure districts during the epidemic year. Similar results are found for the secondary school aged female sample, with increases in meningitis case exposure associated with a reduction of –0.03 years of schooling or 2–3% decrease in years of education, per case exposure relative to the mean for the female cohort. Reassuringly, the interaction is not significant for non-schoolgoing aged female respondents at the time of the epidemic.

Furthermore, various falsification/sensitivity tests are conducted. The findings show that the results are insensitive to marginal changes in cohort

Table 2.2 Difference-in-difference estimates of the differential impact of meningitis exposure on education (1986 epidemic year), MENIN × Female

	Dependent variable: Years of education			
	MENIN Cases		*MENIN Intensity*	
	(1a)	*(1b)*	*(1c)*	*(1d)*
Female	−0.646***	−0.498***	−0.646***	−0.513***
	(0.050)	(0.076)	(0.050)	(0.071)
Meningitis exposure at ages 0–5	−0.002	0.001	−0.0002	0.0001
	(0.003)	(0.004)	(0.0003)	(0.0004)
× Female		−0.006		−0.0005
		(0.006)		(0.001)
Meningitis exposure at ages 6–12	−0.027	−0.004	−0.003*	−0.001
	(0.017)	(0.021)	(0.001)	(0.002)
× Female		−0.044***		−0.004***
		(0.012)		(0.001)
Meningitis exposure at ages 13–20	−0.047	−0.029	−0.004	−0.002
	(0.031)	(0.030)	(0.003)	(0.003)
× Female		−0.032***		−0.003***
		(0.011)		(0.001)
Constant	1.032***	0.953***	1.003***	0.932***
	(0.199)	(0.215)	(0.185)	(0.197)
District fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Year of birth fixed effects	Yes	Yes	Yes	Yes
Observations	47,697	47,697	47,697	47,697
R^2	0.208	0.210	0.208	0.209

Notes: Regressions estimated by OLS. Robust standard errors in parentheses clustered by district. Dependent variable is years of education across all specifications. MENIN Cases is the meningitis exposure explanatory variable defined as average district-level weekly case (per 100,000 population) exposure for cohort at specified ages during the 1986 epidemic year. MENIN Intensity is the meningitis exposure explanatory variable measured as district-level case exposure for cohort at specified ages during the 1986 meningitis epidemic year multiplied by number of months of exposure (with greater than zero cases). Mean level of education in the sample is 1.22, and the standard deviation is 2.7. Mean level of education for boys in the sample is 1.51 and the mean level of education for girls in the sample is 0.94. The estimates represent 3% to 4% and 2% to 3% reduction in education for girls in the primary schoolgoing age sample (ages 6–12) and secondary schoolgoing age sample (ages 13–20) respectively relative to the unconditional and conditional means. *** is significant at the 1% level, ** at the 5% level and *at the 10% level

age cutoffs. The results also indicate that there is no effect of meningitis exposure in non-epidemic years, using 1990 as a test year. These results are summarized in table form in Archibong and Annan (2018) and Archibong and Annan (2017). The results suggest that meningitis epidemics disproportionately impact investment in girls' education, potentially due to increases in the direct and opportunity costs of parental investments in girls' education during epidemic years. Epidemic years and higher than expected meningitis exposure might mean a contraction of the household budget constraint due to lost wages and increased health costs associated with the epidemic. Direct costs associated with fees might be higher when the household budget constraint shifts inward. Opportunity costs might rise with girls' labour increasingly demanded for caregiving or for substituting the labour of sick family members during the epidemic years.[16] One way that parents might respond to rising costs is by selling off "assets," or female children, to reduce the consumption burden and accrue income from bride price transfers from grooms' families to brides' families.

4 Empirical Evidence: "Selling Daughters" and the Bride Price System as a Mechanism

Niger has the highest rates of early marriage in the world, with 75% of girls married before the age of 18 (Loaiza and Wong 2012). Niger is also one of many countries in the world, particularly in sub-Saharan Africa, that engages in bride price marriage practices. Archibong and Annan's (2018) study finds positive and significant associations between the age at first marriage and years of education for schoolgoing aged female populations during the epidemic (1986) and non-epidemic (1990). The coefficients are strongly significant and positive at around 0.3 for schoolgoing aged female populations during the epidemic and non-epidemic years. For the male sample, they find a significant, positive but smaller in magnitude coefficient of association (around 0.06) between age at first marriage and years of education for males who were of schoolgoing age during the epidemic year. There is no significant association between age at first marriage and years of education for males who were of schoolgoing age during the non-epidemic year. These results suggest that the association between age at first marriage and years of education is much stronger for women than men in the sample.

Archibong and Annan (2018) explore the relationship between age at first marriage and meningitis exposure, particularly during epidemic years by plotting the age at first marriage cumulative hazards. Their results show that, quantitatively, female respondents who were of schoolgoing age during the 1986 epidemic year are almost two times more likely to marry earlier in high (above the national mean) meningitis exposed districts than in low (below the national mean) meningitis exposed districts. The trend in 1990 (non-epidemic year) is reversed with age at first marriage higher in high meningitis exposed districts for schoolgoing aged males and females during the 1990 non-epidemic year. Given these trends in the raw data, OLS regressions are estimated and results shown in Table 2.3. The first set of results in column (3) of Table 2.3 show significant negative associations (about –0.024) between meningitis cases and age at first marriage for the female school-age sample at the time of the epidemic, with no significant effect for the comparable male sample. In contrast, there is no significant association between meningitis cases and age at first marriage for either the female or male schoolgoing aged samples during the non-epidemic test year, 1990 as shown in column (6). The results provide support for the channel discussed previously, where the epidemic acts as a negative income shock leading to households smoothing consumption by "selling" their daughters for a bride price. This is reflected in the lower age at first marriage during epidemic years but not in non-epidemic years and with the effects significant for girls but not boys.

In further robustness checks documented in Archibong and Annan (2018), there is no evidence that concurrent weather shocks, like rainfall shocks, are driving the results. The results also indicate that the effect of meningitis exposure during epidemic years in reducing the age at first marriage is limited to women belonging to asset constrained households as measured by the estimated wealth in DHS data. Meningitis has no effect on the age at first marriage of female respondents during the 1990 non-epidemic year, providing further evidence that the reduced educational attainment of schoolgoing aged girls during the epidemic year can be partly attributed to liquidity-constrained households marrying off daughters at earlier ages in exchange for the bride price to smooth consumption in the aftermath of shocks.

Table 2.3 Impact of meningitis exposure on age at first marriage for schoolgoing aged respondents married during epidemic (1986) and non-epidemic (1990) years

	Dependent variable: Age at first marriage					
	(1)	*SGA 1986* *(2)*	*(3)*	*(4)*	*SGA 1990* *(5)*	*(6)*
Meningitis cases, F (OLS)	−0.040**	−0.044**	−0.024**	0.018	0.014	−0.027
	(0.019)	(0.019)	(0.010)	(0.060)	(0.058)	(0.042)
Constant	15.470***	15.098***	14.598***	14.962***	14.511***	14.352***
	(0.343)	(0.449)	(0.177)	(0.135)	(0.258)	(0.176)
Observations	5898	5898	5898	4550	4550	4550
R^2	0.016	0.054	0.093	0.0002	0.058	0.091
Meningitis cases, M (OLS)	−0.043**	−0.025	−0.020	0.031	0.012	−0.003
	(0.018)	(0.017)	(0.019)	(0.088)	(0.081)	(0.077)
Constant	21.275***	21.183***	21.087***	19.873***	18.724***	18.661***
	(0.359)	(0.454)	(0.490)	(0.306)	(0.514)	(0.497)
Observations	954	954	954	551	551	551
R^2	0.012	0.159	0.161	0.0003	0.175	0.178
Niamey FE	No	No	Yes	No	No	Yes
Year FE	No	Yes	Yes	No	Yes	Yes
Year of birth FE	No	Yes	Yes	No	Yes	Yes

Notes: OLS regressions. Robust standard errors in parentheses clustered by district. Dependent variable is age at first marriage for schoolgoing aged respondents (between 6 and 20 years old) during the 1986 epidemic and 1990 non-epidemic years. SGA is schoolgoing aged sample. Meningitis Cases are mean weekly meningitis cases by district for 1986 and 1990. *** is significant at the 1% level, ** at the 5% level and * at the 10% level

5 Conclusion

Climate change is expected to worsen disease environments, particularly in the tropics, with the most vulnerable countries concentrated in Africa and Asia, where some of the world's poorest populations currently reside. This chapter examined the role of climate-induced disease in widening the gender gap in human capital investment, and explored the mechanisms through which the effect occurs. The chapter reviewed the literature on climate change, disease and gender gaps, and highlighted evidence from a particular disease context—the meningitis belt in sub-Saharan Africa. It also provided evidence that changes in the seasonal climate, through the dry season, or Harmattan period, are strongly associated with meningitis epidemics in the region. Finally, it presented evidence from previous and ongoing research using data from Niger's 1986 meningitis epidemic to estimate the impact of sudden exposure to the epidemic on girls' education relative to boys. The results show that the educational attainment of schoolgoing aged girls during the epidemic, and in areas with high meningitis exposure, is significantly reduced, relative to their male counterparts. The results also highlight the negative income effects of the epidemic and, specifically show that early marriage in exchange for a bride price to smooth household consumption following the epidemic is a primary mechanism driving the results. The findings highlight the need for more research on the role of household coping strategies in worsening gender inequities in the aftermath of climate-induced disease shocks.

Appendix

A Simple Framework of Parental Investment in Education by Child Gender and the Role of Marriage Markets When Female Children Are "Assets" Post Shocks

This section presents a simple framework, adapted from Björkman-Nyqvist (2013), on the relationship between climate-induced health shocks, like a meningitis epidemic, that treats the epidemic as a negative income shock to the household and parental investment in human capital of male and female children. Following the unitary household model, within each family i, parents maximize discounted expected utility over two periods and choose to invest in schooling for girls (denoted s_g) and boys (denoted s_b). In period 1, the child works at home, goes to school or both. In period 2, the child is an adult and works for a wage. The parent's optimization problem is as follows:

$$\max U_i = u\left(c_1^i\right) + \delta c_2^i \tag{2.2}$$

s.t.

$$c_1^i = y_1 - pe_b^i - pe_g^i + \eta_b\left(1 - s_b^i\right) + \eta_b\left(1 - s_g^i\right) \tag{2.3}$$

and

$$c_2^i = y_2 - \gamma_b y_b^{ai} - \gamma_g y_g^{ai} \tag{2.4}$$

where

$$a_s^i = \alpha_s^i s_s^i; \quad s_s^i \in [0,1]; \quad y^{ai} = \omega_s a_s^i\left(\omega_b > \omega_g \text{ and } \gamma_b > \gamma_g\right);$$
$$\theta_s = \delta\gamma_s\omega_s \quad \text{and} \quad \theta_g < \theta_b$$

and c_t^i is the parent i's consumption in period t, u is a concave utility function and δ is a discount factor. a_s^i are cognitive skills with a_s^i denoted as the learning efficiency of a child of sex s in family i and which is assumed to be equal for boys and girls. s_s^i is the fraction of time in period 1 spent in school by a child from family i of sex s and defined over the interval 0,1. y_t is (exogenous) parental income and p is the schooling price for a child. e_s^i is an indicator variable that takes 1 if family i sends a child of sex s to school. $\eta_s\left(1 - s_s^i\right)$ is the income provided from home production in period 2 and $\gamma_s y_s^{ai}$ is the share of the child's income transferred to her parents. ω_s is the return to education of a child of sex s. Given simple restrictions on the parameters above and outlined in Björkman-Nyqvist (2013), the first order condition for household i, after maximizing the parent's expected utility will be:

$$FOC: \; -u'\left(c_1\right)\eta_s + \alpha_s^i s\theta_s^i \le 0 \quad \text{for} \quad s_s \in [0,1] \tag{2.5}$$

parents will choose to invest in schooling for a child up to where the marginal cost of more schooling, in the form of forgone time for domestic production or foregone income from early marriage for girls, is equal to the marginal benefit, in the form of higher transfers from a more educated

and subsequently higher paid (using a standard Mincerian model of returns to education) adult. An implication of the Björkman-Nyqvist (2013) model is if both s_b and s_g are greater than 0, a reduction in parental income, y_1, will on the margin only reduce investment in girls' education. There is an important contention in Hoogeveen et al. (2011) that the impact of income shocks on selling of daughters for the bride price, might depend on whether the shock is an idiosyncratic one, unique to a particular household, or a covariate one, shared by all members in the community. Given that marriage markets are two sided, an idiosyncratic shock, might lower the asking bride price of poorer, liquidity-constrained households, while keeping the demand side fixed, leading to an increase in marriages of brides, and potentially early marriage of brides in a higher-demand market. A covariate shock on the other hand that depresses the incomes of both sides of the market might lead to an increase or decrease in brides "sold" depending on the elasticity of the demand and supply curves for brides. We will address a fully specified model in further research (Archibong and Annan 2018), and focus on presenting the results from empirical research in Niger in the proceeding sections.

Notes

1. With details provided in the appendix.
2. Source: https://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/index.html.
3. Where epidemics are defined in the SSA context as greater than 100 cases per 100,000 population nationally within a year by the World Health Organization (WHO) (LaForce et al. 2009).
4. Source: http://www.who.int/mediacentre/factsheets/fs141/en/.
5. http://www.who.int/mediacentre/factsheets/fs141/en/.
6. In contrast with the dowry system prevalent in India where the direction of payments goes from the bride's family to the groom's family.
7. Given strong positive associations between education and age at first marriage (Archibong and Annan 2018).
8. Though there is no sub-national record of epidemics available prior to 1986, historical records suggest that the last epidemic prior to 1986 occurred in 1979 in Niger (Yaka et al. 2008; Broome et al. 1983).
9. Calculated from WHO data.
10. With most migration consisting of young male seasonal migrants in the northern desert regions, travelling internationally to neighbouring countries for work during dry months (Afifi 2011).

11. Source: Author's estimates from DHS data.
12. Niger is 98% Muslim, over 50% Hausa and has a majority poor, agricultural population. Source: US Department of State, CIA.
13. Source: UNICEF statistics.
14. MERRA-2 is an atmospheric reanalysis data product that assimilates historical observation data over an extended period. https://disc.sci.gsfc.nasa.gov/datasets.
15. Relative to the unconditional and conditional mean years of education respectively.
16. Hartmann-Mahmud (2011) documents this phenomenon in her case study research interviewing Nigerien women.

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CHAPTER 3

Weather Shocks and Women Empowerment

Linguère Mously Mbaye

1 Introduction

It is widely accepted that the empowerment of women is an important element of economic development (e.g. Duflo 2012). While in Africa there has been progress regarding gender issues, the fifth Sustainable Development Goal (SDG) focuses on gender equality and the empowerment of women and girls because there is still a gender gap between men and women in economic, social and political participation. Moreover, the current global context is characterised by many environmental problems that are exacerbated by climate change and its related disasters (IPCC 2012). This context poses a great challenge to developing countries and

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their most vulnerable people, including women. In many developing countries, women are still the most exposed group to adverse shocks and often bear the costs (Dercon and Krishnan 2000). In response to adverse shocks, households adjust by reallocating the available resources in a way that can be detrimental to girls and women. This renders the link between shocks and women empowerment crucial.

This chapter examines the relationship between income shocks caused by extreme weather events and women empowerment in Africa. This is done through the exploration of the nascent literature that examines how weather shocks affect women empowerment through various socio-economic outcomes. Income shocks related to extreme weather events are examined for two main reasons. First, in cases where income shocks are unmeasurable, exogenous variation in weather provides an accurate picture of income variations in developing countries. Poverty is usually defined as having a low income (Ringen 1988); the latter is correlated in a bidirectional way with many development factors such as human capital, labour market participation, institutions or violence. Put differently, it means that while poverty affects these outcomes, they can also have an effect on the level of income. Moreover, there are many unobservable characteristics that can affect both income and other development factors. In terms of identification, using income measures to study the impact of income on other development outcomes can lead to biased conclusions since it will be difficult to fully isolate the effect of income. Weather shocks, which cause income drops, famine and decrease agricultural productivity and crop yields, are an exogenous measure of income shocks that can better identify the impact of income on various development outcomes. Consequently, weather shocks, especially extreme rainfall events (and temperature events in some cases), have been used as a proxy for income shocks in a number of studies (e.g. Rose 1999; Corno and Voena 2016; Corno et al. 2017; Björkman-Nyqvist 2013; Miguel 2005; Miguel et al. 2004). Second, agriculture is the main source of livelihoods and income for most people in Africa and it is weather-dependent. Most African countries are agrarian societies and the average share of the employment in agriculture was estimated at 51% between 2011 and 2016. The agricultural sector is the primary employer in Africa, particularly in rural areas which host the majority of the population (AfDB 2018).

The chapter considers a wide range of indicators as measures of women empowerment. According to the concept of agency promulgated by Amartya Sen (1999), a person is empowered when he or she can make their own choices and pursue the goals that are important to him or her.

In a broader definition of agency, women are empowered when they are able to make their own choices and control their lives and resources (Samman and Santos 2009). Female empowerment is an outcome but also a process since women are agents of the change they want to make (Malhotra et al. 2002; Bold et al. 2013). Empowerment is a multidimensional concept. It can occur at household, community, national, regional and global levels (Bold et al. 2013), and has various economic, social, cultural, familial, legal, political and psychological dimensions (Malhotra et al. 2002). There are direct and indirect measures of female empowerment. On the one hand, the literature generally considers as direct measures elements such as women's involvement in household decision making, access to and control over resources, women's and men's attitudes toward abuse and intimate partner violence, and attitudes towards gender roles. On the other hand, the indirect measures considered in the literature include human capital outcomes like education (e.g. primary and secondary completion), health outcomes (fertility, maternal mortality), labour market participation, legal rights, marriage and family structure, number of children, land ownership, social norms and political participation. Other measures of empowerment include marriage and kinship factors such as assets brought to marriage, traditional support networks, educational differences between husband and wife, age difference between spouses, relative age at first marriage (Bold et al. 2013). Although these indicators do not translate directly or automatically into empowerment, they are drivers of women empowerment (Duflo 2012).

The rest of this chapter is organised as follows. The next section explores the relationship between weather shocks and human capital. Section 3 discusses the link between weather shocks, marriage and fertility decisions while Sect. 4 focuses on the relationship between weather shocks and violence. Section 5 discusses the link between weather shocks and economic independence measured through asset ownership. Finally, Sect. 6 discusses the various channels through which weather shocks affect women empowerment, as well as the policy implications.

2 Weather Shocks and the Gendered Effect on Human Capital

In developing countries, when girls' education is perceived as less necessary than boys' education, the former tend to receive less schooling than the latter (Behrman and Knowles 1999). Relatedly, households facing weather-induced income shocks can adjust their investments in children's

education in ways that are detrimental to girls. For instance, using district level data from 1975 to 2003 from Uganda, Björkman-Nyqvist (2013) finds that adverse rainfall shocks strongly decrease female enrolment in primary school and this is particularly true for older girls. The study finds that a 15% decrease in rainfall lowers female enrolment by 5 percentage points, while rainfall variation has no effect on male enrolment. These results suggest that older girls provide labour to compensate for the adverse effects of the rainfall shock. This is illustrative of the general fact that the reduction of income increases child labour (Basu and Van 1998) at the expense of education and children help smooth consumption over time and free up time for adults. Beegle et al. (2006) find that when adverse shocks affect crop yields in the Kagera region in Tanzania, child labour increases by 30% in affected households. Bandara et al. (2015) find that agricultural shocks increase child labour, particularly for boys, while they increase the probability of girls quitting school by 70%. Although crop shocks in these studies are mainly due to rodents, insects or pests, their effect on the yields is comparable to that caused by weather shocks.

The differential treatment between boys and girls when households experience shocks is not limited to education. Weather-induced income shocks can also adversely affect the health outcomes of girls, especially when these shocks happen early in life. Using household data from India collected from 1969 to 1971, Rose (1999) finds that positive rainfall shocks in early life increase the survival rate for girls compared to boys. Moreover, consequences of weather shocks on human capital are not only experienced in the aftermath of the shock but can also persist over time with long-lasting effects on health, education and future income. Maccini and Yang (2009) look at how exposure to early-life rainfall shocks by people born in Indonesia between 1953 and 1974 affected their outcomes in 2000 as adults. They find that while early-life rainfall shocks did not affect men, adult women who experienced positive rainfall shocks when they were children were in better health, taller, had more schooling and lived in wealthier households.

3 Weather Shocks, Marriage and Fertility Decisions

Female education is a strong determinant of fertility (Baird et al. 2011; Drèze and Murthi 2001; Fafchamps and Shilpi 2014; Marchetta and Sahn 2016; Osili and Long 2008), or female labour market participation (Bbaale

2011). Consequently, any shock affecting girls' education can have an indirect effect on fertility. At the same time, early marriage and early fertility limit the opportunities for pursuing education and participating in the labour market and in income-generating activities, which generally reduces female bargaining power within the household (Jensen and Thornton 2003; Field and Ambrus 2008; Miller 2010; Yount et al. 2018).

Evidence of the impact of weather shocks on marriage and fertility is limited but growing. The existing studies show that child marriage and fertility are used as a strategy for reducing income volatility (Corno et al. 2017; Corno and Voena 2016; Grimm 2017). Corno et al. (2017) examine the relationship between extreme rainfall events and the timing of marriage in sub-Saharan Africa and India. They find that drought reduces annual crop yields by 10–15%, which increases child marriage between the ages of 12 and 17 by 3% in sub-Saharan Africa but reduces it by 4% in India. This effect is mainly linked to social norms and more precisely to the role of marriage payment.[1] The latter is practised in the form of bride price in sub-Saharan Africa where the bride's parents and family receive the payment from the groom and his family, and dowry in India where it is the groom who receives the payment from the bride. The results suggest that child marriage increases when a payment is expected and decreases when it is due. This has also been proven within sub-Saharan Africa as the study shows that droughts increase child marriage in countries practising bride price payments but decrease the practice in countries practising dowry such as Eritrea. Similar findings are observed within countries. For instance, in Zambia, ethnic groups that offer bride prices are more sensitive to drought. Traditional norms such as marriage payment are thus used for consumption smoothing to help dampen the effect of the weather shock. The relationship between weather shocks and child marriage as well as the role of marriage payment has also been found in rural Tanzania (Corno and Voena 2016).

When weather shocks affect early marriage, they also affect fertility. As stated earlier, in households facing income shocks, children are a potential source of labour that could help mitigate the effects of the shocks. Consequently, fertility is seen as insurance against risks (e.g. Cain 1981, 1983; Pörtner 2011; Grimm 2017). For instance, Grimm (2017) compares differences in fertility between farm and non-farm households within US counties in the late nineteenth century and finds that high rainfall variability led to higher fertility rates for agricultural households but did not increase fertility for non-agricultural households. More precisely, moving

from the 10th to the 90th percentile in the rainfall variability distribution increases the fertility differential between farm and non-farm households by about 12%. This study suggests that fertility is part of the response to weather-induced risks, which may explain the slow demographic transition occurring in sub-Saharan Africa and arid regions. Interestingly, another study by Abiona (2017) finds different results in the case of Uganda where adverse negative shocks increase the demand for contraceptives. Taken at face value this result seems to contradict Grimm (2017); however, it is actually complementary since the result also suggests that when women are given the opportunity and have control over their fertility decisions, they can choose to postpone childbirth when they face adverse shocks.

4 Weather Shocks and Violence Against Women

Violence against women such as Intimate Partner Violence (IPV), domestic violence or violence perpetrated by relatives or individuals outside close circles is both a cause and a consequence of gender inequality. For instance, in the case of domestic violence, it has been demonstrated that it has serious adverse effects on health (Heise et al. 1994; Diop-Sidibé et al. 2006). It can have consequences beyond the direct victims and affect children's outcomes (Kishor and Johnson 2004; Rawlings and Siddique 2014), which makes it a critical issue not only for women but also for future generations.

Existing studies have explored the various reasons for violence against women. These include labour market conditions such as the gender wage gap or the unemployment rate (Aizer 2010; Anderberg and Rainer 2013; Bhalotra et al. 2018), inequality (Cools and Kotsadam 2017), poverty, social norms, education, economic and social empowerment (Benson et al. 2003; Jewkes 2002).

Weather-induced income shocks are another cause of violence against women. Evidence from India shows that a decrease in annual rainfall below its long-term mean increases dowry-related killing and domestic violence (Sekhri and Storeygard 2014). In Africa, a study from Tanzania shows that rainfall shocks increase the incidence of domestic violence. In terms of magnitude, the study finds that one standard deviation in adverse rainfall shocks increases domestic violence by 18.8 percentage points with results mainly driven by drought and the effect particularly notable among poorer households (Abiona and Foureaux Koppensteiner 2016). Using data from 67 villages between 1992 and 2002, another study from Tanzania

shows that the murders of women aged between 50 and 60 years and accused of witchcraft are two times higher in years of extreme rainfall (Miguel 2005). In this particular case, although it is difficult to disentangle fully the role of income shock from the role of non-income factors such as cultural norms, income shocks are the key drivers of accusations of witchcraft. However, this type of violence is not unique to Africa. Witch killing occurred in Europe between the sixteenth and eighteenth centuries and was reported in poor and agrarian societies in Germany. The deterioration of economic conditions due to the weather and declining crop yields partly explains this phenomenon (Behringer 1999). In her study on witch killing in Europe and America between 1520 and 1770, Oster (2004) shows that most of the victims were women, widows and poor, characteristics that highlight their vulnerability. In this context, witchcraft was mainly related to the decrease in temperature and food shortages.

5 Weather Shocks and Economic Independence

Within marriage, women's ownership of assets can represent economic independence as assets would be a source of wealth distinct from their spouse. Risk-coping mechanisms are also linked to intra-household resource allocation. Indeed, men and women use their assets differently to cope with shocks; and jointly owned assets are not easily used to deal with shocks as it can be difficult for couples to reach an agreement on selling them (Rakib and Matz 2016). This could explain why women are more vulnerable to weather shocks affecting their income. For instance, Quisumbing et al. (2018) find that weather shocks have different consequences on male- and female-owned assets in Bangladesh and Uganda. In Uganda, they find that when a drought occurs, male-owned assets are better protected than female-owned assets since the shock reduces the wife's assets but does not affect those of the husband. However, in Bangladesh, they find that drought has a minor impact on the wife's assets due to the low exposure of women to agricultural risk, low level of women's asset ownership and the effective targeting of drought relief programmes. Another study from Malawi also highlights the unequal gendered effects of temperature shocks on assets ownership (Asfaw and Maggio 2018). In households where only women managed plots there were severe adverse effects on consumption, food consumption and daily calorie intake when compared to those managed by men or jointly managed by men and women. This impact is mainly attributed to land tenure

security related to social norms since the gender gap in vulnerability to shocks is observed in patrilineal societies rather than matrilineal ones where women's property rights are more secure (Asfaw and Maggio 2018).

6 Discussion

In the studies reviewed, the main channel through which weather shocks affect socio-economic outcomes is agricultural output and the subsequent pressure on food availability and consumption. The decline in crop yields reduces income. This reduction translates into lower education, poorer health, excess mortality and can, for instance, force households to use marriage payment as an income source which would result in early marriage. It may also translate into an increase in the demand for children's contribution to household production therefore leading to higher fertility. In addition to the pathway of decreased agricultural output and yields, it is interesting to mention the mediating role of social norms which are at play and part of the strategy households use to cope with the adverse effects of shocks. Perceptions of and the place of women in the society shape the visions and aspirations women have for themselves, but also the way their parents value them (Beaman et al. 2012). Therefore, social norms and women's rights play an important role in women's levels of vulnerability to weather-induced shocks.

Identifying the channels of impact informs the actions that need to be taken by decision makers to deal with the adverse effects of weather shocks and increase the resilience for women. Findings of the reviewed studies suggest that in the absence of social protection mechanisms such as insurance and social transfers targeted to the most vulnerable groups, risk-coping mechanisms can be costly to women. Yet, the adverse effect of rainfall variation can be mitigated by irrigation systems and agricultural machinery (Grimm 2017). Moreover, access to credit markets can reduce consumption volatility and act as a buffer against shocks (Corno et al. 2017; Bandara et al. 2015). Importantly, women can also mitigate the adverse effect of shocks when they have alternative choices and control over life decisions such as fertility (Abiona 2017).

It is important to note that gender-differentiated effects of weather shocks are also a reflection of gender inequality in access to education and health, in marriage and fertility decisions, in the exposure to or incidence of violence, and in available economic opportunities. This inequality needs to be addressed first and this is fully in line with SDG 5 on achieving gen-

der equality and empowering all women and girls. Beyond SDG 5, women empowerment is a cross-cutting area that is important for achieving all the other targets of the SDGs. Consequently, empowerment can make women more resilient to the adverse effects of weather-induced shocks and this is directly linked to SDG 13, which calls for "taking urgent action to combat climate change and its impacts". It is thus important to support virtuous circles where more female empowerment and equality between men and women will help make societies more resilient and achieve sustainable development.

Finally, this review highlights the need for further empirical evidence on the link between weather shocks and women empowerment in the short and long term. It would be interesting to have more microeconomic analysis and cross-country analyses that would provide a broader perspective. Although there is an emerging literature, it is still limited and a further exploration of the gendered effects of weather shocks on political participation and other economic factors such as labour market outcomes is warranted. Future research could also examine whether there are other channels beyond agricultural productivity that explain the impact of weather shocks or how the impact on crop yields interacts with other determinants.

Note

1. On the role of social norms such as bride price payment on fertility decisions also see Mbaye and Wagner (2017).

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CHAPTER 4

Gender and Climate Change: Towards Comprehensive Policy Options

Gregor Schwerhoff and Maty Konte

1 Introduction

Climate change awareness is gaining in importance in everyday life and interacting with gender issues in important ways. The impacts of climate change can be clearly felt among women and men in different ways. Climate change is not gender neutral, which means the consequences of climate change are lived and experienced differently based on gender (MacGregor 2010). The United Nations Development Programme (UNDP) discusses gender-based vulnerabilities and the fact that 'women are disproportionally vulnerable to the effects of climate change' (2012, p. 1). Policies for climate mitigation and adaptation have the potential to either amplify those differences or contribute to improving opportunity equality for women and men.

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The recent literature has largely focused on investigating why women are more vulnerable to climate change impacts and why there is a gender difference in mitigation behaviours and attitudes. This knowledge is important for the development of comprehensive policies. When econometric studies simply include gender as an explanatory variable, gender differences may be understood as an inherent characteristic of men and women. Hence, a misinterpretation can lead to flawed conclusions that can negatively affect the situation of women. Additionally, simply targeting aid to the most vulnerable does not address the underlying power dynamics that contribute to female vulnerability (Djoudi et al. 2016). Similarly, Arora-Jonsson (2011) highlights the pitfalls of declaring women to be more 'virtuous' in climate change decision-making because that has led to instances in which women have been given more responsibility without a corresponding increase in power.

This chapter reviews the literature on women's vulnerability to climate change and gender differences in attitudes and behaviours towards climate change, with a particular focus on the mechanisms that cause those differences, and gender differences in climate change adaptation. The chapter highlights the fact that gender vulnerability differences can be traced back to various types of cultural restrictions imposed on women. Gender differences in attitudes and mitigation behaviours often can be traced back to complementarity roles or activities between men and women in terms of, for example, skills or representation of different community subgroups. Further, differences in socialisation have been identified.

Understanding the mechanisms causing gender differences in vulnerability to climate change helps to identify comprehensive policy options for addressing both climate change and gender inequality. Gender mainstreaming, the design of climate policy with an explicit evaluation of gender effects, is an important approach emphasised in this context. Additionally, this chapter suggests addressing the causes of inequality, for example, by removing de jure or de facto restrictions on women owning land. Finally, it proposes prioritising climate mitigation policies that have proven co-benefits for women. One example is electrification that reduces health hazards for women and provides them with new opportunities.

Several papers have analysed the interactions between gender and climate change. MacGregor (2009, 2010) analyses the discourse on climate change and emphasises that it is not a gender-neutral, scientific problem but, instead, is deeply gendered. Arora-Jonsson (2011) identifies the narrative of 'virtue and vulnerability', pointing out the lack of a scientific

foundation for some of the statements as well as the problems associated with simple generalisations. Pearse (2017) takes a feminist view on climate change and argues for the importance of gender studies in the context of climate change. In addition to that literature, this chapter focuses on the mechanisms causing gender differences in the context of climate change and conducts the first assessment of the policy options available for simultaneously addressing climate change and gender equality. This chapter further provides solid guidance for policymakers who are interested in Sustainable Development Goal (SDG) target 5.a and in all the targets listed in SDG 13.

The remainder of the chapter is structured as follows: Sect. 2 is devoted to reviewing the literature on the cultural mechanisms that cause women to be more vulnerable to climate change. Section 3 investigates why skills and behaviours with climate change implications can be gender specific. Section 4 moves beyond the male–female dichotomy and discusses which groups of women are most affected by the mechanisms described here. Section 5 uses insights from the preceding sections to suggest three types of comprehensive policy options and, finally, Sect. 6 provides some concluding remarks.

2 Vulnerability of Women to Climate Change

Many studies have observed that women are more vulnerable to climate change than men. This section focuses on the reasons behind this difference in vulnerability.

2.1 Lack of Resources Due to Poverty

In many studies, the higher vulnerability of women to climate change is attributed to their lack of resources. Studies have provided evidence that people with fewer resources are generally more affected by climate change (MacGregor 2010). People with lower incomes tend to work in agriculture, which is the sector most easily affected by climate change (Hope 2009; Mubila et al. 2011). People in low-income households are also more vulnerable to external factors because they work in fragile employment with high levels of income insecurity (Mubila et al. 2011). Food security, which is a concern for people with fewer resources, is also greatly affected by climate change, which exacerbates food insecurity (Mubila et al. 2011). The negative impact of climate change on people with fewer

resources is also based on the fact that limited resources prevent people from adapting to changing conditions. With limited resources, women do not have the necessary means to adapt and, therefore, are more vulnerable than men. Jaggernath (2014) further claims that women have a lower capacity to cope with climate change consequences than men because of their lower and less steady incomes. Kumar and Quisumbing (2013) find that, in Ethiopia, male-headed households own considerably more land and livestock and are more likely to own oxen than female-headed households. According to Jost et al. (2016), crop yields would be 20–30 per cent higher in developing countries if rural women had the same access to resources as men do. Similarly, Kakota et al. (2011) report that women in Malawi have lower income levels than men.

Women do not have the means to adapt and farm successfully, which further decreases their income (Magrath 2010). Research in South Africa has proven that because of limited resources, women in agriculture are not learning new strategies to cope with droughts and rising temperatures (Magrath 2010). In Ghana, the lack of resources prevents women from participating in climate change negotiations on coping strategies (Glazebrook 2011). Finally, in Benin, women's limited income prevents them from purchasing new land, which can be a means of coping with the destruction of natural resources (Bob and Babugura 2014).

2.2 Division of Labour

The traditional division of labour in developing countries has unfavourable effects on women. Women have traditionally assumed the role of carers and provisioners, which implies that they rely on natural resources for many activities. For instance, they are responsible for collecting water and growing food for the family and, therefore, are more dependent than men are on the natural resource base for their livelihoods. With the environmental disruptions caused by climate change, women are being forced to find other ways to provide for their families, which can be more dangerous and time-consuming with the consequences of climate change (MacGregor 2010). For instance, the water shortages induced by climate change in Africa mean that women have to walk longer distances to collect water (Mubila et al. 2011). They also are more exposed to health risks from carrying heavy loads over those long distances (Meyiwa et al. 2014) and to possible sexual abuse by armed groups in forests and remote areas (UNDP 2012).

2.3 Cultural Restrictions

Adaptation to climate change is also affected by cultural restrictions. In Ethiopia, women have smaller networks and, thus, poorer access to informal forms of insurance (Kumar and Quisumbing 2013). Smucker and Wangui (2016) identify the lack of access to social networks as the greatest challenge to adaptation by women. In Nepal and India, migration is considered an option mainly available to men (Sugden et al. 2014). In Mali, women are affected negatively by male out-migration because the women are expected to take over some of the activities previously performed by men (Djoudi and Brockhaus 2011). Further, women's lack of power in Mali households prevents them from realising the full potential of adaptation options.

Education contributes to climate change adaptation because it facilitates relations with external agencies and provides access to new sources of information (Cohen et al. 2016). It also increases opportunities for paid employment (Cohen et al. 2016), in particular by increasing sectoral mobility (Kumar and Quisumbing 2013). However, women and girls in Africa have attained only 80 per cent of the rate of male education. That difference is explained by a number of factors, including cultural factors such as the high incidence of early-age marriage in Malawi (Kakota et al. 2011).

Overall, the fact that climate change has a greater impact on women than on men can be explained by two conditions specific to women: the fact that women have to provide for their families (which is based on traditional gender roles) and the fact that women have greater difficulty in adapting to climate change because of their lack of resources. Those conditions imply that climate change has a multidimensional impact on women's lives.

3 Gender-Specific Skills and Behaviours

There is substantial empirical evidence, both scientifically rigorous and disaggregated, that demonstrates that women do react differently to the challenges surrounding climate change than men do. However, women should not be considered only as victims; they are also relevant actors of change. Arora-Jonsson (2011) criticises the narrative—found in some of the literature—that women are more 'virtuous' in reacting to climate change as lacking scientific evidence and being overly simplistic.

The UNDP (2011) claims that women possess unique skills and a strong knowledge of resource management. Evidence in Africa has shown that women have skills that can be used to recognise which soils will be the most favourable for growing crops as well as how to adapt when unpredicted rainfalls damage those soils (Glazebrook 2011). Women also rotate crops in Ghana depending on the quality of the soil that is affected by climate change. That allows them to grow crops by using their specific knowledge of soils (Glazebrook 2011). In Rwanda, the disruption of rainfall has led women to rotate crops and assess how plants react (Oxfam 2015). Connolly-Boutin and Smit (2016) explain how adaptation strategies are different for men and women in Ghana and state that 'women tended to prefer adopting post-harvest technology more than men, while men favoured light infrastructure projects such as the construction of community drains' (p. 394). The following subsections provide concrete examples of strategies adopted by women in developing countries.

3.1 Forest Governance

In many countries, executive committees resolve issues or discuss concerns about forest governance. The percentage of women on those committees has a significant positive influence on forest conditions (Agarwal 2009a). The most important mechanism for this result is that women who participate in decision-making have a sense of ownership of the forest and, thus, take responsibility for it through actions such as patrolling and vigilance. Women also inform other women more about rules than men do. Qualitative survey responses indicate that women have a particular interest in conservation because of the significant economic importance forests have for them and the gender-specific knowledge women have about forest conservation. Westermann et al. (2005) add that the presence of women in groups increases collaboration, solidarity, and conflict resolution.

There is also evidence regarding the effect of the number of women in executive committees on conservation outcomes. In line with general gender studies, Agarwal (2010) describes the effect of a critical mass of women on forest conservation in India and Nepal. The presence of women on executive committees substantially increases once women reach a share of approximately 25 per cent. The likelihood that women speak up during meetings increases at higher membership percentages of approximately 33 per cent and above. McCarthy and Kilic (2015) find that similarities between the leadership and the general population, with respect to gender,

increase the ability for collective action in Malawi. This suggests that a share of approximately fifty per cent women in decision-making is optimal. Finally, Agarwal (2009a) presents evidence that executive committees entirely composed of women achieve better forest regeneration and canopy growth even though they tend to be in charge of the most degraded forests. A very degraded forest requires more conservation, and this initial poor forest quality causes all-women groups to implement stricter conservation rules (Agarwal 2010).

3.2 System Justification

Gender differences in environmental behaviours and attitudes have been studied by many scholars. A general finding is that women report more pro-environmental behaviours and attitudes (Goldsmith et al. 2013). That finding has been attributed to differences in socialisation that make women more altruistic and socially responsible (Zelezny et al. 2000). The different prioritisation of altruism could have originated in men's socialisation to cooperate within the group but compete outside of the group (Dietz et al. 2002). Following research in the United States, these results have been confirmed by international comparisons (Hunter et al. 2004). These general findings also have been observed in attitudes towards climate change. Although cognitive risk judgements are comparable in both men and women, women are more worried about climate change (Sundblad et al. 2007). At the top political level, however, it appears that ideology and partisan politics outweigh gender differences in attitudes (Sundström and McCright 2014). In summary, women are more active than men in environmental protection. Women are more willing to acknowledge ecological problems and risks and, thus, are less engaged in 'system justification'.

3.3 Farming Decisions

Gender behavioural differences also can be observed in climate change adaptation. Because the climate in Africa is already changing and is most commonly manifested in low and unpredictable rainfall, it is possible to study adaptation behaviours on a large scale. Dah-gbeto and Villamor (2016) observe that men tend to react to worsening climate conditions with out-migration, which subsequently results in more women making decisions on land use. The authors describe female decision-making as

more active, dynamic, and innovative with respect to income diversification. Jost et al. (2016) report a variety of differences in the adaptation behaviours of men and women in Northern Ghana. The farmers themselves describe women as more interested in the family's food supply and men as more interested in earning profit. Saenz and Thompson (2017) show that women in Zambia maintain more crop diversification than men in response to government maize subsidies, and that has positive effects on soil quality and on resilience in regard to climate change.

3.4 Economic Behaviour in General

As in farming, women adapt to climate change differently from men in other contexts. This is due to the gendered division of labour. A second reason for the different adaptation abilities is gender-specific knowledge. Aregu et al. (2016) describe the consequences of excluding women from informal institutions governing access to communal pastures in the Ethiopian highlands. As more female knowledge and preferences are disregarded, the ability of the community to adapt declines. Similarly, Díaz-Reviriego et al. (2016) show that knowledge of medicinal plants among Tsimane' Amerindians is gendered such that women's knowledge is an important factor in adapting local medical systems to climate change.

Some of this evidence is relevant for the mitigation of climate change. The participation of women in decision-making often improves forest conservation, and women are less likely to ignore and deny climate change. Women have gender-specific skills for adapting farming to climate change, and they can contribute to that adaptation in various other forms. Section 4 discusses how this analysis can be taken beyond a simple gender distinction and how doing so would lead to a better understanding of gender differences in vulnerability and adaptation to climate change.

4 Beyond the Male–Female Dichotomy

Focusing on women and men as homogeneous groups with fixed characteristics is problematic for two main reasons: one is that these groups are not homogeneous, and subgroups may be particularly vulnerable to climate change, thus requiring policy responses that take *intersecting identities* into account (Thompson-Hall et al. 2016). Women may be particularly vulnerable to climate change when they have a low level of income, when they are unmarried, or when they are from a low caste or class. Ajibade

et al. (2013) study the effect of flash flooding, an extreme event expected to become more frequent under climate change, on the coastal city of Lagos in Nigeria. Women in low-income neighbourhoods were affected much more severely than more well-off women, due in part to hazardous housing but more directly because of their low socioeconomic status.

In addition to household wealth, other personal characteristics can determine a person's ability to adapt to climate change. As the following examples will show, however, these other characteristics—including marital status, caste, and class—are closely associated with poverty. Studying a rural region in Tanzania, Van Aelst and Holvoet (2016) demonstrate the central role of marital status in adaptation ability, especially for women. Although married women can obtain access to more drought-resistant valley land through their husbands, unmarried women cannot rely on such opportunities. Unmarried women also are more dependent on agriculture because they are tied to agricultural work and cannot share risks with a husband.

A second reason for taking the analysis beyond the male–female dichotomy is that the behaviours and abilities of men and women are shaped by social power dynamics. Understanding these social dynamics allows one to design comprehensive policies to achieve equal opportunities for both women and men and to mitigate climate change and adapt to it. Describing women as vulnerable instead of addressing the underlying power dynamics can contribute to reinforcing the situation instead of improving it. Djoudi et al. (2016) express concern that it might be easier for donors to focus their support on the most vulnerable instead of initiating transformational change that would address the cause of gender inequalities. Ravera et al. (2016) point out that power dynamics are renegotiated in communities under pressure to adapt with the possibility of either improving or worsening the situation for women. In India, they found that a collective agency of women emerges, which decreases vulnerability. Further examples of how environmental pressure affects social structures and starts new dynamics are provided by Onta and Resurreccion (2011) and Andersson and Gabrielsson (2012). As noted above, viewing women as more resilient in mitigating climate change can distract from the inequality in the power balance between men and women (Arora-Jonsson 2011).

The literature reviewed in Sects. 2 and 3 shows how scientific analysis of gender and climate change has evolved from the narrative of 'virtue and vulnerability' towards a comprehensive study of power dynamics. The vulnerability of women to climate change, discussed in Sect. 2, can be traced

to gender-specific access to resources, gendered labour divisions, and further cultural restrictions. The gender-specific behaviours and abilities of women and men, described in Sect. 3, are complementary to each other either because women responsible for decision-making improve their representativeness or because men and women have complementary skills. Furthermore, Sect. 3 identifies situations in which women achieve better mitigation or adaptation results than men do. These gender differences, however, are not ascribed to inherent gender differences but rather to differences in socialisation.

5 Implementing Gender Equality and Improving Mitigation and Adaptation

The need to address climate change with mitigation and adaptation and the need to eliminate gender inequality—which limits women's capabilities compared to men—are linked. The straightforward way of designing policy is to aim at achieving synergies by simultaneously addressing both needs. Such a comprehensive design is known as the gender mainstreaming of climate policy, and it is discussed in Sect. 5.1. In addition, policies addressing one of the challenges can have positive co-benefits for the other. Section 5.2 discusses the co-benefits of improving gender equality to enhance the ability of women to adapt to climate change. Section 5.3 discusses how one important climate policy, electrification, can improve the lives of women and promote gender equality.

5.1 Gender Mainstreaming of Climate Policy

Given the gender differences in the ability to adapt to climate change described above, gender mainstreaming has been advocated as a policy response. Alston (2014) defines it as 'the process of incorporating a gender perspective to any action, policy, legislation or action in order to ensure that the concerns of all are addressed and that gender inequalities are not perpetuated through institutional means'. In her analysis, Alston finds that policies and practices designed to mitigate climate change, or to adapt to it, lack attention to social outcomes and to vulnerable women in particular. Allwood (2014) confirms this finding for European Union policy and explains it as the result of institutional resistance. Nhamo (2014), by contrast, does find gender mainstreaming gaining momentum in national climate policy in East and Southern Africa.

An obvious first step in gender mainstreaming would be to provide services to both women and men. However, according to Jost et al. (2016) and Bhattarai et al. (2015), there are still extension services and NGOs that mainly target men. Ultimately, mainstreaming gender into climate policy will have to address structural inequalities, especially land ownership and access to resources and technologies (Bhattarai et al. 2015). To that end, Alston (2014) demands a reappraisal of all policies to ensure that they do not reinforce or create new gender imbalances. The meaning of gender-sensitive adaptation in climate adaptation policy is spelled out by Buchanan et al. (2016) in the case of communities engaged in traditional activities. They recommend providing men with better opportunities to build up human capital outside traditional activities. They also suggest encouraging women to actively engage in policymaking.

Taking gender aspects into account also can benefit environmental policy. Agarwal (2009a, b) shows that having a significant percentage of women engaged in decision-making can improve forest conservation outcomes in India and Nepal. Goldsmith et al. (2013) show, in an experimental setting, that reformulations of environmental policy that are consistent with the established way of life can help gain the support of men who tend towards system justification. Below the national level, female policymakers report greater environmental concern (Sundström and McCright 2014), suggesting that a higher share of women in decision-making also could increase support for environmental policy.

5.2 Gender-Specific Restrictions

Gender mainstreaming refers to the gender-specific design of climate-related policies. Evidence from Sect. 2 indicates that a simpler approach could also achieve progress in both gender equality and climate adaptation (i.e., by removing the gender-specific restrictions imposed on women that reduce their adaptation abilities). Where women do not have the formal right to own land, land ownership can be made independent of gender. If land registration is a practical difficulty for women, registration services can be made more accessible and transparent. Employing women as contact persons in these services could further reduce barriers to accessing services. Other access restrictions to women—on credit, forest plantation allocations, or irrigation rights, for example—also can be causes of high female vulnerability. Removing those restrictions would improve the resilience of women to climate change.

Education has been found to be an important determinant of the ability to adapt to climate change. While progress in terms of the average years of schooling has been rapid, and the gender gap has closed or narrowed at the primary school level, there is still much to be done at the higher levels of education. The early age of marriage for women has been identified as a cause of the lower educational attainment of women. Adjusting and/or enforcing a minimum age of marriage could be an indirect way of closing the gender gap in education and, thus, in climate change adaptation.

Some cultural restrictions on women will be difficult to address through government policy; examples are the gendered division of labour and the gender difference of power within families. Andersson and Gabrielsson (2012) suggest a potentially creative way of addressing this problem: they show that, in East Africa, new social institutions have emerged in response to climate change. These institutions are mainly formed by women, and their main purpose is to share resources through collective action. It may be possible to transfer this model to other communities and, thereby, strengthen existing social institutions.

5.3 Co-Benefits of Electrification for Gender Equality

Many households in developing countries, particularly in Africa, live without access to electricity; they rely on carbon-intensive ways of producing energy, particularly traditional forms of biomass. An effective way of reducing these emissions and the associated deforestation is to provide access to electricity. Doing so can have a direct positive effect on the lives of women and improve their capabilities. Thus, when setting development priorities, it might be useful to consider the gender effect of electrification.

An important direct effect of policies on electrification is that the availability of electricity reduces the need for time-consuming tasks traditionally performed by women. For instance, having access to electricity in South Africa allows women to save so much time on household work that they have time to work in the market (Dinkelman 2011). Electricity also enables them to run microenterprises. Finally, electric lighting permits children to do more homework (Daka and Ballet 2011) and benefits girls in particular because they are in charge of fetching firewood and, therefore, may have less time for homework. Additionally, the smoke from traditional biomass used for cooking results in significantly negative effects on the health of women (Torres-Duque et al. 2008; Parikh 2011).

6 Conclusion

As far back as 2001, the Inter-Governmental Panel on Climate Change acknowledged that Africa will be significantly affected by climate change. Its socioeconomic and land conditions make Africa particularly vulnerable to any climate disruptions. Climate change is not gender neutral because the causes and consequences of climate change are lived and experienced differently across the two genders, and women are more 'vulnerable' to climate change and more 'resilient in mitigating it'.

Research on gender and climate change defies the simple narrative that women are more vulnerable to the effects of climate change and more resilient at mitigating it. Most studies investigate where gender differences come from and reveal mechanisms and causal chains that have great relevance for policy design. Gender differences in vulnerability to climate change can mostly be traced back to inequality in the power between men and women. That can take the form of limited access to resources, a gendered division of labour, or several other types of cultural restrictions that limit the options of women to react to environmental changes.

In societies where production involves gender-specific tasks, women and men also have gender-specific knowledge. This implies that women and men take different approaches to mitigation and adaptation such that both genders can make specific contributions to the adaptation capacity of the community. Further, the quality of decision-making is better when decision makers are more representative of their community. Thus, women have a positive impact on decision-making because they represent the interests of women better than men do. Finally, some differences in behaviour have been attributed to differences in socialisation. This suggests that pro-environmental behaviours can be learned.

Simply allocating more aid to women to reduce their vulnerability addresses the symptoms but not the cause. Climate policy needs to be conscious of the power relations between women and men, both existing ones and newly created ones. These social dynamics are constantly evolving and can be directed in a more cooperative and fair direction. Gender mainstreaming of climate policy is the most explicit method of doing this. However, the synergy effects of gender equality on climate policy, and vice versa, can be reinforced intentionally to achieve both objectives simultaneously.

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PART III

Women's Land Rights and Agricultural Productivity in East Africa

CHAPTER 5

Women's Land Rights and Agricultural Productivity in Uganda

Francis Mwesigye, Madina Guloba, and Mildred Barungi

1 Introduction

Secure access to land is key to agriculture development and poverty reduction (Deininger and Jin 2006; Lawry et al. 2017). However, insecure land tenure systems remain prevalent in sub-Saharan Africa (SSA), where agriculture is the backbone of most economies (Place and Otsuka 2002; Place 2009; Holden and Otsuka 2014). This problem is more severe for women, whose effective rights to land remain elusive even as their marital and kin support erodes and female-headed households multiply (Agarwal 1994). The status of perceived land rights affects farmers' decisions regarding whether to invest in land, which crops to grow, and which farming practices to adopt.

There is a large and growing literature that shows how land tenure security affects production and productivity. The main pathways studied are land investment, land transactions, and use of land as collateral for credit (Feder and Feeny 1991; Place 2009). With regard to land investment,

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studies have shown that secure land rights enhance the use of soil conservation practices such as manure application, drainage, and mulching (Besley 1995; Deininger and Ali 2008; Deininger et al. 2008; Goldstein and Udry 2008; Fenske 2011).

Land rights can be de jure, defined by law, or de facto, defined by customary norms and practices (Place and Otsuka 2002). In SSA, land titling and registration are limited; hence, most land is held under customary tenure arrangements, where land rights are informal. For instance, in Uganda 80% of land is under customary land tenure arrangements; land access, control, and transfer are dictated by community-specific norms and practices (Republic of Uganda 2013). Under customary land tenure arrangements, communities follow norms and practices that often discriminate against women.

Studies suggest that gender still plays a significant role in determining land rights (Goldstein and Udry 2008; Deininger 2010). Indeed, Deininger (2010) argues that unless explicit attention is paid to traditional land rights and land access by weaker groups, particularly women, interventions aiming to increase agricultural productivity may have negative social consequences. This is particularly relevant in contexts where current interpretations of customary systems define women's rights only through their relationship with men, and women are often unable to inherit land that is considered the property of their husband's lineage. Negative implications for productivity can be severe, particularly if, as is the case with most SSA countries, women make a major contribution to agricultural production and its management (Ochieng et al. 2014; Palacios-Lopez et al. 2017).

In this study, we use plot-, parcel-, and household-level data to examine the extent to which women have rights over land, and how different forms of land use and ownership rights are associated with productivity. This rich data set is part of the nationally representative Uganda National Panel Survey (UNPS), funded by the World Bank's Living Standards Measurement Study (LSMS). This study enriches the literature on gender and land rights by examining the differential effect of land ownership and use rights on agricultural performance. Results from the study indicate that women had ownership rights over 32% of the surveyed parcels and had use rights over 16% of the parcels. The results also indicate that having a female as a head of household does not guarantee that the woman will have either land use or land ownership rights. In female-headed

households, women had ownership rights over 8% of the parcels and use rights over 56% of parcels. Regression results showed that female ownership rights and not use rights matter most for productivity. The yield is 182 kg/ha lower if a female only has use rights over a parcel. However, the yield is 552.3 kg/ha higher on parcels where females had ownership rights. Therefore, granting use rights alone is not sufficient for promoting efficient land use by females, but granting ownership rights can be yield enhancing. These results suggest a need to strengthen female ownership rights to land to promote the first sustainable development goal (SDG): agricultural productivity and poverty reduction. In addition, enhancing women land rights is key in closing the gender gap, which is the fifth SDG.

The rest of the chapter is structured as follows. Section 2 provides the context of land tenure arrangements in Uganda. Section 3 discusses the data used and the descriptive statistics. Section 4 details the analysis methodology. Econometric results are presented and discussed in Sect. 5. Section 6 concludes and provides policy implications.

2 Background: Land Tenure Arrangements in Uganda

Land is the most important factor for agricultural production in Uganda, and its security enhances food and nutrition security (World Food Program and National Planning Authority 2017). Land tenure security is especially critical for poor people living in rural areas, who depend on agriculture for their livelihood. In Uganda, over 78% of the total population live in rural areas, and agriculture employs about 72% of the rural labour force; the majority of women (73%) are employed in agriculture as primary producers (Uganda Bureau of Statistics 2016).

There are four legally recognized land tenure regimes in Uganda—freehold, leasehold, customary, and Mailo—with varying levels of tenure security and land rights. The customary tenure system is the dominant regime, governing about 80% of the land in Uganda. Land ownership arrangements are evolving from communal to private due to population pressure, rural-to-rural migrations, and increased land transactions (Mwesigye et al. 2017). Therefore, the customary tenure regime incorporates both private and communal elements (Busingye 2002). Another land regime is the Mailo tenure system, which allows for overlapping land rights between landlords, who own titles, and tenants, who have usufruct rights. Because

tenants have typically been on the land for a long time, they consider it their property which creates overlapping rights and has catalysed land disputes (Deininger and Castagnin 2006). Land rights secured under freehold and leasehold tenure systems together account for the smallest share in Uganda.[1] These two tenure regimes grant land titles to owners, which increases tenure security.

In Uganda, women are primary users of land and provide the bulk of 'non-contractible' agricultural outputs. Despite this, men dominate most decisions related to land use and management, and the security of women's land tenure can be tenuous. Insecurity associated with women's land rights under customary law is grounded in assumptions that women are dependent on men and cannot own land in their own right under customary tenure. Women have what many term 'secondary rights' (Burke and Kobusingye 2014).

To promote equal access to opportunities, the government of Uganda devised strategies to enhance women's access to land and other resources. For instance, the 1998 Land Act protects women's rights over customary land. The act stipulates that any decision taken with respect to land held under customary tenure, whether in respect of land held individually or communally, shall be in accordance with the customs, traditions, and practices of the community concerned, except a decision that denies women or children or persons with a disability access to ownership, occupation, or use of any land (Republic of Uganda 1998). Furthermore, the Uganda National Land Policy (2013) codifies the government of Uganda's commitment to enhancing women's rights. It states that the government of Uganda shall (1) by legislation, protect the right to inheritance and ownership of land for women and children, and (2) ensure that both men and women enjoy equal rights to land before marriage, in marriage, after marriage, and at succession without discrimination (Republic of Uganda 2013). The National Development Plan II also aims to enhance equal access to resources by gender (Republic of Uganda 2015). It highlights measures to eliminate gender discrimination in terms of land access, land use, and land disposition.

However, although traditions, customs, and practices that discriminate against women in matters of use, access, and ownership of land have been outlawed, the practice does not acknowledge these changes. The de facto land tenure arrangements are still not favourable to women in terms of

inheritance, tenure security, and land transactions. Indeed, the evidence illustrating gender inequalities in land access and tenure security is overwhelming. Like in other SSA countries, women in Uganda are consistently less likely to own or operate land; they are less likely to have access to rented land, and the land they do have access to is often of poor quality and in smaller plots. When women have access to land, they do not have secure rights over the land they occupy.

3 Data and Descriptive Statistics

3.1 Data

This study uses 2015–2016 data collected by the Uganda Bureau of Statistics (UBOS) under its annual UNPS, which built on the Uganda National Household Survey (UNHS) of 2005–2006. The UNPS tracks and reinterviews 3123 households that were distributed over 322 enumeration areas (EAs) across Uganda, selected out of the 783 EAs that were visited by the UNHS in 2005–2006. As part of wider efforts to monitor government programmes, UBOS reinstated the annual UNPS in 2009. The first wave was undertaken between September 2009 and August 2010, and it covered 320 EAs; the fifth and latest phase was conducted in 2015–2016.

The land and agricultural data were captured in the agricultural module. The agricultural data were collected through two household visits—six months apart—to account for the two agricultural seasons experienced in most of Uganda. The agricultural module captures information such as household landholdings, type and quality of soils used for cultivation, investments on land, types of crops produced, the use of improved seeds, the use of organic and chemical fertilizers, use of pesticides, agricultural labour inputs, and harvest and produce marketing and sales. In addition, the agricultural module contains information on land rights, especially de facto rights regarding the use, transfer, and ownership of land. In addition to the agricultural module and asset modules, the household module captures information on household characteristics such as education, health, housing material, livestock, and assets. These characteristics are controls in the empirical analysis.

3.2 Descriptive Statistics

3.2.1 Land Rights Status Categorized by Sex of Household Head

Table 5.1 shows household and parcel characteristics disaggregated by sex of the household head. In terms of landholdings, male-headed households have larger landholdings (an average of 1.44 hectares) compared to 1.06 ha owned by the female-headed households. Furthermore, male-headed households have fragmented landholdings indicated by the great number of parcels and a higher Simpson Index than female-headed households.

Statistics show that land ownership rights are stronger in male-headed households than in female-headed households. The statistics also show that females own 42% of parcels, whereas males own 58%. However, women in female-headed households own only 8% of parcels, whereas

Table 5.1 Parcel ownership and use rights

Variable	*All data pooled*		*Male head*		*Female head*		t-*test*
	Mean	*SD*	*Mean (A)*	*SD*	*Mean (B)*	*SD*	*A – B*
Landholding information							
Total land operated (ha)	1.33	3.86	1.44	4.22	1.06	2.80	0.39***
Number of parcels	1.91	1.09	1.97	1.12	1.77	0.99	0.20*
Simpson Index	0.28	0.27	0.29	0.28	0.24	0.27	0.05***
Number of households	2507		1711		737		
Land ownership and use rights							
1 if the female HH member has ownership rights	0.32	0.47	0.42	0.49	0.08	0.27	0.34***
1 if a female HH member has use rights	0.16	0.37	0.02	0.15	0.56	0.50	−0.53***
1 if a female has sell rights	0.19	0.39	0.03	0.17	0.60	0.49	−0.57***
Marital status of those with use rights							
Monogamous	0.61	0.49	0.77	0.42	0.16	0.36	0.62***
Polygamous	0.19	0.39	0.18	0.38	0.23	0.42	−0.05***
Divorced	0.05	0.23	0.02	0.16	0.14	0.35	−0.11***
Widow	0.13	0.34	0.01	0.12	0.47	0.50	−0.45***
Single	0.01	0.11	0.01	0.11	0.01	0.11	0.00
Number of parcels	4611		3430		1181		

Source: Authors' computations using UNPS 2015–2016 data set. *** is significant at 1%, ** at 5%, and * at 10%

men own 92%. Put differently, even in female-headed households, the right of females to own parcels of land is not guaranteed; evidence has shown that significantly fewer females than males have ownership rights (Table 5.1).

Women have more use rights than men in female-headed households. The descriptive statistics in Table 5.1 indicate that women in female-headed households have use rights over 56% of parcels, whereas men have use rights over 44% of parcels. However, females in male-headed households have use rights over 2% of parcels, whereas males have use rights over 98% of parcels. Overall, the findings suggest that having a female as a head of household does not guarantee that she will have ownership rights over the land the household occupies; however, her use rights are likely to increase remarkably. This finding is in part explained by the fact that most of the land operated by female-headed households is owned by males and females only have use rights.

Upon examination of the marital status of those who exercise use rights within households, the results show that in male-headed households, monogamously married women have use rights, whereas in female-headed households, widows have use rights.

3.2.2 Parcel Characteristics Disaggregated by Possession of Use and Ownership Rights

Table 5.2 breaks down parcel characteristics and shows how they differ depending on whether a female or male has use or ownership rights. Column 1 reports the overall characteristics, collected by pooling all data. Columns 2 and 3 present parcel characteristics based on who has use rights, and columns 4 and 5 show parcel characteristics disaggregated by who has ownership rights.

The statistics show that parcels over which males have use rights are relatively larger than those over which females have use rights. The size of parcels over which males have use rights is 0.7 hectares, which is significantly higher than the 0.48 hectares for females. However, the parcel size is not significantly different for parcels over which males and females have ownership rights. In terms of distance, 61% of parcels over which females have use rights are located less than a 15-minute walk from the homestead, significantly higher than 57% of those used by males. While most of the parcels over which males have use rights are located 15–30 minutes by foot from the homestead. More so, a bigger percentage of parcels (59%) over which males have ownership rights are located less than a 15-minute

Table 5.2 Parcel characteristics based on whether male/female head has ownership right and can use parcel as collateral

Variable	*All data pooled*	*Who has use right?*		*Who has ownership right?*		t-*test*	
		Male	*Female*	*Male*	*Female*		
	Mean	*A*	*B*	*C*	*D*	*A – B*	*C – D*
Parcel size (ha)	0.65	0.70	0.48	0.68	0.61	0.23**	0.07
Time from homestead to parcel (minutes)							
Less than 15 minutes	0.58	0.57	0.61	0.59	0.56	−0.04*	0.03*
Between 15 and 30 minutes	0.21	0.22	0.18	0.17	0.24	0.04**	−0.07***
Between 30 and 60 minutes	0.15	0.15	0.14	0.16	0.14	0.01	0.03**
Between 1 and 2 hours	0.06	0.06	0.06	0.06	0.05	0.00	0.01
Above 2 hours	0.01	0.01	0.01	0.01	0.01	0.00	0.00
		Parcel acquisition mode					
Purchased	0.31	0.34	0.21	0.36	0.25	0.13***	0.11***
Inherited	0.67	0.65	0.77	0.62	0.73	−0.13***	−0.11***
Other mode	0.02	0.02	0.02	0.01	0.02	0.00	−0.01
Certification documents							
Title	0.04	0.06	0.00	0.07	0.00	0.06***	0.07***
Customary certificate	0.02	0.03	0.00	0.04	0.00	0.03***	0.04***
Occupancy certificate	0.08	0.11	0.00	0.16	0.00	0.11***	0.16***
No document	0.85	0.81	1.00	0.73	1.00	−0.19***	−0.27***
1 if there are concerns that parcel ownership rights will be disputed	0.06	0.05	0.06	0.07	0.04	−0.01	0.04***
Soil type and parcel gradient							
1 if there was soil erosion problem on the parcel	0.10	0.09	0.11	0.12	0.06	−0.02	0.06***
Soil type							
Loam soil	0.51	0.50	0.58	0.49	0.54	−0.08***	−0.05**

(*continued*)

Table 5.2 (continued)

Variable	*All data pooled*	*Who has use right?*		*Who has ownership right?*		t-*test*	
		Male	*Female*	*Male*	*Female*		
	Mean	*A*	*B*	*C*	*D*	*A – B*	*C – D*
Sandy soil	0.34	0.35	0.30	0.35	0.31	0.06***	0.04**
Black clay soil	0.14	0.15	0.12	0.15	0.14	0.02	0.01
How good is the soil							
Good	0.61	0.62	0.56	0.60	0.60	0.06**	0.00
Fair	0.37	0.36	0.41	0.37	0.38	−0.05**	−0.02
Poor soil	0.02	0.02	0.02	0.03	0.01	−0.01	0.02
Parcel gradient							
Hilly	0.05	0.05	0.03	0.04	0.06	0.02**	−0.02**
Flat	0.55	0.56	0.52	0.52	0.57	0.03	−0.05**
Gentle slope	0.35	0.35	0.38	0.38	0.32	−0.03	0.06***
Steep slope	0.04	0.04	0.06	0.05	0.04	−0.02**	0.01
1 if the parcel has been fallowed in the past 2 years	0.10	0.10	0.12	0.12	0.09	−0.02	0.03*
	3357	2618	739	1775	1426		

Source: Authors' computations using UNPS 2015–2016 data set. *** is significant at 1%, ** at 5%, and * at 10%

walk away compared to 56% of the parcels owned by females. A large percentage of parcels owned by females (24%) are relatively far from the homestead compared to those owned by men (17%).

Land is largely acquired through inheritance. For instance, 67% of parcels were inherited, whereas 31% were purchased. The remaining 2% of the parcels were acquired through other means such as bequeathed by non-family members and borrowing. However, there are more purchased parcels used (34%) and owned (36%) by males compared to 21% and 25% used and owned by women, respectively. This suggests that women largely acquire their land through inheritance compared to males, and this can be explained by the finding mentioned above that males are wealthier than females; thus, they have higher financial potential to purchase land. In terms of land formalization through titling and registration, more parcels used and owned by males have a formal document (title, certificate of occupancy), significantly higher than those used and owned by women. For instance, 6% and 7% of the parcels owned and used by males respectively are titled whereas none of the parcels owned and used by females are titled. In fact, 100% of parcels used and owned by females have no formal documentation.

In terms of soil quality and parcel gradient, parcels used and owned by females have loam soils, whereas those used and owned by males have sandy soils. However, a larger percentage of land used by males have good soils, whereas those used by females reportedly have fair soils, suggesting that males operate relatively better-quality land. More parcels (12%) owned by males had been fallowed in the past two years compared to 9% of those owned by females that had been fallowed.

3.2.3 Input Use and Productivity on Parcels Disaggregated by Sex and Rights

Table 5.3 presents plot-level characteristics disaggregated by whether males or females have use or ownership rights. The overall yield for all crops combined is about two tons per hectare. The yield is higher on plots used by males (1971 kg/ha) compared to those used by females (1943 kg/ha), but the difference is not statistically significant. However, the yield is significantly higher (2402 kg/ha) on plots owned by females compared to plots owned by males (1761 kg/ha). This finding is interesting because it suggests that granting use rights alone is not sufficient to promote efficient land use by females; however, granting ownership rights can be yield enhancing.

Table 5.3 Yield and input use on plots, disaggregated by whether or not women have user rights

Variable	*All data pooled*	*Who has use right?*		*Who has ownership right?*		t-*test*	
		Male	*Female*	*Male*	*Female*		
		A	*B*	*C*	*D*	*A – B*	*C – D*
Yield (kgs/ha)	1967	1971	1943	1761	2402	28.41	−641***
Percentage of harvest that is marketed	17.77	18.37	14.64	16.45	19.21	3.73***	−2.75***
1 if there is a single decision maker on the use of sale proceeds	0.48	0.41	0.84	0.58	0.37	−0.43***	0.20***
Storage facilities							
1 if the harvest was stored in a modern store	0.01	0.01	0.01	0.01	0.01	0.00	−0.01***
1 if the harvest was stored in a local store	0.01	0.01	0.02	0.01	0.01	0.01	0.00
1 if harvest were stored in sacks	0.46	0.46	0.46	0.44	0.49	0.00	−0.05***
1 if harvest were stored by pilling	0.51	0.51	0.51	0.53	0.48	0.00	0.05***
1 if other storage means were used	0.01	0.01	0.00	0.01	0.00	0.00	0.00
Mixed cropping and input use							
1 if crop was pure stand	0.44	0.43	0.45	0.42	0.47	−0.02	−0.05***
1 if improved seed was used	0.08	0.09	0.05	0.08	0.08	0.03***	0.00
Annual crop grown on a plot	0.58	0.59	0.53	0.61	0.50	0.06***	0.11***
Perennial crop grown on a plot	0.42	0.41	0.47	0.39	0.50	−0.06***	−0.11***
Organic fertilizer applied on a plot	0.05	0.05	0.03	0.04	0.04	0.02***	0.00
Inorganic fertilizer used	0.02	0.02	0.01	0.02	0.01	0.01***	0.01***
Pesticide used on a plot	0.05	0.06	0.03	0.06	0.02	0.03***	0.04***
	15,724	13,195	2529	10,994	4457		

Source: Authors' computations using UNPS 2015–2016 data set. *** is significant at 1%, ** at 5%, and * at 10%

The results also show that farmers with higher yields sell a larger percentage of their produce compared to those with lower yield. For instance, when males have use rights, they produce more than females and market 18% of their produce compared to females who market 14.6% of their harvest. However, when females have ownership rights, they produce and market more (19%) than males (16%). The table also presents results on how output from each plot is stored. The results do not show any difference in the storage used when males or females have use rights. However, the results indicate that when females have ownership rights, they use more modern stores compared to males.

A further analysis is taken on the differences in input use depending on who has use and ownership rights. Overall, there are low levels of input use in Uganda. Improved seed, organic or inorganic fertilizers, or pesticides were applied on less than 10% of the plots. This is an extremely low level of technology adoption. Improved seed was used on only 8% of the plots, organic fertilizer and pesticides were applied on 5% of the plots, and inorganic fertilizer was applied on only 2% of the plots. Inputs were used more on plots used and owned by males compared to those used and owned by females. However, the results indicate that improved seed and organic fertilizer are not applied differently on plots owned by males and females. The difference in level of input use between male and female plots might be due to differences in the wealth status of males and females.

4 Empirical Estimation of theImpact of Women's Land Rights on Agricultural Productivity

The results obtained in Sect. 3.2.3 indicate that input use is higher on plots over which males have use and ownership rights compared to those of females. It also shows that yield is higher on plots used by males than those used by females. However, yield is higher on plots owned by females than those owned by males. More so, we found that the male-headed households have more land, and parcels over which males have ownership or use rights had better soil quality. Lastly, male-headed households are wealthier than female-headed households. It is possible, then, that the observed productivity differences are caused by these other attributes, rather than the differences in the status of land rights.

Based on the foregoing, this subsection implements regressions and controls for all observed characteristics that might influence productivity

to examine whether the sex of an individual with plot use or ownership rights is associated with yield. The empirical estimation can be written as follows:

$$Y_{pi} = \alpha + \beta \text{Rigts}_{pi} + \vartheta M_{pi} + \partial X_i + \varepsilon_{pit}, \tag{5.1}$$

where Y_{pi} is yield (kg/ha), and Rigts_{pi} is a dummy that takes the value of 1 if the female has ownership rights over a plot and 0 if it is a male. In another specification, Rigts_{pi} take the value of 1 if a female has use rights and 0 if it is a male with use rights. M_{pi} is a vector of plot-level characteristics such as whether a parcel is purchased or inherited, soil type (loam, clay, or black clay), soil quality (good or poor), parcel gradient (steep, flat, or hilly), whether the land has a formal document (title, customary, or tenancy certificate), travel time to parcel in minutes, whether the farmer has experienced soil erosion on the parcel, and whether the planting method is a pure stand or mixed cropping.

X_i is a vector of household characteristics such as whether the household is female headed. Several studies have used gender of the household head to examine the effect of female land ownership on yield. The assumption is that when a female is the household head, she has both use and ownership rights. The statistics, however, reveal an interesting finding: a small percentage of parcels under female-headed households are owned by females; instead, females have only use rights. The results in Table 5.1 also show that most females who are heads of households and have use and ownership rights are widows who obtained the land through inheritance. Because Uganda follows a patrilineal system, sons take ownership of land; if the deceased family head does not have sons, the male siblings take charge of the land and females only retain use rights. This, therefore, suggests that having a female head of household does not guarantee that women will own land.

Other household variables controlled for are the age of the household head, household level of education (proportion of household members that can/cannot read and write), family size, the value of household assets (in Uganda shillings), the number of parcels operated, and the Simpson Index (SI), a measure of land fragmentation. The SI is included because studies suggest that fragmentation possesses both benefits and costs and, hence, can be chosen by the household accordingly (Monchuk et al. 2010). Its effect on productivity is not known a priori.

5 Results and Discussion

Table 5.4 presents regression results on the association between female land rights and yield (kg/ha). The regression results are consistent with the descriptive statistics. Specification 1 shows that yield is 192 kg/ha lower if the household head is female than if the head is male. Specification 2 looks at whether having user rights is associated with higher productivity. The results show that yield is 182 kg/ha lower if the female has use rights over a parcel than on parcels where males have use rights. In specification 3, another indicator of female land rights, ownership rights, is

Table 5.4 Female land rights and yield

Variables	*Dependent variable is yield (kgs/ha)*			
	(1)	*(2)*	*(3)*	*(4)*
1 if female is household head	−192.9**			−438.0**
	(−2.427)			(−2.103)
1 if a female has use rights		−182.2**		514.3**
		(−1.982)		(2.477)
1 if female has ownership rights			552.3***	608.9***
			(6.327)	(6.474)
Total landholding (ha)	−6.758	−45.85***	−7.077	−43.58***
	(−0.431)	(−4.113)	(−0.450)	(−3.939)
Simpson Index	596.8***	673.0***	502.7***	557.8***
	(4.839)	(5.246)	(3.841)	(4.077)
Time to parcel in minutes[a]				
1 if less than 15 minutes	210.5**	221.8**	197.9**	206.4**
	(2.416)	(2.405)	(2.371)	(2.307)
1 if it is between 15 and 30 minutes	29.08	64.92	40.49	66.09
	(0.253)	(0.537)	(0.343)	(0.522)
Constant	2340***	2236***	1974***	1911***
	(12.43)	(11.41)	(10.06)	(9.059)
Observations	13,280	12,275	11,999	11,021
R-squared	0.012	0.013	0.014	0.017

Notes: In parentheses are t-statistics computed using robust standard errors. *** is significant at 1%, ** at 5%, and * at 10%. Season dummies are included in all specifications

We control for: Household head age, HH average years of schooling, family size, HH assets value, soil type (loam, sand, or clay), parcel gradient (hilly, flat, or gentle slope), land certification (whether the parcel has a title, customary certificate or certificate of occupancy), whether the crop was pure/mixed stand, modes of land acquisition (purchase and inheritance), and Simpson Index which is a measure of land fragmentation

[a] The reference category for time to parcel is more than 30 minutes

used. The results show that yield is 552.3 kg/ha higher on parcels where females have ownership rights than on those where males have ownership rights. Specification 4 includes all land rights indicators in the same specification to ascertain whether the key variables of interest still retain their significance when controlling for other rights indicators. Indeed, the results suggest that controlling for female household heads, use rights and ownership rights enhance yield. In other words, if a female has use rights in a female-headed household, they experience higher yields than if a male has use rights. The ownership variable retains its significance even when we control for whether the household is female-headed.

Plot accessibility was also found to be associated with yield. Yield is about 200 kg/ha more on parcels that are less than 15 minutes away from the household compared to those that are 30 minutes and further from the household. The SI (a measure of fragmentation) is positively and significantly associated with yield. The SI value ranges from 0 to 1. It is zero if parcels are consolidated and 1 if there are many parcels of the same size. This finding suggests that fragmentation enhances yields. This finding is consistent with other studies that found that while fragmentation increases the time required to move between a household's parcels, this does not appear to affect overall technical efficiency on the farm. Fragmentation reduces the incidence of crop shocks and increases yields and production efficiency (Ali et al. 2015). Lastly, the results show an inverse relationship between land size and yield. This is consistent with previous studies that suggest small landholders are more efficient and productive than large holders.

6 Conclusion and Policy Recommendation

This chapter used plot-, parcel-, and household-level information to examine how female land rights influence land management and productivity. Results from the analysis indicate that having a female household head does not guarantee that female members will have ownership rights. In addition, among the female-headed households, it is the widows who have use rights, suggesting that a household becomes female headed when the male head dies. Cultural customs dictate that a male son or sibling take on land ownership rights, suggesting the reason that even among female-headed households, most females possess use rights but not ownership rights. The results also showed that females largely acquire land through

inheritance compared to males. On the land certification, results indicate that all parcels owned or used by females had no certification documents.

The results also showed that the use of improved seed, fertilizer, and pesticides was significantly lower on parcels used and owned by females. A more empirical analysis through regression analysis revealed that land rights are heterogeneously associated with yield. It is found that yield was significantly lower on plots operated by female-headed households compared those of male-headed households. In addition, yield was lower if the female had use rights compared to when the male had use rights. The study, however, further reveals that yield is higher on the female-owned plots compared to those where males have ownership rights. This finding suggests that granting females use rights is not enough, but rather granting women ownership rights can enhance their tenure security and has the potential to increase productivity. When we control for whether the household is female headed, the results indicate that use rights are also associated with higher yield.

This study joins the body of literature that urges for the enhancement of female land rights as one way to boost agriculture performance. Increased productivity can reduce hunger and poverty, enabling the country to achieve SDGs 1 and 5. However, the study, through comparison of different forms of land rights, shows that land rights for women have to go beyond mere use rights, to ownership rights, if they are to meaningfully influence productivity.

The findings have key policy implications. The results suggest the need to come up with targeted policy interventions that focus on enhancing women's land rights. Indeed, studies have echoed the need to devote explicit attention to traditional land rights and land access by weaker groups, particularly women (Deininger 2010). This is especially relevant in Uganda, where current interpretations of customary systems define women's rights only through their relationship with men, and women are often unable to inherit land, which is considered the property of their husbands' lineage. This has negative implications for agriculture because women make major contributions to agricultural production and its management. In addition, inequality will increase if the poor are denied access to production resources. There is a need to implement strategic actions of the national land policy, which enhances women access to land use and ownership rights. In addition, enhancing women's land use and ownership rights will aid in closing the gender gap and achieving SDG 5 (gender equality).

Note

1. A parcel is considered to be in freehold and leasehold if the owner has a title. Titling and leasing are still rare in Uganda because of high costs such as surveying and demarcation costs involved in obtaining land a title.

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CHAPTER 6

Land Tenure, Gender, and Productivity in Ethiopia and Tanzania

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1 Introduction

Land distribution is more unequal than income distribution in Africa. In Tanzania, the Gini coefficient for owned land distribution is about 0.5 (Wineman and Liverpool-Tasie 2016) compared to 0.39 for income distribution (National Bureau of Statistics 2014). This could be more pronounced considering the distribution of land by gender. Some land reforms in Africa have aimed to remedy the issue; however, the degree to which these reforms have brought about desired economic effects and, particularly, improved the status of women remains debatable.

Further, ownership rights to and control over land in terms of production and management decisions are arguably critical to productivity. A secure land tenure right is vital for successful agricultural development. It plays major roles in shaping farmers' land use decisions. Without secure land rights, farmers may not feel an emotional attachment to their land, will not invest in land development, and will not use inputs efficiently

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(Feder and Noronha 1987). The property right to land provides sufficient incentives for increasing farmers' efficiency in productivity and better land conservation practices. However, in most cases, governmental law and agricultural policies determine land tenure security and agricultural commodities' price and may affect farmers' profit margins and land use decisions (Gavian and Ehui 1999).

Land reforms that strive to improve land rights could go a long way towards improving rural women's economic position. Because land provides the basis for food production and income generation in rural farm households, providing women with the right to own land helps to improve their economic empowerment. Land is also one of the main assets that rural households can use as collateral to access public utilities such as credit. Secure and equitable access to economic resources such as land particularly helps women and disadvantaged groups. Globally, the Sustainable Development Goals also duly recognize the importance of secure land tenure rights. On the continent, the African Union's Agenda 2063 also requires member states to commit to protecting women's land rights and ensuring their tenure security. Therefore, this chapter assesses the current state of land ownership by gender in two East African economies, Ethiopia and Tanzania.

In Ethiopia, the land certification programme has taken steps to incorporate the gender dimension by issuing land certificates jointly to both spouses. Moreover, local land administration committees include at least one female member (Deininger et al. 2008). In Tanzania, the 1995 National Land Policy (NLP) and subsequent 1999 Village Land Act stipulate that women must have access to land not only through purchases but also through allocations.

An increasing number of studies address the effect of land rights on several outcomes of interest. Studies in Ethiopia focus on evidence from regional-level studies. Most studies overall investigate the impact of land certification on land rental market participation (Deininger et al. 2011). However, few studies analyse the differential effect by gender. In the regional state of Tigray, Holden et al. (2011) show the positive effect of land certification on improving female-headed households' land rental market participation, and Ghebru and Holden (2013) document evidence of land certification's positive effect on food security and nutrition in female-headed households. In the regional state of Amhara, Bezabih et al. (2016) show that land certification improves female-headed households' productivity. Using data from four large regional states, Deininger et al.

(2011) provide evidence that land certification improves tenure security and investment in land.

While some studies address issues of land reform and land degradation (Angelsen and Fjeldstad 1995) and land market and its equity implications (Wineman and Liverpool-Tasie 2016), empirical studies that evaluate the impact of land reform in Tanzania on select outcomes of interest are limited. A few exceptions are Peterman (2011) and Mbegalo (2016). Peterman (2011) shows the positive effect of community-level women's property and inheritance rights on women's employment and earnings. Mbegalo (2016) analyses the welfare effects of the Land Act and provides evidenced suggestions to help households smooth their consumption. However, the empirical studies do not provide evidence on the productivity effects of land titles in general and the differential impact of the land title on productivity by gender in particular.

To address the gaps in the previous studies, this chapter uses the nationally representative Living Standard Measurement Study (LSMS) survey of the four major regions in Ethiopia (Amhara; Oromia; Southern Nations, Nationalities, and Peoples' Region; and Tigray) to further study whether the increase in investment resulting from tenure security translates into productivity. It also uses the latest nationally representative round of the LSMS survey from Tanzania to provide a first attempt at evidence of the effect of land title on productivity. Importantly, this chapter investigates the differential effect of land rights on productivity by gender in both Ethiopia and Tanzania.

The chapter examines the differential impact of land rights on the productivity of farmers in general and on that of female-headed households in particular. Using 2011–2015 LSMS panels for Ethiopia, the chapter first estimates the impact of formal land certification on agricultural households' productivity. It then analyses productivity effects separately by focusing on male- and female-headed households by gender. The main finding is that rural land certification significantly affects crop productivity overall and also positively affects female-headed households' productivity. Likewise, using the 2014–2015 round of LSMS for Tanzania, the chapter finds that land rights have productivity-enhancing effects for the whole sample and specifically for female-headed households. This indicates that ensuring land rights is vital for increasing farmers' efficiency to invest in their land and increase their productivity. Thus, gender-sensitive land policy could improve overall productivity and play a role in reducing the gender gap in productivity.

2 Land Policy in Ethiopia and Tanzania

2.1 Land Tenure System in Ethiopia

Land is a major economic asset from which people and nations reap significant profit. In Ethiopia, the issue of land tenure has been an issue of long-lasting political debate. The property right to land is regulated either by the formal legal system or through customary law. For many decades, customary law alone governed and enforced land rights in Ethiopia.

In this earlier period (pre-1975), the land was governed under customary law, and the land tenure system was complex, with strong links to political and class structure as well as high regional variations. Thus, the high inequality of land ownership created high political debates that partly led to the imperial regime's overthrow. After 1975, attempts to modernize land ownership gave titles either to the farmers who tilled the plots or to the large-scale farming programme. However, these attempts involved issuing non-alienable use rights rather than full title land certificates.

After the Derg regime fell in 1991, privatization of land was the expectation; however, in November 1991, the Transitional Government of Ethiopia announced in its economic policy that it would largely continue the Derg regime's land policy and that farmers would receive only usufruct rights. In 1995, the new constitution stipulating state ownership of land in Ethiopia was approved and confirmed (Jemma 2001). Regarding women, the constitution formally acknowledged granting land rights to both women and men, thus enabling women to claim land during land distribution in villages.

This land policy has led to wide concern regarding land tenure insecurity, leading to land certification programmes that began in Tigray and have been implemented in the four major regional states (Amhara; Oromia; Southern Nations, Nationalities, and Peoples' Region; and Tigray) in Ethiopia. The recent certification programmes also duly acknowledge women's land rights by issuing certificates for female-headed households. Married women are also issued a joint certificate with their spouses (Deininger et al. 2011). This chapter evaluates the initiative of formal land certification (use right) to rural smallholders in Ethiopia. The expectation is that even though the certification represents the right to use the lands, the larger implication is to improve tenure security and facilitate investment incentive to increase the efficiency of holders' productivity, which ultimately affects food insecurity and poverty reduction.

2.2 Land Policy in Tanzania

Post-independence, Tanzania nationalized all land in the country, putting an end to freehold tenure status and banning land market activities such as the sale and rent of land (Pinckney and Kimuyu 1994). In 1973, Tanzania made compulsory villagization (i.e., moving rural residents from scattered settlements into communal villages (*ujamaa*), which promoted large-scale collective farming and eased provision of services). This introduced the establishment of elected village councils that would allocate land for private farmers and enforce property rights (Daley 2005).

Following the change in government in 1985, the government recognized customary rights and individualized rights to farmland. In 1995, Tanzania introduced the NLP, which formally adopted legal pluralism recognizing both customary and statutory land tenure (Odgaard 2003, 2006; URT 1997). According to the second edition of the NLP document published in 1997,

> Land is publicly owned and vested in the President as a trustee on behalf of the citizens; speculation in land will be controlled; rights of occupancy whether statutory or customary are and will continue to be the only recognized types of land tenure; and rights and titles to land under any consolidated or new land law will continue to be based mainly on use and occupation. (p. 3)

In 1999, Tanzania enacted the Land Act and the Village Land Act, which translated the NLP into law (Wily 2003). The Acts granted equivalent legal status and protection for both customary and statutory land rights. These Acts recognized the customary land rights and allowed customary right holders to obtain land titles, though not required, in the form of Certificate of Customary Right of Occupancy.

Regarding women's access to land, the NLP clearly states that

> women will be entitled to acquire land in their own right not only through purchase but also through allocations. However, inheritance of clan land will continue to be governed by custom and tradition provided such customs and tradition is not contrary to the constitution and is not repugnant to principles of natural justice. (URT 1997, p. 12)

Despite the legal pluralism introduced in the NLP and the enactment of the Land Act and the Village Land Act, high land insecurity persists

among smallholder farmers, pastoralists, and women (USAID 2016). Because of inheritance customs and norms that favour men, women still feel insecure about losing their lands (USAID 2016). In 2016, Tanzania drafted a new land policy and circulated it for discussion to account for the socio-economic changes that affect the land sector as well as to address current opportunities and challenges.

3 Data and Descriptive Statistics

3.1 Data

The chapter uses the recent LSMS surveys collected by the World Bank in Ethiopia and Tanzania. The LSMS data is a rich, nationally representative panel data that contains a wide range of socio-economic information. The survey collects information using household, agriculture, and community modules. The agricultural module provides details of agricultural production at plot level, covering plot characteristics, inputs used, and issues on land ownership rights, titles, or certification.

The Ethiopian analysis is based on three waves of LSMS surveys (2010–2011, 2012–2013, and 2014–2015) that cover more than 3500 households cultivating more than 6200 plots. The survey attrition rate between each round at household or plot level is low (less than 10%) and is unlikely to affect result interpretation. For the Tanzanian case, the chapter uses the latest round of survey 2014 LSMS, which covers 3352 households cultivating more than 5500 plots. It uses plot-level data and focuses on the cultivated plots in the long rainy season of 2014.

3.2 Descriptive Statistics

3.2.1 Disaggregated Data by Gender for Ethiopia

Disaggregated by gender, the study sample households are 79.6% male-headed and 20.4% female-headed. Below, the chapter discusses the descriptive statistics of key variables used in the analysis (see Table 6.1). The average land size of the full sample is nearly 3 hectares. Yet, male-headed and female-headed households differ in terms of total landholding size (3.21 and 1.99 hectares, respectively). The plot size by gender also shows differences between male-headed and female-headed households (0.15 and 0.1 hectares, respectively).

Table 6.1 Descriptive statistics of the main variable used in the analysis by gender

Variables	*Ethiopia*			*Tanzania*		
	All sample	*Female-headed*	*Male-headed*	*All sample*	*Female-headed*	*Male-headed*
Crop value per plot/acre	1413.6	1133.1	1470.1	225420.2	195721.3	235689.6
	(4566.5)	(2525.1)	(4871.8)	(367754.2)	(335136.5)	(377912.5)
Land certificate	0.49	0.52	0.49	0.346	0.341	0.348
	(0.50)	(0.49)	(0.49)	(0.476)	(0.474)	(0.476)
Total land size	2.99	1.99	3.21	6.788	4.826	7.467
	(10.0)	(5.48)	(10.76)	(12.72)	(13.80)	(12.26)
No. of female adults	0.11	0.10	0.12	1.622	1.720	1.588
	(1.02)	(0.75)	(1.07)	(0.953)	(0.962)	(0.948)
No. of adults	3.23	3.36	3.20	3.090	2.560	3.273
	(2.46)	(2.68)	(2.23)	(1.773)	(1.714)	(1.756)
Education of head	0.69	0.89	0.68	0.692	0.490	0.761
				(0.462)	(0.500)	(0.426)
Plot size	0.13	0.10	0.15	1.600	1.145	1.757
	(0.57)	(0.27)	(0.62)	(2.392)	(1.290)	(2.651)
Distance to plot	2.42	4.00	2.09	6.615	4.355	7.396
	(78.89)	(154.87)	(48.94)	(41.42)	(12.74)	(47.45)
soiltype1=loam	0.28	0.33	0.28			
	(0.45)	(0.47)	(0.44)			
Soiltype2=sandy	0.43	0.39	0.44	0.143	0.163	0.136
	(0.49)	(0.48)	(0.49)	(0.351)	(0.370)	(0.343)
soiltype3=clay	0.26	0.26	0.26	0.208	0.188	0.215
	(0.43)	(0.44)	(0.43)	(0.406)	(0.391)	(0.411)
soiltype4=other	0.01	0.010	0.02	0.0317	0.0305	0.0321
	(.011)	(0.09)	(0.12)	(0.175)	(0.172)	(0.176)
soilqlty1=good	0.42	0.39	0.43	0.436	0.427	0.440
	(0.49)	(0.48)	(0.49)	(0.496)	(0.495)	(0.496)

(*continued*)

Table 6.1 (continued)

Variables	*Ethiopia*			*Tanzania*		
	All sample	*Female-headed*	*Male-headed*	*All sample*	*Female-headed*	*Male-headed*
soilqlty1=fair	0.35	0.35	0.35			
	(0.47)	(0.47)	(0.48)			
soilqlty3=poor	0.22	0.24	0.21	0.0687	0.0845	0.0632
	(0.41)	(0.43)	(0.41)	(0.253)	(0.278)	(0.243)
soilerosion1=yes	0.48	0.44	0.49	0.144	0.139	0.147
	(0.49)	(0.49)	(0.49)	(0.352)	(0.346)	(0.354)
plotslope2=flat	0.29	0.34	0.28	0.0416	0.0305	0.0455
	(0.45)	(0.47)	(0.45)	(0.200)	(0.172)	(0.208)
plotslope3=slightly sloped	0.47	0.45	0.485	0.234	0.224	0.238
	(0.49)	(0.49)	(0.499)	(0.424)	(0.417)	(0.426)
plotslope4=very steep	0.22	0.20	0.23	0.0235	0.0208	0.0244
	(0.41)	(0.40)	(0.42)	(0.151)	(0.143)	(0.154)
Organic fertilizer use=yes	0.53	0.54	0.52	0.134	0.122	0.138
	(0 49)	(0.49)	(0.49)	(0.341)	(0.327)	(0.345)
Inorganic fertilizer use=yes	0.47	0.50	0.47	0.146	0.141	0.147
	(0.49)	(0.50)	(0.49)	(0.353)	(0.349)	(0.354)
Herbicide use=yes	0.51	0.57	0.50	0.0342	0.0208	0.0388
	(0.49)	(0.49)	(0.50)	(0.182)	(0.143)	(0.193)
Pesticide use=yes	0.16	0.15	0.169	0.108	0.104	0.109
	(0.37)	(0.36)	(0.375)	(0.310)	(0.305)	(0.312)
Mechanization use=yes				0.0623	0.0596	0.0632
				(0.242)	(0.237)	(0.243)
Input credit accessed=yes	0.21	0.16	0.22	0.0153	0.00831	0.0177
	(0 40)	(0.36)	(0.41)	(0.123)	(0.0908)	(0.132)
Plot irrigated use=yes	0.04	0.03	0.047	0.0206	0.0208	0.0206
	(0.20)	(0.17)	(0.212)	(0.142)	(0.143)	(0.142)
No of observations	3841	1109	2958	2810	722	2088

Values in parentheses are the standard deviation

The number of adults participating in agricultural production in the full sample and in male-headed households are comparable (3.23 and 3.2 persons per plot, respectively). In the case of female-headed households, the number of adults is slightly higher (3.4 persons per plot). This is in line with the argument in previous studies indicating high participation of rural women in agricultural activities. Regarding educational level, the illiteracy rate in female-headed households is higher (89%) than in male-headed households (68%) and in the full sample (69%). The average plot's distance from the households' residence is around 2.4 km in the full sample and 2.1 km in male-headed households, while, contrary to the study's expectation, the distance is double in female-headed households (4 km).

Sandy soil, clay, and other plot types in the full sample, including both female-headed and male-headed households, are more than 43%, 26%, and 0.01%, respectively, while the percentage of fertile soil type plots in female-headed households is slightly higher (33%) than that of the full sample and male-headed households (28% in both cases). In terms of the soil quality, plots of good soil type in the full sample and male-headed households are more than 43%, while in female-headed households, the percentage of good soil type plots is around 39%.

Male-headed households practice more soil conservation (49%) than female-headed households (44%). On the contrary, female-headed households have a flatter (34%) land type than male-headed households (28%). In the full sample, male-headed households, and female-headed households, slightly sloped and very steep land type comprise more than 45% and 22% of the full sample, respectively.

The percentages of female-headed households that use organic and inorganic fertilizer are 54% and 50% respectively, which is slightly higher than male-headed (52% and 47%, respectively). Similarly, herbicide use is higher in female-headed households (57%) than in male-headed households, while pesticide use is comparable in all cases. In terms of access to credit, male-headed households accessed input credit at a higher rate (22%) than female-headed households (15%). However, in all cases, plot irrigation use for crop production is less than 5%.

When we look at the average value of crop production per plot by gender, the crop value of production in male-headed households is higher (1413.6 *Ethiopian Birr*) than in female-headed households (1133 *Ethiopian Birr*), indicating a gender gap in agricultural productivity. Therefore, the descriptive statistics show a difference between male-headed and female-headed households in terms of landholding size and

productivity in particular and socio-economic and demographic variables in general. Controlling for all differences, the study used an advanced statistical/econometric approach to analyse whether land tenure security productivity differences improved by gender. First, the analysis disaggregated the data by gender (female-headed and male-headed). Around 52% of female-headed and 49% of male-headed households have plot certificates, and 49% of the full sample have certificates.

3.2.2 Disaggregated Data by Gender for Tanzania

Table 6.1 provides the descriptive statistics of the key variables used in the analysis for the whole sample and by gender of household head. The average crop productivity in the sample is about 225,420.2 Tanzanian shillings per acre. Average crop productivity differs for plots cultivated by female-headed households and those cultivated by male-headed households. Female-headed households have an average crop productivity of 195,721.34 Tanzanian shillings per acre, which is lower than the productivity for male-headed households' productivity of 235,689.6 Tanzanian shillings per acre. This is in line with existing evidence of a productivity gender gap.

About 34.6% of the plots have some form of land title. Comparing plots owned by female-headed households against plots owned by male-headed households reveals a marginal difference: 34.1% of the plots owned by female-headed households have land titles against 34.8% of male-headed households.

The average household total landholding is 6.8 acres. On average, male-headed households hold about 7.5 acres, while female-headed households hold 4.8 acres, suggesting lower asset ownership by women. The mean number of adults is three, with more adults in male-headed households. In terms of education, about 70% of household heads can read and write. By gender, 76% of male household heads can read and write compared with only 49% of female household heads.

The mean plot size cultivated is 1.6 per acre. Male-headed households cultivated about 1.8 acres, while female-headed households cultivated slightly more than an acre. The average distance of plot from home is about 6.6 km; female-headed households' plots are closer to their homestead (4.3 km) compared with plots cultivated by male-headed households (7.4 km). Most of the plots have loam soil type with average quality and flatter slope. On average, about 14% of the plots suffered some sort of soil

erosion during the long 2014 rainy season, with female-headed households' plots sustaining slightly less erosion.

About 13% and 15% of the plots applied organic and inorganic fertilizer respectively, while 3.4% and 10.8% of the plots received herbicide and pesticide application respectively. Fewer plots cultivated by female-headed households received fertilizers, herbicide, and pesticides compared with plots cultivated by male-headed households. Nearly 6% of the plots applied some mechanization, and 2% of the plots irrigated, while access to input credit is very low at 1% of plots. Slightly fewer plots cultivated by female-headed households received some form of mechanization and input credit.

In general, the descriptive statistics show some gender gap in productivity. They also show that female-headed households have a lower total landholding, less labour, and lower literacy. At the plot level, female-headed households' plots are almost the same as male-headed households' plots regarding soil type, quality, and plot slope. However, plots cultivated by female-headed households receive fewer modern and productivity-enhancing inputs with lower inputs of credit access.

4 Econometric Estimation

This section describes the chapter's estimation strategies. To analyse the differential effect of land certification on productivity by gender in agricultural households, we apply a fixed effect approach to the three rounds of data from Ethiopia. In estimating (1), the chapter assumes that land certification is exogenous and controls for spatial heterogeneity effects such as differences in productivity across regions and quality of plots (soil) not captured in the regression.

$$y_{ipt} = \alpha_0 + \alpha_1 \text{cert}_{ipt} + \delta X_{ipt} + \varepsilon_{ipt} \tag{6.1}$$

y_{ipt} is the productivity for household i, in plot p, at time t; α_1 is the parameter estimation of plot certification for the household; cert is an indicator (binary) of plot certification owned by the household (whether the plots are certified or not); δ is the parameter to be estimated for controlled variables; X is a vector of household and plot characteristics; ε is an error term; and α_0 is constant. Therefore, for the gender differential effect of land certification on crop productivity, the study separately estimates Eq. (6.1) for female-headed household and male-headed household subsamples.

Equation (6.2) specifies the model estimation for the 2014 Tanzanian sample data.

$$y_{ip} = \beta_0 + \beta_1 \text{cert}_{ip} + \gamma X_{ip} + \epsilon_{ip} \tag{6.2}$$

y_{ip} is the crop productivity level for household i, in plot p; and $cert_{ip}$ is a binary indicator for land title or certificate (in this case, the dummy variable captures whether the plot has some formal or informal title document). X_{ip} is vector of household-level (total landholding, number of adults, and education) and plot-level (soil type and quality, soil erosion, plot slope, irrigation and inputs applied) characteristics; and ϵ_{ip} is the error term. β_1 is the parameter of plots certification/title owned by the households; γ is vector of coefficients for the household- and plot-level control covariates. To analyse the gender differential effect of land rights on crop productivity, the chapter separately runs Eq. (6.2) for female-headed households and male-headed household subsamples.

5 Estimation Results

5.1 Ethiopian Sample

Applying a fixed effect approach to the three rounds of panel data from Ethiopia, the chapter estimates the differential effect of formal land certification on crop productivity disaggregated by gender and at the aggregate level (full sample). The main result shows a direct relationship between land certification and crop productivity (see Table 6.2) in general. The productivity-enhancing effects of land certification on the subsample of male-headed and female-headed households are also positive and significant. This is consistent with previous studies that document the positive effects of land rights on crop productivity in Vietnam (Do and Iyer 2008) and in Ethiopia (Deininger et al. 2011). Field (2007) also indicates that tenure security increases women's income and reduces child labour.

Some studies also indicate that rural women's participation in agricultural activities is high; however, they rarely own the land on which they are working (Ogunlela and Mukhtar 2009). For instance, in Zimbabwe, only 3% of rural women hold the agricultural land in the smallholder farming sector and 10% in the large-scale commercial sector; in Benin, women hold 11%; in the Congo, 25%; and in Tanzania, 25% (Cotula 2006).

Table 6.2 Effect of land certification on crop productivity

Dependent variable: Crop value per acre	*Ethiopia*			*Tanzania*		
	All sample	*Female-headed*	*Male-headed*	*All sample*	*Female-headed*	*Male-headed*
Land certificate	0.710***	0.814*	0.868***	0.223***	0.142*	0.236***
	(2.76)	(1.86)	(2.89)	(5.36)	(1.78)	(4.83)
Total land size	7.651***	5.615	16.455***	0.00158	−0.00133	0.00407
	(3.27)	(0.70)	(4.59)	(0.90)	(−0.46)	(1.86)
No. of female adults	−0.018	0.307	−0.045	−0.0359	0.00915	−0.0425
	(−0.16)	(0.73)	(−0.34)	(−1.07)	(0.15)	(−0.98)
No. of adults	−0.025	−0.058	−0.069	0.0819***	0.0803*	0.0755**
	(−0.45)	(−0.59)	(−1.07)	(4.43)	(2.24)	(3.19)
Education of head	0.083	−0.107	0.096	0.0650	0.0820	0.00892
	(0.61)	(−0.55)	(0.64)	(1.51)	(1.08)	(0.16)
Gender of the head (M/F)	0.607*					
	(1.82)					
Plot size	0.672***	−0.403	0.510**	−0.0782***	−0.163***	−0.0768***
	(3.34)	(−0.40)	(2.25)	(−8.45)	(−5.08)	(−7.71)
Distance to plot	−0.006	0.021	−0.018	0.000534	0.00551	0.000493
	(−0.24)	(0.33)	(−0.63)	(1.09)	(1.86)	(0.98)
soiltype1=loam	0.068	−0.129	−0.011	−0.206***	−0.0915	−0.269***
	(0.17)	(0.21)	(0.02)	(−3.57)	(−0.89)	(−3.88)
soiltype3=clay	−0.105	0.408	−0.186	0.158**	0.0520	0.184**
	(−0.26)	(0.82)	(−0.38)	(3.14)	(0.53)	(3.14)
soiltype4=other	−1.744	2.877	−2.027*	−0.0184	0.182	−0.0749
	(−1.62)	(1.13)	(−1.68)	(−0.16)	(0.83)	(−0.57)
soilqlty1=fair	0.672**	0.736	0.704**	0.162***	0.112	0.181***
	(2.37)	(1.62)	(2.11)	(3.93)	(1.43)	(3.74)
soilqlty3=poor	−0.165	0.484	−0.128	−0.251**	−0.260	−0.231*
	(−0.47)	(0.72)	(−0.32)	(−3.13)	(−1.91)	(−2.36)
soilerosion1=yes	0.037	0.369	−0.037	−0.0113	0.273*	−0.109
	(0.15)	(0.97)	(−0.13)	(−0.19)	(2.44)	(−1.59)

(*continued*)

Table 6.2 (continued)

Dependent variable: Crop value per acre	*Ethiopia*			*Tanzania*		
	All sample	*Female-headed*	*Male-headed*	*All sample*	*Female-headed*	*Male-headed*
plotslope2=flat	3.580***	1.507***	3.955***	−0.0606	−0.0842	−0.0373
	(12.14)	(3.35)	(11.46)	(−0.61)	(−0.39)	(−0.33)
plotslope3=slightly sloped				0.00728	0.0694	−0.0256
				(0.15)	(0.75)	(−0.45)
plotslope4=very steep	0.444	0.180	0.529	−0.149	−0.148	−0.173
	(1.34)	(0.36)	(1.37)	(−1.12)	(−0.55)	(−1.13)
Organic fertilizer use=yes				0.162**	0.156	0.186**
				(2.77)	(1.37)	(2.73)
Inorganic fertilizer use=yes	0.448*	−0.505	0.638**	0.202**	0.0533	0.270***
	(1.82)	(−1.35)	(2.19)	(3.28)	(0.45)	(3.73)
Herbicide use=yes	−1.061***	0.789*	−1.426***	0.488***	0.811**	0.410**
	(−3.97)	(1.68)	(−4.55)	(4.26)	(3.06)	(3.23)
Pesticide use=yes	−0.563	0.018	−0.507	0.318***	0.155	0.393***
	(−1.60)	(0.03)	(−1.25)	(4.61)	(1.16)	(4.86)
Mechanization use=yes				0.387***	0.266	0.427***
				(4.61)	(1.65)	(4.37)
Input credit accessed=yes	0.579**	−0.714*	0.741***	1.009***	2.052***	0.749***
	(2.22)	(−1.80)	(2.38)	(6.15)	(5.03)	(4.13)
Plot irrigated use=yes	−0.110	−0.060	−0.104	0.492***	0.116	0.553**
	(−0.16)	(−0.04)	(−0.13)	(3.45)	(0.44)	(3.27)
Location dummy	0.120***	−0.047	0.160***			
	(4.12)	(−1.11)	(4.62)			
Constant	−0.971*	−0.194	−0.726	11.31***	11.30***	11.38***
	(−1.74)	(−0.31)	(−1.23)	(186.07)	(107.07)	(148.43)
N	3835	1109	2958	2810	722	2088
rho (Eth.) and adj. R^2 (Tanz.)	0.014	0.002	0.013	0.124	0.113	0.137

Note: *t* statistics in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Providing women with ownership rights to land helps them to improve their crop productivity as well as their economic resilience. Studies on the effect of land title on access to capital (Besley 1995; Carter and Olinto 2003) and on the incentive to innovate (Brasselle et al. 2002) show a positive correlation with productivity. Recently, Ali et al. (2014) analysed regularizing land tenure security in Africa; they find that tenure security affects farm households' investment on their land.

Other potential indicators that correlate positively with crop productivity are total land size, plot size, fertility of soil, types of plots, inorganic fertilizer use, herbicide use (in the case of female-headed households), input credit use (in male-headed households and the full sample), and location dummy (with the exception of female-headed households). Households with large total landholding size are more productive. In the Ethiopian case, large total landholding could be a proxy for wealth given the limited market for purchasing land and no land redistribution in almost two decades. Thus, wealthier households could use more and better inputs that complement land productivity.

Consistent with the descriptive finding, the gender of the head of household in the full sample is positive and significant, indicating that male-headed households are more productive than female-headed ones. Inorganic fertilizer use and access to credit positively correlate with productivity (with the exception of the female-headed subsample). Looking into the plot characteristics, the size of the plot is positively associated with crop productivity. Controlling for fertile plots as a reference, plots with less-fertile (in the case of the male-headed subsample and full sample) positively correlate with crop productivity.

Similarly, using slightly-steep plots as a base, flatter plots (in all cases of the full sample and the subsamples) positively affect crop productivity. Contrary to the study expectations, in pesticide and herbicide use in plots in the case of the full sample and male-headed subsample, the correlation is negative with crop productivity. However, in the case of the female-headed subsample, the effect is positive on crop productivity.

5.2 Tanzanian Sample

Table 6.2 reports the estimation results based on data from Tanzania. The chapter finds a positive and significant effect of land rights on productivity. Plots with a land title/certificate have higher crop productivity. Importantly, the results show that significant positive effects persist in the

subsamples of female- and male-headed households. Land titles improve tenure security and provide an incentive for investment, which leads to improved crop productivity. Land titles positively and significantly affect female-headed households' productivity. Female-headed households benefit from land titles improving their crop productivity, which may translate into improved food security and overall improvement in welfare. Overall, the results show a positive effect of tenure security on agricultural productivity in general and particularly on female-headed households.

The estimation controls for both household and plot-level characteristics affect productivity. The coefficients of the control covariates are in line with previous findings. Looking at household-level characteristics, the number of adults in the household correlates positively with productivity. This is in line with the expectation that more labour complements the land productivity that improves overall productivity. No significant effect of education on productivity is evident.

Regarding plot characteristics, plot size correlates negatively with productivity, which is in line with the inverse relationship hypothesis between farm size and productivity. Plots of soil type (loam and clay) and soil quality (average and above) correlated significantly and positively with productivity. As expected, more and better inputs enhance productivity. Consistent with this expectation, input uses such as organic and inorganic fertilizer, pesticides, and herbicides positively affect productivity. Likewise, access to input credits also correlates positively with productivity. Plots that apply some form of mechanization and irrigations correlate significantly with productivity for the whole sample and for the subsample of male-headed households.

Columns 6 and 7 of Table 6.2 (Tanzanian sample) show estimation results for subsamples of female and male-headed households. As previously discussed, plots with land titles/certificates have improved productivity in both subsamples. Comparing the significance of the control covariates for subsample of female-headed households versus male-headed households, yields some coefficients that are not significant in the female-headed households. This is perhaps due to this group's small sample size.

Total landholding size is positively associated with higher productivity only in the male-headed households subsample. In both subsamples, the number of adults in the household significantly and positively correlates with productivity. Looking at the plot characteristics, plot size is negatively associated with productivity in both subsamples. Counterintuitively, in the female-headed household subsample, plot

distance from home and plots suffering some erosion correlate positively with productivity. Perhaps one explanation could be that households have invested more time and effectively cultivated such plots to make up for the plots' adverse characteristics.

As expected, plots with poor soil quality have lower productivity. Regarding input applications, herbicide use and application of some mechanization to the plot improve productivity for the female-headed household subsample. Likewise, access to input credit is significantly associated with productivity.

The Ethiopian land titles are based on low-cost certification programmes that have provided certificates for several million households in the major regions, while the Tanzanian case is a land right based on legal pluralism that recognizes statutory and customary rights and allows obtaining a certificate of title (although it does not require one); both countries' cases show evidence that land titles affect productivity positively.

6 Conclusion and Policy Implication

There is little doubt about the significance of land for food security, poverty reduction, and overall economic development in Africa. In rural Africa, land is a key factor of production in the wealth creation process. Proper land ownership policy is vital given that the vast majority of the rural population relies on farming for their food production and income. Significant evidence demonstrates that access to land is positively associated with household income (Muyanga and Jayne 2014).

This chapter analyses the differential impact of land titles on the productivity of smallholder farmers in two East African countries (Ethiopia and Tanzania). The main findings show the significant and positive effect of land title on crop productivity, both in Ethiopia and Tanzania. Importantly, the positive effect persists for the subsample of female-headed households. However, a comparison with the results with the male-headed samples shows the effect to be lower for female-headed households than male-headed households. This is perhaps due to the relatively lower input use of the female-headed households in comparison with that of the male-headed households, which could have a complementary effect. The results suggest that improving agricultural productivity and reducing the gender gap in productivity is possible by enhancing both women's tenure security and other complementing inputs. The results are in line with previous studies that underscore the significance of land rights.

Women's right to land empowers them to be economically self-sufficient. However, the chapter shows that a lower proportion of women have a land ownership right, highlighting the need for gender-sensitive land policy that ensures women's right to own land. A land policy must be based on the principle of gender equality in the right to land because land is an important asset for food production and income generation in rural households. Although the two countries are different in terms of history and state administration policy, ensuring proper land tenure and property rights improves productivity that could lead to a reduction in food insecurity and poverty.

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PART IV

Maternal Health and Education

CHAPTER 7

Towards Achieving Equity in Utilisation of Maternal Health Services in Selected Sub-Saharan African Countries: Progress and Remaining Challenges in Priority Countries

Estelle M. Sidze, Martin K. Mutua, and Hermann P. Donfouet

1 Background

The burden of maternal deaths is considerable in sub-Saharan Africa. Recent estimates from United Nations inter-agency data indicate that the maternal mortality ratio in the region was 545 deaths per 100,000 live births in 2015, down from 846 deaths per 100,000 births in 2000, but was still unacceptably high compared with other regions of the world (UNICEF 2018). A woman in sub-Saharan Africa, for instance, faces about a 1-in-40 risk of dying during pregnancy during her lifetime. By comparison, the lifetime risk of dying from pregnancy is about 1 in 3300 for a woman in Europe (World Health Organization 2014). The burden of maternal death is not only unequal between regions of the world but

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also between countries within regions and between geographical areas within countries. Pregnancy-related deaths are relatively higher in West Africa because of comparatively low levels of care-seeking during pregnancy, modern contraceptive use, and general access to quality healthcare. Within countries, differences in maternal death rates occur along numerous axes of stratification or social hierarchies, including age, socioeconomic class, education, geography, and culture. Poverty in terms of financial resources and poor availability of quality services accounts for the relatively higher number of maternal deaths observed among poor women, particularly poor women residing in slums (African Population and Health Research Center 2014). In Nigeria, for instance, the maternal mortality ratio among women living in the urban slums of Lagos is twice as high as the ratio estimated for Lagos State (Anastasi et al. 2017).

The Sustainable Development Goal (SDG) framework recognises efforts to ensure equity in access to and utilisation of maternal services in SDG 3 and to maintain a human rights-based approach as vital to reduce further global levels of maternal mortality (World Health Organization 2014). This basic principle of equity and inclusion is rightfully expressed in the principle 'leave no one behind—regardless of ethnicity, gender, geography, disability, race or other status'. Targets such as halving the maternal mortality rate gap between the richest and the poorest or between the best performing and worst-performing regions are therefore key. In the last decade, many international institutions, including the World Health Organization (WHO), have advocated for better social (health) protection, including the expansion of social health insurance coverage and introduction of social welfare systems and waivers of fees for specific conditions or groups to reduce the burden of private out-of-pocket expenditures and health inequalities (Kumar et al. 2011; World Health Organization 2010; Scheil-Adlung 2014). Social (health) protection strategies are relevant in helping poor and marginalised populations to cope with crises and shocks and invest in their health, thus securing the right to health for all (ILO et al. 2007). They are, however, not easy to implement, requiring substantial public funding, accountability, and health sector reforms, including improvements of human resources and availability of supply, medicines, and equipment; therefore, different countries have implemented them with varied levels of success. This chapter first offers in-depth analysis on the concept of equity and how to achieve it. Second, it explores policies designed to promote equity in

priority countries and progress observed. Finally, it provides some conclusions and recommendations.

2 What Is Equity in Health, and How Can Equity Be Achieved?

The equity principle in access to quality health services requires that access be based on individuals' need rather than ability to pay. Policymakers have reached consensus that equity in healthcare is an important goal for health policy. As defined by Braveman and Gruskin (2003, p. 256): 'equity in health is the absence of systematic disparities in health (or in the major social determinants of health) between groups with different levels of underlying social advantage/disadvantage'. Achieving universal health coverage is difficult without addressing the issue of equity. The three dimensions of universal health coverage (i.e., population coverage, package of services, and financial protection) could be analysed through an equity lens. In sub-Saharan African countries, the poor are usually not using maternal health services even when these services are free. The type and quality of services in maternal healthcare require consideration. The services offered should be good enough to improve the health of mothers who are receiving them. Although policymakers in some sub-Saharan African countries are trying to develop health policies that meet the needs of the poor and are sustainable over time, several low-income households are impoverished by the cost of accessing maternal healthcare services. For instance, in Kenya, out-of-pocket expenditures (OOP) expressed as a percentage of total health expenditures decreased from 47% in 2009 to 26% in 2014, although OOP still account for a significant percentage of health expenditures. Despite major efforts from the government, Kenya's health system still faces major challenges in terms of affordability, equity, and provision of quality healthcare services. Furthermore, most Kenyans aged 15–49 do not have health insurance: 82% of women and 79% of men are not covered by any health insurance (KDHS 2014).

Evaluating equity in utilisation of maternal health services requires comparing some health outcomes between more- and less-advantaged groups. This comparison is essential to assess whether maternal healthcare utilisation is heading towards universal health coverage. For instance, differences between men and women and between poor and rich households

in accessing maternal healthcare services could be a serious concern from an equity perspective. As Çalışkan et al. (2015) pointed out, many studies in developing countries around the utilisation of maternal healthcare fail to address the issue of equity.

Although equity is of paramount importance, some policy instruments could help achieve it. More effective taxation could raise money to give the poor access to maternal healthcare services. A proportional tax could be levied on the richest 20% of households, or a progressive tax—proportion increasing with income—could be implemented. In the same vein, because tobacco use is one of the four major risk factors for non-communicable diseases, policymakers could increase taxation of tobacco products, which would moderate tobacco consumption while generating substantial government revenues (WHO 2011, 2014) that could be used to finance access for the poor to maternal healthcare services.

However, in sub-Saharan African countries, enforcing taxation could be challenging. Levying or increasing value-added tax (VAT) is another common indirect taxation measure. For instance, in Ghana, policymakers applied 2.5% VAT to fund the Ghana National Health Insurance Scheme. Another potentially useful policy is national health insurance financed by payroll tax. Community-based health insurance (CBHI) is another instrument, although debate is increasing regarding equity in CBHI. Parmar et al. (2013) explored whether the CBHI scheme in Burkina Faso has been effective in providing equitable healthcare access to poor individuals, women, children, and those living far from health facilities using panel data on 990 households over the period 2004–2008. Results of the study emanating from the random effects regressions and concentration curves revealed that poor households and children were less likely to enrol in the CBHI scheme. Jehu-Appiah et al. (2011) investigated equity in enrolment by comparing enrolment between consumption quintiles and found that there is generally lower enrolment from the poorest socioeconomic quintiles than in the richest in the Ghana National Health Insurance Scheme (NHIS). In the same country, with the aid of cross-sectional survey data on 7223 households and logistic regression models, Sarpong et al.'s (2010) findings revealed that NHIS subscription rates are higher among households of high socioeconomic status (SES) and lower among the households of low SES, implying that CBHI schemes do not reach poor people to the same extent as they do richer people. Hence, if CBHI is adopted, one effective policy that would enable equity would be to subsidise the premiums of the poor.

3 Progress and Challenges in Achieving Equity in Maternal Health in Priority Countries

Numerous countries in sub-Saharan Africa have made progress in building large and nationally owned social protection systems to tackle income poverty and to support broader developmental objectives such as better nutrition, health, and education outcomes for all. Regular and predictable social transfer schemes (conditional and unconditional cash transfers) and fee waivers initiatives have expanded significantly in the last decade (Miroro 2016; Monchuk 2014). The situation in the 11 priority countries (with high maternal mortality rates) is, however, a sharp contrast: eight countries out of 11 (i.e., Nigeria, Sierra Leone, Chad, Guinea-Bissau, Côte d'Ivoire, Mali, Niger, and Kenya) have implemented schemes to reduce OOP for health and particularly for maternal health. However, various implementation challenges have compromised the schemes' impact (see Table 7.1). In Nigeria—the highest contributor of maternal deaths in sub-Saharan Africa—implementation of the Free Maternal and Child Health Programme (FMCHP) introduced in 2003 has been fraught with several operational issues related to human resources, funding, availability of drugs, infrastructures, and commitments of local governments (Holmes and Morgan 2011). As a result, the programme covers less than 0.01% of poor women, which limits its impact on a large scale. In Kenya, the Free Maternity Services programme suffered from challenges in financing and reimbursement mechanisms (Maina and Kirigia 2015), shortages in essential drugs (Maina and Kirigia 2015), and workload concerns among health providers (Maina and Kirigia 2015; Lang'at and Mwanri 2015). As Sidze et al. (2019) showed, despite huge increases in overall access to skilled delivery in Kenya after the programme's introduction, it achieved relatively small gains in equity. The biggest absolute increase in skilled deliveries following the programme's implementation was among households in the rich quintile (28%) compared with 11% of the households in the poorest quintile (Sidze et al. 2019).

To further assess progress achieved in equity in maternal health in priority countries, this study analyses data on the utilisation of antenatal care, skilled birth, and postnatal care grouped by wealth categories from the Demographic and Health Surveys. These data are publicly available at dhsprogram.com. We used the last two rounds of surveys for each country. Figure 7.1 summarises the observed trends on Equiplot, a visual chart that allows the comparison of absolute inequality by selected sociodemographic

Table 7.1 Social (health) protection schemes adopted in priority countries to reduce inequalities in access to maternal health services

Country	*Implemented scheme*	*Available evidence on effectiveness*
Nigeria	Free Maternal and Child Health Programme (FMCHP) introduced in 2003 include free antenatal care and antenatal drugs, free vaginal and assisted vaginal delivery, free Caesarean-section, free post-abortion care services, free management of ectopic pregnancy and free laparotomy for obstetric complications. The programme is financed through the Debt Relief Gain (DRG) (Dijkstra et al. 2011; Hagen-Zanker and Tavakoli 2011; Holmes and Akinrimisi 2011)	Poor coverage (less than 0.01% of the poor) (Holmes and Morgan 2011) and severe operational issues related to human resources, funding, availability of drugs, infrastructure, and commitment of local governments (Jesse Uneke et al. 2013)
	The Community-Based Health Insurance (CBHI) scheme within the National Health Insurance Scheme (NHIS)	Low uptake (about 3% of the population) and issues related to inequity in provision (Odeyemi 2014)
Sierra Leone	The Free Health Care Initiative introduced in 2010 offering free care to high priority users, free care in public facilities for pregnant and lactating women and children under 5	The initiative brought up significant improvements in health workforce and health facilities infrastructures (Witter 2016). There is a need to also focus on residual barriers such as lack of transport and sociocultural barriers to ensure gains are fairly distributed (Witter 2016)
Chad	Free services for emergency surgery, obstetric and medical care introduced in 2008 as part of the social policy. Health insurance and health mutual are also available (Azétsop and Ochieng 2015)	Health insurance covers only 2% of the population and health mutual are still in the experimental phase (Azétsop and Ochieng 2015)
Liberia	* A pre-feasibility study of social health insurance was carried out in 2011 (Eyitayo et al. 2011) but implementation was delayed by the Ebola outbreak.	*Not yet assessed*

Country	*Implemented scheme*	*Available evidence on effectiveness*
DR Congo	* No national risk-sharing mechanisms such as health insurance. The government has increased the health budget from 3.4% in 2011 to 8.6% in 2015 (USAID Global health. Democratic Republic of Congo. Accessible at: https://www.usaid.gov/democratic-republic-congo/global-health)	*Not applicable*
Guinea-Bissau	Free services for pregnant women and children under 5 introduced in 2015 (World Health Organization 2016). Country cooperation strategy at a glance. Guinea-Bissau. Accessible at: http://apps.who.int/iris/bitstream/10665/250275/1/ccsbrief_gnb_en.pdf)	No impact evaluation published
Côte d'Ivoire	Free health services introduced in 2011 for all pregnant women during delivery including free Caesarean-sections (Ouattara et al. 2013) * A planned universal healthcare programme was launched early 2018	Challenges related to budgetary restrictions, drug stock-outs and lack of trained personnel hamper access to quality maternity services for women (MSF Report. Accessible at: http://www.msf.org/en/where-we-work/c%C3%B4te-divoire, Ouattara et al. 2013)
Cameroon	* No national risk-sharing mechanisms such as health insurance to reduce out-of-pocket expenditures for health which are very high compared to most countries in the sub-Saharan African region (Bove et al. 2013). It is estimated that 60 CBHI schemes are available nationwide covering less than 1% of the population (Noubiap et al. 2014)	*Not applicable*

(*continued*)

Table 7.1 (continued)

Country	*Implemented scheme*	*Available evidence on effectiveness*
Mali	National health financing strategy including investments in CBHI schemes (USAID Mali health strategy. Accessible at: https://www.usaid.gov/sites/default/files/documents/1864/USAID-Mali%20Health%20Strategy%202014-2018.pdf)	Significant challenges in allocating financial resources in a way that promotes efficiency, equity, and quality. Significant scale-up needed as the programme covers about 5% of the population only in 2015.
Niger	Free healthcare policy introduced in 2006 for women and children including free contraceptive services, antenatal care, deliveries including Caesarean-sections, and free treatment for breast and uterus cancer (Universal Health Coverage Partnership (2015) Towards A New National Health Policy in Niger. Accessible at: http://uhcpartnership.net/towards-a-new-national-health-policy-in-niger/). Health insurance and mutual health insurance are also available. * Universal coverage is a development priority in the new national health policy	Uptake of antenatal care services doubled between 2004 and 2009. (Free healthcare initiative in Niger makes health gains but many challenges remain. Accessible at: https://reliefweb.int/report/niger/free-healthcare-initiative-niger-makes-health-gains-many-challenges-remain.) In spite of the progress, the free healthcare initiative is endangered by acute funding shortfalls.
Kenya	Free maternity services (FMS) and free primary care services (FPC) introduced nationwide in all public health facilities in 2013	Both programmes have contributed to significant increases in utilisation of maternal health services despite challenges in financing and reimbursement mechanisms (Maina and Kirigia 2015), shortages in essential drugs (Maina and Kirigia 2015) and workload concerns among health providers (Maina and Kirigia 2015; Lang'at and Mwanri 2015). No significant improvement in equity in use of skilled delivery observed in national data collected in 2014 (Sidze et al. 2019)

* refers to plans underway to implement a scheme in the specific country

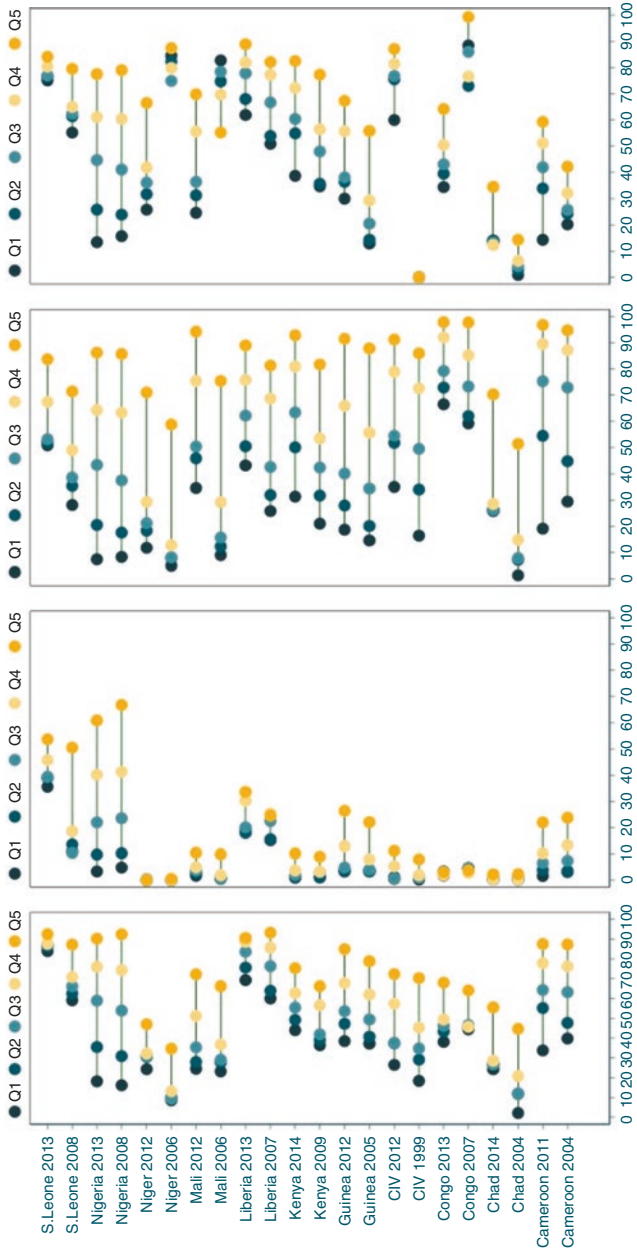

Fig. 7.1 Trends in coverage and inequality in utilisation of maternal health services by wealth groups in priority countries in sub-Saharan Africa. Legend: ANC 4+ = women who had four or more antenatal care visits during pregnancy; ANC 8+ = women who had eight or more antenatal care visits during pregnancy; SBA = Skilled Birth Attendance; PNC = postnatal care two days following birth; Q1 = Poorest; Q2 = Poor; Q3 = Middle; Q4 = Rich; Q5 = Richest; CIV: Côte d'Ivoire; Congo: Democratic Republic of Congo; Absolute inequality is illustrated by both the level of the indicator in each group (i.e., percentage of utilisation by group) and the distance between groups (i.e., the length of the line between plots)

or economic strata (in this case, wealth quintile). Absolute inequality is illustrated by both the level of the indicator in each group and the distance between groups. For more details on Equiplot, see http://www.equidade.org/products.php. As Fig. 7.1 shows, women in the highest wealth quintile enjoyed the highest coverage of the maternal health indicators in all the priority countries. Inequality in terms of skilled birth attendance was the highest in 10 of 11 countries and has persisted over time. The only exception is Sierra Leone, where the gap between wealth groups has narrowed with time. Nigeria stands out as the country with consistently high inequities in utilisation of maternal health services, such as whether women have had at least four antenatal care visits, eight antenatal care visits, access to a skilled birth attendant, and postnatal care. Equity did not improve substantially in Nigeria between 2008 and 2013, which might be related to poor coverage and low uptake of social (health) protection schemes, as Table 7.1 shows. In Cameroon, the gap between wealth groups worsened between 2004 and 2011, particularly regarding the use of skilled birth attendants during delivery. Sierra Leone, on the other hand, showed the greatest improvement in equity in the utilisation of antenatal care services between 2008 and 2013, echoing reports of significant gains made following implementation of the Free Health Care Initiative (see Table 7.1).

4 Conclusions

Demographic and Health Survey data shows that with the exception of Nigeria, Mali, Guinea-Bissau, and Cameroon, the levels of maternal healthcare service utilisation—antenatal care services in particular—have improved over time in the priority countries. Although data indicate various levels of progress in equity, with improvements observed in Sierra Leone and slight improvements observed in Niger, Mali, Liberia, and Kenya, improvement is lacking in Nigeria, Guinea-Bissau, Côte d'Ivoire, Democratic Republic of Congo, and Chad, while Cameroon shows a worsening trend. These variable trends are the result of variable implementation and successes of social (health) protection programmes. Nigeria, the largest contributor to maternal death in sub-Saharan Africa and the second largest in the world (with 814 deaths per 100,000 births in 2015), also stands out as the country with poorest coverage and lowest uptake of social (health) protection programmes. Available estimates indicate that FMCHP covers less than 0.01% of the poor (Holmes and Akinrimisi 2011) and that the Community-Based Health Insurance Scheme within the NHIS covers only 3% of the population. The case of

Cameroon is also worrisome, as no national large-scale programmes exist to compensate OOP for maternal health services for poor women. A dramatic incident of a young woman who died in front of a health facility in the capital city of Douala because she could not afford fees sparked public outrage in 2016 (http://www.dailymail.co.uk/news/article-3491872/Pregnant-woman-left-die-steps-Cameroon-hospital-no-money-pay-treatment-relatives-tried-vain-deliver-twins-alive.html).

In sum, achieving concrete and substantial gains in equity in access to maternal health services that will translate into the reduction of maternal mortality across SES is still far off. Therefore, the need is critical for implementing and improving the implementation of social (health) protection programmes in most of the sub-Saharan African priority countries. It is also necessary to put in place national systems to assess, monitor, and address disparities in line with the SDG framework. These efforts should go hand in hand with parallel health and non-health programmes to encourage the poorest women to demand and access maternal health services. Programmes aimed at addressing demand-side barriers such as opportunity costs, decision-making, education, as well as supply side barriers such as quality of services, are key. Finally, robust monitoring and evaluation systems should be implemented as an integral part of national strategies to assess improvements in the coverage of services. As global debates have clearly reiterated, access to quality maternal health services is a human right of which no woman should be deprived.

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CHAPTER 8

Barriers to and Facilitators of Contraceptive Use Among Married Adolescent Girls in Six Sub-Saharan African Countries

Nyasha Tirivayi

1 Introduction

Around the world, it is estimated that about one in four girls marry before they reach 18 years, with about 21 million girls aged 15 to 19 years becoming pregnant in developing countries (UNFPA 2015; Darroch et al. 2016). It is also estimated that more than 700 million women around the world today married early (UNFPA and UNICEF 2016). Early marriage is an ingrained cultural practice in many developing countries (Singh and Vennam 2016). In sub-Saharan Africa more than 40% of girls marry early, with a significant proportion (44%) of such marriages occurring in West and Central Africa (Malhotra et al. 2011; Jain and Kurz 2007; Amin 2011; WHO 2011). Although the United Nations, through a number of conventions and through Sustainable Development Goal (SDG) 5, considers child marriage a violation of human rights, married adolescents are still overlooked and underserved in international health and development programmes (WHO and UNFPA 2007). It has also been established that

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early marriage is driven by many cultural, social and economic factors. Religion, tradition, lack of schooling opportunities and poverty are some of the determinants of early marriage (Temin and Levine 2009).

Married girl children and adolescents are vulnerable to a myriad of reproductive and maternal health challenges. Studies have shown that married adolescents are deprived of education and livelihood opportunities due to their young age, social isolation and poor autonomy; are at greater risk of HIV infection and are more likely to engage in frequent unprotected sex; and are more vulnerable to domestic and sexual violence than unmarried counterparts and older women (Clark 2004; Glynn et al. 2001; Gavin et al. 2006; UNICEF 2009; Clark et al. 2006; Santhya and Erulkar 2011; Erulkar and Muthengi 2009; Haberland et al. 2005). The negative consequences on health are also intergenerational. Adolescent mothers are more likely to have poor infant feeding and care practices; low birth weight, stunted and underweight babies than older women; higher neonatal and infant mortality rates. These risks are exacerbated in regions where adolescent malnutrition and micronutrient deficiency are high (Sawyer et al. 2012; Prakash et al. 2011; Finlay et al. 2011; Raj et al. 2010).

In addition, married adolescents usually have limited access to skilled antenatal, delivery and postnatal care services and reproductive health information, and are therefore vulnerable to high risk pregnancies, unsafe abortions and subsequent higher maternal mortality and morbidity (Temin and Levine 2009; UNICEF 2009; Canning et al. 2009; Clark et al. 2006; Santhya and Erulkar 2011). Not surprisingly, improving adolescent access to contraceptives has been identified as a research priority (Hindin et al. 2013). Family planning is crucial for reducing the risks associated with morbidity and mortality among adolescents (Worku et al. 2015). Most reproductive health programmes and policies have mainly focused on adult women and unmarried adolescents and have paid little attention to the needs of married adolescents such that they are not explicitly targeted for programme coverage which impedes their access to reproductive health care services (Sarkar et al. 2015; Christiansen et al. 2013; Clark et al. 2006; Haberland et al. 2004; Santhya and Jejeebhoy 2003). In addition, married adolescent girls are less likely to use contraceptives when compared to women aged between 25 and 29 years, and this is in part fuelled by the social pressure to give birth immediately after marriage (Graft et al. 2003; Sarkar et al. 2015).

However, there are still some knowledge gaps regarding the reproductive health of married adolescent girls. Several recent studies have examined

maternal health care utilization among married adolescents. They find that urban residence, women's education, the partner's education and wealth were associated with maternal health care utilization in Nigeria, India and Nepal (Rai et al. 2012; Singh et al. 2012; Khanal et al. 2014). However, little is known about what strategies can increase consistent modern contraceptive use among married adolescents (Hindin et al. 2013). One previous study in Ethiopia examines the increased trends in contraceptive use among married young women aged between 15 and 24 and finds that characteristics such as age, education, religion, couple agreement on family size and fertility preference were the major drivers of the increased use of contraceptives. Most of the existing studies on contraceptive prevalence in sub-Saharan Africa generally focus on the differences between married adolescents and older women. Moreover, existing cross-country studies have generally focused on adolescents as a broad group rather than distinguish unmarried and married adolescents (Patton et al. 2012). Hence, there is still no systematic multi-country evidence base on the prevalence and determinants of contraceptive use among married adolescents in sub-Saharan Africa. This study intends to fill this knowledge gap.

The study assesses the barriers and facilitators to modern contraceptive use among married adolescent girls in six sub-Saharan African countries. Recent Demographic and Health Surveys (DHS) for six countries are utilized for analysis, that is, Burkina Faso, Guinea, Mali, Mozambique, Niger and Nigeria. The target group for analysis is married girls aged 15–19 years. Multivariable regressions are conducted for each country and for one pooled sample combining all the selected surveys. The study finds that facilitators of contraceptive use among married adolescent girls are own and partner education, visits to health facilities, living in urban areas and receiving family planning information from the media. Having a partner or husband who wants more children is a barrier to contraceptive use. Factors such as household size, age and knowledge of ovulatory cycle are both barriers and facilitators of contraceptive use.

2 Data and Methods

2.1 Data Source and Variables

The study utilizes data from recent DHS in selected sub-Saharan African countries. The DHS contain individual social, demographic and economic data from women and men aged between 15 and 49 years. DHS are a

reputable source of nationally representative data on fertility, family planning, gender attitudes, maternal and child health, HIV/AIDS knowledge and nutritional status of women and children. The surveys also collect information on household demographics and socio-economic indicators such as asset wealth, occupational status and education attainment. The DHS use multistage sampling approach where clusters are selected in the first stage and households in the second. One advantage of using the DHS is that the survey questionnaires are largely the same across countries, making it feasible to perform cross-country comparisons on selected variables.

The analysis focuses on six sub-Saharan African countries: Niger, Burkina Faso, Guinea, Mali, Mozambique and Nigeria. According to an international ranking of child marriage prevalence, these countries are within the top 10 among African countries (UNICEF 2017). According to the DHS, these countries have some of the highest rates of early marriage. Among women aged 20–24, a range of about 49.75% in Nigeria to about 84.85% in Niger were married before the age of 19 (see Fig. 8.1). The World Health Organization defines "adolescent" as individuals aged between 10 and 19 (WHO 2018). In the DHS, the minimum age for individual respondents is 15. Consequently, the unit of analysis (married

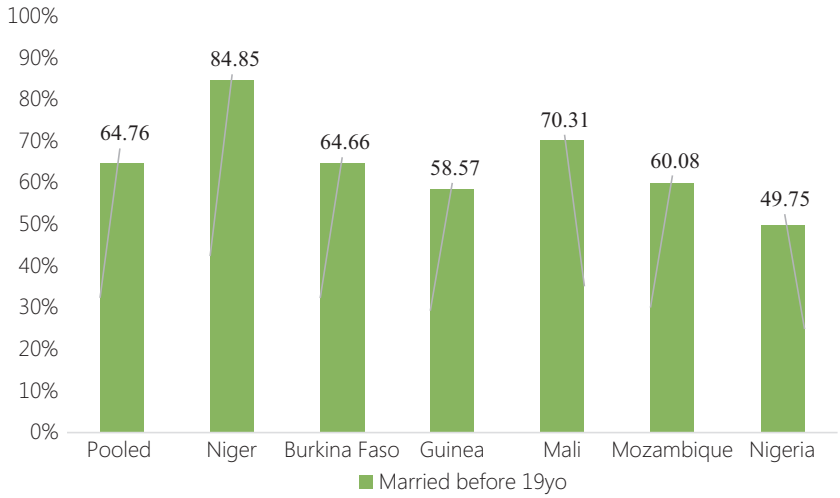

Fig. 8.1 Prevalence (%) of women aged 20–24 who got married before the age of 19. *Source*: Demographic and Health Surveys for each country. YO stands for years old

adolescents) is defined as women aged between 15 and 19 who are either married or cohabiting with a partner. After combining all the individual DHS for each selected country, our analytical sample comprises 4346 adolescent girls and women aged between 15 and 19.

The dependent variable for this study is a dummy variable indicating with value one if respondent is currently using modern contraceptive methods and zero for no. Modern contraceptives refer to the following: birth control pill, intrauterine device (IUD), injections, condom, female condom, female sterilization, implants/Norplant, lactational amenorrhea, foam/jelly and other modern method.

To examine the barriers that married adolescents still face in using modern contraceptive use, several independent variables or determinants are considered. These include demographic and socio-economic characteristics of the adolescents, their partners and households such as household size, living in an urban area, religion, own education level, partner's education, employment status and asset wealth. Religion is a categorical variable denoting whether one is a Muslim, Catholic Christian, Protestant Christian, Animist (Traditional) or had other or no religion. There could be variation in reproductive health care seeking and utilization among the different religions, due to the various religious teachings regarding contraception. For instance, the Catholic Church teaches that most forms of modern contraception are wrong and sinful against God and only allows natural birth control methods such as abstinence during the fertile period of the woman's cycle (Humanae Vitae 1968). The partner's education is a variable with the value of one if the respondent's partner has at least some education, and zero for otherwise. Employment status is a variable with a value of one if the respondent is engaged in any type of formal or informal employment. The asset wealth indicator is measured in three quintiles (poor, middle, rich) resulting from an index constructed using data on household assets and housing characteristics based on a formula described in the DHS manual (Measure DHS 2013).

Additional determinants focus on the individual health care knowledge, decision-making with partner and exposure to health care professionals or facilities. Two variables measure exposure to health care facilities/professionals as such exposure can result in transfer of knowledge on contraception. One variable describes whether the respondent visited a health facility in the past 12 months. Another variable denotes whether respondents were visited by a family planning worker in the past 12 months. Two variables describe the respondent's participation in decision-making on health

care and fertility issues, which may influence the use of contraception. One variable denotes whether there is concordance/agreement between the respondent and her partner about number of desired children (i.e. both want same, husband wants more, husband wants fewer, respondent doesn't know). The other variable denotes whether the respondent has complete decision-making power over their own health care. Finally, the remaining variables focus on whether the respondent has any knowledge of knowledge of their ovulatory cycle and whether they have heard about family planning from media sources, for example, radio, television, newspapers and/or magazines. All regressions include a categorical variable denoting the country of residence of each respondent (i.e. country fixed effects).

2.2 Estimation Strategy

The study uses descriptive statistics and graphs to describe the prevalence of modern contraceptive use among married adolescent girls in the selected countries. Then regressions are used to estimate the determinants of modern contraceptive use. This is done in two ways. First, separate regressions are estimated for married adolescents in each individual country. Second, one regression model is estimated for the pooled sample that combines all the six selected country surveys. Multivariable probit regressions are utilized since the outcome is binary.

Regression models include explanatory variables—determinants—described in the preceding section. Regressions are weighted using sampling weights to account for the complex sampling design used in DHS. The regression for the pooled sample also includes country fixed effects and standard errors are clustered at country level. To ease interpretation of results, average marginal effects are reported for each explanatory variable instead of the coefficients. Statistical analyses were conducted using Stata version 14.

3 Results

3.1 Descriptive Statistics

Table 8.1 presents the summary statistics of the sample of 4346 married adolescent girls. About 72% of the adolescents are Muslims followed by about 16% who are Protestant Christians. There are several statistically

Table 8.1 Summary statistics of the sample

	Full sample (N = 4346)	*Using modern contraceptive (N = 133)*	*Not using modern contraceptive (N = 4213)*	t-*test* (p-*value)*	*Chi*^{2} (p-*value)*
Determinants					
Age (15–19)	17.05	17.43	17.04	<0.001	
Household size	5.06	5.42	5.05	0.788	
Urban (%)	14.01	22.47	13.69		0.007
Religion (%)					
Muslim	71.85	82.21	71.47		0.007
Catholic	6.46	7.94	6.41		
Protestant	15.65	1.83	16.17		
Traditional/animist	3.26	6.45	3.15		
Other/none	2.77	1.57	2.81		
Woman education (primary/post-primary)					
No education	70.26	56.41	70.78		<0.001
Primary	21.44	21.63	21.43		
Post-primary	8.30	21.97	7.79		
Partner received any education (%)	32.23	45.74	31.73		0.005
Employed (%)	39.94	34.13	40.14		0.252
Wealth (%)					
Poor	50.87	40.26	51.27		0.001
Middle	21.28	15.28	21.50		0.683
Rich	27.84	44.46	27.23		0.500
Knowledge of ovulatory cycle (%)	77.67	75.92	77.73		
Woman is the only decision maker over her own health care (%)	4.43	3.44	4.46		
Agreement on family size (%)					
Both want same	23.80	32.04	23.49		0.155
Husband wants more	39.33	30.41	39.66		
Husband wants fewer	2.37	1.02	2.42		0.117
Doesn't know	34.50	36.53	34.42		<0.001
Visited by family planning worker in the past 12 months (%)	4.64	8.14	4.51		
Heard/read of family planning from media (%)	33.52	52.78	32.81		
Visited health facility in the past 12 months (%)	37.44	70.93	36.19		<0.001

Source: Author's calculations using DHS data

significant differences in the averages of the modern contraceptive users and non-users. Users of modern contraceptives are slightly older. They are also more likely to live in urban areas (22.47%) compared to non-users (14.01%). A higher proportion of non-users have no education (70.78%) compared with users (56.41%), while the partners of users are more likely to be educated (45.74%) compared to partners of non-users (31.73%). Modern contraceptive users were significantly more likely to be wealthy (44.46%) unlike non-users (27.23%). About 70.93% of users visited health facilities compared to 36.19% of non-users. In addition, a higher proportion of modern contraceptive users heard about family planning in the media (52.78%) compared to non-users (32.81%). These statistics show that when compared to non-users, modern contraceptive users are generally more likely to be wealthy, have more education and educated partners, have heard about family planning from media sources, reside in urban areas and have more contact with the formal health care system

The summary statistics also show that the level of modern contraceptive use among married adolescent girls is very low. Out of 4346 married female adolescents in the sample, only 133 or about 3% use modern contraceptives. Figure 8.2 shows that within the individual country samples

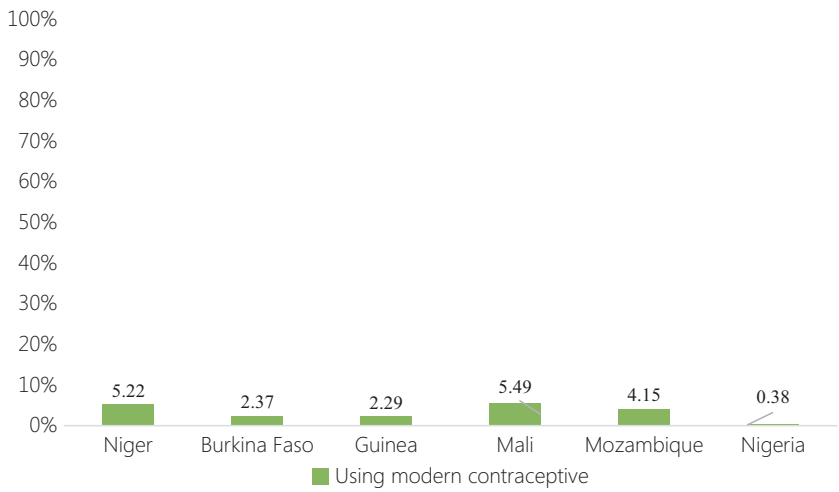

Fig. 8.2 Prevalence (%) of modern contraceptive use among married adolescents. *Source*: Demographic and Health Surveys for each country

and among married adolescents, the level of contraceptive use ranges from 0.38% in Nigeria to as 5.49% in Mali.

3.2 Barriers and Facilitators to Modern Contraceptive Use among Married Adolescents

Table 8.2 presents the results of the determinants of modern contraceptive use among married female adolescents. Several variables are positively associated with modern contraceptive use. Living within an urban area positively influences modern contraceptive use within the pooled sample and in Nigeria. Women and girls having post-primary education are 2.9 percentage points more likely to use contraceptives compared to uneducated women. The positive influence of post-primary education is also observed among married female adolescents in Niger and Mali, while in Nigeria both primary and post-primary education levels are influential. In the same vein, women and girls with educated partners are more likely to use contraceptives in the full sample and in Niger. Women and girls who visited a health facility in the previous 12 months are 4.7 percentage points more likely to use contraceptives, and this is also observed separately among married adolescents in Niger, Burkina Faso, Guinea and Mali. Married adolescents who heard about family planning from the media are more likely to use contraceptives in Mozambique and Nigeria than counterparts who did not. Adolescent girls whose partners want more children are also less likely to use contraceptives in Niger and Mali.

Other determinants have both positive and negative influences. Household size has a positive influence on contraceptive use among married adolescent girls in Nigeria and the opposite in Guinea. Knowledge of ovulatory cycle is associated with less use of contraceptives in Niger but more use in Mali. While age is not statistically significant in the pooled sample, it does have a positive influence on contraceptive use in Niger and Nigeria but a negative influence in Mozambique. Asset wealth largely has minimal influence on contraceptive use while visits by family planning worker and employment status have no statistically significant relationship with contraceptive use. The results show that married adolescents following traditional religions are more likely to use contraceptives than Muslims. In Guinea, Catholics are more likely to use contraceptives than Muslims, and in Nigeria, Protestant Christians are less likely to use contraceptives than Muslims. However, there is minimal variation in religion in countries like Niger and Mali which are predominantly Muslim.

Table 8.2 Determinants of modern contraceptive use among married adolescents in selected sub-Saharan African countries

	Pooled sample	*Niger*	*Burkina Faso*	*Guinea*	*Mali*	*Mozambique*	*Nigeria*
	AMEs	AMEs	AMEs	AMEs	AMEs	AMEs	AMEs
Age	0.00563	0.0218**	−0.00774	0.00614	0.0103	−0.044*	0.008**
	(0.004)	(0.009)	(0.007)	(0.009)	(0.013)	(0.024)	(0.004)
Household size	−0.00139***	−0.000691	−0.000871	−0.00436*	−0.00149	−0.00306	0.00133**
	(0.000)	(0.001)	(0.001)	(0.003)	(0.002)	(0.008)	(0.001)
Living in a urban area	0.00906**	0.0224	0.00650	0.0211	0.0193	0.0205	−0.00652
	(0.004)	(0.021)	(0.016)	(0.013)	(0.033)	(0.062)	(0.007)
Woman religion—referent: Muslim							
Catholic	0.0199		0.00788	0.0506***		−0.0413	0.0109
	(0.023)		(0.022)	(0.020)		(0.088)	(0.007)
Protestant	−0.0144					0.105	−0.0257**
	(0.030)					(0.077)	(0.013)
Traditional/animist	0.0351***		0.0173			0.110*	
	(0.012)		(0.017)			(0.059)	
Other/None	−0.0157					−0.0274	
	(0.016)					(0.069)	
Woman education—referent: No education							
Primary	0.00122	−0.00928	−0.0136	−0.00362	0.0117	0.0704	0.0604***
	(0.006)	(0.024)	(0.014)	(0.017)	(0.027)	(0.092)	(0.018)
Post-primary	0.0289***	0.0621***	−0.0220	−0.00966	0.0544**	0.189*	0.0510**
	(0.009)	(0.022)	(0.027)	(0.023)	(0.028)	(0.111)	(0.020)
Partner has some education	0.0155*	0.0372**	−0.0164	0.0226	−0.00406	−0.0555	
	(0.009)	(0.016)	(0.012)	(0.018)	(0.022)	(0.084)	
Woman is employed	0.00458	0.00306	0.00423	0.0135	0.0215	−0.0332	−0.00639
	(0.004)	(0.024)	(0.015)	(0.019)	(0.019)	(0.048)	(0.008)

	Pooled sample	*Niger*	*Burkina Faso*	*Guinea*	*Mali*	*Mozambique*	*Nigeria*
	AMEs	AMEs	AMEs	AMEs	AMEs	AMEs	AMEs
Wealth index—referent: Poor							
Middle	−0.0182	−0.0848***	0.0259	−0.0213	0.0277	−0.0813	−0.00110
	(0.016)	(0.028)	(0.016)	(0.018)	(0.029)	(0.071)	(0.007)
Rich	0.00198	0.000421	0.0243*	−0.0276*	0.0359	−0.0447	0.00731
	(0.006)	(0.018)	(0.015)	(0.017)	(0.035)	(0.053)	(0.008)
Knowledge of ovulatory cycle	−0.0146	−0.0556***	−0.0236	−0.00621	0.0488*	−0.0900	0.00466
	(0.017)	(0.017)	(0.024)	(0.020)	(0.029)	(0.097)	(0.008)
Visited by family planning worker	0.00395	0.0123	−0.0175		−0.0175	0.00814	
	(0.006)	(0.032)	(0.020)		(0.037)	(0.077)	
Heard of family planning on media	0.00660	−0.00892	0.0102	−0.00564	−0.00982	0.110*	0.0352***
	(0.008)	(0.017)	(0.012)	(0.014)	(0.022)	(0.057)	(0.010)
Visited health facility	0.0458***	0.0555***	0.0698**	0.0287*	0.0684***		0.00240
	(0.006)	(0.017)	(0.027)	(0.017)	(0.024)		(0.006)
HH size concordance—referent: Both want same children							
Husband wants more	−0.0123*	−0.0404*	0.00144	0.00985	−0.0441*	−0.0147	0.00787
	(0.007)	(0.021)	(0.011)	(0.018)	(0.024)	(0.064)	(0.010)
Husband wants fewer	−0.0323	−0.0809	0.0309				
	(0.029)	(0.051)	(0.028)				
Doesn't know	−0.0103	−0.0198	−0.0455*	0.0134	−0.0451*	−0.00334	0.0183*
	(0.006)	(0.018)	(0.026)	(0.018)	(0.025)	(0.064)	(0.011)
Decides about own health care by herself	−0.0165	−0.00955	−0.00790	0.0300	0.0190		
	(0.017)	(0.043)	(0.026)	(0.029)	(0.029)		
Country fixed effects	Yes	No	No	No	No	No	No
N	4178	790	508	433	452	161	507
pseudo R^2	0.161	0.211	0.201	0.258	0.179	0.215	0.605

Source: Author's calculations using DHS data. Standard errors are in parentheses
Note: "AMEs" stands for average marginal effects. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$

4 Discussion and Conclusion

This paper examined the prevalence and determinants of contraceptive use among married female adolescents aged 15 to 19 in six selected African countries. The study finds that urban residence has a positive influence on contraceptive use among married adolescent girls. Unlike rural areas, urban areas generally have higher levels of knowledge exchange and health promotion and have greater access to transportation, health facilities and public services, factors that may influence the use of contraceptives (Rai et al. 2012; Khanal et al. 2014). The study also finds that post-primary educated married adolescents are more likely to use contraceptives than the uneducated. This is consistent with the findings on education in the larger literature on contraceptive use among women of reproductive age. Education may improve contraceptive use through the enhancement of knowledge, literacy and awareness of reproductive health behaviours and health risks (Viner et al. 2017). Visiting a health facility is associated with contraceptive use among married adolescents. Health facilities provide sexual and reproductive health services which could promote the uptake of contraceptives among adolescents who visit (Nyarko 2015). In addition, women and girls who are interested in contraceptives may be more likely to visit health facilities to obtain them (Nyarko 2015). Family planning messages conveyed via media channels are a form of health promotion which explains the increased likelihood in contraceptive use in some countries. A key finding is that husbands or partners who want more children may impede the uptake of contraceptives by adolescents. This signifies that couple agreement on family size is important particularly in patriarchal cultures found across Africa where the husband/male partner's fertility preferences strongly determine family size and therefore can hinder contraceptive use (Worku et al. 2015).

Household size has both positive and negative associations with contraceptive use among married adolescent girls. This could be explained by several possible mechanisms. Larger households may indicate the presence of many young children which may implicitly point to a culture of preferring higher fertility, which could deter contraceptive use. Conversely, larger households are more likely to spend more money on health care and are more likely to have members who visit health facilities when sick which may offer opportunities for health care knowledge exchange among members, all of which could promote contraceptive use (Ogundari and Abdulai 2014). Age also has mixed influences. Older adolescents may be more

knowledgeable and experienced regarding fertility and reproductive health and may also have already had children which could increase the demand for contraceptives. Alternatively, the social pressure to give birth among married adolescents may increase with age which would prevent contraceptive use (Graft et al. 2003; Sarkar et al. 2015). Knowledge of ovulatory cycle also has both negative and positive influences in contraceptive use. On one hand, adolescents who understand their ovulatory cycle are also more likely to be knowledgeable about family planning in general and therefore would use modern contraceptives. On the other hand, women that know their ovulatory cycle may be more likely to rely on natural methods rather than modern contraceptives (Nyarko 2015). Overall, the predictors of modern contraceptive use in this study correspond with other studies in low-income countries.

Overall, the study finds that facilitators of contraceptive use among married adolescent girls are own and partner education, visits to health facilities, living in urban areas and receiving family planning information from the media. Having a partner or husband who wants more children is a barrier to contraceptive use. Factors such as household size, age and knowledge of ovulatory cycle can both be barriers or facilitators of contraceptive use. Findings from this multi-country assessment can be used to discuss policy strategies for increasing access to reproductive health by married adolescent girls. In order to increase contraceptive prevalence in this underserved population, policy strategies may need to strengthen access to and the delivery of social services such as education and health care. Reproductive health programmes could encourage the use of health facility use among married adolescents and exploit media channels to promote contraceptive uptake. Reproductive health programmes should also engage husbands and male partners, as their fertility preferences can deter contraceptive use.

One limitation of this study is that it relies on cross-sectional data and it thus provides only a snapshot on contraceptive use among married female adolescents. Future research could consider using longitudinal datasets for the selected countries and track changes in contraceptive use over time. Another limitation was the lack of diversity regarding religion, given that nearly 72% of the married adolescents were Muslim. Future studies could increase the number of countries to capture the diverse influences of religion on contraceptive use. The study has several strengths. It is based on a systematic population-based sample design with a high response rate. In addition, the study is a multi-country analysis of married

adolescents, an underserved area in the literature. It therefore contributes to a knowledge gap. The multi-country approach can be the first in a series of regular systematic analysis on the topic and will provide a lasting contribution to the global evidence base for married adolescents.

The study not only contributes to the literature, but it is also relevant to policy and especially the sustainable development agenda, given that more than 40% of female adolescents in sub-Saharan Africa are married and remain isolated and underserved by health and development programmes. Any strategies to increase contraceptive use among married female adolescents would contribute to the sustainable development agenda. In the previous Millennium Development Goals, aspects like child, early or forced marriage were not explicitly addressed, as they are under SDG 5 and Target 5.3. These findings can inform policy strategies for increasing contraceptive uptake among married female adolescents which would aid progress towards ensuring "universal access to sexual and reproductive health-care services" as stated in Target 3.7 of SDG 3 and "universal access to sexual and reproductive health and reproductive rights" as stated in Target 5.6 of SDG 5.

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CHAPTER 9

Achieving Gender Equality in Education in Sub-Saharan Africa: Progress and Challenges in Moving from the MDGs to the SDGs

Sandrine A. Koissy-Kpein

1 Introduction

The Convention on the Elimination of All Forms of Discriminations Against Women (CEDAW) in 1979, the Beijing Platform for Action in 1995, the World Conference on Education for All, the World Education Forum, the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs)—among others—underline that achieving gender equality in education is a major concern, recognised and accepted internationally. Equality in education is clearly targeted in the MDGs that aimed at ensuring that boys and girls will be able to complete a full course of primary schooling and eliminating gender disparity in all levels of education by 2015. Despite timid progress, the persistence of inequalities led to the more generalist SDG 5, aiming to "*[a]chieve gender equality and*

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empower all women and girls" and to "*[e]nd all forms of discrimination against all women and girls everywhere*".

Notwithstanding major progress, sub-Saharan Africa (SSA) is the region facing the biggest challenges. If some countries have succeeded in eliminating gender disparities in primary education, statistics generally suggest lower levels of achievement—and lower levels of enrolment in secondary schools—among girls compared to boys. The 2015 Global Monitoring Report reveals a decrease in the participation of boys and girls, as well as a decline in the Gender Parity Index (GPI), as the level of education increases (UNESCO 2015).

Gender inequality in education has been well established in the economic literature. Education is defined as an investment in human capital. Consequently, educational investment choices result from a maximisation process of the households that consists of having an optimal investment taking account of financial constraints. In this context, the concern for optimal and effective choices leads to unequal educational investment at the expense of girls. The higher costs of girls' education, for lower expected returns due to discrimination in the labour market, affect the decision to enrol girls compared to boys. A large body of research points out poverty as the most powerful education inequality determinant. However, when it comes to gender, inequality reflects broader disparities and social standards that guide behaviours, and determine household and society male–female roles (Koissy-Kpein 2008, 2010, 2015).

Drawing upon a review of the literature, statistics and empirical evidence, this chapter offers an examination of a non-exhaustive list of driving factors behind the lower schooling of girls, compared to boys, since the 2015 target date accomplishment of the MDGs in SSA. The chapter shows that African countries failed to eliminate disparities at all levels of education by 2015. In fact, gender inequalities with regard to poverty and subjective well-being, schooling costs, child labour, labour market, traditional harmful practices, school learning environment and crises the region faced—among others—contributed to gender disparity and girls' exclusion from school in the region.

The chapter starts with an assessment of gender parity in education for SSA, based on statistics from the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS). Then, the issue of gender inequality is addressed by accounting for economic factors, cultural barriers, school environments and crises that had affected girls' demand for education. Finally, it provides a short review of some commitments and actions that have led to an improvement in girls' education.

2 Assessment and Progress

Five years of schooling is the most education African girls can expect, on average, according to UNESCO.[1] Despite slow but real progress, girls still face strong discrimination in access to schools in most countries, and gender parity remains far away. According to UIS data, SSA records the highest rate of exclusion, with one-fifth of children between the ages of about 6 and 11, and one-third of youth between the ages of 12 and 14 out of school, and almost 60 per cent of youth between the ages of about 15 and 17 not in school. Across the region, nine million girls between the ages of about 6 and 11 will never go to school, compared to six million boys.[2]

SSA is lagging behind other regions with regard to the achievement of the universal access to pre-primary education (SDG 4, Target 4.2). While gender parity has been achieved in access to pre-primary education, it is parity in very low enrolment rates. In 2015, the SSA pre-primary Gross Enrolment Ratio (GER) was 20 per cent. The highest rate was recorded for Liberia (156 per cent), while the lowest rate was recorded for Chad (0.8 per cent). Unlike primary education, which was a major priority of the MDGs, pre-primary education was not a target to achieve by 2015. This probably explains the low country and family interest, and the very low enrolment rates. Pre-primary schooling remains less appealing to parents. In Ghana, the New Education Strategic Plan 2010–2020 mandates an extensive multimedia public awareness campaign to sensitise people to the need for child-friendly pre-primary provision (UNESCO 2015).

Major milestones have been reached with regard to the MDG 2, which aimed at achieving universal primary education, ensuring that "*by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling*". Overall, the SSA primary school ratio of girls to boys increased from 85 per cent in 2000 to 94 per cent in 2015. Countries throughout SSA experienced an increase in the Gender Parity Index (GPI) from 2000 to 2015, with the exception of Botswana, Cape Verde, Lesotho, Namibia, South Africa and Swaziland. Over the same period, the SSA GER for participation in primary education increased from 82.63 per cent (89 per cent for boys and 76 per cent for girls) in 2000, to 99 per cent (102 per cent for boys and 96 per cent for girls) in 2015. Notwithstanding these improvements, relatively few children make the transition to secondary school, and girls are particularly disadvantaged. They are more vulnerable to school dropout, unable to complete a full cycle of education. A decrease in school enrolments and a decline in the GPI is observed for all the countries as the education level rises (Fig. 9.1).

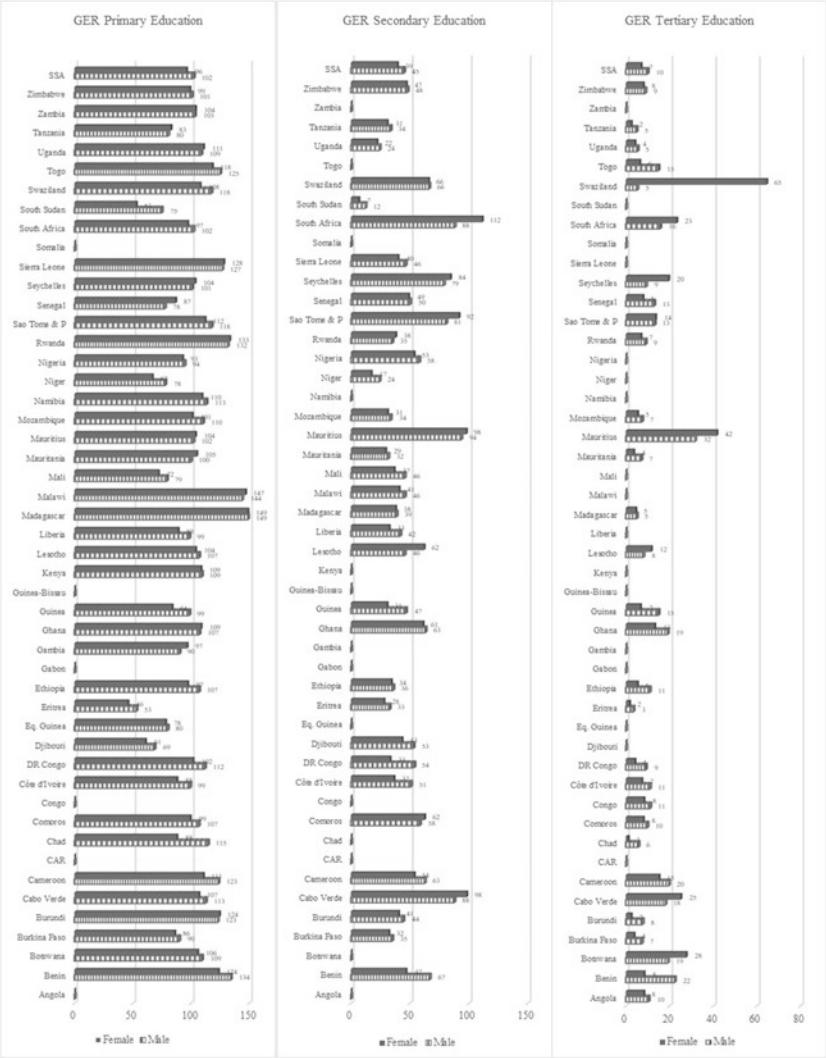

Fig. 9.1 Gross Enrolment Ratio by gender and level of education, 2015. *Source*: Author provided. Data extracted from World Development Indicators and UIS

At secondary levels, the GER for the entire region is 39 per cent for girls and 45 per cent for boys. It is weaker for tertiary education, and equal to 7 per cent for girls and 10 per cent for boys. For countries such as Ghana and Tanzania, which achieved parity in favour of girls in primary level enrolments, disparities in favour of boys appear from the secondary level, and the gap widens as the education level increases.

3 Challenges

3.1 Economic Factors

3.1.1 Poverty, Household Wealth and Financial Constraints

Gender disparities in education are closely related to poverty. Amid the 12 countries with fewer than 90 girls enrolled in secondary education for every 100 boys, 9 are low-income countries. However, disparity in participation is not exclusively determined by poverty since some poor countries have achieved parity. Despite the positive relationship between Gross Domestic Product (GDP) and GPI in secondary education, the weak correlation does not permit the assertion of a negative relationship between the countries' level of poverty and gender inequality in education (Fig. 9.2).

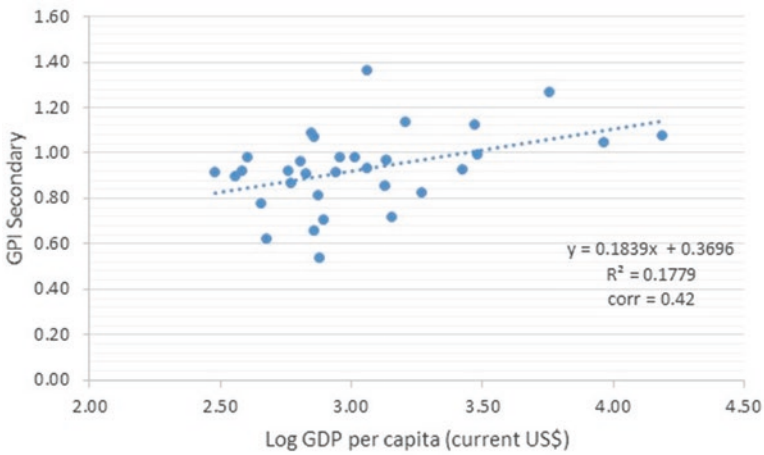

Fig. 9.2 GPI in secondary education and GDP per capita, 2015. *Source*: Author provided. World Development Indicators and UIS

The household economic resource situation is recognised as very important for several dimensions of a child's well-being. Schooling is perceived as a luxury good, which can only be afforded by wealthy households (Koissy-Kpein 2013). The poorest children are four times less likely to go to school and five times less likely to complete primary education than their richest counterparts; girls are less likely than boys to go to school among the poorest children, and the poorest girls still face severe disadvantages in entering and completing primary education (UNESCO 2015). Inequalities are also reinforced in marginalised communities and between rural and urban areas. The combination of poverty, lack of public service provisions, social pressure and gender roles reinforces girls' exclusion. For example, in Nigeria, in 2013, only a quarter of girls in rural areas completed lower secondary education, while nearly half of rural boys did. Furthermore, only 3 per cent of poor rural young women completed lower secondary school in Nigeria in 2013, as compared with 17 per cent of poor rural men (UNESCO 2016).

The impact of the households' poverty goes beyond the availability of money. Some studies reveal the importance of accounting for subjective well-being and shocks (death, unintended pregnancy, flooding). These works showed a greater sensitivity of girls' schooling to subjective well-being, and to the household's adjustments to shocks, compared to boys (Koissy-Kpein 2011; Koissy-Kpein et al. 2012). For instance, it appears that unintended births reduce the probability of school enrolment and increase the probability of school dropouts. The effect is more significant on girls (Koissy-Kpein et al. 2012).

The gap in participation, generally, reflects wider inequalities within society, related to social norms that create powerful incentives, guide behaviours and determine female and male roles, both in the family and in society.

3.1.2 Schooling Costs

African countries have made substantial efforts to eliminate school fees and to guarantee free education at the primary level. This had a positive impact on girls' school enrolments in countries such as Kenya, Malawi, Uganda, Tanzania and Zambia (UNESCO 2015). Despite commitments to guarantee free education at the primary level, a lot of costs associated with sending children to school continue to be charged in the form of textbooks, uniforms, school fees and so on. Aside from these direct costs, the additional costs of schooling can be two to three times higher than

tuition fees and can be higher for girls. For instance, the distance to school and the violence girls could face on the way to school lead to additional transportation fees. Consequently, parents would rather choose to keep their girls at home and send the boys to school instead. The gendered incidence of the costs of schooling can be found in some microeconomics studies, showing that girls' enrolments grow more than that of boys as a result of reduced home–school travel costs (World Bank 2001). Efforts made in primary education do not guarantee continuity in secondary education. High tuition fees and the schools' distance from home, especially in rural areas, contribute to the low rate of participation and the reinforcement of the gender gap.

3.1.3 Child Labour, Including Participation in UCDW

The United Nations International Children's Emergency Fund (UNICEF) records the highest number of child labourers in the world in SSA, with 29 per cent of children aged 5 to 17 years economically active.[3] This definition of economic activity excludes a great deal of unremunerated domestic and community work performed by girls, which is often undervalued and not recorded. In fact, child labour reflects a gender socialisation of children, with girls mainly engaged in Unpaid Care Domestic Work (UCDW) and boys primarily engaged in economic activities (Koissy-Kpein 2012).

Child labour is recognised as detrimental to human capital accumulation. Analysis suggests poor school outcomes for children engaged in any activity, economic or not. They have a lower probability of school participation, a higher probability of school dropouts and grade repetitions (Koissy-Kpein 2013). This negative impact is more harmful for girls than for boys, especially for girls engaged in UCDW (Koissy-Kpein 2012, 2013; Dayıoğlu 2013).

The need to contribute to family income is one of the most common reasons for children's participation in income-generating activities. However, it appears that girls' participation in labour is independent of household wealth. Bhalotra (2000) suggested that boys only take paid work when their contribution to the household income is necessary for the family to survive, while girls take on paid labour even when the household could survive without this additional income. Furthermore, analysis generally shows the possibility of combining school and labour for boys, while the negative effect of participating in income-generating activities is observed for girls (Heady 2000).

The challenge of child labour for girls' education is twofold. It comes from the weight of female contribution to UCDW and from the relatively higher elasticity of the boys' schooling to the household's wealth. Therefore, any action to alleviate the female's workload in the household or the community could have a higher impact than action on the household's wealth. For instance, infrastructure (water, electricity, road) is not gender neutral, and access to good infrastructure favours girls' schooling (Koissy-Kpein 2014).

3.1.4 Expectations about the Returns from Education and Gender Discrimination in the Labour Market

Based on intergenerational models, some economists suggested that parents finance their children's education in order to receive a return on investment in their dotage. These arguments were echoed by development economists, who tried to justify the low level of girls' education. In developing economies, where the pension system is poorly established, investing in offsprings' human capital is an income guarantee for the parents' old age. Therefore, gender inequalities with regard to opportunities, security and participation in the labour market lead to a lower incentive to invest in girls' education, compared to that in boys' education (Koissy-Kpein 2008).

Between 2000 and 2015, female participation in the labour market marginally increased by 1.8 percentage points on average, from 60.95 per cent to 62.76 per cent, while the ratio of female-to-male labour force participation rate significantly advanced from 83.36 per cent to 86.02 per cent. In 2015, females represented 47 per cent of the labour force in SSA, and the ratio of female-to-male labour force participation rate was equivalent to 86 per cent. Compared to men, women tended to be over-represented in self-employment, vulnerable employment and agriculture. Indeed, in 2015, 70 per cent of women versus 56.68 per cent of men were self-employed; 68.47 per cent of women versus 53.81 per cent of men were engaged in vulnerable employment; and 57.09 per cent of women versus 53.28 per cent of men were involved in agriculture.[4] The reverse is true for waged and salaried workers and employment in industries. Additional statistics suggest that the informal sector, which represents 75 per cent of non-agricultural employment in SSA, is the larger source of employment for women than for men, with 84 per cent of non-agricultural women workers informally employed, compared to 63 per cent of men (UNIDO and German Agency for Technical Cooperation 2008).

These findings are supported by several empirical works (Brilleau et al. 2004; Nordman and Roubaud 2005; Fafchamps et al. 2006; Nordman and Wolff 2008). In addition, lower returns of women's education compared to men's were recorded in seven West African capitals (Kuepie et al. 2006). Using firm-level data for 73 developing countries, Islam and Amin (2015) found strong evidence that the likelihood of a female top manager in a firm is positively associated with more favourable education enrolment rates in primary, secondary and tertiary education for girls relative to boys. A strong and positive relationship is observed between the percentage of wage and salaried female workers and Gender Parity Index (GPI) in secondary education (Fig. 9.3), suggesting that the labour market affects the education demand.

In fact, gender disparities in Africa's labour markets are, to a large extent, a result of gender inequality in human capital acquisition, meaning educational attainment, vocational training and years of experience in the labour market. However, these disparities encompass wider inequalities in society, in the community and in the environment in which women live.

3.2 Harmful Cultural Practices and Unequal Gender Norms

Some damaging traditions and practices faced by girls and women in many communities continue to affect girls' education, health and dignity, as well as reinforce the inequalities in educational investments.

Fig. 9.3 GPI in secondary education and women wage and salaried workers, 2015. *Source*: Author provided. Data extracted from UIS.Stat

3.2.1 *Early and Forced Marriage*

UNICEF finds that 12 per cent and 38 per cent of women aged 20 to 24 years in SSA were first married or in union before ages 15 and 18, respectively.[5] Child marriage is an important part of gender-based violence against girls, occurring as a result of gendered behavioural expectations. In societies where the future of women is perceived as hazardous, early marriage of girls ensures a future for them, provides an income for families and helps to lighten their economic burdens. In some societies, the economic value of girls is high, given the importance of bride price. In such cultures, girls' schooling is considered wasteful, and girls are dropouts because the "price" of the wife decreases when she is educated. However, in other regions, especially in Southern Africa, education improves girls' prospects in the marriage market, and parents may expect a higher price for an educated girl (Koissy-Kpein 2008, 2010).

A negative correlation is observed between countries' prevalence of child marriage and the GPI in secondary education (Fig. 9.4). This suggests that countries with high prevalence of child marriage tend to face more disparities in gender education.

Empirical works also revealed the negative impact of early marriage on schooling outcomes. For a set of 18 SSA countries, Koissy-Kpein (2015)

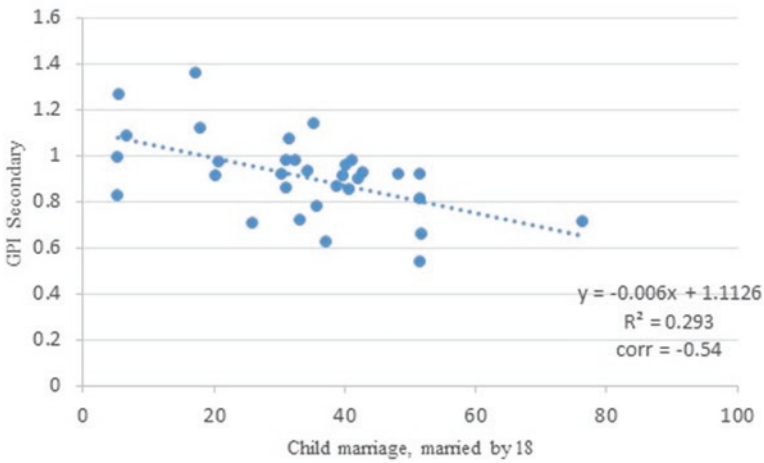

Fig. 9.4 GPI in secondary education (2015) and early marriage. *Source*: Author provided. UIS and UNICEF global databases, 2017

showed that a one-year increase in the women's age at first marriage, at the country level or at the community level, is positively associated with the probability of girls and boys attending school, achieving primary education, and negatively associated with both boys' and girls' probability of school dropout. These impacts appear much larger on girls' schooling than on boys' schooling. For instance, a one-year increase in the women's age at the first marriage in the country is associated with a 32 per cent (20 per cent) increase in girls' (boys) probability of attending school. In Burkina Faso, a one-unit increase in the women's median age at first marriage in the community increases by 45 per cent (36 per cent) the odds of attending school for girls (boys).

Authors generally suggest that ending child marriage would help improve girls' educational attainments, while keeping girls in school is one of the best ways to end child marriage (Koissy-Kpein 2015; Wodon et al. 2017).

3.2.2 FGMs

In SSA, female genital mutilation (FGM) is known to be practised among certain communities in 28 countries: Benin, Burkina Faso, Cameroon, the Central African Republic, Chad, Cote d'Ivoire, Democratic Republic of Congo, Djibouti, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda and Zambia.[6] The region records the highest prevalence rates of FGM. Customs and traditions, control over women's sexuality, religion, social pressure, the demand for excised women in the marriage market are among the reasons given for the practice. FGMs represent serious public health issues, given the consequences on the reproductive health of a part of the population, as well as women's and girls' participation in economic activities.

Statistics hardly show the association between FGMs and GPI. Some countries with significant prevalence rate, such as Burkina Faso (75.8 per cent), Sierra Leone (89.6 per cent) or Mali (91.4 per cent), record GPI in the primary education higher than 90, and GPI in the secondary education higher than 80.[7] However, empirical works revealed a lower probability among excised girls of attending school and of achieving primary level of education, and a higher probability of them dropping out of school compared to non-excised girls (Koissy-Kpein 2015).

Other harmful cultural practices include female's infringement of their freedom of movement and the obligation to be escorted by a male relative;

Leblouh (the practice of force-feeding young girls for marriage) in Mauritania; ritual servitudes in Ghana, Togo and Benin; and breast ironing in Cameroon. There is a need to collect accurate data and provide a mapping of these practices to assess their impacts on girls' educational outcomes (Koissy-Kpein 2015).

3.2.3 Women and Decision-Making

Gender norms that render females unequal in social relationships imply that they are unable to make decisions in the household. Household decision-making is one of the fields in which economic theory has progressed significantly. Developed in the 1980s, collective models of household behaviour indicate that the allocation of resources within the household depends on the member with the highest weight in the decision-making process. These models show how the preferences and bargaining positions of the mothers and the fathers affect schooling decisions of the offspring. Consequently, the schooling of a child will depend on the weight of the parent who prefers the schooling of that child (Koissy-Kpein 2008, 2010, 2015). In that respect, if the mothers have a preference for girls' schooling, the mothers' weight in the decision-making process, and their ability to freely negotiate, facing intimate partner violence, will favour girls' education. Evidence suggests that girls are particularly disadvantaged compared to boys when the mothers have a weak weight in the household decision-making process, and where they face or accept intimate partner violence (Koissy-Kpein 2008, 2010, 2015).

3.3 School and Learning Environment

Once at school, girls could face a hostile and uncomfortable environment, through violence at the hands of adults and peers; teachers' attitudes and pedagogical practices; school curricula and sexism of textbooks resulting from gender-biased societal norms; the lack of appropriate sanitation and hygiene facilities; and so on. Huisman and Smits (2009) noted that parental decisions regarding children's education are found to be influenced by characteristics of available educational facilities, such as the number of teachers, the percentage of female teachers and the distance to school. Attempts to tackle the issues and improve girls' participation in schooling ranged from increasing the number of female teachers to improving the number of single-sex schools.

3.3.1 Single-Sex Schooling

Lee and Lockheed (1990) showed the positive impact of single-sex schooling on girls' learning outcomes in Nigeria. In addition, single-sex schooling appears to have played an important role in promoting the entrance of girls into careers in Science and Technology in Nigeria (Morrell 2000). However, the debate about single-sex schooling versus coeducation remains inconclusive. The effect is certainly linked to society and community characteristics and to gender norms.

3.3.2 Female Teachers

Female teachers are often recognised as a key factor in addressing girls' enrolment and retention challenges. They provide a positive role model for girls, especially in rural areas, and represent a prospect against sexual harassment perpetrated by male teachers and male students. Based on data from 30 countries, Huisman and Smits (2009) showed that the presence of a female teacher mitigates the social and cultural barriers associated with lower schooling of girls. Herz and Sperling (2004) reported that in Cameroon, 27 per cent of girls surveyed had a sexual relationship with a teacher, and 20 per cent of them became pregnant because of those relationships. They recommended more female teachers as an answer to addressing sexual violence in school, as well as teachers' biases and behaviours. The statistics highlighted evidence of a correlation between the number of women teachers and gender parity in secondary education (Fig. 9.5). Accordingly, moving towards a gender balance among teachers could promote gender parity in education.

The percentage of female teachers varied slightly between 2000 and 2015 in SSA. In 2015, around 53.6 per cent of teachers in primary education were women, compared to 42.5 per cent in 2000. Around 30.67 per cent of the teachers in secondary education were women in 2015, compared to 30.55 per cent in 2000. The highest increase was recorded for tertiary education—with 52.26 per cent of female teachers in 2015 versus 27 per cent in 2000.[8]

3.3.3 Water Sanitation and Hygiene

Periods (menstruation) are causing girls' absence from school once a month, and girls are dropping out of school when they begin menstruating. This is reinforced by the lack of basic amenities, especially potable water and toilets. In SSA, with just 29.79 per cent of the population with access to improved sanitation facilities,[9] the availability of water, sanitation

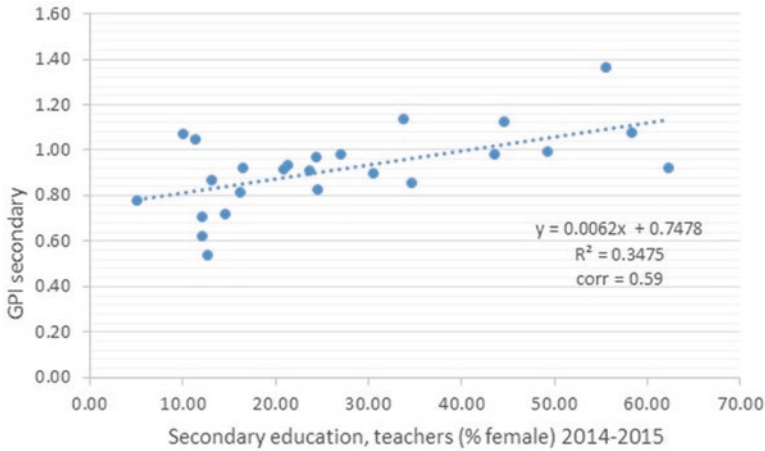

Fig. 9.5 GPI in secondary education (2015) and female secondary teachers. *Source*: Author provided. Data from World Development Indicators, UIS based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys

and hygiene is inexorably a challenge for girls' education. Evidence suggests that girls are more likely to leave schools that lack private latrines, feminine supplies or gender-specific latrines (Herz and Sperling 2004). Agol et al. (2017) showed for Zambia that improved sanitation provision in schools was correlated with high female-to-male enrolment ratios, as well as reduced repetitions and dropout ratios, especially for girls. Furthermore, the statistics highlighted evidence of a correlation between the share of the population with access to improved sanitation facilities and gender parity in secondary education (Fig. 9.6).

3.4 Crises, Armed Conflicts and Outbreak

3.4.1 Crises and Armed Conflicts

In 2013, 39 per cent of socio-political crises and 37 per cent of armed conflicts took place in Africa (Escola de Cultura de Pau 2014). These crises are a threat to achievement of the Sustainable Development Goals, especially the promotion of gender equality. Research reported that females are particularly vulnerable to abduction and sexual violence in conflicts, post-conflict and post-disaster situations. This violence affects, in

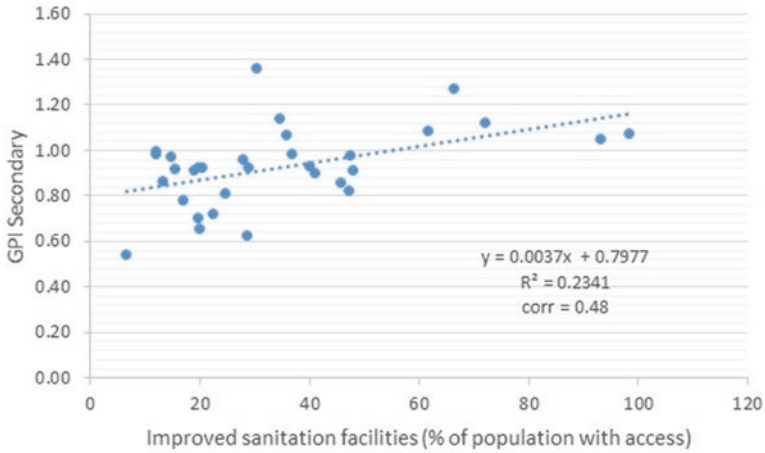

Fig. 9.6 GPI in secondary education and access to sanitation, 2015

turn, their participation in economic activities (International Committee of the Red Cross 2015) and amplifies their gender roles and identities (Bradshaw 2013).

Among the 12 countries with a GPI in secondary education lower than 90 girls per 100 boys, 10 experienced political crises or armed conflicts between 2000 and 2015. In the countries which experienced crises, the girls' GER were very weak in 2015, with the highest ratios recorded for Cameroon and Nigeria (53 per cent) and a low ratio recorded for Niger (17 per cent).

Another example comes from the Boko-Haram insurgency in North Eastern Nigeria, with its negative impact on girls' schooling. It has affected the parents' incentive to send girls to school, and the girls' desire to attend school. It has contributed to the lack of teachers in the region, as well as the learning process, thus reinforcing the weak participations of girls (Joda and Abdulrasheed 2015).

3.4.2 The Effect of Health Shocks

The last Ebola crisis caused economic and social disruption on a massive scale. In Liberia, Sierra Leone and Guinea, the closure of more than 10,000 schools resulted in a lost year of learning plus other challenges.[10] Ebola left girls extremely vulnerable to pregnancy,[11] especially because social protection systems collapsed, and vulnerability to gender-based

violence increased. The United Nations Population Fund (UNFPA) recorded more than 18,000 teenage pregnancies during the Ebola crisis in Sierra Leone. These girls—either stigmatised or prohibited from attending school—were forced to drop out.[12] An initiative supported by the Ministry of Education, Science and Technology, UNICEF, the UNFPA and other development partners provided alternative education for pregnant and newly mothering girls and these pregnant teenagers at community learning centres. More than 11,114 girls have returned to school as a result of the initiative. However, these young mothers require considerable support to ensure their continued education and pursuit of achievements.

Some researchers showed that health shocks disproportionately affect girls' education. Archibong and Annan (2018) noted that higher meningitis exposure during the 1986 meningitis epidemic in Niger reduced years of education for schoolgoing girls at the time of the epidemic, while no significant effects appeared on boys' education.

Additionally, the HIV/AIDS pandemic adversely affected girls and exacerbated gender inequalities. This is partly due to girls' greater risk of infection, but also due to their normatively defined role as caregivers for infected family members. SSA alone accounted for 69.59 per cent of all people living with HIV in 2016. In 2016, there were 19.4 million people living with HIV in Eastern and Southern Africa and 6.1 million people living with HIV in Western and Central Africa. Women and girls account for 59 per cent and 56 per cent of the total number of people living with HIV in Eastern and Southern Africa, and in Western and Central Africa, respectively.[13]

4 From Commitments to Actions for Education for All

4.1 Financing for Education for All

SSA governments have placed a high priority on achieving education for all. From one side, the countries are signatories to major international treaties, promoting gender equality and education for all. From another side, governments have made substantive efforts with regard to education spending. When education spending as a percentage of total government expenditure is considered, SSA spent more than other regions across the world, such as North America, Europe and Central Asia.[14] Between 2000 and 2013, government spending on education as a percentage of total

expenditure grew from 15.26 per cent to 16.62 per cent, and the share of government expenditure on education increased from 3.17 per cent to 4.50 per cent of GDP.

Analysis of the relationship between government expenditure and the level of girls' schooling is not conclusive. For example, the data available for SSA reveal that the correlation between GER in primary education and government expenditure on education is weak (0.078). For secondary education, the correlation is positive (0.34). The correlation between government expenditure in education (per cent of government expenditures) and GPI is 0.32 for primary education and 0.41 for secondary education.

Despite an increase in spending on education since 2000, UNESCO estimated that the governments of low- and lower-middle-income countries would face an annual financing gap of US$39 billion in the period 2015–2030 (UNESCO 2015). Notwithstanding all this, international aid to education has been stagnant since 2010, and aid that is received does not necessarily flow to those most in need. The Global Partnership for Education (GPE) has played an important role in the process of financing education. This multi-stakeholder partnership and funding platform, established in 2002, is seeking an inclusive, equitable quality education for all by 2030. Although aid to education has stagnated since 2010, the GPE disbursements increased by 14 per cent on average from 2010 to 2015 (ibid.). The organisation is the second largest multilateral donor to basic and secondary education after the World Bank. Recently, the GPE has confirmed significant developments in commitments from partner countries and donors. It intends to reach US$2 billion per year by 2020 to deliver better learning and equity outcomes for some 870 million children and adolescents in 89 countries.[15]

4.2 The Development of Community Schools

Community schools have become an important part of the educational landscape in SSA. They solve the challenge of distance to schools, the associated fees in poor remote areas and motivate parents to send their daughters to school. A great number of these schools are supported by international and local donors and non-governmental organisations. The system consists of community-based management of schools, located within the communities. The schools are either part of the formal educational system or feeder schools that prepare students to transfer into the public system after completing the programme (Miller-Grandvaux and

Yoder 2002). Evidence suggests a growth in access, enrolment and retention rate, especially for girls, leading to a significant increase in the total rates in some countries. For example, ten per cent of enrolled children in Mali and Togo are in community schools (Marchand 2000). In Uganda, girls represented half of the students from community schools who transferred to public schools (Wrightson 2001).

4.3 Regional Advocacy and Lobbying for Gender Equality

The Forum for African Women Educationalists (FAWE) has been active in advocating and lobbying in favour of gender equality and girls' education in Africa. Its goal is to increase access, improve retention and enhance the quality of education for girls in Africa. For instance, FAWE advocated for the readmission of girls who became pregnant while in school in SSA (UNICEF 2004).

This strong Pan-African network also works with national governments and policymakers to ensure gender-sensitive education policies are developed and executed. Implemented since 2005 in 13 SSA countries, the FAWE Gender-Responsive Pedagogy model trains teachers to be more gender aware, and equips them to understand and address the specific learning needs of both genders. Over 6600 teachers have benefited from this training.[16] Furthermore, FAWE developed the gender-responsive school in order to make schools and surrounding environments more gender responsible.[17]

5 Conclusion

This chapter has pulled together a selection of relevant research reports to explore how various factors affect the demand for girls' education in sub-Saharan Africa. Major progress has been made with regard to achieving universal primary education since the implementation of the Millennium Development Goals. However, there is still some way to go. Gender equality in education is demanding and far from being achieved. In fact, gender equality is not a purely quantitative goal. It goes beyond parity in education and implies that girls and boys are offered equal opportunities and treatment. Everyday gender-related discriminatory norms, stereotypes and practices affect girls' educational trails, leading to inequality in educational investment. Hence, to improve girls' education, transformative actions should be thought of, in accordance with the girls' direct

environment. This requirement is embedded in the more generalist Sustainable Development Goal 5, aiming "*to achieve gender equality and empower all women and girls*". Sustainable Development Goal 5 also addresses the deeper causes of gender inequalities, such as violence against women and girls, harmful cultural practices, unpaid care and domestic work, female ownership and access to economic resources and so on. This standalone Sustainable Development Goal 5 is an undeniable prerequisite for the achievement of the Sustainable Development Goal 4, seeking an inclusive and equitable quality education as well as lifelong learning opportunities for all.

Notes

1. http://uis.unesco.org/apps/visualisations/no-girl-left-behind.
2. http://uis.unesco.org/en/topic/education-africa.
3. UNICEF global databases, 2017, based on DHS, MICS and other nationally representative surveys.
4. Data source: World Bank Group. Gender data portal.
5. UNICEF global databases, 2017, based on Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and other nationally representative surveys.
6. https://www.unfpa.org/resources/female-genital-mutilation-fgm-frequently-asked-questions#where_practiced.
7. Data on the percentage of women who experienced FGMs provided by ICF International, 2015. The DHS Program STAT compiler. Funded by USAID. https://www.statcompiler.com.
8. IUS statistics.
9. World Bank database.
10. http://blogs.worldbank.org/education/impact-ebola-education-sierra-leone.
11. http://www.unfpa.org/news/one-year-after-ebolas-end-sierra-leones-midwives-help-mend-health-system?page=8#.
12. http://www.unfpa.org/news/one-year-after-ebolas-end-sierra-leones-midwives-help-mend-health-system?page=8#.
13. http://www.unaids.org/en/resources/fact-sheet.
14. The government expenditure on education, total (per cent of government expenditure) is equivalent to 13.96 per cent, 12.09 per cent and 13.29 per cent for South Asia, Europe and Central Asia, North America, respectively, according to the data from the World Development Indicators.
15. https://gemreportunesco.wordpress.com/2018/02/01/what-is-at-stake-at-the-gpe-financing-conference/.

16. www.fawe.org.
17. Other existing tools: UNESCO resource pack for gender-responsible STEM Education; United Nations Girls' Education Initiative's background paper on the evidence around gender-responsive teaching practices.

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CHAPTER 10

Gender Disparities in Access to and Use of ICT in Senegal

Gaye Daffé and Fatoumata L. Diallo

1 Introduction

In sub-Saharan Africa, Senegal is a pioneer in the field of information and communications technologies (ICTs).[1] The youthfulness and dynamism of the population are among the factors that have made Senegal a trailblazer in this field. In addition, there is the existence of a relatively developed telecommunications infrastructure and a vast network of commercial and financial exchanges structured around an emigrant population present on all the inhabited continents. It is, therefore, not surprising that Senegal has long relied on the ICT sub-sector as one of the main drivers of growth

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and one of the levers of the poverty reduction strategy. But despite being a pioneer among sub-Saharan African countries in terms of ICT, Senegal is considered to be 'on the wrong side' of the global digital divide. The main constraints of the sub-sector revolve around the lack of a coherent governance framework, the low level of education among the population and relatively high access costs of ICT services and equipment. If these constraints are experienced by all categories of actors in economic and social life, they are even more so for women. This situation is explained by the higher prevalence of illiteracy among women (62.3%, compared to 46.3% among men), lower income as well as certain socio-cultural factors that disadvantage their access to ICT.

In Senegal, however, the role of women in socio-economic development, economic growth and the fight against poverty, in particular, is celebrated in all development policies and programmes. This recognition cannot be explained only by the numerical size of women (50.1% of the general population and 52.0% of the population of working age) but also—and especially—by their strong contribution to the well-being of their families (Sénégal, ANSD, 2014). Nonetheless, this contribution is not reflected in their participation in the labour market, of which they represent just over one-third (34.3%) of the workforce and one-quarter (27.5%) of the employed. At the same time, more than four out of ten inactive people (43.8%) are housewives.

This chapter proposes an assessment of the degree of sensitivity of access and use of ICTs to gender relations in Senegal. From this perspective, the results can help to identify the progress to be made in the area of gender equality and female empowerment (Goal 5 of the 2030 Agenda for Sustainable Development). Based on data from a survey conducted by the Consortium for Economic and Social Research (CRES) in 2010, the study focuses on the nature and extent of gender disparities in terms of mastery of a certain number of ICT equipment (TV, computer, Internet, landline and mobile). After an overview of the state of the literature on the different domains in question (Sect. 2), the chapter will examine how these inequalities are expressed within Senegalese households (Sect. 3), and subsequently, in terms of effective use of technologies (Sect. 4).

2 Gender Disparities in ICT Access: The Review of the Main Areas of Convergence

Women have become, in both developed and developing countries, major actors in economic and social life. As Sen (2000) pointed out, women have shifted from passive spectators waiting to be taken care of, to being

active economic agents who can find jobs outside the home, earning their own income to enjoy the right to property, to access information and to participate in decision-making inside and outside the family circle. Women's increasing propensity to participate in economic life, however, is hampered both by their low human capital capacities and by the discrimination they face in accessing some of the tools such as ICT, which might enhance their economic participation. That said, the review of the literature on gender relations applied to ICT access and use reveals three main areas of convergence of research so far: the economic and social usability of ICTs for women, gender relations in the accessibility of ICTs and the definition of ICT gender disparity indicators.

2.1 The Economic and Social Benefits of Women's Access to ICTs

The Fourth World Conference on Women in Beijing in 1995 emerged as one of the highlights of the realisation that new communication and information technologies could be a powerful tool for women to share information, develop their human capital and strengthen their autonomy. But nobody could believe that access to ICTs alone would be enough to lift women to the same level as men in economic and social life, while other gender disparities in income, employment, housing and education remained. However, it was known that the ability to receive and produce information autonomously and according to one's own needs and interests, through ICT access, is a prerequisite for greater participation in wealth creation, trade, income distribution and public life.

One of the advantages of ICTs is to convey and multiply the opportunities for use, take over and benefit from an expanding range of products and services. Rathgeber (2002) argues that if ICTs are well designed, it is the implicit assumption that ICTs will benefit everyone, while the evidence shows, rather, that they have differentiated impacts on women and men. In its report on 'Work in the New Economy', the Organisation International du Travail (OIT) (2001) argues that despite the ICT job-creating potential for both sexes, the digital divide between men and women is steadily widening, as women often find themselves relegated to low-skilled and lower-paid jobs. These inequalities tend to duplicate and reinforce existing gender inequalities at all levels.

The use of ICTs offers many opportunities for non-formal education and can have important implications for the training of women. In distance learning, ICT applications can be used as home-based courses for women who are limited in their movements and have difficulty accessing

public spaces. In the field of health, ICTs can also play a crucial role. The use of networked information exchange systems and offline computing tools such as removable media, databases and mobile ICT devices is an important means of strengthening public health services. It allows for dissemination of health education information and programmes as well as bringing together health service communities through a systematic and regular exchange of information. It also offers simple solutions for the collection and analysis of information on diseases and health behaviours to be observed locally. It was pointed out that ICTs could also advance gender equality by giving a boost to women empowerment in economic, political and social life.

2.2 Gender Relations and Access to ICT

It has long been recognised that new ICTs have ushered in a new era for all countries and economies. Their dissemination has raised great hopes for the ability of developing countries to accelerate growth, fight poverty and bridge their development gap. But as Gurumurthy (2006) argues, it soon became clear that ICTs are not just technical tools that need to be tamed to make the most out of them. Experience shows that they are not neutral from the point of view of social conditions and the origins of individuals or of their sex. Access to their benefits is, in part, determined by existing power and gender relations within society.

It is with this in mind that researchers, mostly from feminist movements and civil society, have expressed interest in the relationship between gender, ICTs and development, with a focus on training, employment and women's decision-making power (Hafkin and Taggart 2001). Primo (2003) has developed a detailed inventory of the financial, technical and socio-cultural barriers women face in accessing ICT as a means of information and empowerment. While some of these barriers depend on factors common to men and women, there are many other factors that further limit women's access, including the high illiteracy rate of women, their exclusion from scientific and technological studies because of supposed inaptitude to this kind of training. Recognising that access to science and technology is one of the areas in which women face the greatest discrimination, a United Nations Educational, Scientific and Cultural Organization (UNESCO) study (2003) argues that the digital gender divide is reinforced by the low participation of women in formal economic activities, their generally lower level of education, distance from decision-makers, as

well as factors related to social and cultural life. Gurumurthy (2006) argues that the concentration of ICT infrastructure and equipment in urban areas with fewer women than in rural areas is another type of constraint. Similarly, the reputation of public spaces for providing ICT services as spaces reserved for men makes women and girls reluctant to go there to access the Internet. Another cultural aspect of ICT is sexist attitudes towards women who study or use information technology.

Poverty, illiteracy, lack of computer literacy and the language barrier are factors that prevent men and women from accessing ICT infrastructure. But the fact that society and culture restrict women's access to education makes these problems even more serious for women.

As many research studies on gender have pointed out, access to science and technology is certainly one of the areas in which women are most discriminated against (Gurumurthy 2006). This exclusion is reinforced by the generally lower level of education, income and decision-making power of women compared to men.

A UNESCO study (2003) on the status of research on gender and ICT confirms the existence of the digital gender divide. That digital gender divide is reinforced by the low participation of women in the production and distribution of merchant exchange, the low level of education and training of women and by constraints related to their triple role in social life. ICTs create new types of economic activities and jobs. But this potential can only be harnessed if the specific needs of women in terms of access and content are taken into account by policies, as well as the institutional resources and regulatory frameworks for ICT. However, the experience of many countries shows that public policies on ICT lose sight of the needs, demands and aspirations of women (Marcelle 2000). Many aspects of ICT policies have gender implications in terms of technology choices, uses or universal access.

2.3 Indicators for Measuring Gender Disparities in ICT

To monitor and evaluate the impact of ICTs on economic and social development and to effectively address gender inequalities in this area, there is a need for statistics and indicators to identify and assess women's participation in the access, production and use of ICTs. The last decade witnessed a proliferation of studies aimed at differentially measuring the performance of women in various fields, including ICT. As such, the last decade witnessed a proliferation of approaches aimed at differentially

measuring the performance of women in different aspects of ICT use, at assessing progress and efforts to achieve equal access for both sexes. Advocating for the definition of gender-sensitive indicators, Hafkin (2003) calls for building them from the beginning of data collection to capture the differences between men and women. He, however, stressed that a single indicator would not suffice. It is within this framework that the Association for Progressive Communications (APC) developed a 'gender assessment methodology for ICT-related initiatives' encompassing all kinds of gender disparities. This methodology is based on the idea that an analysis of gender disparities in the ICT field cannot be limited to inequalities in terms of accessibility. Indicators for measuring access need to be complemented by qualitative indicators to answer the following questions: How do women use the information accessible to them? How do ICTs help women to promote collective action and advocacy for change? Who makes the decisions on access to technologies? Who creates the content used and in which language?

Some studies have attempted to construct indicators to assess, both quantitatively and qualitatively, the disparities between men and women in ICT. Other works have focused on developing indicators that are relevant to the African context. A study carried out by the Réseau Genre et TIC (2005), entitled 'The digital gender divide in Francophone Africa: A disturbing reality', can be considered as part of this type of study. Going beyond the Gender Human Development Index (GDI) developed by Sen and Anand (1995) for the United Nations Development Programme, the methodology consisted of constructing an index called 'Synthetic Index of the Digital Gender Divide' (SIDGD) based on four components: control, content, capabilities and connectivity.

The results showed that, in the six countries covered (Benin, Burkina Faso, Cameroon, Mali, Mauritania and Senegal), women are, on average, one-third less likely than men to benefit from the advantages of ICTs. But the SIDGD masks varying degrees of disparity across the four areas studied. It is in the area of control that gender disparities are most marked, with women's level of control being three times lower than men's. It is followed by content and capacity, where gender disparity indices show women lagging behind by 38% and 30%, respectively. In terms of connectivity, however, the gap between women and men is real, but less, at 10%. However, the study showed that gender disparities in access to ICTs tend to disappear in the age groups enrolled in secondary education.

The analysis of gender disparities in ICT in Senegal will be conducted in two stages. We shall first assess the gender inequalities in access to ICT and then analyse the gender disparities in the uses of ICT.

3 Gender Disparities in ICT Access

As we have just seen, the use of ICT has several dimensions, the first of which is availability and control of equipment. Access means the ability to have the technology, exploit the content and use the information it provides. In this section, we analyse gender disparities in access to ICTs by placing ourselves successively at two different levels. For the first level, it will be necessary to assess the availability of ICT within households, taking into account the sex of the head of the household. The analysis will then focus on the ability of household members to use available ICT.

3.1 Household's Access to ICT

The analysis of household access to ICT aims to capture the disparities between male-headed and female-headed households in terms of holding a number of tools. It focuses on availability of landline phone, computer, TV and video player. The choice of these technologies is based on the idea that they are for collective use, and as such, accessible *a priori* to all members of the household. Table 10.1 presents the main results of the survey conducted by the Consortium for Economic and Social Research (CRES) in 2010 by disaggregating households by gender of head of household and area of residence.

Data review shows that for all technologies considered, except video players, access is broadly the same in both male-headed and female-headed households. It is even noted that in urban areas (Dakar and other cities), the latter have better access to the ICTs than the former. In contrast, a look at data for rural areas shows the opposite picture. Here, no female-headed household has a landline, computer or Internet connection, even though data reveal that 27% of rural male-headed households are equipped with a television set and 10% with a computer.

The quasi-equality observed in urban households' access to ICTs can be misleading, as in many households headed by women, the decision-making power over equipment (television set and computer) and subscription to an ICT service (telephone and Internet) often relies on the absent spouse or other household members, such as children. As for the low

Table 10.1 Households with ICT access by gender of head of household and area of residence (in %)

Equipment	*Gender*	*Zone*			*Total*
		Dakar (%)	*Other cities (%)*	*Rural areas (%)*	
Internet connection	*Total*	*3.0*	*2.6*	*0.2*	*5.8*
	Male	2.8	2.8	0.3	5.8
	Female	3.7	1.9	0.0	5.6
Phone	*Total*	*6.2*	*7.2*	*0.8*	*14.1*
	Male	6.3	6.9	1.0	14.2
	Female	5.6	8.3	0.0	13.9
TV	*Total*	*24.7*	*31.5*	*18.9*	*75.1*
	Male	25.1	29.7	20.3	75.1
	Female	23.1	38.0	13.9	75.0
Computer	*Total*	*2.8*	*4.0*	*0.6*	*7.4*
	Male	2.5	4.1	0.8	7.4
	Female	3.7	3.7	0.0	7.4
Video	*Total*	*4.0*	*3.4*	*1.6*	*9.0*
	Male	4.3	3.6	2.0	9.9
	Female	2.8	2.8	0.0	5.6

Source: Authors using ICT Survey, Growth and Poverty in Households conducted by CRES

endowment in video players of households headed by women, it is probably explained by the lack of interest in the contents of this technology for women.

The existence of a television set, a computer or a landline telephone in a household does not guarantee equal access to these technologies by each of its members. For this reason, the access indicator measured by the level of ICT household equipment must be supplemented by an indicator related to the capacity of actual use of technologies in the household. Examining the status of Internet and landline users in households can be a measure of this capacity. However, analysis of the data shows that household heads and children are the main users of the Internet connection in households headed by men (57% and 33%, respectively).

On the other hand, female heads of households are completely excluded from using this technology even when it is available in the household. These differences can be explained by the fact that in female-headed households, women do not always have the decision-making power over the acquisition of ICT equipment. In addition, communication by telephone or Internet is often only possible in urban areas. Since most

female-headed households live in rural areas, this asymmetry in the diffusion of information technology tends to severely limit access in female-headed households.

Examining data on the status of landline users in households gives a very different picture. Indeed, in households headed by women, household heads are all landline users, while only 87.5% of male heads of households are landline users. It is striking to note that it is in households headed by women that children are proportionally the most likely to access both the Internet connection and the landline.

Overall, the analysis of gender disparities in household access to ICTs by sex of head of household has limitations that make it virtually impossible to understand the inequalities in the ability of each household member to use the ICTs. Since the use of ICT is a generally private and isolated phenomenon, only an individual approach makes it possible to take full measure of the gender disparities that characterise their control and actual use.

3.2 Gender Disparities in ICT Endowment

As we have seen, for every kind of ICT, the physical availability of infrastructure and equipment is the prerequisite for access to applications and services. Once this availability is assured, access is translated by the possibility given to potential users to use them from their personal means or from private or public spaces. It is about having both the technology at hand and the ability to use it to extract the information sought. Access to ICT, therefore, requires three conditions: the physical presence of technology (computer, telephone, Internet, etc.), a space (home, public, professional) and the right or the faculty to use it (subscription, price of purchase). The gender disparities generated by each of these conditions vary in intensity from one technology to another. As the data show, women's difficulties in accessing the landline are less than those related to computer and Internet access. Similarly, in both households and individuals, the more economically weak and close to rural areas they are—which is more common for women than for men—the less likely they are to access ICTs.

The CRES survey's individual questionnaire focused on household equipment and access to television programmes, computer, Internet and e-mail. The results show that for all technologies considered, men are not only better endowed than women, but they are proportionally more likely

to use the technologies. In particular, it appears that women are half as likely as men to hold a computer (3.5% vs. 8.7%) and to use it (10.0% vs. 20.2%). On the other hand, for the possession of mobile phone and e-mail, the gap between men and women is much smaller. These results seem to imply that the more personal a technology is—like the phone or e-mail—the less marked the gender disparities and *vice versa*. Moreover, a look at the place of access of the computer used reveals that for nearly 70% of women, use of computers takes place in cyber cafés against 55% of men. This higher prevalence of cyber cafés for women may seem paradoxical in light of the findings of studies in many developing countries that have found that there are significant barriers to entry of cyber cafés for women. This paradox can be explained by the fact that men have better access to a personal computer or from their workplace and have, therefore, less reliance on public access computers. For example, men have greater access to a computer at work relative to women: half of men (49.0%) versus one-third (35%) of women.

With regard to accessing television programmes, the results of the survey also indicate that women are relatively more regular viewers than men. This greater viewing tendency can be explained simply by the fact that women are generally more present at home and by their attachment to a certain number of cultural or entertainment programmes. For many women, television is also a means of both information and training that at least partially addresses their educational deficit.

4 ICT Use and Gender Disparities

For both women and men, the use of ICT has two aspects: the control and use of services associated with technology (access to television programmes, a computer, the Internet) and the accessibility aspect of the equipment. These two aspects are analysed through the types and places of use of ICT as well as the obstacles to access.

4.1 Inequalities in ICT Use

Whereas analysis of disparities in ICT equipment aims to measure the differential of women and men in a number of technologies, that of disparities in access through use is more general. This includes both inequalities in the personal capacities of individuals to reap the benefits of using ICT tools. In order to benefit from ICT, access alone is insufficient; knowledge on how to effectively use the technology is a prerequisite.

Although the use of ICT by women is rising strongly, the survey shows that women continue to use them less intensely and for uses that are different from those of men. However, even if there are no marked differences between men and women in the use of some ICTs, it appears that women utilise them more for personal and family needs, while men use them for professional purposes.

Table 10.2 is a presentation of types of usage of e-mail, Internet and mobile phone by both men and women who own these technologies. With regard to e-mail, the data show that with the exception of work and distance education, women are proportionately less numerous than men in all types of use. Particularly striking is the large gap between the proportion of women and men who use e-mail for professional purposes: 13.6% and 39.5%.

Regarding the use of the Internet and mobile phone, analysis of the data shows that it is only for phone calls, conversations, information retrieval and business transactions that gender parity is almost achieved. For all other types of use, the behaviours are divergent. In particular, it appears that very few women use the Internet for entertainment or gaming purposes. On the other hand, there is a higher proportion of women than men who use the Internet for telephone calls. These results show that, overall, there is a similarity in the use of basic ICT functions by men and women, but the use of secondary or marginal ICT functions is marked by significant disparities. The results corroborate the findings of studies in other developing countries that have shown that Internet use by women is generally limited to e-mail services. The reasons for this concentration can be related to the cost of access and the lack of time and technical skills.

To conclude on gender disparities in access to ICT, it appears that while the mobile phone has become a common object, especially in urban areas, the use of a computer and the Internet by women is not a common practice. When they can access the Internet, it is usually outside their home and as part of an office job. But even then, gender inequalities continue to affect the types of uses that can be made of them. For the vast majority of women with access to ICT, the uses are limited to basic functions and services (e-mail services, telephone calls, SMS). These functions and services are usually solicited to meet personal and social communication or advocacy needs. Even though initiatives are developing in this direction, few women are using ICT for economic, commercial, entertainment or educational activities. Limited use of ICTs by women can be explained by the high cost of ICT access and lack of time, technical skills and adequate equipment.

Table 10.2 Types of ICTs use by sex (in %)

	Males	*Females*
E-mail		
Social communication	74.4	59.1
Professional needs	39.5	13.6
Communication	37.2	27.3
Interaction with the local administration	7.0	0.0
Business needs	20.9	18.2
Work/distance training	20.9	22.7
Other	16.3	9.1
Internet		
News	53.3	44.4
Information search	70.0	66.7
Entertainment/games	18.3	8.3
Telephone communication	8.3	27.8
Distance training	6.7	0.0
Social networks	40.0	41.7
Bank transactions	1.8	6.1
Business transactions	5.3	6.1
Administrative procedures	10.0	2.8
Internet TV shows	11.7	5.6
Internet radio broadcasts	8.3	2.8
Personal website	0.0	2.8
Other	13.3	8.3
Mobile phone		
Phone calls	98.9	99.4
SMS	47.1	39.8
Pictures	16.6	8.7
Video clips	10.7	4.3
Diary	16.6	6.8
Time	24.6	20.5
Banking follow-up	2.1	1.2
Games	8.6	5.6
Music	18.2	9.9
Radio	16.0	13.7
Calculator	16.6	14.9

Source: Authors using ICT Survey, Growth and Poverty in Households conducted by CRES

4.2 Barriers to Women's Access to ICTs

In a country such as Senegal where 46.7% of the population is poor, the price of accessing most ICTs is considered to be the biggest barrier to accessing these technologies. To this factor is added women's illiteracy, which prevents them from using the tools that could help lift them out of poverty.

The survey looked at why individuals do not subscribe to a mobile phone plan and the Internet. The results in Table 10.3 show that the majority of both men (57.1%) and women (55.4%) without mobile phones state this is due to the price of the technology. Recall that 25% of women surveyed do not have a mobile phone against 19% of men. As for the reasons for not having access to the Internet, they are mainly related to the lack of computers and technical skills in both men and women. However, for both these reasons, women are more numerous than men. This underlines once again the importance of the level of education when it comes to access to ICTs. In summary, poverty, illiteracy, lack of computer literacy and language barrier are factors that, in general, limit women's ability to use ICT equipment and services even when they are available in households.

5 Conclusion

The purpose of our research was to analyse ICT gender disparities in Senegal through survey data. A critical research objective was to assess the importance of gender relations that determine access to ICTs and their uses. The analysis sought to understand if the influence of gender relations on ICT access and use places women at a disadvantage in relation to men. While not all the results of the analysis show women at a disadvantage, most of them attest to the persistence of gender disparities in access to ICTs. A brief recap is provided herein.

Table 10.3 Barriers to access to ICTs by sex (in %)

	Males	*Females*
Mobile phone (%)		
Lack of resources	57.1	55.4
Lack of network coverage	2.0	0.0
Lack of electricity at home	8.2	7.1
Other (s) to be specified	28.6	33.9
Reasons for no Internet access by gender		
No access to a computer	31.6	42.1
Lack of skills	29.5	44.7
Lack of motivation	5.3	2.6
Lack of equipment providing internet	20.0	10.5
High cost of access	6.3	6.6
Other	11.6	5.3

Source: Authors using ICT Survey, Growth and Poverty of Households conducted by CRES

First, it has emerged that even in cases where female-headed households are in a position of equality with those headed by men in terms of ICT endowments, gender disparities are expressed in terms of control (ownership), skills (for use) and content (expected services). The combination of these factors means that the male household heads are the main users of the Internet connection in their households, while female heads of households are excluded for the benefit of children and other household members. The opposite is true for the use of landlines—for which female heads of household appear to be the main users.

Second, analysis showed that gender disparities in access to technology are less pronounced for personal-use items and items requiring less technical expertise. In this sense, in the analysis of gender disparities in access, the determining factors are the availability of basic infrastructure and the cost of access to technology. For the analysis of gender disparities in use, however, we must distinguish two types of ICT: those whose use is exclusively personal (mobile phone, Internet, e-mail account) and those for collective use (computer, fixed telephone). For the analysis of gender disparities in access, the decisive criterion is control.

Third, the analysis showed that while there is a similarity in the use of basic e-mail, Internet and mobile phone functions by both sexes, there are marked differences in secondary functions. In perfect agreement with the results of studies in many other developing countries, women's use of the Internet is generally limited to e-mail services.

These results show that while the empowerment of Senegalese women has made significant progress as a result of the diffusion and generalisation of certain technologies such as the mobile phone, major steps still need to be taken for gender equality in terms of achieving accessibility and mastery of many other ICTs.

Note

1. See Daffé and Dansokho (2002), 'On the genesis and development of ICTs in Senegal'.

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PART V

Labour Market Participation and Unpaid Care Work

CHAPTER 11

Gender Gaps in Employment and Wages in Sub-Saharan Africa: A Review

Miracle Ntuli and Prudence Kwenda

1 Introduction

The fact that, on average, the labour market position of women is worse than that of men is pervasive nearly across the world (World Bank 2012). This has provoked policy responses at national, regional and international levels because empowering women has increasingly become seen as invaluable for economic development (Wekwete 2013). At the global level, the United Nations' Millennium Development Goal 3 and Sustainable

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Development Goal (SDG) 5 have both echoed this argument. This stance is in part reactive to poverty which has in many instances been shown to have a feminine face, and household well-being which is gradually becoming more reliant on women's labour income. Notwithstanding advancement in counterstrategies for job market gender divides, the phenomenon stubbornly persists in both the world's developed and developing regions (Blau and Kahn 2016; Blundell and MaCurdy 1999). Located at the heart of this predicament are sub-Saharan African countries that already suffer from low income and poor human development (UNDP 2015). Unequivocally, this raises a need to critically review studies of gender gaps in the region's labour markets for redressal strategies. Sub-Saharan Africa (SSA) has 46 countries in five sub-regions: Northern, Eastern, Central, Western and Southern Africa. This chapter provides a review of existing literature on gender gaps in wages and employment in the region. It consolidates previous studies and identifies strengths and weaknesses as well as research gaps to guide future studies. While providing a comprehensive review of literature for all countries in SSA would be ideal, data limitations make this impractical. Therefore, the review relies on a sample of countries that spans all sub-regions.[1]

Since the 1960s, labour and development economists have studied the role of women in economic development (Weichselbaumer and Winter-Ebmer 2005; Boserup 1970). Historically, specialisation occurred in household time allocation, with women's specialty as unpaid household activities and men's as paid activities outside the household (Becker 1991). Because of social developments over time—more educated women, birth control, fertility decline, household appliances and a change in social norms—the value of women's time in the household has been eroded, paving the way for them to allocate some time to paid activities (Jacobsen et al. 2015; Mincer 1985). Consequently, the literature has extensively explored the topic of labour force participation (LFP). An associated empirical regularity has been the convergence in men and women's LFP over time (Jacobsen et al. 2015). Because LFP differs from employment, studies have progressed to investigate gender gaps in employment, which directly links to income for survival. However, this theme has faced empirical irregularities across countries, which shows the need for country-specific studies (Kunze 2017). Literature on employment has also been intricately linked to that on gender wage gaps, in which results are also mixed across studies (Kunze 2017; Fafchamps et al. 2009; Blau and Kahn 2016; Altonji and Blank 1999). These literature themes inform the overview of gender gaps in LFP, employment and sector of employment in SSA presented here, followed by a more detailed discussion of gender

gaps in employment and wages. In brief, the literature survey shows that in SSA, socially constructed gender differentials in time use, family responsibilities and property rights, women's relatively inferior human capital endowments, labour market discrimination, and occupational and sectoral sorting tend to play a key role in perpetuating women's inferior labour market position relative to men.

2 An Overview of Gender Gaps in LFP and Employment in SSA

Figure 11.1 presents gender gaps in LFP rates by gender and region for the period 1990–2017 based on ILOSTAT data. For SSA as a whole, men's LFP rates hovered around 78% (women's 62%) over the period.

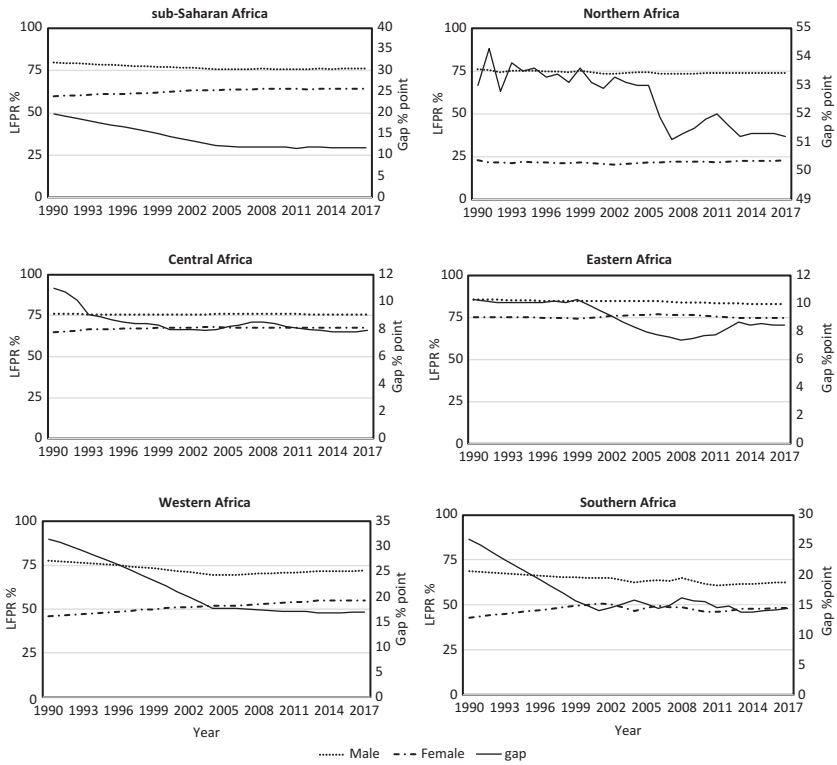

Fig. 11.1 Labour force participation rates by gender and region

However, men's and women's LFP rates have converged slightly over time; initially, the gap was about 20 percentage points and decreased to 12 percentage points. This type of gender gap also persists across the sub-regions, albeit with varying magnitudes. Northern Africa (NA) has the lowest female LFP rates, lingering around 25% compared to about 75% for men; the gender gap declined non-monotonically from about 54 to 51 percentage points. At this size, the NA gender gap outweighs that of other sub-regions. This pattern differs from that of Central Africa (CA) where the gap declined from 11 to 9 percentage points in the early 1990s and then became flat. For Eastern Africa (EA), the gap only declined between 1999 and 2011. Remarkably, EA has higher LFP rates than SSA as a whole, while the reverse is the case for Southern Africa (SA). Western Africa (WA) and SA witnessed relatively large decreases in the gap (about 15 and 10 percentage points, respectively) than other regions: a sharp decline from the 1990s to the early 2000s, becoming somewhat flat afterwards. Regardless of peculiarities in the magnitude of the gendered LFP rate in the sub-regions, the temporal evolution shows a trend, albeit slow, towards closing the gender gap in LFP rates in SSA.

ILOSTAT data for the period 1991–2015 shows that men's employment rates are relatively higher than women's in SSA and its sub-regions. Although slightly larger than that for LFP, the gender employment gap declined by a smaller magnitude over the period: about eight percentage points. The situation somewhat differs for NA, CA and EA, where the gender gaps were nearly flat across the given period at about 50, 10 and 7 percentage points, respectively. At the same time, gaps for WA and SA declined by about 13 and 5 percentage points. Strides made in SA and WA appear to have driven the slight decline in SSA's gender employment gap. Nonetheless, that three of the five SSA sub-regions registered sub-optimal progress towards reducing the gender employment gap warrants an in-depth analysis of the gap's sources. This is particularly important, considering that women in SSA disproportionately work in the informal sector, which is inundated with indecent work (i.e. work without fair income, workplace security, personal development opportunities and social protection) compared with the formal sector International Labour Organisation (ILO).

Figure 11.2 shows gender gaps in employment by sector and region for the period 1991–2017 using ILOSTAT (2017) data. Sectors considered are agriculture; manufacturing; construction; mining and quarrying (mining); electricity, gas and water supply; trade, transportation, accommodation and food, and business and administrative services (trade); and public

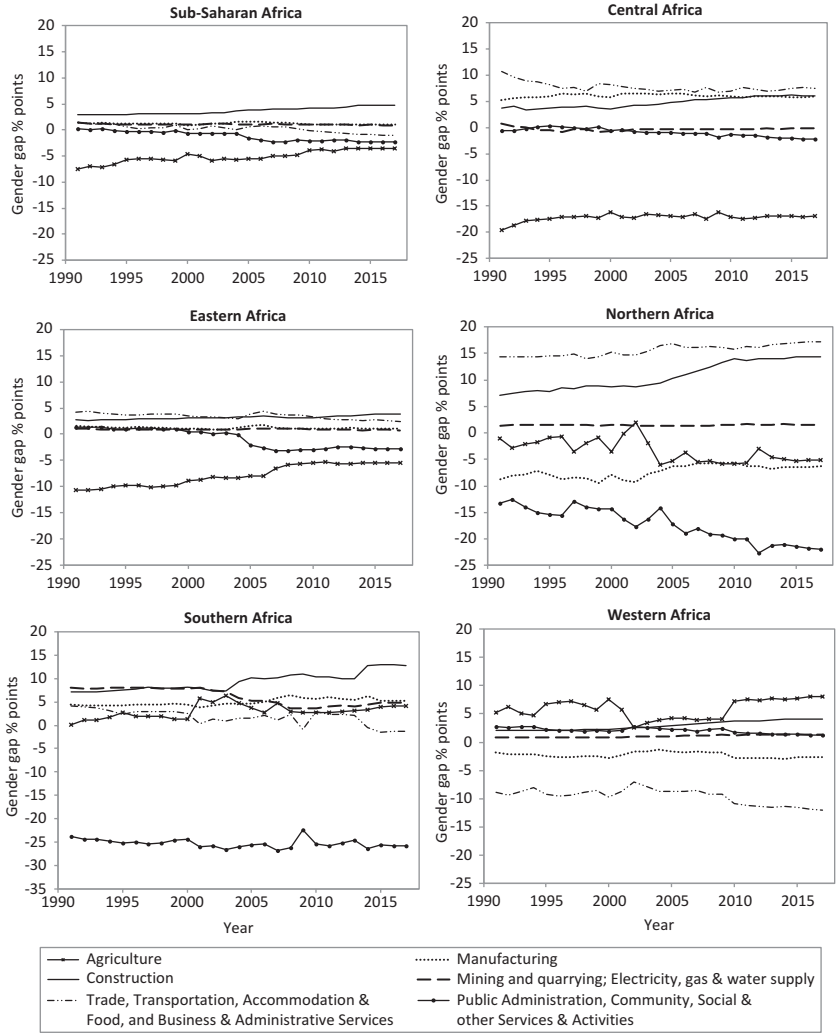

Fig. 11.2 Gender gaps in employment by sector and region

administration, community, social and other services and activities (public administration). These sectoral labour demand gaps show the difference between the percentage of men employed in a sector minus the corresponding percentage of women. On average, SSA's agriculture sector

demands a larger proportion of the female workforce than men (7.5 percentage points more in 1991, which declined to 3.5 percentage points in 2017), followed by public administration (2.2 percentage points more females in 2017). Trade also became more female-orientated as of 2010. Mining, manufacturing and construction are male-biased, with a temporal increase in the construction sector male advantage. This average picture shows that, in SSA, women are more in demand in the low-paid agriculture sector, while men are in higher demand in relatively better-paying sectors, such as mining and manufacturing. This picture is consistent with employment patterns in the sub-regions, although with slight peculiarities. Sectoral cases in which the SSA-level gender employment gaps are reversed include mining in CA; manufacturing in NA; trade, manufacturing and public administration in WA; and agriculture in WA and SA. Hereafter, gender gaps in employment and wages are discussed in detail.

3 Gender Gaps in Employment in SSA

In many SSA countries, women tend to operate at the margins of the labour market and are more likely to participate in unpaid activities not recognised in national accounts. Most working women outnumber men as own-account/self-employed workers in the informal sector, as small-acreage farmers, and as service workers and caregivers (Mbratana and Fotie 2017; Comblon et al. 2017; Wekwete 2013; Castel et al. 2010; van Klaveren et al. 2009; Kabubo-Mariara 2003; Suda 2002). Relatively few women are employed in the formal sector, where they occupy more low-status, non-managerial and non-contractual positions than men (Wekwete 2013; Kolev and Robles 2010; Brixiova and Kangoye 2016). Nonetheless, extant SSA literature on sources of this difference is limited. The literature has mainly been descriptive regarding where men and women are situated in the job market (Comblon et al. 2017; Mbratana and Andree 2017; Kolev and Robles 2010; Dolan and Sutherland 2002). Consequently, knowledge is scarce about the reasons behind the observed gender allocation across jobs and sectors.

Factors such as women's relatively low educational attainment, age structure, double burden of paid work and family responsibilities, geographic location, lack of rights to land and asset ownership, and low access to formal credit have been put forward as propagators of the gender gap (Comblon et al. 2017; Nwaka et al. 2016; Mufune 2013; Castel et al. 2010; van Klaveren et al. 2009; Alene et al. 2008; Kabubo-Mariara 2003).

Some African cultural practices such as early marriages and female genital mutilation have also been said to place women at a literacy disadvantage, which automatically qualifies them into unpaid work (Suda 2002). Although informative, the reasons these factors propagate gender gaps in employment are not clear for policy purposes. For instance, an in-depth analysis into the effect of education and skills can inform us whether women are in a precarious position because they are less productive and efficient than men or because hiring discrimination exists against women across the education and job spectrums. A decomposition analysis of the gender gaps in employment types correcting for sector choice or a Difference-in-Difference-type analysis of employment patterns of men and women of similar characteristics can be beneficial to this effect. Comprehensive investigation into whether women self-select themselves into female-dominated jobs or are segregated into those jobs is also necessary. If systematic segregation is present, understanding this mechanism is imperative. Experimental analysis into the type and role of social values and cultural practices that shape gendered employment patterns in SSA is also pertinent. It is, however, notable that these suggestions require collection of datasets with variables that go beyond those in currently published labour force surveys. Next, we discuss gender wage gaps.

4 Estimating Gender Wage Differentials

Several extensions of the standard Mincer (1974) earnings function have been employed in the gender wage gap (GWG) literature. This entails regressing individuals' log hourly wages against their human capital, individual and job-related characteristics and structural variables. To investigate whether women receive lower wages than men, a female dummy is included in a pooled wage regression. This, however, assumes away gender bias in labour market valuation of other characteristics. Oaxaca (1973) and Blinder (1973) (O-B hereafter) propounded the common procedure for estimating the GWG. The O-B method allows for different valuation of men's and women's characteristics by estimating separate regressions by gender. The wage regressions usually must be corrected for the problem of sample selection bias because working men and women are not always representative of the labour force. Heckman (1979)-type sample selection correction models are typically employed for this purpose. Thereafter, the O-B technique partitions the mean GWG into one component explained by gender differences in endowments of labour market characteristics

(explained effect) and another explained by gender differences in returns to these characteristics (unexplained effect). Traditionally, the latter is ascribable to labour market discrimination, gender differences in unobservable traits and other omitted variables. However, studies now hint at factors such as support networks, ambition, leadership and income expectations (Bhorat and Goga 2013). Further, the explained and unexplained components of the GWG can be decomposed to isolate the contribution of each explanatory variable. Remarkably, the literature has extended the O-B approach in numerous ways: see, for instance, Reimers (1983), Cotton (1988), Neumark (1988), Brown et al. (1980) and Oaxaca and Ransom (1994). More recently, the mean-based O-B decomposition has been extended to provide a more detailed decomposition of the GWG across the length of the wage distribution. Procedures used in this case include Machado Mata (2005), Melly (2005) and Firpo et al. (2009) inter alia.

Turning to actual GWG studies, discussion of SA includes Botswana, Swaziland, South Africa and Zambia. In Botswana, Siphambe and Thokweng-Bakwena (2001) used mean-based O-B decomposition and 1995/1996 Labour Force Survey data to investigate the GWG in the country's formal labour market. The study found relatively less discrimination in the public sector. Of the 0.9-point log wage gap, 67% was explained and 33% left unexplained. In the private sector, labour market discrimination (LMD hereafter) against women was a major factor in explaining the differences in earnings (66% of the GWG). Thus, for the public sector, gender differences in human capital and other characteristics explained most of the gap, while discrimination was more important in the private sector. In the public sector, women occupied traditionally female jobs, which are presumably less rewarding than men's; self-selection or occupational segregation could have been at play.

For Zambia, Nielsen (2000) applied an extension of the O-B decomposition to analyse gender wage discrimination. The method corrects for the parameter invariance problem inherent in the detailed decomposition of coefficients (unexplained effect). The estimations were based on 1993 Priority Survey 2 data and a sample for economically active adults from urban areas consisting of 2115 women and 4828 men. The study was, however, restricted to human capital variables: education, experience and full-time work. The GWG was 32.4 percentage points in men's favour. Two-thirds of the gap was attributable to discrimination, with the remainder attributable to differences in qualifications. Among education,

experience and full-time work, the key contributor to the explained effect was women's inferior endowment of education. The key predictor variable for the unexplained effect was full-time working women's inferior returns on primary and junior secondary education relative to men's. Thus, the male–female human capital gap drives the GWG in Zambia. Nielsen and Rosholm (2001) made a methodological advancement in the Zambian literature. They applied quantile regression by Koenker and Bassett (1978) to investigate the country's public–private sector wage differential over the period 1991–1996. Pertaining to the GWG, they included only a female dummy interacted with that for the public sector in a pooled quantile regression. The findings associated being female with low wages in the private sector. In 1991–1993, the GWG was relatively large at lower quantiles (sticky floor) but became flat across the distribution in 1996. The GWG was not evident in the public sector. However, the study did not proceed to investigate sources of the GWG in the private sector.

Concerning Swaziland, Brixiova and Kangoye (2016) investigated gender disparities in earnings for the wage- and self-employed workers. They carried out trend analysis of GWG using 2007 and 2010 labour force survey data for 15–60-year-old men and women. Gender wage gaps existed for both wage workers and the self-employed; in 2007, women's average wage income was 40% of men's, and their self-employment income was 86% of men's. Descriptive statistics attributed part of the unadjusted gap to gender differences in the sector of activity and education. Women's education achievements were below men's; 17% (19%) of women (men) had high secondary education. The two-percentage-point gap also existed for tertiary education. A mean-based O-B procedure was applied to understand sources of the gap (Brixiova and Kangoye [2016]). In 2007, the GWG was 0.21 points, declining to 0.093 points in 2010. Results showed that 85% of the 2007 GWG was due to differences in coefficients or wage structure while 64.5% of the 2010 GWG was explained. However, the study did not explain the characteristics behind these results.

South Africa has relatively more developed GWG literature than other SA countries. Owing to the country's history of legislated discrimination and broader inequality, interest has increased in investigating whether LMD also explains GWGs in the country. Since the early 1990s, researchers have been updating South African studies of the GWG. Hence, both mean-based and detailed analyses of GWGs are available. Hinks (2002) is one of the first studies to investigate GWGs in South Africa. The study used the 1995 October Household Survey data for 15–65-year-old formal

sector workers and undertook a mean-based O-B type decomposition that identifies underpayment, overpayment and gender productivity gaps by race. The decomposition perceived a pooled sample of men and women as the non-discriminatory competitive wage structure. For all population groups, males tended to be overpaid while females were underpaid relative to the hypothetical group. Overpayments for white, Indian and black men were by 9%, 8% and 4%, respectively, whereas white, Indian, coloured (mixed race) and black women were underpaid by 13%, 16%, 11% and 11%, respectively. Thus, white and Indian women suffered more discrimination than their coloured (mixed race) and black counterparts. The low GWG for Africans and coloureds was deemed to occur because their wages were for mere subsistence. The study also concluded that there were no gender productivity gaps for Indians, while white men had a productivity advantage over white women. Conversely, black and coloured women were more productive than their male counterparts, by 24% and 16%, respectively.

Extending the literature beyond the mean-based O-B decomposition, Ntuli (2009) explored the GWG using quantile regression and the Machado Mata's (2005) decomposition method. The procedure estimates the unexplained component of the GWG–counterfactual gap. Specifically, the study investigated the evolution of the GWG among African men and women in South Africa across the wage distribution ten years post-apartheid. The analysis employed data for formal sector workers in 1995, 1999 and 2004. The key finding was that the counterfactual and raw GWGs were wider at the bottom than at the top of the wage distribution: evidence of a sticky floor. The GWG also increased at the top end of the wage distribution between 1995 and 2004. Thus, low-paid women suffered more discrimination than higher-paid women, although discrimination increased over time for higher-paid women.

While Ntuli (2009) did not delve into variables that drive the unexplained GWG, Bhorat and Goga (2013) did address the caveat. The study used Firpo et al.'s (2011) recentred influence function to carry out a detailed O-B decomposition across unconditional quantiles of the wage distribution. Because of the lack of data, the study could not control for the problem of sample selection bias in the wage regressions. It used Yun's (2005) normalised regression in the detailed decomposition of coefficients to correct the parameter invariance problem. As in Ntuli (2009), Bhorat and Goga found the GWG to be wider at the bottom than at the top of the wage distribution. The gap was 0.632 at the 10th quantile; between

0.407 and 0.330 from the 20th–60th quantiles; and decreasing from 0.212 to 0.072 between the 70th and 90th quantiles.

Remarkably, the GWG persisted 15 years post-apartheid, and it was higher for workers in the middle and lower parts of the distribution. Across the distribution, the gap was more unexplained than explained by gender differences in productive characteristics. Between the 10th and 60th percentiles, the unexplained effect increased across the distribution, while from the 70th to 90th percentiles, women's relatively greater endowment of productive characteristics than men's tempered its effect. Thus, discrimination explains a large portion of the GWG, although women's better endowment at the top somewhat attenuates the gap. The detailed decomposition analysis showed that the constant term—or pure discrimination—accounted for the majority of the gap between the 20th and 50th quantiles. Women's lower presence in the formal sector also contributed to increasing the gap (endowment effect). The opposite effect applied to women's better returns on domestic work and formal sector employment (positive policy shock to minimum wages). Overall, the formal sector reduced the gap as the negative unexplained effect outweighed the positive explained effect. Between the 70th and 90th percentiles were large unexplained contributions related to degree holders, wage employment, public sector employment and managerial work. Men tend to earn more than women in these jobs.

Casale and Posel (2011) unearthed similar results when investigating the GWG in South Africa's union and non-union jobs. The *a priori* expectation was a lower GWG in the union sector, as unions are expected to champion for wage equity. The researchers found the opposite after accounting for sorting across occupational and industrial categories. Unionised women's high-productivity-related characteristics were underpaid, relative to unionised men's characteristics. Returns on higher education were also more flattened for unionised women than for unionised men, which the researchers attributed partly to the crowding of professional women in female jobs, such as teaching and nursing, which may have lower union bargaining power. Taken together, these South African studies show that LMD is key in explaining the GWG, which is wider at the bottom than at the top of the wage distribution. This is further associated with women's lower payoffs than men's to higher education, unionisation, wage employment, public sector employment and managerial work. Findings for the explained gap also call for strategies to increase female employment in the formal sector to reduce the

GWG. Remarkably, higher-paid women's relatively better labour market characteristics are laudable for reducing the GWG.

For CA, data challenges prevented discussion of all but the case of Cameroon. In a 2017 working paper, Mbratana and Fotie investigated the GWG for paid and self-employed workers. The study employed mean-based O-B decomposition and quantile regression based on Machado Mata (2005); also mentioned among the methodologies is Melly (2005), although its role in the empirical section is questionable. Mbratana and Fotie used the 2007 Cameroon Household and Consumption Survey to show that a large proportion of men and women are self-employed in the informal sector. The GWG in self-employment is mainly driven by differences in coefficients (unexplained). For paid employment, the reverse is true: the gap is due mainly to differences in characteristics (explained). The GWG in the latter sector decreases across quantiles of the wage distribution, while the study inconsistently discusses the evolution of the GWG in the self-employment sector. These results are linked to the persistence of GWGs in working hours, occupations and employment sectors. They show that strategies to reduce the country's GWG should be sensitive to the employment sector.

Comblon et al. (2017) also undertook a descriptive analysis incorporating GWGs in Cameroon and Mali. They discussed how GWGs (male wage minus female wage divided by male wage) vary across different characteristics. They reported a non-monotonic GWG by education level: uneducated (37.8% of equivalent men's wages), primary (35.7%) and more educated workers (39.2%). For hours worked, the GWGs were smaller for single than married persons; the gaps increased with the number of children. Self-employment also had higher GWGs than paid employment. This is, to some extent, linked to customary patriarchal norms that limit property rights for women and therefore exclude them from formal credit, resulting in the lack of working capital for small enterprises. Social norms (such as women's disproportionate burden of childcare responsibilities) appear important and deserve a thorough study to understand observed gender wage differentials.

For EA, the literature discusses cases for Ethiopia, Uganda, Kenya and Tanzania. Appleton et al. (1999) investigated GWGs in public and private sectors of Ethiopia, Uganda and Côte d'Ivoire. The study used individual cross-section data from the three countries spanning the period 1985–1992. It was based on the conventional O-B and a Neumark (1988)-type decomposition that addressed the index number problem

and accounted for differences across employment sectors. The study controlled for selection bias by using Lee's (1983) correction, although the study preferred uncorrected results because of controversy surrounding the correction. The public sector paid more than the private sector in all these countries; in Ethiopia and Côte d'Ivoire, public sector wages were about two-thirds higher than those for the private sector, while in Uganda, the public-sector premium was around 5% for men and 12% for women. Notably, men in these countries earned more than women; whereas the differential was trivial in Côte d'Ivoire, women earned about three-quarters of men's wages in Ethiopia and two-thirds in Uganda. Nonetheless, women were more likely to be employed in the public sector than men; there were no marked gender differences in education among the workforces. The study found that in Ethiopia and Uganda—the effect being slightly less pronounced in Côte d'Ivoire—the GWG in public and private sectors was largely due to differences in labour market valuation of men and women's labour market characteristics (unexplained effect). That women were overrepresented in the better-paid public sector somewhat attenuated the GWGs in these countries, raising the importance of these jobs.

Agesa (1999) applied the conventional O-B decomposition to investigate the GWG in urban areas of Kenya. The results confirmed the existence of over 70% gender wage discrimination. This finding was, however, contrary to Kabubo-Mariara (2003), who found some favouritism towards men across all the employment sectors, but no evidence of discrimination against women. More recently, Agesa et al. (2013) carried out a distributional analysis of the GWG in line with Firpo et al. (2011). The findings suggest that both gender differences in characteristics and in returns thereof widened the GWG at the bottom of the wage distribution, while only gender differences in characteristics widened it at the top. Gender differences in composition and returns to industry, occupation, higher education and geographic region drove these characteristic and 'return' effects. Findings for the middle of the distribution showed that gender differences in returns to education and experience propelled the GWG. Thus, both women's inferior endowments of observable characteristics and LMD explain the Kenyan GWG.

For Uganda, the GWG seems to be closing over time in comparison with other African countries, which may be due to higher educational attainment among women relative to men (Appleton et al. 1999; Staveren 2012). The 2004 aggregate personnel data revealed a wage gap of 5.3% on

mean wages (Staveren 2012), lower from 68% in 2002 (Kagundu and Pavlova 2007). The gap was higher at higher management levels than at lower quartiles. Using Ordinary Least Square (OLS) regressions, Staveren (2012) found that education and experience explained the difference in wages between men and women. Employing the O-B method, data revealed that neither human capital nor other characteristics explained 80% of the GWG, which a glass ceiling effect also could not explain. Further decomposition using the Neumark (1988) method indicated that most of the 2002 wage gap could be attributed to employer-driven differences in treatment and discrimination (Kagundu and Pavlova 2007). More recently, de la O Campos et al. (2016) analysed the GWG in the agricultural sector, finding a 10% GWG resulting primarily from human capital deficiency among women, the child dependency ratio and lack of access to assets such as land and credit services.

Using the 2004 Tanzanian Household Worker Survey, Elu and Loubert (2013) estimated the GWG using quantile regressions and found a considerable gender gap linked to discrimination on ethnic grounds. In their quantile regressions, the gender dummy by itself was not significant unless interacted with ethnicity. The interaction term was only significant for women who belonged to the Chagga, Haya, Nyamwezi, Sambaa and Zaramo ethnic communities, while the reverse was the case for those from the other 14 ethnic groups (Elu and Loubert 2013). The effect was more significant and higher in upper tails of the wage distribution. Discrimination across the quantiles also reduced returns to education for women from specific ethnic groups such as the Nyamwezi. This implies that policies to reduce GWGs must be sensitive to ethnicity (Elu and Loubert 2013).

Guinea, Nigeria and Mali exemplify the case for WA. Glick and Sahn (1997) explored GWG in Conakry, Guinea, using 1990 data, the Neumark (1988) decomposition and Lee's (1983) correction for selection bias. The study analysed GWG separately for workers in the public sector, workers in the private sector and self-employed workers. Results showed that gender differences in characteristics accounted for 45% of the GWG in self-employment and 25% of the GWG in the public sector; the latter percentage is lower because women in the public sector were better educated than men. Curiously, women earned more than men in the private sector, which was partly attributable to their better education. Residual differences in GWGs for these sectors were associated with occupational sorting as 41% of women in wage employment were in female jobs such as

teaching, nursing and secretarial work, which supposedly have lower pay advancement than men's jobs. Notably, evidence for the private sector should be taken with caution as most parameters in the underlying female wage regressions were statistically insignificant.

In the same descriptive study as Cameroon, Comblon et al. (2017) revealed that, in Mali, most women are concentrated in unpaid family work and employed women are more likely than men to work in the non-farm informal sector. However, a gender gap exists in hourly wages at 61.5% of men's wages; this tends to decrease with education. The GWG is also bigger in self-employment than in paid work. For instance, it was found to be 52% and −9.1% of men's wages for self-employed and paid workers, respectively. This finding is partly attributable to gender differentials in education, marital status, age, hours worked and women's disproportionate childcare burden, which increases women's chances of self-employment.

For Nigeria, Nwaka et al. (2016) investigated the GWG in Nigeria's wage and self-employment sectors; most women are concentrated in self-employment, which dominates the Nigerian labour market (57% versus 43% for men). The country's GWG is relatively higher in self-employment than wage employment. The study applied the conventional O-B decomposition across the wage distribution to examine the GWG, controlling for selection bias. The results showed evidence of a sticky floor in self-employment and a glass ceiling in wage employment. Gender discrimination occurred for self-employment at lower and higher quantiles, as the unexplained component outweighed the explained component of the GWG. The same applies to the middle of the distribution. In wage employment, women were paid less than men for similar characteristics. Nonetheless, the unexplained parts of the GWG at the 50th and 75th quantiles were lower in wage employment than in the unregulated self-employment sector. Generally, the study attributed GWG to geopolitical regions and individual characteristics such as marital status, age and education. The study discovered a marital wage premium and a parenthood penalty for men and women in wage employment as well as women in self-employment. The outcome for self-employment harmonises with Becker's (1991) household specialisation model.

It is notable that we had difficulty in finding convincing GWG literature for the NA sub-region, comprising Sudan and Western Sahara. Hence, this literature review includes none for this region.

4.1 Discussion of Findings

The literature discussed for GWGs in SSA's sub-regions attests that the sources of the GWGs are neither random nor systematic by sub-region. Instead, they mostly recur across countries and sub-regions. Gender wage discrimination explains a substantial amount of the GWG in most countries. In SA and WA, evidence shows that women at the bottom of the wage distribution suffer more discrimination than those at the top, and demonstrates the existence of a sticky floor. The literature does not delve into the actual labour market discrimination theories behind these results, making recommendation of mitigation measures difficult. Furthermore, disentangling the intricate link between discrimination and some omitted variables in the unexplained effect of the O-B decomposition poses a challenge. The scant studies in SA, EA and WA that explore sources of the unexplained gap showed its key drivers as lower returns to women's occupations, education, sector of activity and marital status compared to men. This raises a need to harmonise the labour market valuation of these characteristics for men and women. However, recommendations cannot be made based on this review regarding whether men or women's returns are the fair pricing regime, which suggests this as a subject for further study.

It is also notable that in EA and WA, ethnicity and LMD are intricately linked. For instance, in Uganda, wages for women at the top of the wage distribution are lower than men's because of ethnic discrimination associated with returns to education. Further, discrimination could be higher in one region than in another, depending on the importance of cultural factors in the region. Therefore, in these sub-regions, strategies to reduce GWGs need be cognisant of ethnicity and region of residence.

Another important driver of the GWG in SSA pertains to women's inferior human capital endowments relative to men. Hence, there is need to direct concerted efforts towards boosting women's human capital; education, experience, general and specific skills in this region. That men and women are sorted into different sectors of activity and occupations also propels the GWG in SSA. For instance, in Cameroon and Nigeria, women are disproportionately self-employed, which has a higher GWG than paid employment, while in South Africa, this applies to the informal sector. However, whether a greater part of occupational sorting is associated with occupational segregation theory or self-selection remains obscure, as women could prefer more nurturing and 'service'-related occupations that pay less than men's jobs. Regardless, this necessitates efforts towards more gender-assimilated occupations and better valuation of women's labour in

SSA. The cases of Cameroon and Nigeria hint somewhat at marital status and women's disproportionate burden of childcare (family gap) as a sorting mechanism for women's higher presence in the unregulated self-employment sector. Governments in such countries need to consider providing state-funded childcare services to reduce the GWG.

The key outcome from this review is that women fare worse than men in SSA labour markets. Sources of the gaps seem common in the region: women's returns to the labour market are inferior to men's; women's poorer composition of human capital and job-related characteristics; and the family gap plays a role. This suggests that the GWG problem in SSA is not just a national problem but a regional problem. Thus, national, regional and international bodies may benefit from devising strategies to root out the problem at all these levels, based on its highlighted triggers. This can be premised on SDG 5, which outlaws gender disparities in society, as well as SDG 8, which promotes decent work for all. Of particular importance are policies and implementation processes geared towards promoting gender equity in acquisition of human capital, land and property rights, and more gender-assimilated occupation and sectoral labour market distributions, with bias towards gainful jobs and employment sectors. Societal perceptions promoting gender discrimination in the job market and in household time-use also must be tackled to promote women's labour market position for the benefit of greater society.

5 Gaps in the Literature

Some SSA sub-regions such as CA and NA Africa are underrepresented in the study because of insufficient data, which is perhaps understandable, given the high levels of political instability in those regions. Furthermore, this strand of SSA literature is mostly old; many studies are based on data from the 1990s and early 2000s. Many such analysis papers focus on providing snapshots rather than trend analyses that would reveal temporal evolutions of the GWG and associated correlates. This is informative in assessing the effectiveness of countermeasures for the GWGs. Recent labour market data is not readily available in many SSA countries except in a few countries such as Namibia, Kenya and South Africa. On average, SSA studies lag in embracing methodological developments in the literature and updating findings pertinent for comprehending gender gaps in the region. In particular, panel data is scarce for tracking cohorts from point of entry into the labour market so as to isolate gender-based life cycle

effects, such as the effects of family interruptions on women's careers and associated gender gaps. At the time of writing, literature is lacking regarding experiments that assess the effect of behaviour on gender gaps in SSA—self-selection, support networks, ambition, leadership and income expectations. This could be encapsulated by the unexplained GWG component, which exaggerates the extent of reported gender wage discrimination. This raises a need for international and regional bodies such as the ILO and the World Bank to partner with SSA countries in producing such labour market data, preferably using comparable survey instruments. Hopefully, this will enable competitive and impactful analyses of gender gaps in SSA countries with more targeted redressal measures for the gaps.

Note

1. Southern Africa: Namibia, South Africa, Botswana, Malawi, Zambia, Swaziland; Central Africa: Cameroon; Eastern Africa: Ethiopia, Uganda, Kenya and Tanzania; Western Africa: Guinea, Côte d'Ivoire, Nigeria and Mali.

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CHAPTER 12

Child Health and Relatives' Employment in South Africa: The Gendered Effect Beyond Parents

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1 Introduction

The presence of an ill child in a household can influence the family by compelling members to reconsider family goals and plans and by diverting attention from important aspects that are needed for the family to function. This is because ill children in the household may be more prone to hospital visits (Hockenberry and Wilson 2014) or may require additional

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physical care compared to children who are not disabled (Kuo et al. 2014). This could also result in increased medical costs (special diet and wheelchairs), which may result in a huge financial burden for parents (Anderson et al. 2007; Stabile and Allin 2012). Time spent during hospital visits can prevent members of the family from engaging in other activities, such as employment. For instance, research has found that families caring for ill children have lower incomes because of the employment constraints they face (Heymann et al. 2013).

Despite a number of programmes and policies emphasising investment in early childhood development, developmental delays and incapacities still exist. There are about 3.6 million children aged 1–9 years living with autism and more than 15 million living with idiopathic developmental intellectual disability (Vos et al. 2015). Other estimates report that about 5.1% of the world's children are living with a 'moderate or severe disability' (UNESCO 2014). The majority (four out of five) of children with disabilities are in developing countries, with the highest levels in sub-Saharan Africa (UNESCO 2010). In South Africa, recent census data report that the prevalence of childhood disability is 27.5% for children under the age of 4 and 11% for children aged 5–9 (Statistics South Africa 2012a).

Family types in developing countries are very specific. In fact, the 2015 World Family Map (WFM) report showed clearly that extended family structures, including parent(s) and kin from outside the nuclear family, are common in Asia, the Middle East, Central/South America, and sub-Saharan Africa but not in the other regions in the world (World Family Map 2015). In South Africa, the family has undergone key transformations, resulting in a number of different family units. Some researchers have attributed the changes in family life to apartheid (Hosegood et al. 2009). In other words, the existing family types differ by race. For instance, the nuclear family type is particularly common among Whites and Asians to a certain extent, whereas Blacks and Coloureds (Mixed-Race persons) are more likely to live in an extended family system (Amoateng et al. 2007). Meanwhile, Blacks and Coloureds (Mixed-Race Persons) represented 88.1% of the South African population in 2011 (Statistics South Africa 2012b). The WFM report showed that in 2007, 70% of children in South Africa were living in an extended family with other adults in addition to parents. This percentage was higher than what was observed between 2000 and 2014 in sub-Saharan African (SSA) countries such as Kenya, Nigeria, Uganda, Ethiopia, Ghana, or the Democratic Republic of

the Congo, and was the highest percentage among the sample of WFM countries.

Because of this structure, the cost of raising children can no longer be restricted to the biological parents alone. Close relatives in the household also help share in the cost of caring for children. This may not be restricted to financial costs alone but can also include time and other material support (Wusu and Isiugo-Abanihe 2006). Although there is research available on the association between labour force participation of parents and child health (Gould 2004; Powers 2003; Burton et al. 2014; Simo Fotso 2017), there is a paucity of research on the relationship between child health and labour force participation of other caregivers in the household.

The scarcity of evidence on the relationship between child health and labour force participation of relatives in the context of extended family types such as those in SSA makes South Africa, which is among the countries with the highest percentage of children living in such a family structure, a good case for studying this relationship. This study therefore examines how child health influences the outcomes of parents and other adult members in the household, especially their labour force participation in South Africa. It also questions whether this effect is gendered and how the effect varies among married parents.

This is important because regardless of whether this effect is positive or negative, it can be very detrimental for these adults, the family, and society in general; therefore, this issue needs adequate attention from policymakers. On the one hand, an increase in labour force participation can intensify stress and anxiety on the adults concerned. On the other hand, a reduction in labour force participation can reduce income sources for the household and deprive society of an important labour force component that goes beyond the issue of parents caring for their children. This would be much more concerning if such a deprivation affected women only, because it would make them more vulnerable and widen the employment gender gap, which the international community is trying to reduce in accordance with Sustainable Development Goal (SDG) Number 5 (UN 2015).

2 Literature Review

The economic theory of domestic production, enriched by Becker (Becker 1965), is a good framework to understand the effect of child health on family members' employment. This theory, in general, offers an advantage

because it considers the fact that in addition to paid work and leisure, unpaid work is also a part of an individual's or family's decision portfolio. Hence, time for caring for a child with a serious illness, which is a part of domestic production, must be considered by the family in the context of the maximisation of its utility function.

A number of studies have documented the cost of child health for mothers' labour market participation in developed countries (Powers 2003, 2001; Gould 2004; Burton et al. 2014; Zimmer 2007), as also in developing countries (Simo Fotso 2017; Gupta et al. 2013), with sometimes contradictory results. A few studies have also examined the effect on fathers or on the couple (Gould 2004; Burton et al. 2014) and tried to identify how the child's health affects the father's or the couple's coping strategy to participate in the labour market. Other studies differentiated among time-intensive and cost-intensive children, such as Gould (Gould 2004) in the United States and Simo in Cameroon (Simo Fotso 2017). Some authors such as Power and Gould compared married and female household heads and found some heterogeneity in term of labour supply (Powers 2003, 2001; Gould 2004).

Despite the relatively abundant literature on parents, few studies exist on the cost of child health on developmental outcomes, especially the labour force participation of other relatives in the household. According to Reichman et al. (2008), living with an ill child can have adverse consequences on the entire household, including parents, siblings, and extended family members. Most of the research in this area has focused on families without parents. In the absence of parental care (e.g., with the death or migration of both parents), extended family members appear to be the most popular alternative for caring for an ill child, and among family members (Zagheni 2011), grandparents are usually the favourite option (Beegle et al. 2010; Karimli et al. 2012).

Acknowledging the importance of grandparents as key support mechanisms for households that have children with disabilities, Miller et al. (2012) used a phenomenological method to understand the everyday lived experiences of grandparents living in households with disabled children. The grandparents in their study highlighted the fact that the presence of disabled children in the household often delayed the life goals of family members and also disrupted the schedules of other family members. Other studies also found increased psychological distress among grandparents taking care of disabled children (Hartley et al. 2005; Mitchell 2007; Hillman 2007; Wakefield et al. 2014).

Examining the labour market outcomes of grandparents caring for children among families in the United States using two-stage least-squares models, Wang and Marcotte (2007) concluded that grandparents caring for children were more likely to participate in the labour market, with grandmothers working longer than grandfathers. Using a framework of family financial well-being, Bailey et al. (2013) examined the income streams and expenditures of grandparents raising grandchildren in Montana and also found gender differences. Their study found that grandparents had to work additional hours to increase their income to care for children in the household. These results are similar to the work done by Ho (2015) using longitudinal data. Ho's results pointed out marital differentials in the labour market participation of grandparents, with married grandparents having a higher likelihood of being employed.

Besides grandparents, other relatives may exist in the household who are able to care for ill children. A number of researchers have examined the relationship between child health and financial burdens of other members in the family. For instance, a descriptive study in China found that the presence of an ill child in the household resulted in the loss of employment for some members of the household in the past year preceding the survey. Apart from losing jobs, some members of other families studied reported that someone in the household had quit, rejected a job offer or changed jobs (Ou et al. 2015). These results are similar to the results from another study in the United States, which found that someone in the family had quit a job, not taken a job, or changed the type of job because of the presence of an ill child in the family (Montes and Halterman 2008).

Other studies have found different results when adult health, rather than child health, was examined. These studies established a positive relationship between caregiving and labour force participation. In the United Kingdom, female caregivers were more likely to be in the labour force compared to their counterparts who were non-caregivers (Carmichael and Charles 1998). This was also found to be true in the United States among male caregivers (Dentinger and Clarkberg 2002).

In sub-Saharan Africa, where a number of countries have been hit by HIV/AIDS, children are increasingly seen as caregivers in cases of adult mortality, and other relatives sometimes have to care for children in the household. The literature on HIV/AIDS care has found that caregivers who are in the working age group are unable to participate in the labour market (Akintola 2008).

To the best of our knowledge, the literature on the labour supply of other relatives in households with long-term ill children in SSA, especially South Africa, is scarce. Therefore, the purpose of this study is to examine the influence of child health on the employment of fathers, mothers, and other male and female relatives in the household to determine whether there is a penalty for women.

3 Method

3.1 Data

The main data source of this study is the National Income Dynamics Study (NIDS) panel data set. NIDS was conducted by the Southern Africa Labour and Development Research Unit at the University of Cape Town under the initiative of the Department of Planning, Monitoring, and Evaluation. The data were collected from February 2008 through August 2015 in 4 waves. NIDS used a combination of household, child, and adult questionnaires. The survey successfully interviewed 26,776 individuals during wave 1. With newborn children and other new arrivals in the household, this number rose to 37,396 in wave 4. There was also some attrition both among the original sample and among new arrivals across the waves (Chinhema et al. 2016).

The analyses presented in this chapter focused first on adults aged 18 to 60 who have at least one child under 17 years of age living with them; they constitute our parent sample. Then, they focused on adults aged 18 to 60 who are living in the same household as at least one parent of a child under 17 years of age; these adults are our non-parent sample. The lower bound age of 18 was chosen based on the South African Children's Act 38 of 2005, according to which, a child is any person aged under 18 (South Africa 2006). Additionally, 60 years is the 'normal' retirement age in South Africa (Limpopo Legislature 2014).

3.2 Variables

Employment status was drawn from the labour market module of the adult questionnaire. Based on the International Labour Organization's recommendation (ILO 2016), our measure of employment included all types of jobs, including full-time, part-time, and temporary/casual paid jobs, self-employment, work in one's own farm or plot, and assistance of

others in business activities. The employment variable was a dummy variable taking the value 1 if the individual worked and 0 if not.

Child's serious illness/disability variable was measured differently for parents and non-parent relatives. For parents, the study used a variable indicating if a mother or a father had at least one child with a serious illness or disability. This meant a child with conditions such as tuberculosis; respiratory problems (asthma, bronchitis, and pneumonia); physical handicaps; problems with sight, hearing, or speech; mental problems; HIV/AIDS; diabetes; heart disease; cancer; epilepsy/fits; or other serious illnesses specified by the respondent. For the other relatives, this variable indicated if they lived with a parent of a child with a serious illness or disability.

The health conditions were self-reported by children aged 15 to 17, while the mothers/caregivers or another household members knowledgeable about children aged 0 to 14 were asked about the health conditions of the latter. This method of measuring child health can raise many issues. First, some studies have shown discrepancies between self-reported conditions and medical health records (J. E. Miller et al. 2001). However, some authors argue that this measurement error decreases with the severity of the condition (Baker et al. 2004; Burton et al. 2014). Because the conditions accounted for in this study are serious illnesses, this measurement error should be very limited.

The second issue raised by the literature is 'justification bias' (Baker et al. 2004). In fact, some parents/respondents can justify their poor labour market results by falsely reporting children in poor health. Further, some working parents who feel guilty because of the time they spend away from their homes are more likely to report serious child health problems. However, some studies have shown that maternal self-reporting of specific conditions, rather than a general assessment of child health, tends to be more objective (Powers 2003; Gould 2004). To measure health, this study used the question 'Has this child had any serious illnesses or disabilities?' with subsequent reports of specific conditions by the respondents, rather than questions on general assessments of health. Hence, this 'justification bias' should be very small.[1]

The estimations also controlled for marital status. An interaction term between child health and marital status was introduced to account for the variation in effects according to the mother's marital status, which is reported in the literature (Powers 2001). Including an interaction term for marital status in the overall sample allowed for a larger sample and more power for estimations. A set of individual characteristics reported in

the literature as potential determinants of labour market participation, such as age, age squared, education, immigrant status, parent's own health status (Burton et al. 2014), were used as covariates.[2] Additionally, the relationship of individuals to the household head was controlled for. This was done to assess whether being a household head, family member, or an in-law had an impact on employment status. Moreover, the study accounted for other variables susceptible to affecting the reservation wage (i.e., the lowest wage at which an individual is willing to work), such as individuals' non-labour income (measured as the log of non-labour income plus one), the number of children aged 0–6 and 7–17, the number of adults present in the household, and the total monthly income of the household (measured as the log of income plus one). Because residence type is not part of NIDS' publicly released data, our study controlled for the density of the population of the province of residence (high, medium, low) using the 2011 census. The unemployment rate of the province was also included as a control variable to account for employment opportunities. The unemployment data came from the Quarterly Labour Force Survey published by Statistics South Africa (Statistics South Africa 2017). The unemployment rate of the third quarter of the starting year of the survey wave for the corresponding province was used.

3.3 Estimation Strategy

Because the dependent variable was dichotomous, logistic regression was used. The panel structure of the data allowed three types of models to be considered: pooled logistic regression, random-effects logistic regression, and fixed-effects logistic regression (Greene 2012). The fixed-effects logistic model was used for this study.

The choice of this model was guided by the fact that it allowed us to control for individuals' observable and unobservable characteristics that were stable over time (Allison 2009). In fact, it has been argued in the literature that mothers of ill or disabled children can differ from those of healthy children in terms of career motivation or work attachment (Allison 2009). Others have argued that some unobservable characteristics such as mother's ability can affect both child health and mothers' employment outcomes (Zimmer 2007; Powers 2003; Simo Fotso 2017). To correct the estimations from this source of endogeneity bias, the logistic fixed-effects model appears to be a good option.

In addition to this theoretical reasoning, a set of empirical tests was conducted to choose the ideal model. A likelihood-ratio test of rho equals 0 showed that the panel level variance measure was important; hence, pooled logistic regression was not relevant. Further, the Hausman test clearly showed that the fixed-effect model was a better fit for the data than the random-effect models. To correct for attrition between waves 1 and 4 of the survey, the panel weights of wave 4 were used.

4 Results

4.1 Sample and Descriptive Statistics

The sample consisted of 4141 observations by 1727 fathers and 12,597 observations by 5069 mothers with non-missing information for any analysis variables. A total of 2294 non-parent adult males with 4028 observations and 1738 non-parent adult females with 2816 observations and non-missing information were identified as living in the households of these parents.

Overall, the proportion of working fathers was higher than for mothers (76% vs. 45%). This was true, whether or not they had an ill/disabled child. Among fathers, as shown in the first panel of Table 12.1, those having an ill/disabled child were more often employed than those who did not (83% vs. 76%). The opposite was observed among women, where those with ill children were very slightly less likely to be working. The same tendency was observed among non-parent relatives presented in the second panel. Males living in a household with an ill child tended to work more often than those in households with healthy children (50% vs. 45%), whereas females in such households worked less than others (35% vs. 37%).[3]

4.2 Individual Analyses of the Effects of Child's Serious Illness on Employment

The third panel of Table 12.1 presents the adjusted odds ratios of the fixed-effects logistic regressions of parents' employment. The first column shows that everything else being equal, among single fathers, the odds of working when they have an ill child is 1.14 times the odds of working when they have a healthy child. The odds of working for married fathers are 57% lower than the same odds for single fathers among fathers with healthy kids. For married fathers with at least one unhealthy child, the

Table 12.1 Proportion of adult in employment by child illness status and odds ratios of fixed-effects logistic regression of employment status

	Proportion	*Proportion*	*Proportion*	*Proportion*
	No ill child	*Presence of an Ill child*	*No ill child*	*Presence of an ill child*
Panel 1: Parents				
	Fathers		**Mothers**	
Employment status	0.758	0.827	0.455	0.450
Panel 2: Non-parents				
	Males		**Females**	
Employment status	0.449	0.498	0.371	0.351
	OR	**SE**	**OR**	**SE**
Panel 3: Parents				
	Fathers		**Mothers**	
A child with serious illness/dis.	1.142***	(0.014)	0.891***	(0.003)
Married	0.435***	(0.003)	0.738***	(0.002)
A child with serious illness/ dis. × Married	1.027*	(0.014)	0.890***	(0.005)
Age	1.455***	(0.007)	1.119***	(0.003)
Age2	1.000***	(0.000)	0.996***	(0.000)
Education (*no education*)				
Primary	0.616***	(0.007)	2.372***	(0.024)
Secondary	1.489***	(0.022)	2.210***	(0.025)
Vocational	5.471***	(0.092)	2.312***	(0.028)
Higher	1.528***	(0.028)	5.089***	(0.061)
Immigrant	3.399***	(0.051)	0.474***	(0.006)
Adult ill	0.575***	(0.003)	1.192***	(0.003)
Log(non-labour income+1)	0.888***	(0.001)	0.954***	(0.000)
Relationship to the HH (*HH*)				
HH family	0.375***	(0.003)	0.756***	(0.002)
HH in-law/non-relative	0.644***	(0.002)	1.171***	(0.002)
Number of children 0–6	1.013***	(0.003)	0.921***	(0.001)
Number of children 7–17	1.033***	(0.003)	0.939***	(0.001)
Number of adult in the house	0.958***	(0.002)	0.892***	(0.001)
Log(household income+1)	2.025***	(0.004)	1.544***	(0.001)
Provincial unemployment rate	0.956***	(0.000)	0.988***	(0.000)
Population density (*high density*)				
Middle density	0.700***	(0.009)	1.140***	(0.009)
Low density	1.671***	(0.028)	0.490***	(0.004)
Observations[a]	1312		5577	

(*continued*)

Table 12.1 (continued)

	Proportion	*Proportion*	*Proportion*	*Proportion*
	No ill child	*Presence of an Ill child*	*No ill child*	*Presence of an ill child*
Panel 4: Non-parent relatives				
	Males		**Females**	
Lives with child with serious illness/dis.	1.352***	(0.008)	0.996	(0.013)
Married	3.206***	(0.031)	1.841***	(0.034)
Age	1.125***	(0.005)	1.858***	(0.016)
Age2	0.999***	(0.000)	0.993***	(0.000)
Education (*no education*)				
Primary	3.239***	(0.087)	4.514***	(0.088)
Secondary	3.345***	(0.092)	0.528***	(0.013)
Vocational	3.815***	(0.106)	0.349***	(0.011)
Higher	4.539***	(0.127)	2.012***	(0.055)
Immigrant	0.801***	(0.023)	9.524e+09	(1.659e+13)
Adult ill	0.433***	(0.002)	1.601***	(0.013)
Log(non-labour income+1)	0.969***	(0.001)	0.993***	(0.001)
Relationship to the HH (*HH*)				
HH family	1.090***	(0.008)	2.788***	(0.025)
Head in-law/non-relative	0.984*	(0.009)	1.647***	(0.019)
Number of children under 6	1.036***	(0.002)	1.011**	(0.004)
Number of children aged 6–17	0.844***	(0.001)	0.930***	(0.004)
Number of adult	1.027***	(0.001)	0.891***	(0.003)
Log(household income+1)	1.151***	(0.001)	1.501***	(0.005)
Provincial unemployment rate	0.972***	(0.001)	1.095***	(0.001)
Province pop density (*high density*)				
Middle density	1.912***	(0.043)	0.000	(0.000)
Low density	0.560***	(0.012)	0.000	(0.000)
Observations[a]	1422		653	

Note: Significance levels: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. Variables in parentheses are reference categories. OR: Adjusted Odd ratios; SE: standard error

[a]The observations presented differ from those of the descriptive statistics section, for the fixed-effects logistic regression drop automatically the individual observed only once in the panel as well as those with identical outcomes across waves. Wave dummies are included but not reported

odds of working are slightly higher than for single fathers with unhealthy kids (OR = 1.03). Therefore, the increasing effects of child illness are stronger among married fathers. For women, the opposite effects were observed. The odds of being employed are lower for mothers with ill children compared to mothers with healthy children among the single women (OR = 0.89). Similar to what was observed for fathers, among

mothers of healthy kids, married mothers are less likely to work than single mothers (OR = 0.74). Once again, the observed effects of child illness were stronger for married women. In fact, the odds of working for married women were lower than single women when they both have unhealthy children (OR = 0.89).

As shown in the fourth panel of Table 12.1, males living in the same household as a parent of a child with a serious illness/disability have higher odds of working (OR = 1.35). A different effect was observed for female adults living in a similar household. Their odds of being employed were not insignificantly different (OR = 1). Contrary to what was observed for parents, married non-parent males and females have greater odds of being employed.

4.3 Household Analyses

Individual level analyses do not account for the fact that the employment decisions of household members are linked and can be taken at a household level as a coping strategy to deal with the presence of a seriously ill child. To account for the fact that the employment decisions in a household can be taken at a household level, an analysis was also conducted at the household level. The proportion of working adult males and the proportion of working adult females, and their differences, were used as employment outcomes. For this analysis, a linear regression model was used.[4] Given that household data are not longitudinal in NIDS, in the sense that only individuals, not households, were followed across waves and that a new household identifier was assigned at each wave (Chinhema et al. 2016), the data were pooled with waves dummies introduced as control variables. The variables measured at the household and regional levels quoted earlier were also used as controls. Calibrated weights, which were measured at a household level and allowed the sample to be representative of the national population (Chinhema et al. 2016), were used.

As shown in the first column of Table 12.2, the presence of an ill/disabled child in a household is significantly associated with a higher proportion of adult males working in that household. This confirms what was found at the individual level for fathers and male relatives. The presence of a seriously ill child is negatively associated with the proportion of women working in that household, even if the relation is not significant. The difference between the proportion of male and female workers seems to be positively, although non-significantly, associated with the presence of a

Table 12.2 Linear regression of employment outcome at the household level

	Proportion of males working		*Proportion of females working*		*Difference in proportion (males–females)*	
	Coef.	*SE*	*Coef.*	*SE*	*Coef.*	*SE*
Child with illness/dis.	0.049**	(0.024)	−0.009	(0.026)	0.053	(0.045)
Number of children under 6	−0.030***	(0.006)	−0.074***	(0.005)	0.035***	(0.010)
Number of children aged 6–17	−0.061***	(0.005)	−0.028***	(0.005)	−0.042***	(0.008)
Log(household income+1)	0.107***	(0.006)	0.091***	(0.005)	0.020**	(0.008)
Provincial unemployment rate	0.006***	(0.002)	0.004**	(0.002)	−0.000	(0.003)
Population density (*high density*)						
Middle density	0.027*	(0.015)	−0.007	(0.015)	0.024	(0.026)
Low density	−0.051***	(0.018)	−0.069***	(0.017)	0.005	(0.031)
Constant	−0.131*	(0.067)	−0.175***	(0.054)	0.108	(0.093)
Observations	9356		14929		8629	

Note: Significance levels: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Variables in parentheses are reference categories. Coef.: coefficient; SE: robust standard error. Wave dummies are included but not reported

seriously ill child. This seems to confirm the hypotheses of a gendered effect of child illness on adult family members with the increase of the employment gap between males and females.

5 Discussion and Conclusion

The aim of this chapter was to investigate the effect of a child's serious illness/disability on the employment status of adults living in South African households. This chapter went beyond father–mother analyses and accounted for the context of developing countries characterised by an extended family structure by analysing whether and how child health affects labour market participation of parents and non-parents in the household. Using the South African NIDS panel data, fixed-effects logistic regression, and linear regression at the household level, a number of results were obtained.

First, the individual analyses showed that the presence of a child with a serious illness/disability significantly increases the odds of fathers being in employment and reduces the same odds for mothers. This was similar to Burton et al.'s result, although they found that the effect for fathers was not statistically significant (Burton et al. 2014). Second, the negative effect is even stronger among married mothers, suggesting that the gendered effect of child illness is much more present among couples. This contrasts with the results of Power (2003), who found using his dynamic model that employment of female household heads was adversely affected by child's disability and had no effect for wives. Third, the gendered effect of child illness goes beyond parents and affects non-parent adults living in the household. Male relatives are more likely to work, whereas no significant effects are found for females. Finally, the analyses at the household level showed that the proportion of working males is significantly and positively associated with the presence of an ill child. The presence of an ill child seems to be associated, although not significantly, with a wider difference in the employment gap between males and females.

This study has some limitations. First, the effects of some individual characteristics—such as race, which is a very important variable in South Africa—were not calculated because of the method used. Nevertheless, given the advantage of the fixed-effect model in accounting for individuals' observable and unobservable characteristics, the study used that method despite this limitation. Second, because household data are not longitudinal in NIDS, the analyses at the household level were not dynamic and did not account for households' unobservable traits. Hence, they may be biased. Further research using household panel data could be conducted to assess the coping strategies at the household level.

Despite the limitations, the results obtained have important policy implications. First, they show that child illness has a wider effect going beyond parents; it affects non-parents of working age living in the same household as parents. It will be necessary for policymakers to provide urgent support to limit this effect. Second, the effect appears to be gendered, making males breadwinners, and females caregivers. This suggests that child illness and disability is a penalty for maternal labour market participation, especially when mothers are married. A cash transfer system should help to relieve financial cost for these families and reduce the pressure on males regarding employment. Such a system could help to balance carer roles in families, and ultimately, improve mothers' labour market

participation. A formal childcare system adapted to seriously ill/disabled children that is affordable for families should help to reduce the employment gender gap, allowing women to be more productive in the labour market. This should contribute to the achievement of SDG Number 5 on gender equality and the full and effective participation of women in the labour force.

Notes

1. For people aged 15 and above, a separate question was asked regarding the presence of some specific conditions. This was followed by the question, 'Do you have any other major illnesses or disability not mentioned above?' with subsequent reports of the illness/disability.
2. There are, however, few immigrants among non-parent female relatives, so the results of this variable in this group should be interpreted cautiously.
3. The full table of descriptive statistics is available upon request.
4. The generalised linear model with binomial family and logit link for proportion produced very similar results.

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CHAPTER 13

Unpaid Care Work Inequality and Women's Employment Outcomes in Senegal

Racky Baldé

1 Introduction

Despite decades of policy advocacy towards more equality between men and women, the gender gap still remains. This gap is particularly pronounced in unpaid care work. According to McKinsey Global Institute (2015), women bear 75% of the global unpaid care work. The number of hours spent in unpaid care work by women represents nearly three times that of men (McKinsey Global Institute 2015). Across all regions of the world, women spend, on average, six hours a day while men spend approximately two hours (Ferrant et al. 2014). The gap is more pronounced in low-income countries. This inequality in unpaid care work between men and women is mostly driven by gendered norms and beliefs that women should be the ones devoted to unpaid care work. In Ghana, for instance, women perform around two-thirds of the household's chores (Ferrant et al. 2014). The failure to account for unpaid care work in policy agendas has dramatic consequences on productivity. An equal participation of women in the labour market would increase the world's annual gross

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domestic product by $28 trillion in 2025 (McKinsey Global Institute 2015). In 2015, United Nations member states with the Sustainable Development Goals recognized the importance of unpaid care work.

According to economic theory, unpaid care work affects women's choices of occupation, their time in employment, and the allocation of their effort (Drobnič et al. 1999). This is due to the difficulty in combining full-time (part-time) employment with household chores. Drobnič et al. (1999) find that childbearing affects women's labour participation in Germany and in the US. A macro-level study by Ferrant et al. (2014) shows that the share of women participating in paid activities is higher in countries with fewer hours spent in unpaid care work by women. Likewise, a drop in the unequal distribution of unpaid care work between men and women increases women's labour force participation. In Australia, Nguyen and Connelly (2014) find that the intensity of caregiving decreases the probability of women working by 12%. Because of an unequal distribution of unpaid care work, women work fewer hours compared to men and are overrepresented in low-paid jobs. According to Narayan (2017), an unequal distribution of unpaid care work is one of the persistent causes of gender inequality in the labour market. Lately, progress has been made in terms of women's education, particularly in developing countries. Still, women do not participate equally in economic activities. When they work, women are more likely to have a low-quality job than men (WB 2014). Thus, in order for the investment in women's education to translate into greater participation in the paid labour market, it is necessary to tackle the unequal division of unpaid care work between men and women.

The relationship between unpaid care work and women's participation in the labour market is well documented. But studies have so far mainly examined the effect of the hours spent in unpaid care work without considering the existing gaps within the household or between couples. As argued by Ferrant et al. (2014), inequality in unpaid care is the missing link in the analysis of the effect of unpaid care on women's labour market outcomes. The importance of redistributing unpaid care is now receiving attention in policy circles due to target 5.4 of the fifth Sustainable Development Goal (SDG 5), which commits countries to "recognize and value" unpaid care work and promote "shared responsibility within the household and the family as nationally appropriate".

This chapter contributes to the literature by first investigating the socio-economic determinants of the unequal distribution of unpaid care work between women and men in Senegal. It also examines the effect of the unequal distribution of unpaid care work on women's participation and

women's quality of employment in Senegal. The study uses the Survey of Monitoring Poverty in Senegal (ESPS) conducted in 2011. For the empirical analysis, the study uses the linear regression model to analyse the determinants of unpaid care inequality, and the Heckman selection model to analyse the effect of unpaid care inequality on women's participation and women's quality of employment. An indicator of gender inequality in unpaid care work is used in the analysis. It is denoted by the ratio of the time spent in unpaid care work by women to that of men's weekly, where a ratio 1 indicates that men and women equally share the unpaid care burden and a value higher than 1 indicates that women take on a higher share of unpaid care work than men.

Results obtained from the descriptive analysis show that women undertake most of the unpaid care work, particularly tasks such as cooking and taking care of the children and elderly people. This result reveals the existence of gendered tasks in Senegal. Regarding women's employment, women facing the highest inequality in unpaid care end up with the most vulnerable jobs. The jobs they are likely to get are positions without a contract and as family workers or unpaid apprentices. On the determinants of unpaid care inequality, results from the study show that women's age and level of education reduce the unequal distribution of unpaid care work while the number of children and being married increase the unpaid care work inequality that women face within their households. Concerning the effect of unpaid care inequality on women's employment, results indicate that women facing a higher inequality in unpaid care work within their household are less likely to be engaged in paid activities, to be formally employed and obtain a full-time job. These findings show that the unequal distribution of unpaid care between men and women within the household deserves more attention in research.

The rest of the chapter is structured as follows: Section 2 reviews related existing literature; Section 3 describes the data used for the empirical analysis; Section 4 details the empirical estimation strategies; Section 5 reports and discusses the empirical results, while Sect. 6 concludes the chapter.

2 Review of the Literature

2.1 The Determinants of Unpaid Care Work

Scholars have explored the different channels that explain the time spent in unpaid care work. The most investigated channels are the

socio-demographic determinants. A study from Slovakia finds that in tasks traditionally viewed as performed by women, such as cleaning and taking care of children, being older and being a female increase significantly the amount of time devoted (Kaščáková et al. 2013). Altintas and Sullivan (2016) in a cross-country analysis find that being married and having children increases the time spent in unpaid care. Policies are also viewed as a way to relieve women from the unpaid care burden. Treas and Drobnič (2010), in a cross-country analysis, find that the provision of childcare in a country decreases the amount of time women devote to unpaid care activities. Additionally, a better integration of women in society reduces the unpaid care activities of women. This indicates that when a society has less discrimination towards women, it will decrease the burden they bear within their household. One of the channels could be a greater involvement of men. Indeed, when the roles of women in economic activities are highly considered, it is likely that men and women will equally share the different household chores. Fahlén (2016) shows that there is a better distribution of housework between men and women in countries with support for family-work reconciliation policies and countries with fewer gender norms. Amarante and Rossel (2018) explore the factors behind the time devoted to unpaid care in Latin America. Their study reveals that the number of children, the age of women, and their matrimonial status play an important role. They went further to uncover the factors explaining the unpaid care inequality in Colombia, Mexico, Peru, and Uruguay by using Blinder-Oaxaca decomposition. Surprising, their result indicates that more than 60% of that gap comes from unexplained factors that might reflect the structures of different societies.

In order to reach a less unequal distribution of housework between men and women, men need to undertake more of the unpaid care work. Thus, scholars have started examining the factors explaining a greater involvement of men in unpaid care activities. Sullivan et al. (2015) find that highly educated husbands in European countries tend to participate more in unpaid care activities compared to less educated husbands. This result shows that education may be used as an instrument to get men to equally share unpaid care work with women. Carriero and Todesco (2017) investigate the effect of peers on men's involvement in unpaid care work. Their results show that peers can induce men to participate in unpaid care work, particularly childcare. This highlights the importance of campaigns to sensitize men about the importance of sharing housework equally. Gaunt (2018), using a sample of Israeli couples, reveals that the more

value men put into their father's role, the higher the share of unpaid care they will be willing to take. This strand of the literature focusing on men shows that a rising consciousness among men may help lessen the burden borne by women.

2.2 The Effect of an Unequal Distribution of Unpaid Care on Women's Employment

Scholars have provided many explanations about the probable negative effect of unpaid care on employment outcomes. According to Becker (1985), the time dedicated to unpaid care work decreases the available time for employment, resulting in lower productivity. A very high unpaid care burden may be a hindrance to getting a job because of the difficulty of combining both. As outlined in the World Development Report (2012), discrimination in society and in the household towards women is reinforced by traditional views about the roles of men and women. These views shape the gender identity in every society and assign different roles to men and women. Thus, a gendered division of unpaid care work hinders women's opportunities outside the household. Therefore, it is necessary to advocate for a better distribution of the different tasks included in unpaid care work.

There is empirical evidence of a negative relationship between unpaid care work and employment participation. Drobnič et al. (1999) find that in Germany and in the US, childbearing affects women labour participation. A macro-level study conducted by Ferrant et al. (2014) shows that the share of women participating in paid activities is higher in countries with fewer hours spent in unpaid care work by women. A decrease of one unit in women's unpaid care increases women's labour force participation by 10%. Likewise, a drop in the unequal distribution of unpaid care between men and women increases women's labour force participation. Similarly, Nguyen and Connelly (2014) examined the effect of caregiving intensity on labour force participation in Australia. They make a distinction between primary caregiver and secondary caregiver. They find that being a primary caregiver is negatively associated with the probability to get paid employment. Dildar (2015) uses the number of children in a household as a proxy of women's provision of childcare and finds a negative effect on women's employment in Turkey. Ciani (2012) looks at the effect of being a caregiver of children and the elderly on the probability of being employed. He finds a negative effect. One of the few studies

exploring the effect of unpaid care work on women's employment in developing countries finds that caring for children negatively affects women's employment chances (Cáceres-Delpiano 2012).

Some scholars further investigate the impact of unpaid care work on wages. As highlighted by Noonan (2001), women and men typically perform different tasks. And the tasks that women perform have the greatest effect on their productivity since they have to be performed daily. Using longitudinal data from the US, Noonan (2001) shows that tasks traditionally performed by women have the greatest negative impact on wages. Cooke and Hook (2018) explore the effect of domestic tasks across the wage distribution. They find that women at the top of the wage distribution suffer a wage penalty when the time spent in unpaid care work increases. Hersch and Stratton (2002) find that, in the US, time spent on daily routines such as cleaning and cooking have the largest effect on women's wages. Leigh (2010), in Australia, finds that the time spent in unpaid care work is positively associated with fewer hours in paid work, lower wages, and lower life satisfaction. Van Houtven et al. (2013) find that time spent on caregiving in the US negatively affects the probability of being employed, the number of paid work hours, and wages. Some studies reveal the role played by governments in lessening the unpaid care burden and the consequences on women's employment. According to O'Neill et al. (2017), Mexico has provided a childcare subsidy that has led to a higher participation of women in paid labour.

The available literature is mostly focused on developed countries. Furthermore, the number of studies that investigates the effect of unpaid care—and particularly, unpaid care inequality on women's employment quality—is limited.[1] Given that the most developing economies are characterized by huge informal sectors with many women workers, it is clear that filling these knowledge gaps is important. This chapter, therefore, contributes to the literature by investigating the socio-economic determinants of an unequal distribution of unpaid care work between women and men in Senegal and examines the effect of this unequal distribution on women's participation and women's quality of employment.

3 Data

Data from the 2011 Survey of Monitoring Poverty in Senegal (ESPS) are used in the analyses. This is a nationally representative survey that includes information on the socio-economic characteristics of individuals, labour

market participation (formal and informal jobs), unpaid care activities, and the migration of family members. The analytical sample is composed of individuals aged 15 and above. For information on the unpaid care work, the survey asked questions about individual involvement in different tasks that include household purchases, laundry, cooking, cleaning, fetching water, fetching wood, caring for children and the elderly, making repairs in the household, among others. Number of days and hours spent per week are reported for each of these tasks.

The study uses the definition of unpaid care work developed by Ferrant et al. (2014). It refers to all unpaid services provided within a household for its members. The study follows the methodology of Statistics Canada[2] to obtain a measure of the inequality of unpaid care work. This measure is denoted by the ratio of the time spent in unpaid care work by women to that of men. A ratio of 1 means that men and women equally share the burden. A ratio higher than 1 means that women take on a higher share of unpaid care work compared to men. The total number of hours spent by women and men in unpaid care work is obtained by summing up all the reported hours spent on each task. Average number of hours spent by women and men within each household is calculated. The inequality of unpaid care work per household is obtained by the ratio of the average number of hours spent by women to the average number of hours spent by men. The number of hours and the ratio of unpaid care are measured per week.

3.1 Unpaid Care in Senegal

According to the first Labour Force Survey in Senegal (ANSD 2016), the rate of labour participation for women is 42.7% compared to 65.8% for men among individuals aged 15 and above. In Senegal, despite progress made in terms of access to education of girls, the gender disparity is still significant. In 2015, the country ranked 30th in terms of gender equality among 52 African countries (African Development Bank 2015). The survey data is used to analyse the different components of unpaid care work in Senegal and reveals some diversity between men and women (Fig. 13.1). Men spend more time on average than women in activities such as fetching wood, repairing, and other unpaid care work in the household. For tasks that are usually done by women, such as cleaning, cooking, doing laundry, fetching water, and caring for children and the sick elderly, women spend far more time on them compared to men.

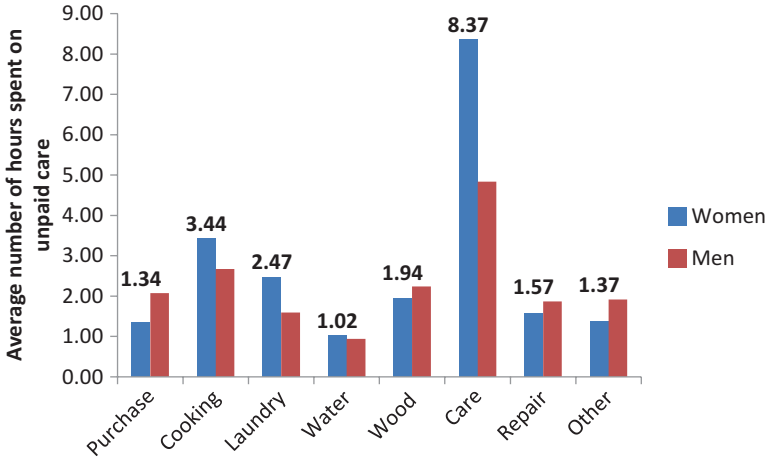

Fig. 13.1 Hours spent on each component of unpaid care by men and women

With regard to caring for children and the sick elderly, women spend nearly double the hours of men (8.36 hours vs. 4.83 hours). This reflects the existence of gendered tasks in Senegal, where some unpaid care tasks are exclusively reserved for women, and tasks such as cooking and caring for children and sick elderly are the most time-consuming. As pointed out by Baxter (1992), female unpaid care work is less flexible and needs to be performed at precise points during a day. Accordingly, women have less choice in the type of job they can have. They will not be able to perform jobs that require staying late or travelling frequently.

The unequal distribution of unpaid care faced by women may be associated with poor labour market conditions. Figure 13.2 shows the association between the inequality in unpaid care work and women's occupations. Women facing the highest inequality in unpaid care are those working as family workers or unpaid apprentices. The time these women spend in unpaid care is almost eight times that of men's. Women in a management position are those with the lowest inequality in unpaid care. The time they spend in unpaid care is only six times that of men's. This suggests that the unequal distribution of unpaid care is a barrier to women's labour market opportunities. This inequality hinders women's access to top positions in the labour market. It also drives women to vulnerable job positions. The highest inequality in unpaid care is reported for women without a contract

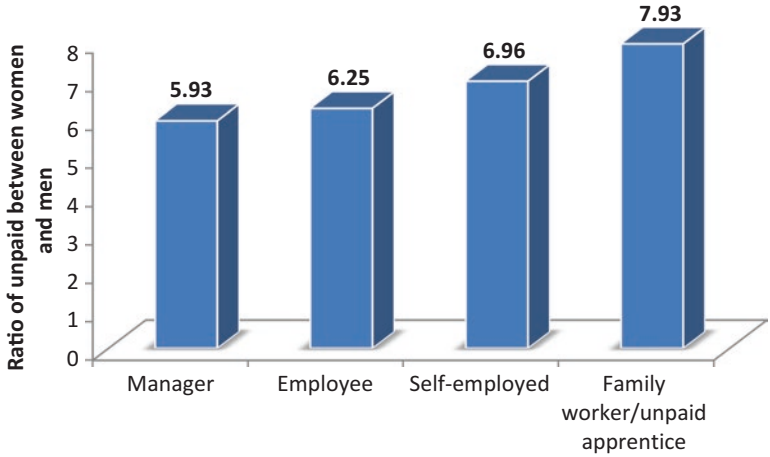

Fig. 13.2 Inequality in unpaid care work between men and women and socio-professional category of women

in their job. The time they spend equals around 6.6 time that of men's. The two lowest inequalities in unpaid care are reported for women with fixed term contracts (5.4) and women with permanent contract (4.87).[3]

3.2 Descriptive Statistics[4]

The sample for the empirical assessment is restricted to women aged 15 and above. In the sample, only 0.7% of women benefit from health insurance in the job that they hold. This also implies that a low proportion of women have a formal job. In the sample, 87% of women among those who are working have a full-time job. A striking observation is that only 37% of all women are working, which is quite low. The average number of hours worked by women per week is 4.21 hours.

The average value for the inequality in unpaid care women face within households is around 7. This means that, on average, the time women spend on unpaid care is seven times that of men. This is a huge inequality that they are facing. Half of the women are involved in the less productive sector, that is, the agricultural sector, while only 4.5% of them are working in the secondary sector (manufacturing sector). A large share of women is also involved in the tertiary sector (Services). Even if the latter has a higher productivity level compared to the primary sector, most women end up in

very low productive jobs such as domestic work in developing countries (ILO 2016). On average, women have two and a half years of education. This reflects the situation of the education system in Senegal, where 54% of the adults have not been to school according to ESPS 2011. The average number of children per household is four.[5] A high number of children in a household may increase the time women devote to unpaid care work.

4 Estimation Strategy

4.1 *The Determinants of Unpaid Care Inequality*

The first regression estimates the determinants of unpaid care inequality between men and women using a linear regression model. The dependent variable is the ratio of unpaid care of women to that of men. The independent variables are the level of education of women, their age, urban or rural location, number of children, and number of individuals with disabilities. To capture the probable effect of informal institutions, binary variables—such as being married or not, whether the household head is Muslim or not, and the whether the head is polygamous or not[6]—are also included.

4.2 *The Effect of Unpaid Care Inequality on Women's Participation and Quality of Employment*

We estimate the effect of unpaid care inequality on women's labour market participation and employment quality. The employment quality outcome is conditional to labour market participation and is not observed for women who are not working. In cases where the dependent variable is missing for a part of the sample, sample selection bias arises (Heckman 1977). In order to overcome this bias, it is necessary to select a model that accounts for and corrects it. Therefore, the Heckman selection model is applied in order to estimate the effect of unpaid care inequality on the quality of employment for women.

First, the selection equation is given as:

$$T_i = 1, \quad \text{if } T_i^* > 0$$

With

$$T_i^* = \theta w_i + \mu_i$$

where w_i is a vector of the control variables; θ is the vector of the parameters to estimate and μ_i is the error term with a normal distribution $N\left(0,\delta_\mu^2\right)$. One of the assumptions is that $w_i \perp \mu_i$.

The outcome equation is given as:

$$y_i = \beta X_i + \varphi T_i + \varepsilon_i$$

where X_i is the row vector of the control variables, β and φ are the parameters to estimate, ε_i is the error term.

The control variables in the outcome equation are hours spent in unpaid care, the inequality in unpaid care between men and women, age, years of education, urban or rural location, binary variables of the sectors of occupation (primary, secondary, and tertiary) with the tertiary sector being the reference, years of experience in current job, and number of children. Control variables in the selection equation are hours spent in unpaid care, inequality in unpaid care between men and women, age, years of education, urban/rural location, and number of children. For a better identification of the selection equation, it is necessary to have at least one variable that only affects the selection equation and is excluded from the outcome equation. Accordingly, two variables that satisfy the exclusion restriction are used: being married or not and number of individuals with a disability. These two variables determine the decision to enter the labour market, rather than the quality of the employment. The dependent variable for the selection equation is whether or not women are performing an economic activity (formal or informal). The dependent variables for the outcome equations are the variables "health" and "full-time". The variable "health" captures the information about health insurance provided to women in their jobs and the variable "full" determines whether they are working full-time or part-time. Since the dependent variables are all binary variables, the Heckman probit model is used.

5 Results

5.1 The Determinants of Unpaid Care Inequality

Table 13.1 reports the estimated determinants of unpaid care inequality between men and women. The first column reports the results for the

Table 13.1 The determinants of unpaid care work inequality within households

	(1)	*(2)*	*(3)*
	Whole sample	*Rural*	*Urban*
Age	−0.117***	−0.104***	−0.136***
	(0.006)	(0.008)	(0.009)
Education	−0.083***	−0.02	−0.116***
	(0.03)	(0.052)	(0.038)
Rural	−1.319***		
	(0.206)		
Children	0.120***	0.113***	0.151***
	(0.029)	(0.035)	(0.051)
Polygamy	0.096	−0.155	0.38
	(0.202)	(0.27)	(0.305)
Married	3.301***	3.150***	3.630***
	(0.207)	(0.288)	(0.306)
Disability	−0.095	−0.165	−0.078
	(0.092)	(0.149)	(0.12)
Muslim	−0.389	−1.016	0.28
	(0.469)	(0.65)	(0.68)
Observations	11,668	6717	4951
R-squared	0.06	0.054	0.069

Standard errors are in parentheses; ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$. OLS regression models used

whole sample and the second and third columns report the results for the rural and urban areas. The results show that age is strongly and negatively correlated with the inequality in unpaid care. The older they are, the less inequality in unpaid care women face. This expresses the reality in Senegal, where young women are more likely to undertake unpaid care compared to older women. This effect holds regardless of the urban/rural location. The level of education decreases the unpaid care inequality between men and women, and particularly within urban areas. Despite achieving a certain level of education, rural women still bear much of the unpaid care work burden. Rural areas often have rigid informal institutions and confine women in traditional roles. Surprisingly, within the whole sample, living in the rural area decreases unpaid care inequality. As highlighted by Oxfam (2018), typically, women in rural areas bear much of the unpaid care work.

The number of children within households increases unpaid care inequality, an expected result in a society where tasks are gendered. Caring

for children is one of the most time-consuming tasks and is almost exclusively undertaken by women. Being married increases unpaid care inequality. None of the other variables used as proxies of informal institutions has a significant effect on the unpaid care inequality, that is, Muslim religion and polygamous household. Overall, these results are consistent with the findings of Amarante and Rossel (2018), who also find that getting older, being married, and having children are strongly correlated with unpaid care inequality in Latin American countries.

5.2 The Effect of Unpaid Care Work Inequality on Women's Employment

The first two columns of Table 13.2 show the results of the selection equation whose dependent variable is participation in an economic activity. In the first, the primary independent variable is the number of hours spent in unpaid care, and in the second column, the primary independent variable is the inequality in unpaid care between men and women. The number of hours spent in unpaid care does not have a significant effect on women's labour market participation. Conversely, unpaid care inequality between men and women decreases the probability of women participating in the labour market. This result is consistent with the findings of Ferrant et al. (2014), which was carried out at the macro level.

As for the other control variables, age is positively associated with women's participation in the labour market. The older they are, the higher their likelihood to get involved in an economic activity. The variable education is negatively correlated with women's participation in the labour market. Even if this result seems peculiar, it reflects the labour market situation in Senegal. Indeed, the unemployment rate is higher for individuals with a secondary degree or a university degree compared to the individuals without education.[7] One of the explanations is that people without education are used to taking any available job, while those with a higher level of education have a higher wage reservation. The demand for skilled workers is also likely to play a major role. Women residing in rural areas have higher labour market participation than those in an urban area. As pointed out by Verick (2014), in developing countries, a high labour market participation of women may be driven by existing poverty. Poverty levels are higher in rural areas such that women cannot afford to not engage in any economic activity. The effect of the number of children in

the household is not significant, contrary to previous findings from the literature, which observe a negative effect on women's employment (Cáceres-Delpiano 2012; Dildar 2015). Being married increases the probability of participating in an economic activity. The number of individuals with a disability in the household is negatively associated with women's labour market participation. This result indicates that women are affected by the well-being of the other household's members as they are often the ones responsible for caregiving.

The last four columns of Table 13.2 show the estimated effects of the primary independent variables on women's quality of employment. Columns 3 and 4 show the effects of the number of hours spent in unpaid care and the inequality of unpaid care on the probability of working in jobs that provide health insurance. When workers benefit from social protection in their job, they are often considered as formal workers. Thus, we can get an insight on the quality of employment when women benefit from health insurance. The estimates in column 3 show that the effect of the number of hours spent in unpaid care is not significant. Conversely, column 4 shows that unpaid care inequality decreases the probability of working in a job that provides health insurance—and thus, a formal job. This result supports the importance recently given to unpaid care inequality (Narayan 2017; Ferrant et al. 2014; Oxfam 2018; Amarante and Rossel 2018). Due to an unfair distribution of unpaid care and gendered tasks, it appears women end up in less productive jobs. Hegewisch and Gornick (2011) argue that women often end up with low-skilled jobs due to the difficulty of combining unpaid care work burden with a competitive job. Concerning the effect of other variables, it appears that the level of education increases the probability of obtaining a formal job, that is, a job that provides health insurance.

Both the hours spent on unpaid care and unpaid care inequality have a negative and significant effect on the probability of having a full-time job. The more time women spend in unpaid care activities, the lower the probability of being in full-time employment. This is consistent with findings in the literature that show that unpaid care activities are associated with fewer hours in paid work (Van Houtven et al. 2013; Leigh 2010; Ferrant et al. 2014). This may be due to the difficulty of combining full-time employment with unpaid care work. Women are only left with the choice of getting a job that is not time-consuming.

Table 13.2 Unpaid care work inequality and women's employment outcomes

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
	Probit		*Heckman two-step*			
	Participation	*Participation*	*Health*	*Health*	*Full*	*Full*
Age	0.004***	0.003***	−0.004	−0.006	−0.002	−0.001
	(0)	(0.001)	(0.007)	(0.007)	(0.002)	(0.002)
Education	−0.020***	−0.018***	0.138***	0.137***	0.015**	0.012*
	(0.002)	(0.004)	(0.014)	(0.014)	(0.008)	(0.007)
Rural	0.335***	0.319***	−0.322	−0.332	0.221***	0.222***
	(0.012)	(0.026)	(0.212)	(0.208)	(0.065)	(0.06)
Total hours	0.001		−0.0005		−0.013***	
	(0.001)		(0.009)		(0.003)	
Inequality		−0.002*		−0.0206**		−0.006***
		(0.001)		(0.01)		(0.002)
Number of children	0.001	−0.003	0.002	0.003	0.0007	0.0006
	(0.002)	(0.004)	(0.019)	(0.01)	(0.005)	(0.005)
Married	0.320***	0.342***				
	(0.013)	(0.027)				
Disability	−0.016**	−0.031**				
	(0.007)	(0.012)				
Primary sector			−0.19	−0.177	0.191***	0.164***
			(0.203)	(0.202)	(0.059)	(0.055)
Secondary sector			0.135	0.11	0.015	0.011
			(0.203)	(0.203)	(0.092)	(0.087)
Experience			0.011	0.01	0.012***	0.012***
			(0.008)	(0.008)	(0.002)	(0.002)
Mill's ratio			−0.164	−0.2	0.545	0.697***
			(−0.448)	(−0.421)	(−0.168)	(−0.16)
Observations	51,517	11,730	11,210	11,210	11,210	11,210

Table reports coefficients from the probit (columns 1 and 2) and the Heckman probit (columns 3 to 6) estimations; standard errors are in parentheses; ***$p < 0.01$, **$p < 0.05$, *$p < 0.10$

6 Conclusion and Recommendations

Despite many decades of progress towards more gender equality, women still have a lower rate of participation in paid activities and have less productive jobs than men. One of the possible explanations is that participation in unpaid care work hinders women's opportunities in paid activities. Little attention has been given to the effect of inequality of unpaid care work between men and women within the household on the quality of women's employment. Additionally, the lack of research on that issue in African countries is striking.

This study finds that women's age and level of education reduce the unequal division of unpaid care work within the household. This supports the idea that education is a tool that can alleviate the inequality women may face. The findings also reinforce the notion that norms impede gender equality. For instance, the number of children and being married increase the unpaid care work inequality that women face within the household. Women—particularly in Africa—are expected to take care of children. Moreover, married women are expected to take on most of the household's chores and responsibilities.

The study also finds that women facing higher inequality in unpaid care work within their household are less likely to participate in the paid labour market. In addition, unpaid care inequality negatively affects their likelihood of obtaining formal employment and a full-time job. Compared to the effect of number of hours spent in unpaid care work, the effect of unpaid care work inequality is stronger. Overall, these findings suggest that policymakers and researchers should pay more attention to the unequal distribution of unpaid care work between men and women within the household.

The gender gap in unpaid care must be addressed in order to increase the participation of women in economic activities, and consequently, women empowerment. Governments can play a decisive role in reducing the unpaid care work borne by women. They can provide free access to kindergartens or lower the costs, and provide care services for elderly and disabled people. As pointed out by O'Neill et al. (2017), investment in time-saving equipment and infrastructure may also help relieve the unpaid care burden from the shoulders of women. Men need to get more involved in unpaid care activities in order to provide women better flexibility in their labour market choices. To get men more involved, policies that tackle perceptions, norms, and gender roles are needed. In order to realize SDG

5, which calls for gender equality by 2030, all parts of the society have a key role to play. A greater involvement of governments and men in lessening the unpaid care work of women could accelerate the achievement of gender equality by 2030. Still, further research is required to provide additional insights on the causal impacts of unpaid care inequality on women's quality of employment.

Notes

1. To the best of our knowledge, the only study that investigates the effect of unpaid care inequality on women's employment is Ferrant et al. (2014). Moreover, their study is at the macro level.
2. Economic Gender Equality Indicators (1997). Federal Provincial/Territorial Ministers Responsible for the Status of Women, Canada.
3. Additional information may be provided upon request.
4. Due to space constraints, the table of descriptive statistics is not included in the document. But, more details can be provided upon request.
5. We consider as children those who are aged 10 or less.
6. We mean by polygamous nature of the household whether or not the household head is polygamous or not.
7. Diagnostic sur l'Emploi des Jeunes au Sénégal: Etude réalisée dans le Cadre de L'initiative conjointe pour l'Emploi des Jeunes en Afrique. https://www.onusenegal.org/IMG/pdf/emploi_jeunes_senegal.pdf.

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CHAPTER 14

When Women Go to the City: African Women's Rural-Urban Migration and the Sustainable Development Goals

Lynda Pickbourn

1 Introduction

In the last two decades, the international migration of women has been the subject of intense focus by researchers and policymakers. A substantial body of research into the outcomes of migration for women who move across international borders has led to a growing recognition of the challenges they face. This has led to calls for changes in migration policy to

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protect women migrants, improve their access to services in the destination countries and facilitate their ability to make remittances.

In contrast, women who migrate within national borders, especially those who migrate from rural to urban areas, have received far less attention. For example, a background paper on gender and migration for the Human Development Report on Gender and Migration (UN 2009) mentions women's internal migration only sporadically, with the most substantial discussion of internal migration focusing on internally displaced women, while the policy recommendations at the end of the document are limited to policies designed to improve outcomes for women who migrate across international borders (Ghosh 2009). Indeed, with few exceptions (e.g. Awumbila et al. 2014; Castaldo et al. 2012), very little has been written about the kinds of policies that would contribute to improving outcomes of migration for women who migrate within national borders, and in particular, women who migrate from rural areas to cities in search of employment.

This is especially true of the literature on migration in Africa, where the focus has primarily been on the development potential of international migration. Despite the fact that the share of women participating in rural-urban flows within the continent has been rising since the 1980s (Adepoju 2004; FAO 2016), it is only recently that this phenomenon has even been acknowledged in high-level policy discussions relating to migration. For example, the first African Union Strategic Framework for a Policy on Migration, published in 2006, devoted less than a page to internal migration and made no mention of the participation of women in internal migration flows within the continent (AU 2005). A recently revised version of the document devotes two pages to internal migration, acknowledges the role of rural-urban migration in Africa's rapid urbanization, and calls for more research on rural-urban migration 'to deepen understanding of the unique issues faced by rural-urban migrants, especially migrant women'(AU 2018, p. 40).

This lack of attention to women's internal migration is perhaps unsurprising, given the uneasy place that internal migration—especially rural-urban migration—occupies in development research and praxis. In a study of 84 Poverty Reduction Strategy Papers (PRSPs) from 59 countries, Black and Sward (2009) find that more than half cite the problems posed by rural-urban migration in particular for urban environments, infrastructure, employment and services. More specifically, the PRSPs of the 22 African countries in the Black and Sward sample blamed rural-urban

migration for social dislocation, urban unemployment and the growth of urban squatter settlements. Ghana's PRSP (2006), for example, barely mentions internal migration, except to state unequivocally, in a section on housing and slum upgrading, that 'the growing incidence of slum development in Ghana has been the result of rural-urban migration' (GoG 2006, p. 53).

This perspective helps to explain the variety of policies that African governments have used to actively discourage rural-urban migration, for example, through forced slum clearance and mass evictions from squatter settlements, and laws that restrict, penalize or even criminalize the types of urban informal economic activities that provide income to many rural-urban migrants (Deshingkar and Grimm 2005; UN 2009). These restrictions make the lives of migrants even more difficult—not only are they unable to access basic amenities, housing and government support, but the variety of policies put in place to restrict mobility and informal employment makes rural-urban migrants, particularly women, especially vulnerable to harassment. These outcomes directly contradict two key objectives of the Sustainable Development Goals (SDGs): promoting gender equality and the empowerment of women (Goal 5) and providing decent work for all, including the protection of labour rights and the promotion of safe and secure working environments for all workers, especially women migrant workers (Goal 8).

This chapter draws on a study of women's migration in Ghana to explore the links between rural-urban migration, informal employment and women empowerment in greater depth, and to show how the stigmatization of rural-urban migration and urban informal employment limits the potential of rural-urban migration to empower women. Utilizing qualitative and quantitative evidence obtained from interviews and surveys of migrants and rural households, the study argues that although poor women who migrate from rural to urban areas often experience a double burden of marginalization and exploitation, their decisions to migrate represents an attempt to improve their own life outcomes as well as those of their families, in the face of severely constrained options for doing so. Moreover, for many of these women, the ability to circulate between their communities of origin and the city is an important part of their efforts to exert agency in the choice of where to live and work.

Promoting women empowerment entails expanding their ability to exercise control over major decisions that affect their life outcomes. This includes the ability to freely choose whether or not to migrate, as well as

the ability to engage in paid employment that will be potentially transformative for women. Both of these decisions require the presence of a set of equally viable alternatives from which to choose (Kabeer 2005). Sectoral and employment policies that constrain women's access to economic opportunities at home, together with urban planning policies that stigmatize or penalize rural-urban migration and informal employment only serve to restrict women's freedom to choose where to live and work. Promoting gender equality and women empowerment requires policy and programme interventions that increase women's freedom to choose, by expanding the livelihood options available to women who stay at home and by improving migration outcomes—through the protection of labour rights and livelihoods and the promotion of safe and secure working environments in the informal economy—for those who move.

2 Internal Migration of Women in Africa: What Do We Know?

Information on the characteristics of internal migration in Africa is limited, despite the scale of the phenomenon in the continent. A Food and Agriculture Organization (FAO) study, using data obtained from World Bank household surveys and population surveys from selected African countries,[1] suggests that internal migration remains the dominant migration flow, and that most of this migration is from rural to urban areas: over 50 per cent of households in Africa reporting at least one internal migrant are located in rural areas, and the share of rural-urban migrants ranges from 40 per cent in Nigeria to 55 per cent in South Africa (FAO 2017).

Women's participation in internal flows varies widely, ranging from 12 per cent in Burkina Faso to 53 per cent in Malawi (FAO 2017). Among migrants under the age of 20, there are 101 women for every 100 men (FAO 2016). In South Africa, for example, female migration has accounted for most of the increase in internal migratory movements of the country's African population in the 1990s, with the percentage of women in the migrant population rising from approximately 30 per cent to 34 per cent in 1999 (Posel and Casale 2003).

Although the FAO study suggests that African women are more likely to cite family-related reasons for their migration, other country-level studies of women's migration suggest otherwise (Findley and Diallo 1993; Findley and Williams 1991; Lesclingand 2011; Reed et al. 2010). Women who engage in short-term seasonal, temporary or circular migration for

employment are more likely to leave their families behind, while women who migrate permanently are more likely to be moving with their families. If migration surveys capture primarily long-term migration, then it will appear that women who migrate do so primarily to accompany family members. In contrast, migration studies that define migration as shorter-term movements are more likely to find that women are increasingly migrating autonomously primarily for employment reasons, although this migration may be short-term or circular in nature.

3 Data Source and Methods

3.1 Context

The migration of labour from the north of Ghana to the south dates back to the early colonial period when male labour was recruited to work in the mines and cocoa farms of the south. This migration stream remained male-dominated until the 1980s, when the number of women leaving rural agricultural communities in the north to work in urban centres in the south began to rise. This migration may be characterized as circular or seasonal migration, with women leaving their origin communities for five to six months at a stretch, often right after the harvest season is over, and then returning home for a few weeks to help family members harvest shea nuts or to plant or harvest the new crop. The capital, Accra, is a major destination for these women; in 2000, women made up 49.8 per cent of migrants from the Northern Region of Ghana living in the city (GSS 2012). Other important destinations are Kumasi and the port cities of Sekondi and Takoradi. The majority of migrants move independently of their families. In the south, where they work primarily as porters in the markets, they are known as *kayayei*, which loosely translates to 'women who carry loads'. Their clients are mainly traders and shoppers who hire them to carry goods between storage points and market centres or between market centres and transport terminals.

The major economic activity in the Northern Region is smallholder agriculture, with over 80 per cent of the population dependent on agriculture for their livelihood. The sector was hit hard by the country's Economic Recovery Program of the 1980s, which abolished guaranteed minimum prices for food staples and removed all subsidies to agricultural inputs, and by low and fluctuating rainfall levels (MOFA 2007; Nyanteng and Seini 2000). Falling agricultural yields of the major staple crops (millet, rice,

maize and sorghum), together with rising real food prices have resulted in chronic food insecurity in the region (Braimoh and Vlek 2006; MOFA 2007; WFP 2009, 2012).

A number of empirical studies have drawn a link between migration from agricultural communities in sub-Saharan Africa and livelihood vulnerability resulting from droughts or erratic weather patterns (Findley and Diallo 1993; Marchiori and Schumacher 2011). Although persistent out-migration from the Northern Region of Ghana appears to fit this pattern, understanding the growing participation of women in these flows since the 1980s requires an understanding of gender inequality in the region.

The typical household in the Northern Region of Ghana is an extended family unit built around a closely related group of married men and their conjugal families. Food staples are collectively cultivated on the household farm, which is managed by the household head, usually the oldest male in the compound. Male household members are allocated individual parcels of farmland, on which they cultivate cash crops, and they control the income generated from these private farms. Senior married women (those with two or more children) are required to supplement the food staples with vegetables, legumes and protein, and when food stocks run low, as has increasingly been the case, they may even become the main providers of food. Unlike men, however, they are not entitled to own or inherit land, although in land-rich households, they may be allocated a small piece of land on which they may cultivate vegetables and legumes for household consumption. These obligations for household provisioning provide the motivation for married women to engage in various income-generating activities such as food processing and shea-butter extraction, and result in women using almost all the income earned from these activities to meet these obligations (Warner et al. 1997). Junior married women and single women have no access to land; in addition to providing unpaid labour on the household farm, they are expected to assist senior women with their income-generating activities and to contribute to the household any payments they receive in exchange for providing labour on neighbouring farms. Greater food insecurity implies greater demands on women to supplement or replace diminished household food supplies. In the context of deteriorating agricultural livelihoods, the responsibilities of women for household provisioning, and their growing inability to meet these obligations while remaining at home, constitute an important reason for the migration of both single and married women from the region (Pickbourn 2011; Yaro and Tsikata 2013).

4 Methods and Data Analysis

Motivated by the paucity of research on this particular migration flow and curious about the implications of women's internal migration for development in sub-Saharan Africa, the author spent a year in Ghana researching the reasons for and outcomes of migration for these women. During that time, 253 women were surveyed, who had migrated from the Northern Region to live in Accra. The respondents were selected using a snowball sampling technique, with the initial sample purposely selected to ensure diversity in terms of age, marital status and origin community. In-depth interviews were also held with 50 of the survey respondents. A migrant was defined as any woman who had moved from the north of Ghana to live in the south for at least three months prior to the interview, or who intended to stay in the south for at least three months following the interview. The surveys and interviews took place in five separate locations in Accra, all chosen for their proximity to the market centres where the majority of female migrants from northern Ghana live and work. The characteristics of the migrants obtained from the migrant surveys are presented in Table 14.1. The second part of the field study took place in the Savelugu-Nanton district of the Northern Region of Ghana. Here, 181 migrant and non-migrant households in 24 communities were randomly selected from lists provided by village chiefs, and information was collected on, among other things, migration, remittances and household expenditures on education. Focus group discussions were also held with different groups—community elders and leaders, young men and women—to better understand the social context within which migration was occurring from the area.

Table 14.1 Migrant characteristics

Migrant characteristics	
Age (mean)	22.4
Childless (% of total)	66.7
Never married (% of total)	54.5
Married/consensual union (% of total)	44.3
Widowed/divorced (% of total)	1.9
N	253

Source: Author's surveys of female migrants in Accra

5 Results

5.1 Reasons for Migration

The surveys and interviews with women migrants in Accra revealed that the most important reason given by women migrants for their migration to the south was employment. Women who had migrated to the south wanted to save money to meet household consumption needs, pay for children's health and education and invest in economic activities. Even when women migrants indicated that they wished to spend money on acquiring 'personal' assets such as cooking pots, further questioning revealed that these were intended for use in food-processing activities, such as the parboiling of rice and extraction of groundnut oil and shea butter, the income from which would ultimately be used to meet household needs (Pickbourn 2011, 2016).

For the majority of the women interviewed, temporary migration to the south was part of a multi-sited livelihood strategy that women employed to balance the risk of unpredictable incomes in the south with limited employment opportunities in the north. Almost 80 per cent of them had been in Accra for less than a year, and of those who had been in Accra for more than a year, 44 per cent had returned home for periods ranging from one to five years. Of those who provided a reason for their most recent visit home, almost 43 per cent reported going home to help on the family farm or to work on their own account. More importantly, almost all planned to return home, with 60 per cent planning to stay there for more than a month and 41.2 per cent planning to help with the family farm or work on their own account upon their return. For those who had not returned, the most common reason given was that they had not achieved their financial goals at the time of the interview. Clearly, these women were not planning to move to Accra permanently. Instead, circulating between their rural communities and the city was an important part of their efforts to ensure that they could earn an income and meet their obligations at home.

5.2 Rural-Urban Migration, Remittances and Women Empowerment

Although internal migration is often overlooked in discussions of poverty reduction, research shows that remittances from internal migration can

have positive impacts on receiving households in terms of debt payment, nutrition, education and enterprise investment (Afsar 2003; Castaldo et al. 2012; Dayal and Karan 2003). The research in Ghana revealed that women migrants participated in female-centred networks of remittances flows, directing their remittances to female relatives in their sending households, who in turn, maintain control over the use of these remittances. Thus, there was an increased likelihood that women would be the primary recipient of migrant remittances if they lived in a household from which other women had migrated to work in urban areas in the south of the country. Those households in which women were the primary recipient of remittances spent more on education per child than other households (Pickbourn 2011, 2016).

The relationship between rural-urban migration and women empowerment is more complex. Under certain circumstances, migration can be empowering for women, and can be a way for women to escape social control or gender discrimination (Deshingkar and Grimm 2005; Hugo 2000). In northern Ghana, for example, the act of migrating itself represents a challenge to indigenous ideological constraints on women's mobility (Abdul-Korah 2011; Darkwah et al. 2016). In addition, the ability to send remittances can have an impact on social norms and values relating to gender roles and responsibilities in the migrants' communities of origin. For example, Abdul-Korah (2011) shows how the ability of Dagaaba women, who migrate from northern Ghana to urban areas in the south to send money home on a regular basis has had a positive impact on the social valuation of women at home, and on the status of women in the family.

However, the liberating potential of rural-urban migration for women themselves is tempered by multiple factors, and may be realized in certain dimensions, but not in others. In his discussion of the conditions under which migration can be empowering for women, Hugo (2000) argues that migration is more likely to empower women if it moves them from rural to urban locations, engages them in employment outside the home in formal sector occupations, and takes place within the legal framework for an extended period. Two of these conditions—formality and legality, not only of employment, but also of housing—pose significant challenges for the realization of the empowerment potential of rural-urban migration for women.

As in other parts of Africa, the informal economy provides the major source of employment for the majority of rural-urban migrants in Ghana,

and employment in the informal economy provides a degree of economic mobility for women rural-urban migrants, many of whom have limited access to opportunities for wage employment at home. All but one of the women interviewed in Accra were informally employed in the city's largest markets, and with the exception of the one woman, who was unemployed because she had just arrived in the city, all reported that their earnings from such employment were higher than they would have received at home (Table 14.2). About 94 per cent of those surveyed reported having some savings that would enable them to meet goals such as paying for children's education, making remittances to their origin households and purchasing household assets—goals that they would not have been able to meet had they remained at home. In this way, migration to work in the urban informal economy gave women access to an independent income—an opportunity that would otherwise have been denied to most of them.

However, gender and migrant status have implications for migrant women's earnings from informal employment, as do institutional barriers to credit and other productive resources. Empirical studies of non-agricultural informal employment in Ghana have shown that recent migrants and women are more likely than other groups to be concen-

Table 14.2 Economic mobility of migrants in Accra

Prior economic activity (in previous 12 months before first coming to Accra)	*Frequency*	*% of total*
Work for pay/profit	36	14.3
Unpaid family worker	187	74.2
Housework/childcare (unpaid)	11	4.4
School	10	3.9
Apprenticeship	8	3.2
N	252	100
No income	220	88
Some income	30	12
N	250	100
Post-migration labour market experience		
Employed	252	99.60474
Unemployed	1	0.395257
N	253	100

Source: Author's interviews with migrants

trated in the low-earning segments of the sector, and to have lower monthly earnings than men (Heintz and Pickbourn 2012, 2013). Thus, their earnings might not be enough to propel them up the ladder to more stable, less dependent and better paying forms of urban employment. The migrant women surveyed in Accra reported a high degree of variability in their earnings, and complained about the extent to which their earnings depended on the integrity of their clients. Access to loans or credit from the formal banking system was non-existent: only one woman had her savings in a formal financial institution; the rest participated in rotating savings and credit associations, or kept their savings on their person or with a moneylender. Reports of thefts and losses were common.

Moreover, the official stance on urban informal employment represents a significant challenge for women who migrate to urban areas from rural areas. Despite its importance in African economies, informal employment is often perceived as 'backward' and inconsistent with modern urban settings—a view that leads to efforts by municipal governments to reduce the visibility of informal employment by imposing various restrictions on informal economic activity. However, this can be disastrous for the livelihoods of the informally employed (Heintz 2010; Skinner 2010). The women interviewed in Accra complained of having to pay frequent fines to the Accra Metropolitan Authority (AMA), and having their property and loads confiscated, often for reasons that were unclear to them. On many occasions during the interviews, women migrants were observed running away in panic because an AMA official had been spotted in the vicinity. In some of the most egregious cases, these officials, who were armed with a cane, would lash out at the women, in an attempt to stop them from working in a particular location. Yet, these were often the same places where there was a high demand for their services, or where they needed to walk as they moved goods from one place to another for a client. The restrictions imposed by the municipal authorities presented an additional constraint on the ability of women migrants to maximize their earnings in the city.

A third challenge for the realization of women empowerment through rural-urban migration arises from the lack of affordable housing in many African cities, and the inability of municipal governments to plan adequately for urban growth and informality. Finding shelter in the city was a particular problem for the majority of the migrant women interviewed in

Accra. A third of the interviewed migrants had been unable to find affordable housing and slept on sidewalks, shop fronts and in bus terminals. Slightly more than half were renting a one-room wooden structure, usually in an informal settlement, which was shared with up to 20 other migrants. Only ten per cent were lucky enough to have access to shelter in a more permanent structure, which was often shared with others. Most were dependent on public standpipes and public toilets for water and sanitation. As in other African cities, the threat of forced eviction was always present, and in 2015, the city made good on this threat, with the clearance of the Old Fadama settlement, where a majority of migrants from northern Ghana live (Awumbila and Deshingkar 2016).

Unsurprisingly, women migrants from the Northern Region of Ghana were ambivalent about the emancipatory potential of migration for them. Although 47 per cent considered their living conditions in Accra to be an improvement upon those in their communities of origin, 34 per cent thought they were better in some respects and worse in others, while 15 per cent thought they were worse. While many acknowledged the importance of having independent access to income, control over their life's decisions, and the ability to send money home to support their families, they also pointed out the contradictions inherent in the process. Many noted that although they were pleased about being able to find work easily in Accra and earn some money, they also had to pay for many of the things that they had received for free at home—food, shelter and basic services such as water and sanitation. One pointed out how her ability to move around the city freely was curbed by her lack of familiarity with the city as well as the high cost of transportation, both of which meant that she was only able to go to places that were within walking distance; for her, she had much greater freedom of movement at home than she had in the city (Pickbourn 2011).

Clearly, for all these women, periodic migration to the south was an important element in their efforts to meet their financial obligations at home in the face of economic and social constraints on their access to important resources. In making the decision to migrate, women were exercising their agency, even as they were very much aware of the risks involved. Given that the promotion of gender equality and women empowerment and decent work constitute two important commitments of the SDGs, what is the appropriate role of development policy in relation to the increased participation of women in rural-urban migration flows in Africa?

6 Empowering Women and Protecting Migrant Workers' Rights: A Sustainable Approach Towards Women's Rural-Urban Migration

Current policy discussions on migration, which have focused primarily on cross-border migration, have focused either on improving the outcomes of migrants at their destinations or on encouraging development at home by supporting rural development projects as a way of reducing the incentive to migrate. Bakewell (2008) has argued forcefully against the latter, noting that the desire to reduce rural-urban migration by improving conditions in rural areas constitutes a primary reason for the investments in rural development programmes by African governments, international development non-governmental organizations (NGOs) and donors. These programmes, he argues, are grounded in an approach to development that assumes that development is about enabling people to stay at home without taking into account whether or not they actually wish to do so. He writes, '…. development action to sustain some rural areas, or even whole countries, may be attempting to create artificial incentives to keep people in their place. In some cases, it could be asked if investing such aid is wasteful when migration may be a more attractive and sustainable option for those people who have the opportunity to take it' (Bakewell 2008, p. 1353). For Bakewell, the focus should be on improving outcomes for migrants at their destinations, an approach that has also been advocated by organizations such as the Department for International Development (DFID) and the African Union.

On the other hand, Zoomers and Adepoju (2014), writing about the limits of international migration for sustainable development, note that despite the growing attention to international migration, the majority of the population in Africa is geographically stable, and argue for more explicit attention to improving local employment opportunities for those who stay, especially the youth. Presumably, this would involve expanding employment opportunities in both rural and urban areas—precisely the approach of which Bakewell is so critical.

However, these different approaches to 'managing migration' do not have to be mutually exclusive. As this study shows, the argument that migration may be 'more attractive and sustainable' for those who migrate overlooks the fact that migration is not always freely chosen. The rising participation of African women in migration flows previously dominated by men, as well as their growing participation in labour circulation between rural and urban areas, rather than in permanent migration, needs to be

understood in the context of the failure of decades of neoliberal economic policy in Africa to generate adequate employment opportunities in rural and urban areas. Market liberalization, the withdrawal of state support from agriculture and increasing competitive pressures from global markets have resulted in the growing inability of rural households to depend on farming alone for their livelihoods, and in the increasing proletarianization of smallholder farmers and their families (Bryceson 2000; Oya 2010). In this context, migration to urban areas and employment in non-agricultural economic activities provide access to higher earnings than women will be able to receive were they to remain at home. Yet, permanent migration does not offer sustained upward mobility for many of these women. In the post-liberalization context of deindustrialization, women face bleak prospects for good employment in towns and cities and it becomes even more important for them to sustain strong attachments to home by maintaining economic activities and residence in multiple locations. This lack of security in urban destinations is further heightened by the urban management approach of African municipal governments committed to creating 'world class cities' in which informal employment is seen as backward and inconsistent with modernity (Kinyanjui 2014).

Under these circumstances, it is entirely possible that many women who migrate to urban areas might have chosen not to do so if they could have gained access to the economic opportunities that they sought while remaining at home. For these women, policies that reduce their access to economic opportunity at home only serve to further limit their options for sustaining a livelihood without migration. On the other hand, there are women migrants who would be happy to remain permanently in urban areas if conditions in these urban locations were better. For these women, policies that restrict informal economic activity and the growth of informal settlements in the city worsen the risks they face at their destination. For both groups of women, a commitment to SDG 5—promoting gender equality and the empowerment of all women and girls—requires governments to ensure that migration is freely chosen; in other words, that it is chosen from among a set of equally viable alternatives, so that women who choose to migrate or to stay could have chosen differently, had they wished to do so. Furthermore, the commitment to SDG 5 also requires governments to ensure that the livelihoods, rights and safety of women workers, and in particular, migrant women workers, in the urban informal economy are protected—a requirement that is enshrined in SDG 8.

In the absence of adequate demand for labour in rural areas and inadequate employment opportunities in urban areas, the trend of women floating between rural areas and urban areas in coping migration patterns will only persist, and attempts by donors, NGOs and government agencies to curb women's migration by promoting self-employment in micro-enterprises and providing women with artisanal training and microcredit to support self-employment will continue to have limited impacts on poverty reduction or women empowerment. A sustainable and empowering approach to this development dilemma must involve policies that expand women's employment opportunities in their areas of origin as well as at their destination, together with a shift in perceptions regarding the role of rural-urban migration and the informal economy in African development and a reorientation of economic policy towards improving working and living conditions in the urban informal economy. Expanding women's employment opportunities in the areas of origin will require agricultural policies and rural development policies that seek to create rural employment for those, including women, who are currently unable to generate a sustainable livelihood from small-scale farming alone. Improving working and living conditions in the urban informal economy will require a policy approach towards informal employment, social protection and urban employment generation that goes beyond microloans, as well as more progressive solutions for housing the poor in urban areas.

7 Conclusion

The migration of women from rural areas for informal employment in urban areas in Africa is neither inherently good nor bad—what matters, from a human development perspective, is whether it is freely chosen from a set of viable alternatives, or whether women feel compelled to do so because they see no other alternative. The goal of ensuring that when women make the decision to move or stay, they are indeed choosing from among an expanded set of viable alternatives is entirely in line with the idea of human development as an expansion in the freedom of people to live the lives that they value. It is also completely in consonance with SDG 5 and 8. If these goals are to be achieved by 2030, African governments as well as their development partners will have to contend with the challenges raised by the feminization of rural-urban migration in the region.

Note

1. The countries were Nigeria, Senegal, Uganda, Burkina Faso, Kenya, South Africa, Ethiopia, Malawi and Ghana.

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PART VI

Women's Bargaining Power and Their Households' Well-Being

CHAPTER 15

Women Empowerment and Child Obesity: Evidence in Comoros, Malawi, and Mozambique

Carolyn Chisadza, Eleni Yitbarek, and Nicky Nicholls

1 Introduction

Obesity is a major global health issue. The link between obesity and numerous non-communicable diseases (NCDs), including diabetes and heart disease as well as the associated high cholesterol and high blood pressure, is now widely acknowledged. According to Lim et al. (2012), overweight and obesity were estimated to cause more than three million deaths and 4% of years of life lost in 2010. Overweight/obesity among preschool children and adolescents is a growing health challenge that many countries are facing today. In 2010, 43 million children were overweight/obese, and this number is estimated to reach 60 million in 2020 (De Onis et al. 2010). A systematic analysis of overweight and obesity among children and adolescents further estimated a global prevalence of obesity of 24% in boys and 23% in girls in 2013 (Ng et al. 2014). The existing empirical evidence indicates that childhood obesity is a cause of poor adulthood

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health outcomes such as premature illness and premature death (De Onis et al. 2010; Freedman et al. 2005).

In developing countries, and particularly in Africa, undernutrition and stunting have been a more pertinent issue than obesity, with stunting having its highest prevalence in sub-Saharan Africa.[1] As such, much of the literature on nutrition in developing countries has focused on factors related to undernutrition rather than obesity. However, Ng et al. (2014) argue that developing countries are not exempt from the global trends of increasing obesity. According to their findings, obesity/overweight prevalence increased from 8.1% in 1980 to 12.9% in 2013 for boys and from 8.4% in 1980 to 13.4% in 2013 for girls in developing countries. Ziraba et al. (2009) found that obesity in seven sub-Saharan African countries increased by 35% on average between 1992 and 2005, with most of this increase among poor households and uneducated women. Although they argue that reliable statistics on obesity/overweight in Africa are not available, Keino et al. (2014) estimate that over a third of women and a quarter of men in Africa are overweight. They also note a common pattern of stunting in childhood being associated with overweight as a person ages. In another systematic review, Muthuri et al. (2014) also document an increasing obesity and overweight prevalence trend over time in sub-Saharan Africa, while the problem of the high prevalence of underweight persists concurrently.

In developed countries, the increasing participation of women in the labour market has been linked to the rise in child obesity. Anderson et al. (2003) found a positive correlation between a mother working long hours and the probability that her child (aged 3 to 11) is overweight in the United States (USA). They note that this link is limited to higher socioeconomic status families. Similar positive correlations between working mothers and child obesity have been found in other developed countries, including among 6 to 11-year-olds in Canada (Phipps et al. 2006) and among 2 to 11-year-olds in Spain (Garcia et al. 2006). Cawley and Liu (2012) also confirm the link among 3 to 11-year-olds in the USA. Hawkins et al. (2008) considered a small sample of 3-year-old singleton children in the UK. They also found that maternal employment is associated with increased prevalence of obesity and noted that this relationship is only significant for higher-income households. Cawley and Liu (2012) used time-use survey data in the USA and found that working mothers spend less time than their non-working counterparts in active play with their children and in preparing food, and spend more time purchasing prepared food. Moreover, working mothers have less time to monitor the time spent by

their children watching television or their involvement in sports, which can result in child obesity (Ziol-Guest et al. 2013). Anderson (2012) finds evidence of maternal employment increasing body mass index (BMI) in children because of fewer regular family meals and children going to bed after 10 p.m. A study by Maddah and Nikkoyeh (2009) shows that among 6 to 11-year-old Iranian children with overweight parents, children with more educated mothers and children who often skip breakfast are more prone to overweight and obesity.

The timing of maternal employment is also found to matter: children whose mothers work full-time during mid-childhood (aged 7–11) are more likely to be overweight at age 16 (Scholder 2008). However, Greve (2011) finds no increase in childhood obesity with increased working hours among mothers in Denmark, arguing that this difference in the USA and the UK studies is due to the high quality of childcare available in Denmark as well as to the greater participation of fathers in children's caregiving. Gwozdz et al. (2013) also find no significant evidence that maternal employment affects either obesity or diet or the physical activity levels of children aged 2–9 in eight countries in Europe. However, they did find that children who are already obese are more likely to gain weight faster than those who are not overweight and that children from low-income households are more likely to be obese. The latter finding by Gwozdz et al. (2013) is in line with Anderson (2012), who finds that children from rich households with educated parents are less likely to be obese. Evidence from several other studies finds no correlation between maternal employment, or increased grandparent childcare, and child obesity, diet or physical activity in South Asia and Australia (Cunningham et al. 2015; Nie and Sousa-Poza 2014; Taylor et al. 2012). Despite the growing number of studies, the nature of the relationship between maternal employment and children's overweight/obesity remains unclear.

The role of institutions in this debate has not gone unnoticed. Public policies related to maternity leave and childcare can influence mothers' participation in the labour market and children's development. A European study reveals that Denmark has a high rate of working mothers but the lowest rate of childhood obesity compared to Australia, Germany, Spain, the UK and the USA. The author attributes this to the generous public investment in childcare as well as to additional parental leave after maternity leave (Gwozdz 2016).

Most of the studies identified in the literature consider maternal employment instead of considering women empowerment more broadly;

this is particularly true in Africa. We were only able to identify a handful of studies on women empowerment and child obesity in Africa. Mamabolo et al. (2005) studied 3-year-olds in rural Limpopo (in South Africa) and find that mothers' employment significantly increases the risk of the child being overweight. Mvo (1999) considered the perceptions of overweight Black women in squatter communities in Cape Town (South Africa) in a qualitative study and concludes that because food security is not assured; overweight children are seen as being healthy because their higher weight is associated with sufficient food supply. A few studies cover another measure of empowerment in the form of mothers' education: in Iran, Maddah and Nikkoyeh (2009) note higher child obesity with educated mothers. More encouraging, mothers' education has been linked to less undernutrition in Africa (Beegle et al. 2016; Kabubo-Mariara et al. 2008). Women empowerment (Sethuraman et al. 2006) and women autonomy (Shroff et al. 2009) are also associated with less child malnutrition in India.

Although the existing empirical evidence shows that the nature of gender relations between partners—the relation of power between husband and wife—shapes the resource allocation of households, research on the implications of mothers' bargaining power in the health outcomes of their children, particularly those overweight/obese, are quite limited in developing countries.[2] In its simplest form, body weight is the result of proximal lifestyle factors that determine the balance between energy consumption (eating and drinking) and energy expenditure (physical activity). Generally, what children eat and how they spend their time are shaped by various factors within the household, including mothers' empowerment. For instance, maternal employment largely determines the amount of resources (money and time) available for human capital accumulation of children within a household. Often, foods that are relatively 'unhealthy' are relatively cheaper, readily available, and quick to serve. Therefore, full-time working mothers, who may have less time to prepare healthy meals, may rely more on prepared foods (Cawley and Liu 2012). In developed countries, as discussed earlier, women's labour force participation has been linked to increasing obesity rates among children (Banwell et al. 2007; Brown et al. 2010). At the same time, maternal employment increases the household income, which can be used to reduce childhood obesity. It is possible that mothers' contributions to household income enable the purchase of more healthy food and better childcare and enrolment of children in organised sports to offset the weight gain (Cawley and Liu 2012; Gwozdz et al. 2013). Indeed, in the developed world,

childhood obesity tends to follow the typical health inequalities gradient. Child obesity is more prevalent in low-income households than in their non-poor counterparts (Wake et al. 2003; Wang et al. 2002).

The number of studies conducted in Africa continues to be small despite the fact that, as noted earlier, obesity is increasing in developing countries, including in the African continent. Agyemang et al. (2015) mention a dramatic increase in the prevalence of overweight people in Southern Africa since 1990. They cited an average prevalence rate of 21% in Southern Africa in 2015, which amounts to a 330% increase in the last 25 years. Beegle et al. (2016) further note that poor nutritional habits appear to be accompanying rising incomes in Africa, citing highest obesity prevalence among highly educated women, women in urban settings, and women in middle-income countries.

This chapter contributes to filling this gap in the literature by investigating the effects of different indicators of women empowerment on child obesity in Africa. It looks at education and employment and also at women's decision-making power in healthcare decisions, major household purchasing decisions, and income spending decisions. According to Cunningham et al. (2015), different women empowerment domains may relate differently to a child's nutritional status. With social programmes and policies in Africa aimed at improving women's inclusion in education and the labour market (Duflo 2012; Kabir 2012), this study is relevant in highlighting the possible indirect outcomes that may arise from women empowerment and how policymakers can best mitigate these effects.

The results from this study suggest that certain aspects of a mother's bargaining power within a household are sometimes associated with lower overweight/obesity levels. This study documents a negative correlation between mothers' decision-making authority and overweight/obese children in Malawi and Mozambique, but not in Comoros. Moreover, this study reaffirms other important determinants of overweight/obese children in three sub-Saharan African countries where the obesity/overweight prevalence among preschool children is high. The negative relationship between mothers' empowerment and the weight status of their young children in Malawi and Mozambique provides strong support for women empowerment policies as an important means for promoting healthy family lifestyles and early childhood well-being.

The rest of the chapter is structured as follows: Section 2 discusses the research methods, including the data and variables used for the

empirical analysis; Section 3 reports the results; and Section 4 concludes the chapter.

2 Data and Variables

This study uses the latest Demographic and Health Surveys (DHS) of three of the sub-Saharan African countries that have the highest obesity/overweight prevalence rate among preschool children: Comoros (2012), Malawi (2015/2016) and Mozambique (2011). DHS is a nationally representative household survey that is designed to provide health-related data, including fertility, childhood mortality, contraceptive knowledge and use, maternal and child health, nutritional status of mothers and their children, awareness of HIV/AIDS, and domestic violence. The data also provide detailed information on several aspects of household-level welfare, except for household income and expenditure.[3] The main target population is all women aged 15–49 and children under 5 years of age living in selected households. For the purpose of this analysis, DHS provides the anthropometry data of children whose age ranges from 0 to 59 months as well as maternal anthropometry and socio-demographic data.[4]

The analysis is restricted to three sub-Saharan Africa countries—Comoros, Malawi, and Mozambique—that have the highest children obesity/overweight rate. According to Gebremedhin's (2015) estimates, Sierra Leone (16.9%), Comoros (15.9%), Malawi (14.5%), and Mozambique (11.9%) have the highest levels of obesity/overweight in children aged 0–59 months in Africa. Because this study aims to conceptualise the mother's bargaining power in relation to her husband, only those surveys (Comoros, Malawi, and Mozambique) that collect data on both men and women and only children who reside with both parents are included in our sample.[5]

In all the countries analysed, the unit of analysis is children (boys and girls) whose age ranges from 0 to 59 months and who reside with both parents. BMI-for-age z-scores are calculated on the basis of the World Health Organization (WHO) growth reference data.[6] Children with BMI-for-age z-scores greater than 2 are considered as overweight/obese. Children with BMI-for-age z-scores less than -2 and between -2 and 2 are defined as thin and normal, respectively. In all the countries, children who are classified as thin and children for whom there are incomplete or implausible anthropometry data are excluded from the analysis. Table 15.1 presents the descriptive statistics of variables used for the analysis. There are two

Table 15.1 Summary statistics of variables used in estimation

	Comoros				*Malawi*				*Mozambique*			
	Mean	*St. Dev*[a]	*Min.*	*Max.*	*Mean*	*St. Dev*	*Min.*	*Max.*	*Mean*	*St. Dev*	*Min.*	*Max.*
Mothers & children characteristics												
Children overweight/obesity status[c]	0.13				0.05				0.11			
Sex of child (Female = 1)	0.50				0.50				0.49			
Age of child (in months)	29	17	0	59	30	17	0	59	29	17	0	59
Mom age	30	7	15	49	28	7	15	49	29	7	15	49
BMI mom (kg/m^2)	2.69	2.18	0	43	2.30	0.96	0.62	44.30	2.24	0.36	1.00	9.37
Maternal educational status												
Illiterate	0.45	0.50			0.13				0.37			
Primary[b]	0.24	0.43			0.67				0.51			
Secondary	0.24	0.43			0.18				0.11			
Tertiary and higher	0.07	0.26			0.02				0.01			
Mom working	0.38	0.48			0.65				0.36			
Household characteristics												
Sex household head (Female = 1)	0.25				0.05				0.14			
Place of residence (Urban = 1)	0.33				0.16				0.31			
Age household head	39	12	15	93	35	10	17	98	37	11	15	90
Poor[b]	0.48				0.43				0.40	0.49		
Middle	0.20				0.20				0.21	0.41		
Rich	0.32				0.37				0.39	0.49		
Mother bargaining power												
Empowered healthcare[e]	0.45				0.66				0.70	0.46		
Empowered purchases[f]	0.52				0.55				0.61	0.49		
Empowered income[g]	0.47				0.17				0.14	0.34		

(*continued*)

Table 15.1 (continued)

	Comoros				*Malawi*				*Mozambique*			
	Mean	*St. Dev*[a]	*Min.*	*Max.*	*Mean*	*St. Dev*	*Min.*	*Max.*	*Mean*	*St. Dev*	*Min.*	*Max.*
Empowered mother[d]	0.62				0.75				0.77	0.42		
Observations	1852				3594				6342			

[a]Min., Max. and St. Dev. for dummy variables are not included

[b]Symbolises a reference group

[c]1 if *z*-scores for BMI for age greater than 2

[d]1 if a woman is involved in making at least one of the three decisions

[e]1 if mothers unilaterally or jointly involved in health decision

[f]1 if mothers unilaterally or jointly involved in major purchase decision

[g]1 if mothers unilaterally or jointly involved in income spending decision

types of variables: the outcome variable (obesity/overweight status of children based on BMI-for-age *z*-score) and determinants of the obesity/overweight status of children (control variables). The controls are grouped into four main categories: children and mothers' characteristics, household characteristics, household head characteristics, and women's bargaining indicators.

Women's bargaining power variables are based on women's contribution to household decision-making. The literature has used various bargaining power measures such as relative education, employment type, asset ownership, and women involvement in decision-making, depending on data availability (see Doss 2013, for a survey of the literature). However, women's ability to negotiate on intrahousehold resource allocations reveals the true distribution of bargaining power in a household (Agarwal 1997; Doss 2013). Thus, women who participate in household decision-making may be considered to be empowered or to have greater bargaining power than their counterparts who are excluded from the decision-making process altogether. Following this, mothers' bargaining power is defined based on their role in making certain decisions in the households. In all the three surveys, the following questions were asked:

- Who usually makes decisions about the health of mothers?[7]
- Who usually makes decisions about making major household purchases?
- Who usually decides what to do with the money the mother earns?

Based on this, three dummy variables were created, that take a value of 1 when women are unilaterally or jointly involved in the decision-making process. Moreover, with the objective of identifying the lowest level of women's involvement in decision-making, a binary variable that takes a value of 1 if a woman is involved in making at least one of the three decisions was also created. The bargaining power indicators reflect some of women's contribution in household decision-making and give equal weight to unilateral and joint decision-making. Indeed, unilateral decision-making might indicate more power in these decisions, which would entail assigning an arbitrary value for both scenarios, but this study refrains from doing that.

3 Results

3.1 Estimation Approach

The empirical analysis uses mixed-effects logistic regressions to analyse the effect of different variables on child obesity. The study is particularly interested in the correlation between women's bargaining power (women empowerment) and child obesity. The study first considers child and household demographic variables and then adds women empowerment variables. Because the inclusion of the women empowerment variables did not materially change the effects of the other variables, only the regression results where these variables (as the main focus of the study) are included are reported. Table 15.2 reports the odds ratios from these regressions. As discussed earlier, in addition to education and employment, the study considers three indicators of women's bargaining power indicators: empowerment in healthcare decisions, empowerment in purchase decisions, and empowerment in income decisions. We also created a single binary variable to measure women empowerment: woman involved in making at least one of the three decisions.

3.2 Child and Household Demographics

In all the countries studied, girls are less likely to be obese than boys. The magnitude of the difference varies by country, with the biggest difference observed in Malawi. In Comoros, this relationship is not statistically significant, but the same direction is observed. Older children in Malawi and Mozambique are also less likely to be obese than younger children (we see a 2–3% difference per month by which age increases). Not surprisingly, higher BMI of the mother is strongly correlated to child obesity. Here, there is a smaller (but still significant) impact of mothers' BMI in Comoros (1.1), whereas in Mozambique and Malawi, there is a factor of above 2. The latter finding is in line with Maddah and Nikkoyeh (2009).

Other variables that are included such as the wealth status of the household, urban area, and the age and gender of the household head make no consistent significant contribution to childhood obesity. Older household heads are associated with higher child obesity in Malawi, but not in other countries, whereas lower levels of child obesity are seen in urban versus rural Mozambique. The latter effect, however, disappears once multiple women empowerment indicators are included in the regression.

Table 15.2 Estimation results (odds ratios) by country

	Comoros [1]		*Comoros [2]*		*Malawi [1]*		*Malawi [2]*		*Mozambique [1]*		*Mozambique [2]*	
Dependent variable: overweight/obesity status[a]	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*
Mothers & children characteristics												
Sex of child (Female = 1)	0.78	0.12	0.78	0.12	0.58[c]	0.092	0.58[c]	0.092	0.84[b]	0.07	0.84[b]	0.071
Age of child	0.99	0.005	0.99	0.005	0.97[c]	0.005	0.97[c]	0.005	0.98[c]	0.003	0.98[c]	0.003
Mom age	1	0.014	0.998	0.014	0.97[b]	0.015	0.97[b]	0.015	0.99	0.007	0.995	0.007
BMI mother (kg/m^2)	1.10[b]	0.043	1.10[b]	0.044	2.11[c]	0.43	2.11[c]	0.432	2.14[c]	0.253	2.16[c]	0.257
Maternal educational status												
Illiterate	0.60[b]	0.12	0.59[c]	0.118	1.2	0.29	1.2	0.291	1.21[a]	0.119	1.21[a]	0.119
Secondary	0.74	0.16	0.71	0.155	1.16	0.251	1.15	0.249	1.03	0.156	1.04	0.159
Tertiary and higher	0.58	0.207	0.59	0.21	2.34	1.285	2.42	1.31	0.81	0.392	0.86	0.418
Mom working	0.86	0.147	0.85	0.145	0.82	0.135	0.81	0.139	1.06	0.096	1.09	0.111
Household characteristics												
Sex household head (Female = 1)	0.85	0.165	0.84	0.162	0.82	0.285	0.82	0.285	0.9	0.115	0.9	0.115
Place of residence (Urban = 1)	1.24	0.27	1.19	0.256	0.77	0.198	0.76	0.196	0.81[a]	0.101	0.82	0.102
Age household head	0.999	0.008	0.998	0.0077	1.02[b]	0.009	1.02[b]	0.009	0.997	0.004	0.996	0.004
Wealth index												
Middle	1.05	0.223	1.05	0.224	0.99	0.207	0.99	0.209	1.19	0.137	1.21	0.139

(*continued*)

Table 15.2 (continued)

	Comoros [1]		*Comoros [2]*		*Malawi [1]*		*Malawi [2]*		*Mozambique [1]*		*Mozambique [2]*	
Dependent variable: overweight/obesity status[a]	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*	*Coef.*	*Std. Err.*
Rich	0.99	0.21	0.97	0.207	0.89	0.184	0.89	0.184	1.13	0.143	1.17	0.149
Mother bargaining power												
Empowered mother[d]	1.45[b]	0.258			0.65[b]	0.11			0.85	0.086		
Empowered healthcare[e]			1.41	0.341			0.71[a]	0.135			0.97	0.108
Empowered purchases[f]			1.72[b]	0.391			0.98	0.187			0.85	0.09
Empowered income[g]			0.8	0.178			0.95	0.226			0.89	0.137
Constant	0.14[c]	0.062	0.15[c]	0.065	0.05[c]		0.04[c]	0.024	0.045[c]		0.042[c]	0.013
Log likelihood	−677.29		−670.93		−704.02		−704.65		−2091.65		2090.22	
Prob > 2	24.05[b]		35.97[c]		73.37[c]		72.26[c]		95.16[c]		97.78[c]	
No. of observations	1852		1852		3594		3594		6342		6342	

For each country, regression 1 includes a binary variable for women empowerment, indicating a mother is involved in making at least one of the three decisions while we include the individual women empowerment indicators in regression 2

[a]1 if *z*-scores for BMI for age greater than 2

[b]5% significance level

[c]1% significance level

[d]1 if a woman is involved in making at least one of the three decisions

[e]1 if mothers unilaterally or jointly involved in health decision

[f]1 if mothers unilaterally or jointly involved in major purchase decision

[g]1 if mothers unilaterally or jointly involved in income spending decision

3.3 Women Empowerment

A number of previous studies document a positive link between mothers' education and child obesity (Anderson 2012; Maddah and Nikkoyeh 2009). However, the results obtained above do not show a significant relationship between mothers' education and child obesity in Malawi. Mothers with no education are less likely to have obese children than mothers with primary education in Comoros, whereas illiterate mothers are likely to have obese children in Mozambique. The result in Comoros might reflect undernourishment in children of families without education, who are likely to have little access to paid employment.

While several studies found a positive correlation between working mothers and child obesity (Anderson et al. 2003; Garcia et al. 2006; Hawkins et al. 2008; Liu et al. 2009; Phipps et al. 2006), the results do not indicate a significant relationship between working mothers and child obesity in any of the three countries studied. The findings therefore align with evidence from Greve (2011), Gwozdz et al. (2013), Nie and Sousa-Poza (2014), and Cunningham et al. (2015). At the same time, the indicators of women empowerment are significantly related to child obesity, but the nature of this relationship varies significantly by country. In both Malawi and Mozambique, there are lower levels of child obesity when the mother is empowered on at least one of the three dimensions mentioned earlier. This relationship is significant for Malawi, but not for Mozambique. When the dimensions of empowerment are considered individually, the biggest driver of the link between mother empowerment and decreased child obesity in Malawi is empowerment in healthcare decisions, whereas for Mozambique, it is empowerment in major household purchases, although this result is insignificant. In Comoros, the opposite occurs because there is now a positive link between empowerment and obesity—that is, when mothers are empowered on any of the three dimensions, they are more likely to have obese children.

4 Discussion and Conclusion

While the insignificant findings between working mothers and child obesity are not different from Gwozdz et al. (2013) or Greve (2011), this study does find evidence of different effects from women empowerment variables and child obesity in Comoros, Malawi, and Mozambique. It is plausible to assume that cultural differences might account for these differing effects. Mvo's (1999) qualitative study in South Africa pointed

to overweight children being seen as healthy in a context where food security was not assured. Because food security is a major challenge in Comoros, it might account for the positive relationship between empowered mothers and overweight children. This argument is reinforced by the finding that illiterate mothers are less likely to have obese children in Comoros. The negative relationship between mother empowerment and obesity in Malawi and Mozambique is, however, encouraging. If women empowerment does aid this aspect of child health, it gives yet another impetus to more women empowerment policies as an important means for promoting healthy families and early childhood well-being.

Although we can speculate about the cultural reasons for the differences between countries, further (possibly qualitative) research will be needed to better understand these differences and the true reason for the troubling higher obesity seen among children of empowered women in Comoros. Proper understanding of such mechanisms can help to inform policy aimed at reducing child obesity in Comoros and other African countries where a positive relationship between women empowerment and child obesity is seen.

A more comprehensive study including other African countries would also be an important next step in identifying which countries experience a decrease in child obesity with empowered mothers and which see child obesity increasing with mothers' empowerment. Appropriate policy (including, for example, better education on child nutrition to accompany women empowerment policies) will flow from a better understanding of the country-specific links between child obesity and women empowerment. The evidence from a better country-specific understanding can help policymakers to leverage links between Sustainable Development Goals (SDGs) such as Zero Hunger (SDG 2) and Gender Equality (SDG 5). Further, given the well-established links between obesity and NCDs, reducing obesity also aligns with SDG 3, which promotes good health and well-being.

Notes

1. Exact estimates differ slightly, but a systematic review by Keino et al. (2014) and Beegle et al. (2016) estimate this at close to 40% in 2012–2013.
2. There exists ample evidence that shows that improving the share of household income controlled by women and improving women's participation in household expenditure decisions changes the pattern of household expendi-

ture in a way that benefits children (World Bank 2011; Duflo 2000; Thomas 1990).

3. At the same time, DHS provides data on household wealth index, an index that measures relative living standards of households.
4. More statistical addendum of DHS is available on https://dhsprogram.com/data/.
5. In the latest DHS data available for Sierra Leone (2016), male data is not collected.
6. http://www.who.int/childgrowth/standards/technicalreport/en/.
7. In all the countries, this question is forwarded to the respondents (i.e. mothers in households). We assume that if a mother has some contribution towards her health decision, she will make the same contribution to her children's health.

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CHAPTER 16

Women, Inclusive Finance and the Quality of Life: Evidence from Zambia

Lwanga Elizabeth Nanziri

1 Introduction

Women remain disproportionately excluded in various dimensions despite the progress made under the Millennium Development Goals. For instance, fewer women access quality health care (Teunissen et al. 2016; Ngoma 2016; Mehrotra and Chand 2012; Hjortsberg 2003), attain higher education (Dube 2015; Klasen and Lamanna 2009), occupy senior positions in the workplace (Bhorat and Goga 2012) and participate in politics (Bwalya and Sukumar 2016; Coffe and Bolzendahl 2011; Kenworthy and Malami 1999). The growing awareness about the intersectional character of gender equality and the multiplier effects it has across the spectrum of development has motivated the United Nations Development Programme (UNDP) to focus on the simultaneous eradication of poverty, inequalities and exclusion.[1] Reducing gender inequalities can have beneficial effects such as poverty alleviation, enhanced economic growth and agricultural productivity, better nutrition and educational standards, as well as the building of more resilient communities.

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Financial inclusion has been identified as a development tool because it allows individuals, households and firms to make intertemporal decisions. Financial inclusion refers to a state in which all working-age adults have effective access to financial services (credit, savings [defined broadly to include current accounts], payments and insurance), provided by formal financial institutions (see Alliance for Financial Inclusion 2016). For women, access to finance gives them (equal) rights to economic resources. This is based on the argument that access to the formal financial system can increase asset ownership and serve as a catalyst to greater economic empowerment among women (Demirgüç-Kunt et al. 2013). According to these authors, a basic financial tool such as a deposit account at a formal financial institution provides a safe place to save and creates a reliable payment connection with family members, an employer or the government. It can also open up channels to formal credit, critical to investing in education or in a business. Thus, financially including women, as well as granting them ownership and control over land and other forms of property, inheritance and natural resources, reinforces their potential contribution to the development agenda.[2]

The crucial part that is played by women's ability to gain control over economic and financial resources has been underlined by the 2009 World Survey on the Role of Women in Development (United Nations 2009), and now adopted as a target under Sustainable Development Goal 5.[3] The report argues that persisting gender inequalities around the world are the consequence of discriminatory norms and practices. Despite an increase in the women's share of employment, the jobs they take are more precarious, less paid and more often take the form of part-time or temporary work, while at the same time there has been no decrease in women's share of domestic work, therefore limiting women's choices and mobility. Access to land and property is constrained by sociocultural norms and inheritance practices. These practices have implications for women's participation in the credit market, where land could be used as collateral. Furthermore, women's involvement in entrepreneurial activities is often limited to micro-, small- and medium-sized businesses in the service industries. In some countries like South Africa, the community of property arrangement requires married women to obtain their husband's signature and approval for all banking transactions, thus limiting their access to finance. Moreover, credit taken by the husband is recorded on the wife as well, further compromising access to own credit for business or otherwise, should the husband mismanage the credit facility.[4] The report strongly advises governments to increase the access of women entrepreneurs to financial instruments, including reg-

ular banking services, debt financing and equity financing through specific policy interventions. Thus, pursuing financial inclusion is not only a step towards reaching women empowerment, but it could also have spill-over effects in reducing poverty.

A gender gap in access to and use of financial services has been documented (for instance, Aterido et al. 2013; Asiedu et al. 2013; Demirgüç-Kunt et al. 2015). The main barriers associated with this financial inclusion gap relate to the following: (1) demand-side barriers (lack of bargaining power within the household, concentration in lower-paying economic sectors, lack of time as a consequence of unpaid domestic work, lack of assets for collateral, no formal identification, reduced mobility and lower rates of cell phone ownership), (2) supply-side barriers (inappropriate product offerings, lack of gender-specific policies, inappropriate distribution channels) and (3) legal and regulatory barriers—disadvantageous requirements related to the opening of accounts, barriers to formal identification, barriers to inheritance, property ownership and collaterals, and lack of gender-inclusive credit-reporting systems (Holloway et al. 2017; Morsy and Youssef 2017). These barriers are common in developing countries, especially in sub-Saharan Africa (SSA).

As the implementation of financial inclusion initiatives increases in developing economies, it is imperative that their contribution to household well-being is evaluated. There is, however, a dearth of empirical findings, especially gender-specific evidence. This study addresses this gap. The chapter investigates whether a gender gap in access to and use of financial services exists in Zambia, and the implications on the quality of life of especially female-headed households. The case for Zambia is motivated by its low rank in financial inclusion, against its peers both in sub-Saharan Africa and the Southern African Development Community (SADC), despite financial inclusion initiatives undertaken as part of poverty reduction efforts in the country. The study uses the FinScope survey for Zambia from 2015 to examine whether there is a gender gap in the use of formal financial products in Zambia, the drivers of financial use, and whether there are differences in the quality of life of the financially included and the financially excluded. The focus is on female-headed versus male-headed households following financial inclusion and on financially included female-headed versus financially excluded female-headed households.

Results show that fewer women use formal financial services compared to men (17% and 26% respectively), but the predictors of financial inclusion by gender in this setting are the same, namely, level of education, location and source of income. Notwithstanding the disparity in financial

inclusion, there is no significant difference in the quality of life of financially included female-headed households compared to financially included male-headed households. This points to the potential role of finance in reducing gender inequality in welfare. Low quality of life is, however, observed for female-headed households that are financially excluded. These findings are consistent with the current literature on the role of finance in poverty reduction (Beck et al. 2007; Dialloy and Zhang 2018) and on women empowerment through finance (Arku and Arku 2009; Ashraf et al. 2010; Kabeer 2001; Nanziri 2016; Shetty 2008).

The rest of the chapter is organised as follows: Section 2 provides the context and the methodological approach, while results are presented and discussed in Sect. 3. Section 4 concludes.

2 Financial Inclusion, Gender and Welfare in Zambia

In the early 1990s, Zambia undertook initiatives to increase the number of formally served individuals in the country. However, there was slow progress such that by 2005, only 14% of Zambians had an account at a formal financial institution (FinScope Zambia Report 2015), making the country lag behind its peers in SSA and SADC regions, as shown in Fig. 16.1. Following the Maya Declaration of 2013, a global commitment to unlock the economic and social potential of the world's unbanked population through financial inclusion,[5] Zambia renewed its financial inclusion com-

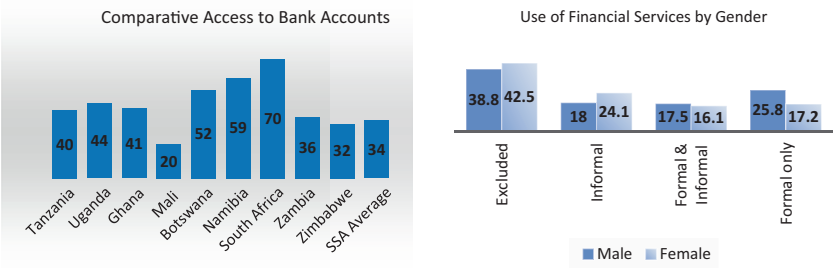

Fig. 16.1 Financial inclusion in Zambia. *Source*: Author's compilation from the Global Financial Inclusion Database (2014) and FinScope Zambia Survey (2015). Numbers are percentages

mitment with the help of the World Bank. The key feature of the inclusion drive was the increase in the number of financial access points, including agency banking and mobile money for bill payments (Zambia Economic Outlook 2014). The idea behind this expansion is that proximity of financial service providers (equivalent to a reduction in travel costs) would spur unmet demand for financial services for both households and businesses. As a result, the overall number of formally served individuals increased to 38.2% in 2015 (see FinScope 2015). However, disaggregating this inclusion by gender shows that there is greater inclusion for men than for women, as shown in Fig. 16.1, with more women using informal financial services. This gender gap in financial inclusion is one of the country's priorities under Zambia's National Financial Inclusion Strategy of 2017–2022. The focus is on women's product awareness and knowledge of financial services providers' location.

A gender gap in Zambia, however, is also evident in other spheres of life. For instance, fewer women have high education attainment than men (67.5% vs. 82.7% respectively) (Demographic and Health Survey [DHS] 2013–2014). The majority of women are employed in agriculture (up to 47.6%) and only 2.4% are employed in skilled labour. Moreover women are less likely to be paid for work done, and in the event of a payment, they are more likely to be paid in cash (Labour Force Survey 2012; DHS 2013–2014). Up to 16% of married women do not have control over how their earnings are spent, while up to 49% decide with their husbands (Zambia Gender Status Report 2012–2014). Zambia also has a high poverty rate, where up to 64% of the population lives on less than $1 a day (World Bank 2015). Thus, establishing the contribution of financial inclusion to women's welfare will add to the knowledge on the pathways to reducing gender inequality and enhancing quality of life in Zambia, over and above social welfare support, for instance.[6]

2.1 The Empirical Strategy

To explore the gender disparity in access to and use of finance and the drivers the following analyses are carried out. First, the characteristics of users and non-users of formal financial services in the categories of transactions, credit, insurance and savings are disaggregated by the gender of the household head. Second, discrete choice models are used to estimate the predictors of financial inclusion for men and for women. The estimable

relationship is the probability of using formal financial services given one's observable characteristics, represented as in the following expression:

$$\Pr\left(\mathrm{USE}_i^g\right) = f\left(X_i, C_i, \varepsilon_i\right) \tag{16.1}$$

where USE is a binary variable equal to 1 if household head (i) of gender (g) uses at least one financial service, 0 otherwise; X_i represents the characteristics of the household head such as level of education, age, marital status, level of income and location (rural/urban). C_i represents community-level characteristics that would affect the household's use of financial services such as proximity of financial agents (the study uses the distance of the household from financial service providers such as banks, ATMs, mobile money agents, etc.). These factors are argued to be predictors of financial inclusion (see Demirgüç-Kunt et al. 2015, Allen et al. 2012). ε_i is the error term capturing unobserved characteristics. Two separate probit regressions are estimated for men and women.

To explore the potential differences in the households' quality of life due to financial inclusion, the analysis compares the within-gender welfare outcomes for households where the head is financially included and for households where the head is not financially included. Another exercise compares the between-gender welfare outcomes when both male and female heads are financially included. Propensity score matching (PSM) is used, as in Dehejia and Wahba (1999) and Heckman et al. (1997), to make inference on the welfare benefits of financial inclusion. The evaluation parameter of interest is the average treatment effect on the treated (ATT), which measures the mean impact of treatment. This is expressed as ATT = $E(\Delta y|D = 1) = E(y_1|x, D = 1) - E(y_0|x, D = 0)$, where D is the treatment, y_1 is the quality of life for the treated household, y_0 is the quality of life for the treated if they had not received the treatment (the counterfactual) and x is a vector of observable household characteristics. Since it is not possible to observe the same individual in both states of treatment and control, the analysis follows Rosenbaum and Rubin's approach (1983) by conditioning matching on a 'propensity score' such that ATT = $E(\Delta y|p(x), D = 1) = E(y_1|p(x), D = 1) - E(y_0|p(x), D = 0)$, where $p(x)$ is the propensity score. The propensity score is obtained by estimating the probability of an individual's or household's participation in the financial sector, then matching with a non-participant with a similar score, to construct the comparison group. In this study, the 'nearest neighbour' and 'radius'

matching algorithms are used to estimate the causal relationship between quality of life and financial inclusion.[7]

In the empirical estimation, each treated observation i is matched on control observations and their outcomes y_0 are weighted by w (but not for the nearest neighbour estimator). The estimator is given by expression (16.2), where n_1 is the number of treated observations. The average treatment effect (ATT) on the quality of life of using formal financial services is obtained by comparing the outcomes between men and women who use these services on the one hand, and between women users and non-users on the other hand. A positive (negative) value of *ATT* suggests that financial inclusion leads to a better (worse) quality of life for the treatment group, compared to the control group:

$$ATT = \frac{1}{n_1} \sum_{i \in \{D=1\}} \left[y_{1,i} - \sum_j w(i,j) y_{o,j} \right] \tag{16.2}$$

2.2 *Measuring Quality of Life and Financial Inclusion*

The quality of life is proxied by a wealth index (WLT). This is constructed from households' possession of assets (land, house, electronics, etc.) and the quality of their dwelling. This is based on the argument that assets might be better at capturing the long-term welfare of individuals/households than income or expenditure, which exhibits substantial measurement error and is often not recorded in surveys. The use of assets to measure welfare is also widely used, for example, in Gwatkin et al. (2000) and McKenzie (2003). In this study, the wealth index is constructed according to the uncentred principal component (PC), in which every variable is divided by its mean and then the first principal component of the cross-product matrix is extracted (Wittenberg and Leibbrandt 2017; Banerjee 2010).[8] The items used to construct this index are similar to those found in the Demographic and Health Surveys. The index obtained is a continuous variable, which is split into quintiles, where higher quintiles of the index indicate better quality of life while lower quintiles indicate poor quality of life. A binary measure of poverty is then created, which is equal to 0 if a household is in the lower two quintiles and equal to 1 if in the upper three quintiles.

Financial inclusion is also constructed as a binary variable which is equal to 1 if the household head uses at least one product from the formal finan-

cial sector, and 0 otherwise. The financial services considered fall into four categories in this setting: transactions (including transfer payments, remittances and mobile money transactions), credit and loans (borrowing in cash or in kind such as agricultural supplies, food and other material requirements for home consumption or business inputs), insurance pay-in or cash-out, and savings and investment. An individual is assigned 0 if he/she uses none of these products in the formal setting and 1 if he/she uses at least one of the products. Non-cash transactions are considered for institutions such as agricultural cooperatives (semi-formal), which advance agricultural inputs to farmers. These are also part of financial inclusion given that Zambia has a strong cooperative system that provides credit for agriculture. In the case of Zambia's financial sector expansion, proximity is crucial and this is measured using the self-reported time taken to get to the nearest financial service point (bank branch, ATM, mobile money agent, etc.), and is included in all regressions as an independent variable. Generally, a binary measure of inclusion will suffice once proximity is controlled for.

2.3 Data

The chapter uses the 2015 FinScope surveys for Zambia in analyses. This period is preferred given that the financial sector expansion happened between 2013 and 2015. The surveys are nationally representative surveys of consumers' perceptions and use of financial services, conducted among individuals aged 16 years or older. Ten households were randomly selected from 866 enumeration areas, and one individual selected using a Kish table, for a face-to-face interview using a structured questionnaire. The person interviewed was not necessarily the head of the household, but his/her relationship to the household head was recorded. Consequently, the analytical sample is restricted to the household heads, yielding a total of 3734 out of 8500 respondents. Data was collected on access and use of formal and non-formal financial services and on indicators of well-being such as possession of durable items, possession of dwelling, quality of the dwelling and cooking technology.

2.3.1 Descriptive Statistics

The data shows that half the number of men are female household heads. Many have no formal education compared to men, fewer earn more than 601 Zambian Kwacha, are urban based, separated/divorced and self-employed. On the other hand, the men have higher education levels, higher incomes, are predominantly rural based and engaged in farming.

In terms of indicators of wealth, up to 59% of men own land compared to 42% female heads. However, more women own a house and use high-quality floor and roofing materials compared to men. Male-headed households have more electronics such as televisions and cellular phones, but they also have more people per sleeping room than female-headed households (five vs. four respectively). A higher number of people per sleeping room is often indicative of a constrained household. Overall, female heads have a slightly higher wealth score, and although their median monthly income is lower than that of their male counterparts, over 50% are in the top three wealth quintiles.

Looking at the sub-sample of the financially included household heads, the data shows they have similar characteristics irrespective of their gender. That is, they have high education levels compared to the financially excluded female heads, relatively high incomes, are urban based and mainly engaged in farming. Except for land ownership, where men outnumber women (perhaps due to customary land rights often in favour of men), both male and female heads own houses, with modern floors and high-quality roofing materials. They equally own televisions and cellular phones, have relatively fewer people per sleeping room in a house, and are in the top three wealth quintiles. However, female heads still have slightly lower income levels than their male counterparts. Finally the data shows that financially excluded women mainly reside in rural areas, and a majority do not own land or a house, and nor do they disclose their source of income.

3 Results

3.1 Predictors of Financial Inclusion by Gender

The predictors of financial inclusion, estimated by a probit model, are reported in Table 16.1 for men and women respectively. The results show that for Zambia, the predictors for financial inclusion are mainly the level of education, location (rural/urban and province) and the source of income. The significance of the location variable reinforces the role of financial infrastructure in the use of financial services. For example, the probability of being financially included if living in urban areas, which are renowned for sufficient financial service points, increases by 19% for women and 5.5% for men (Table 16.1: column 4), compared to living in rural areas. Similarly, living in provinces that witnessed a higher increase in

Table 16.1 Predictors of financial inclusion by gender of the household head in Zambia

Variables	*(1)*	*(2)*	*(3)*	*(4)*
	Men		*Women*	
	Coeff.	*Marginal effect*	*Coeff.*	*Marginal effect*
(Single) Living with partner	0.159	−0.031	−0.125	0.051
	(0.101)	(0.302)	(0.124)	(0.032)
Separated/divorced	0.202	−0.088**	−0.374***	0.071
	(0.176)	(0.029)	(0.134)	(0.065)
Widowed	0.112	−0.043	−0.165	0.039
	(0.228)	(0.032)	(0.131)	(0.081)
(No education) Primary school	0.478**	−0.041	0.923***	0.156*
	(0.230)	(0.032)	(0.296)	(0.072)
High school	1.376***	0.209***	2.019***	0.475***
	(0.233)	(0.055)	(0.302)	(0.075)
Post-high school	2.144***	0.638***	–	0.670***
	(0.350)	(0.083)	–	(0.046)
(No income) Up to K200	−0.344***	−0.096**	−0.428***	−0.105**
	(0.128)	(0.028)	(0.144)	(0.035)
K201–600	−0.503***	−0.091***	−0.399***	−0.150***
	(0.096)	(0.023)	(0.116)	(0.025)
K601–1000	−0.399***	0.033	0.122	−0.120***
	(0.101)	(0.040)	(0.144)	(0.027)
(Rural) Urban area	0.567***	0.051*	0.201*	0.190***
	(0.073)	(0.026)	(0.107)	(0.024)
(Western) Central province	0.285*	0.032	0.118	0.102
	(0.167)	(0.060)	(0.215)	(0.062)
Copperbelt	0.411**	0.120*	0.410**	0.149*
	(0.162)	(0.056)	(0.178)	(0.062)
Eastern province	0.570***	0.161*	0.525**	0.210**
	(0.169)	(0.072)	(0.207)	(0.066)
Luapula	0.410**	0.094	0.328	0.149*
	(0.173)	(0.064)	(0.203)	(0.066)
Lusaka province	0.371**	0.101*	0.356**	0.149*
	(0.157)	(0.052)	(0.169)	(0.066)
Northern province	0.423***	0.109*	0.379**	0.152*
	(0.157)	(0.058)	(0.184)	(0.059)
Northwestern province	0.506***	0.075	0.264	0.187*
	(0.172)	(0.063)	(0.204)	(0.067)
Southern province	0.573***	0.125*	0.419**	0.212**
	(0.165)	(0.070)	(0.207)	(0.064)

(*continued*)

Table 16.1 (continued)

Variables	*(1)*	*(2)*	*(3)*	*(4)*
	Men		*Women*	
	Coeff.	*Marginal effect*	*Coeff.*	*Marginal effect*
(Salary) Farming	0.603***	0.143*	0.490***	0.215
	(0.149)	(0.056)	(0.170)	(0.055)
Family	−0.262	−0.107**	−0.503**	−0.084
	(0.160)	(0.037)	(0.214)	(0.049)
Self-employed	−0.465***	−0.110**	−0.483***	−0.142
	(0.160)	(0.035)	(0.178)	(0.043)
Other (excl. salary)	0.024	−0.003	−0.012	0.008
	(0.151)	(0.041)	(0.161)	(0.051)
Constant	−2.092***		−2.069***	
	(0.305)		(0.364)	
Observations	2289		1422	

Source: Author's own calculations

Notes: Standard errors are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Columns (2) and (4) show the percentage increase (+) or decrease (−) in the probability of financial inclusion for men and women respectively. The reference category is denoted in bold-italics for each set of covariates

the number of financial access points during the expansion programme (such Lusaka, Copperbelt, Northern provinces, etc.) is associated with a higher likelihood of being financially included. This justifies the financial sector expansion programme undertaken by the Zambian government and its marginal benefit to women than to men. However, even with the introduction of mobile money technology, which is meant to overcome the physical infrastructure challenge, almost half of Zambia's bankable population remains outside of the financial sector (only 17% use mobile money [FinScope 2015]).

These results are somewhat consistent with the literature. For instance, Botrić and Broz (2017) find income and education to be significant predictors of the financial inclusion gender gap in Southern and Eastern Europe, while Arun et al. (2016) find that social norms propel women's decisions to use financial services in Ghana. Indeed, from a financial behaviour perspective, scholars such as Caliendo et al. (2009) and Sapienza et al. (2009) argue that global gender differences in the use of financial services, especially for business, are institutionally driven, emanating from the fact

that finance is considered to be risky and that women are more risk averse than men. While in several SADC countries the pattern is similar (see Fanta and Mutsonziwa 2016), in South Africa, financial inclusion is more prominent along racial lines (see Kessler et al. 2017; Nanziri 2016), with disparities more prevalent among Black women (Naidoo and Hilton 2006). This is mainly related to the Apartheid policies, on the basis of which other services such as access to physical infrastructure, education and so on were provided.

The results also suggest that perhaps financial inclusion programmes for women should be complemented with financial education, in order to address the complex realities of inequalities in some contexts. The significance of the education variable reflects the low levels of financial literacy among women globally (see Lusardi and Mitchell 2014; Nanziri and Leibbrandt 2018). Indeed the survey data shows that fewer women in Zambia have attained levels higher than secondary education. Thus financial education for women should be encouraged.

3.2 Estimated Impact of Financial Inclusion

Results of the matching exercise show that the conditions for estimating the treatment effect were satisfied and that there is ample common support using either the nearest neighbour or the kernel matching technique. Estimates of the average treatment effect on the treated (ATT) are presented in Table 16.2. A *t*-test of mean differences shows that the effect of financial inclusion on welfare is significant, as shown in columns (1) and (5). This positive effect is observed in linear (naïve) regressions in columns (2) and (6) that control for possible observable confounders such as education, marital status, income and location. The gender comparisons in treatment effects are presented in columns (3) and (4). Results show that among financially included households, the quality of life in female-headed households is not statistically different from that in male-headed households. This is a key result and it implies that financial inclusion can potentially attenuate gender inequality in wealth. In other words, from a welfare perspective, we should expect equality at household level if there is equality in access to financial services. It should be noted that for Zambia, the wealth index was constructed from a wide range of items, including land, dwelling place quality and ownership, plus electronics. In all cases, more financially included women reported ownership of these items, except for land. Hence a gender gap in welfare outcomes, where it exists, could be

Table 16.2 Average treatment effect of financial inclusion on the quality of life in Zambia

	Financially included women compared to their included male counterparts				*Financially included women compared to excluded women*			
Estimator	t-*test*	*OLS*	ATT_{nn}	ATT_k	t-*test*	*OLS*	ATT_{nn}	ATT_k
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Financial inclusion	2.361*** (0.070)	1.072*** (0.069)	0.440 (0.190)	0.514 (0.238)	2.55*** (0.143)	1.144*** (0.150)	1.711** (0.266)	1.103** (0.178)

Source: Author's own computations

Notes: Bootstrap standard errors for the ATT estimates are reported in parentheses at 95% level of confidence. ***$p < 0.01$, **$p < 0.05$ percent level of significance. *t*-test = linear regression of quality of life on financial inclusion (treatment) dummy; OLS = linear regression of quality of life on its determinants (education, income, marital status, source of income, location—rural vs. urban and provinces); ATT_{nn}: average treatment effect using the nearest neighbour random draw with replacement; ATT_k: average treatment effect using kernel matching (*b*-width = 0.06). Results in columns (1), (2), (5) and (6) are used for comparison with the treatment results, which are relatively less biased

minimised by initiatives that allow women to participate in the formal financial sector.

The within-gender analysis shows that households where the female head is financially included have a significantly higher quality of life than those where the female head is financially excluded, as shown in Table 16.2: columns (7) and (8). This result is expected, and it supports the rationale for using financial inclusion as a tool for reducing poverty in communities.

In a broader context, the results resonate with empirical findings in different parts of the world. For instance, Ashraf et al. (2010) utilise a randomised control experiment and find that financial inclusion has a positive impact on women's well-being in the Philippines. In that setting, access to a savings product increased the decision-making power of women with low agency, which in turn led to the accumulation of durable assets in the households, thus improving the household's well-being. Similar results are obtained by Mahmud (2003) and Kabeer (2001) in Bangladesh. They find positive effects on household well-being following the extension of credit to women regardless of whether they were household heads or not. Within the region, the results are also consistent with evidence from South Africa, as reported by Nanziri (2016), which shows that there are no significant differences in the welfare of financially included men and women, while financially included women, on average, enjoy higher welfare outcomes than their excluded female counterparts.

4 Conclusion

This chapter provides evidence that financial inclusion can reduce differences in the quality of life along the gender dimension. This is in light of the pursuit of financial inclusion, both as an end in itself and as a means to many ends, that ultimately contributes to Sustainable Development Goal 5, which aims to reduce gender inequality. Women remain disproportionately excluded from the financial sector despite the implementation of financial inclusion initiatives in many developing countries. The predictors of the gender gap in the use of financial services are both individual and institutional specific in so far as the financial sector is gendered. The main predictors of the gender gap in this setting are levels of education, location and source of income. On average, education drives earnings irrespective of gender. What is interesting, however, is that location has a higher benefit for women than for men.

Measuring the quality of life using a wealth index, the main finding of this study is that there is no statistically significant difference between the

quality of life of female-headed households and male-headed households if the heads are financially included. There is, however, a positive and significant better quality of life for households when the female head is financially included compared to when the female head is financially excluded. Overall, results suggest that there is an increase in household welfare following financial inclusion.

The findings also suggest that despite the observed gender gap in the access and use of financial inclusion in Zambia, women use finance efficiently. This is evident in the type of investments women make compared to men. The findings show that women invest more in the quality of their dwelling than men, who prefer electronic items. This long-term outlook of the choice of investments made by women is consistent with findings in other parts of the world, where women opt for more durable assets with positive spill-overs for the well-being of the household.

In lieu of the above therefore, efforts should be made to provide financial services in areas with a high concentration of women. While women still lag behind their male counterparts in financial access and use of financial services even after the financial sector expansion, for those who transitioned into inclusion, there are positive and significant welfare outcomes than if they had remained excluded. Thus, the integration of women into the formal financial sector is recommended, since the financial empowerment of women has welfare benefits for households. It should be noted, however, that there are many ways of constructing wealth indices and the approach taken in this chapter is by no means superior. Nonetheless, the results of this exercise provide some benchmark results in evaluating the benefits of financial inclusion in settings such as the one considered in this chapter.

Notes

1. See UNDP Support to the Integration of Gender Equality across the Sustainable Development Goals (SDGs) Including Goal 5. http://nbsapforum.net/sites/default/files/5_Gender_Equality_digital.pdf.
2. See United Nations (2016). Metadata on Sustainable Development Goal 5.
3. See United Nations (2009). World Survey on the Role of Women in Development. Women's Control over Economic Resources and Access to Financial Resources, Including Microfinance. ST/ESA/326.
4. For more details on this marriage arrangement and its implications, see http://www.divorcelaws.co.za/marriage-in-community-of-property.html#.

5. See Alliance for Financial Inclusion (2013).
6. For more details on these social schemes, see Tesliuc et al. (2013).
7. See Heckman et al. (1997) for the technical details of these matching algorithms.
8. See Wittenberg and Leibbrandt (2017) for an overview of the superiority of this approach, for purposes of this study, compared to the conventional principal component approach by Filmer and Pritchett (1998).

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CHAPTER 17

Women's Bargaining Power and Households' Living Standards in West Africa: Evidence from Benin, Togo and Mali

Monsoï Kenneth Colombiano Kponou

1 Introduction

Since the household is a set of economic agents with different preferences and different levels of utility, it seems clear that collective decision-making affects the state of well-being of the household. Many decisions affecting the well-being of individuals are made in the family or household, and the process from resource allocation to outcomes is referred to as intra-household resource allocation (Quisumbing 2003). Within the household, several factors influence the decision-making process. If different household members (men as opposed to women) have different preferences, it will follow that households will behave differently depending on who controls the household's resources (Urdinola and Wodon 2010).

The use of a single model based on the assumption that household members share the same preferences and pool their resources together would lead to an erroneous analysis if household members have different preferences, resources and responsibilities (Haddad et al. 1997). The

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literature has shifted from a unitary model to an approach that takes into account the participation of different household members in decision-making. In particular, this involves analysing women's participation in household decision-making in order to better understand the effect of such participation on the household's final well-being.

The rejection of the validity of the unitary model is based on the invalidity found in almost all the empirical studies that have tested the assumptions of income pooling and the symmetry of the Slutsky matrix (Chiappori and Donni 2006). The income pooling hypothesis assumes that the sum of household members' income is sufficient to understand the household's behaviour, but not the distribution of income among its members. In recent years, the economic literature has paid particular attention to the allocation of intra-household resources. Decision-making and resource allocation are important for economic and human development (Urdinola and Wodon 2010). Gender equality and women empowerment are integral to human development (UNDP 2015).

The eradication of poverty remains an important concern in both developed and developing countries. As a result, poverty analysis plays a fundamental role in shaping development policies. This analysis focuses on two aspects: measuring and understanding the structure of the determinants of poverty (Coondoo et al. 2009). In the literature, several studies have identified channels through which better participation of women in household decision-making leads to improved household welfare. These studies have shown, for example, that better participation of women in decision-making improves children's nutritional status and education, as well as the household's level of savings and overall well-being (Schmidt 2012; Anwar et al. 2013). Several studies in the literature have analysed the effect of women's decision-making power on one of the couple's outcome variables, such as the level of savings, education and/or nutritional health of children (Dito 2011; Nordman and Sharma 2016). Duflo (2012), taking stock of contributions to the issue of women empowerment, concludes that neither improving women empowerment nor economic development alone is enough to ensure that the gap between men and women is narrowed. The chapter contributes to the existing literature by analysing the effect of women's household decision-making on the living standards of entire households, rather than focusing on singular household members, as done in previous studies. The study assumes that women's involvement in household decision-making could generally improve the standard of living of the household.

The study seeks to answer the following question: What is the effect of women's participation on the standard of living of households? The study is conducted in three West African countries: Benin, Mali and Togo. The approach used is essentially empirical and relies on the logic of cooperative non-unitary models of decision-making. The rest of the chapter is organised in five sections. The second section presents an overview of women's situation in Benin, Mali and Togo. The third section reviews the theoretical and empirical literature. The fourth section discusses the method and the identification strategy while the fifth section discusses the results. Finally, the last section concludes the study.

2 Overview of the Women's Situation in Benin, Mali and Togo

According to the last general census of the population carried out in 2013, Benin has approximately ten million inhabitants and about 51% are women, indicating that the proportion of women remained almost stable between 2002 and 2013.[1] In Mali and Togo, they represent 50.4[2] and 50.7%[3] of the total population, respectively. Women are therefore an important part of the population to which particular attention must be paid given the sociological factors that often negatively affect their empowerment and participation in household management. Women intervene globally at both the state and household levels. Gender-disaggregated data lead to the realisation that in terms of people in charge of directorates at the national and departmental level or in the departments' sub-trust structures, there are more men (81.46%) than women (18.54%) in Benin. At the same time, 80.6% of public sector jobs are held by men compared to only 19.4% for women in Mali (UNDP 2013). This isolation and under-representation often makes women vulnerable and economically poor. As a result, they are subject to a high prevalence of poverty, low income-generating activities, low decision-making power and precarious living conditions in rural areas especially. When women's income management is considered, evidence shows that in Mali, the extent of under-involvement of women is considerable. But women's vulnerability and lack of decision-making power is not an isolated problem that needs to be analysed separately from the living conditions of the household. Indeed, there is a close relationship between the level of well-being of women and children and that of the household more generally.

3 State of the Question in Literature

It is difficult to believe that there may be a curve of indifference, as taught in consumer theory, which represents the preferences of the family. 'If community indifference curves are impossible, how can we expect family demand functions observed in the market place to obey the consistency axiom of revealed preference or any other regularity conditions?' (Samuelson 1956, p. 9). Samuelson's answer to his question is that in conventional theory, one might think that it is the head of the household who has decision-making authority in the family and that all requests reflect the consistency of his indifference curves. As Samuelson (1956) admits, we accept that such a consensus is not easy to have in a family—and even less in modern families. Yet, altruism is recognised as an important element in the family (Becker 1981). There are generally two models in economics for studying household decisions. The so-called unitary model, which considers the household as a set taking unified decisions, and so-called non-unitary models, which analyse households as a set of individuals having different utility functions.

Different studies have focused on the empirical evaluation of the scope of these different models. This section provides an overview of the empirical literature on women's participation in household decisions and the effect of such participation on household outcomes. According to the results of Rode (2011), empirical tests largely do not reject cooperative non-unitary models of decision-making. But in an experimental study using the counterfactual method, Fiala and He (2016) utilise Ugandan data and find that there are both unitary and non-unitary decision-making processes in households and that a household model that could be suitable for all possible configurations does not exist. The process of resource allocation and decision-making has significant effects on the household. In this regard, Zou (2015) shows that the difference in income between households comes mainly from the decision-making model. In fact, it shows that households where one spouse values their income and that of their spouse equally have a significantly better income level compared to other households. Cooperation in decision-making also influences the fertility of women. McCarthy (2016) shows that informational processing has a significant effect in reducing pregnancy. Indeed, the author has shown that the inclusion of the husband in the contraceptive process leads to better results in that it allows for better planning and prevention of unwanted pregnancies. Spouses who accompany their wives in consultation show a

decrease in the desire for fertility. But fertility is not the only aspect of the couple's lives that improves with the decision-making power of the woman.

According to Afoakwah et al. (2015), an increase in women's bargaining power results in an increase in the household's ownership and level of savings. In addition, based on Filipino data, Ashraf et al. (2006) show that commitment savings improve the decision-making power of women in the household and provide them with the opportunity to buy durable goods for women. As a result, these authors advocate for the greater empowerment of women through better education. In the same vein, Thiombiano (2014) finds that women do not participate much in decisions about their health care, large household purchases and visits to parents, but that those with a gainful activity are likely to decide on the management of their income. In addition, the author shows that women's participation in decision-making within the household depends on ethnicity. Its findings suggest that to achieve an improvement in the social status of women, measures should be promoted to improve girls' enrolment, urbanisation and increased access for women to the labour market.

In the literature, most studies address the effect of women's decision-making power on one aspect of the household. This study seeks to go further by identifying the impact of women's participation in household decisions on living standards.

4 Method and Identification Strategy

This study uses cross-sectional data from the Demographic and Health Surveys (DHS) of Benin (2012), Mali (2015) and Togo (2013). These countries are chosen because of their location in West Africa, which is the target region of this study. The DHS has several components and provides information on health indicators as well as on the living conditions of households and the social status of household members. The study uses data on the social status of women in household management. The survey is conducted using a standardised questionnaire, making it easy to use data across multiple countries. The data collected in this database are nationally representative.

4.1 Measuring Women's Decision-Making Power

To identify the determinants of women's participation in decision-making, the study considers a set of variables that summarise decision-making at the household level. In the context of the DHS, respondents are asked to

indicate who makes the decisions for their health care, purchases and visits to parents, and especially who decides how to use not only the woman's income but also that of the man. Responses are broadly structured around terms such as 'respondent only', 'respondent and partner, in our case husband', 'husband only', 'someone else' and finally 'other'. Given that the analysis is done within the context of a household and more specifically from the point of view of a couple, the study considers that the first two modalities summarise fairly well the idea of the participation of the woman in the decision-making. The decision variables will be considered separately to account for the specificity of each decision made in the household.

4.2 Women's Participation and Living Standards of the Household

Household poverty or living standards are proxied by asset wealth. An asset wealth index is available in the DHS. This index has five categories: poorest, the poor, the middle, the rich and the richest. The analysis will focus on these categories. The aim is to assess the effect of women's participation on the standard of living of the household according to the different levels of household poverty. Given the multinomial qualitative nature of this variable, the multinomial logit model is employed to estimate the effect of women's participation in household poverty decision-making. The equation is as follows:

$$\text{Prob}\left(Z_i = j\right) = a_0 + \sum_i a_1 + Y_i a_2 + \sigma_i, \tag{17.1}$$

where Z_i is a multinomial variable with five categories (named j) characterising the state of life of the households, a_0 is the constant term, $\sum_i$ is the matrix of the explanatory variables (see Table 17.1 for definitions), a_1 and a_2 are vectors of parameters, Υ_i is the matrix of the variables of participation of the woman to the decisions of the household and σ_i is the error term.

5 Results

Results from Eq. (17.1) for the three countries are presented in Table 17.2. Only the results related to the interest variables are reported. All the regressions control for the variables like wife's age, husband's age, education level, residence place, number of children, wife's employment status,

Table 17.1 Variables' definition

Variables	*Codification/definition*
Age of wife	15–49
Age of husband	15 and more
Education level attained	No education (reference)
	Incomplete primary
	Complete primary
	Incomplete secondary
	Complete secondary
	Higher
Residence place	1-urban
	0-rural
Number of children	Number of children living in the household
Wife's employment status	1-employed
	0-unemployed
Wife's kind of remuneration	Not paid (reference)
	Cash only
	Cash and in-kind
	In-kind only
Earns more than husband	1-wife earns more than husband
	0-otherwise
Health decisions	1-collective decision-making
	0-wife does not participate
Purchase decisions	1-collective decision-making
	0-wife does not participate
Visit decisions	1-collective decision-making
	0-wife does not participate
Husband's income management	1-collective decision-making
	0-wife does not participate
Wife's income management	1-collective decision-making
	0-wife does not participate

wife's kind of remuneration and the fact that the wife earns more than her husband.

Table 17.2 shows that the level of education of women has an effect on the household's probability of belonging to one or another category of the standard of living. Indeed, it can be seen that a higher level of education for women reduces the household's chances of remaining in the lower standard of living while it improves the chances of the household being in the higher categories. This evidence reveals that the level of education of women produces external benefits to the household's living standards. Such a result is in line with that found by Adekunle and Yusuf (2013), who

Table 17.2 Women's decision-making power and household's living standards

		Middle (base year)		
Variables	*Poorest*	*Poor*	*Rich*	*Richest*
Benin: Participation to household's decisions				
Health decisions	0.121	–0.001	–0.275***	–0.085
	(0.099)	(0.094)	(0.097)	(0.128)
Purchase decisions	0.353***	0.241**	0.102	0.207
	(0.100)	(0.096)	(0.100)	(0.128)
Visit decisions	–0.184*	–0.114	0.044	–0.022
	(0.101)	(0.096)	(0.102)	(0.136)
Husband's income management	0.078	–0.122	0.025	0.216**
	(0.084)	(0.083)	(0.086)	(0.106)
Wife's income management	–0.115	0.008	0.752***	0.498***
	(0.116)	(0.112)	(0.130)	(0.166)
Observations	7345	7345	7345	7345
Mali: Participation to household's decisions				
Health decisions	0.160	0.092	0.137	–0.117
	(0.185)	(0.189)	(0.191)	(0.239)
Purchase decisions	0.324*	–0.135	–0.324*	–0.489**
	(0.170)	(0.175)	(0.182)	(0.230)
Visit decisions	0.131	0.105	0.102	0.258
	(0.153)	(0.152)	(0.156)	(0.197)
Husband's income management	–0.324**	–0.251	0.196	0.438**
	(0.163)	(0.162)	(0.162)	(0.207)
Wife's income management	–0.352**	–0.007	0.042	–0.008
	(0.166)	(0.169)	(0.169)	(0.223)
Observations	3877	3877	3877	3877
Togo: Participation to household's decisions				
Health decisions	–0.076	0.103	–0.234	–0.557**
	(0.114)	(0.121)	(0.187)	(0.224)
Purchase decisions	–0.188	–0.237*	–0.084	–0.182
	(0.117)	(0.124)	(0.189)	(0.224)
Visit decisions	–0.075	0.122	0.116	0.237
	(0.116)	(0.125)	(0.185)	(0.217)
Husband's income management	–0.115	–0.126	0.097	0.320
	(0.142)	(0.149)	(0.209)	(0.245)
Wife's income management	–0.132	–0.058	0.331	0.279
	(0.308)	(0.336)	(0.534)	(0.607)
Observations	4307	4307	4307	4307

Note: All the regressions control for the variables like wife's age, husband's age, education level, residence place, number of children, wife's employment status, wife's kind of remuneration and the fact that wife earns more than her husband

identify a negative and significant effect between the education level of the head of the household and the level of household poverty. Thus, in the context of cooperative decision-making at the spousal level, a woman's level of education could also have a beneficial effect on the household.

The place of residence is a contributing factor to the standard of living of households. This evidence is uniform for the three countries considered. For example, urban households are less likely to belong to lower levels of quality of life compared to rural households. This can be explained by several reasons: most of the best jobs in developing countries are in the urban areas; secondly, those with more human capital in education are generally found in urban centres; and finally, modernisation and development programmes often start with cities first, before reaching rural areas.

Likewise, it appears that when the woman is provided with a job, it improves the living conditions of the household. The rationale for such a result is that the woman's employment earns the household extra income. This will ultimately improve the well-being of the household. Harriet et al. (2014) believe that an improvement in the level of education of women could ensure that they have better opportunities for high-paying jobs, which could increase their financial contribution to reducing poverty at the household level.

The results show that the effects of cooperative decision-making are unclear regarding health and purchasing decisions. Although these results may seem surprising, these effects do not negate the possible benefit of women's participation in household decisions. Indeed, it is important to keep in mind that these mixed effects are achieved in the case of cooperative decisions. So the estimated effect may be due to the way cooperation takes place in decision-making. In other words, women's involvement in these decisions does not necessarily inform how their opinions and choices are taken into account in final health and purchasing decisions. The important question would therefore be, why does cooperation in health and purchasing decisions produce mixed effects?

On the other hand, the results concerning spousal income management show more clearly that cooperation is beneficial to the living standards of the household. Two aspects are important to emphasise regarding this finding. The first is that the cooperative management of income underlines the importance of the process of global allocation of resources at the household level. The second aspect is that this result, in comparison with that on health and purchasing decisions, seems to indicate that the efficiency or the benefit of the overall income allocation does not necessarily

appear in the specificities of the other decisions of the household. Like income allocation, the decision-making process and women's participation in household decisions are key drivers for a household's living standards.

It is generally noted, taking into account the three countries, that the inclusion of women in the decision-making process is associated with a greater likelihood that the household will belong to the higher class of living conditions. Such an outcome does not suggest that the woman must necessarily have the same resources as her spouse, or vice versa, but rather that the woman has access to opportunities within the same limits as men. Thus, gender equality is not the equality of interest between men and women but rather the equality between the determinants of the achievement of these magnitudes (World Bank 2001). As such, Morrison et al. (2007) show that women's access to markets (labour, credit, land) and their intra-household power in decisions have an effect on poverty reduction and productivity at both the individual and household levels. The findings of Islam (2014) indicate that microcredit promotes financial inclusion and moderately enhances the empowerment of women in rural areas in terms of income generation, mobilisation of savings, asset creation for the household and, more generally, poverty reduction. Therefore, microcredit can be used as a policy for women empowerment and, ultimately, a lever for development.

6 Conclusion and Policy Implications

This study analysed the effect of women's participation in decisions on the standard of living of households. The study follows the logic of non-unitary models and assumes that the low inclusion of women in household decisions is associated with losses both in terms of resource allocation and in terms of welfare. It appears that the inclusion of women in the decision-making process within the household has a beneficial effect on the standard of living of households. The increased involvement of women in decision-making can translate into overall household welfare gains. In view of these results, women's education and participation in the labour market are necessary to improve their decision-making power. The main finding of this study is that the participation of women in decision-making is beneficial to the household through its effect on the standard of living. Public policies that are aimed at reducing poverty and household vulnerability should include a sub-component dedicated to improving women's decision-making power. This can contribute to the achievement of the fifth Sustainable Development Goal, which targets gender equality and women empowerment.

Notes

1. National Institute of Statistics and Economic Analysis (2013).
2. http://www.instat-mali.org/contenu/eq/rana14pas1_eq.pdf visited on November 7, 2017.
3. https://fr.wikipedia.org/wiki/D%C3%A9mographie_du_Togo visited on November 7, 2017.

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PART VII

Women in Politics and Society

CHAPTER 18

Female Policymakers and Women's Well-Being in Africa

Maty Konte

1 Introduction

Gender equality—whether economic, social or political—is a value that promotes peace and inclusive prosperity for nations. Women, in particular, have specific characteristics and preferences that can boost economic development when they are involved in decision-making inside and outside the home. For instance, when they have control over household expenditures, which results in greater autonomy, a significant portion of the money is spent on, among others, health, child rearing, housing and food (see Ashraf et al. 2010; Duflo and Udry 2003). Research has also shown that women's political empowerment is directly reflected by an increase in income, savings and investments for women and their families, contributing to the economic growth of a country (Mutume 2004).

The type of public goods and services provided in a community depends strongly on the gender of the policymakers. As shown in the literature,

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female political leaders tend to invest more in goods and services linked to women's concerns, such as ease of access to water and public health provisions (Beaman et al. 2006) and local infrastructure (Bhalotra and Clots-Figueras 2014). When women are included in decision-making, they advance the rights and the conditions of not only other women but also the population as a whole. Examples in Africa include the gender-based violence bill passed in Rwanda in 2006 and the sexual offence law passed in Kenya in 2006, both advanced by women policymakers in these countries.

Over the last decade, many African countries have encouraged policies that increase the number of women policymakers at the national and sub-national levels. The degree of implementation of such policies has varied across countries and also across regions within the same country for the representation at the local government level. However, little is known about the economic and social gains from promoting women policymakers in Africa and how increasing numbers of women policymakers shape the provision of public goods and services at the sub-national level. This chapter assesses the effects of women holding more seats in the national assembly on the improvement in women-friendly development indicators, measured at the local level across 50 African countries.

Data on the percentage of seats held by women in national assemblies across countries are combined with data on 11 local development indicators measured at the regional level. Measuring development indicators at the local level (i.e., regional level) allows one to take into account the differences that exist across regions within a country. The local development indicators considered in this chapter include girls' education such as enrolment rates, fertility rate, child mortality, childhood stunting, age at first birth, early marriage, age difference between wife and husband, and access to electricity.

The analysis includes 50 African countries for which data are available over the period 1997–2016. The statistics show that despite the increase in the number of seats held by women in the national assembly in most of the countries, women policymakers occupy fewer than 50% of the seats. Rwanda, where around 64% of seats are held by women, remains an exception. Most interestingly, the empirical analysis reveals that regions that are located in countries where women hold a higher percentage of seats in the national assembly are also the regions that record the lowest fertility rate, higher age at first birth, lower incidence of early marriage and lower age difference between husband and wife. Also, these are regions in which a higher percentage of people have access to electricity. This suggests that promoting women's full and effective participation and equal opportunities

for leadership in national assemblies will positively contribute to the Sustainable Development Goal targets 1.B (on pro-poor and gender-sensitive development strategies), 3.2 (on infant and child mortality) and 4.5 (on girls' school enrolment), among others.

The rest of the chapter is structured as follows: Section 2 provides a brief literature review of women's political empowerment and development. Section 3 presents the data used for the analysis. Section 4 presents the empirical analysis and discusses the results obtained. The last section, Sect. 5, concludes and provides some policy guidance.

2 Women in Politics and Development

There are various ways in which women's political empowerment can lead to development. First, it has been shown that when women are included in the decision-making process, they tend to favour and pay greater attention to the provision of social services for the population (Brollo and Troiano 2016). A research study conducted in India shows that women who were locally politically empowered provided better access to drinking water and invested more in water facilities than men (Beaman et al. 2006). Bhalotra and Clots-Figueras (2014) show in a study conducted in India that women politicians tend to invest more in village-level infrastructures, leading to a reduction in neonatal mortality. The same study also demonstrates a correlation between women's representation and an increase in the quality of public health. Women are also more likely to get involved in the community and voice their concerns when leadership positions are held by women. This shows the positive impact of women's political empowerment on women's participation in civil society (Chattopadhyay and Duflo 2004).

Second, women in politics are more likely to allocate more resources towards education and health and human rights issues (European Union 2016). The presence of women also leads to significant improvement for communities and children, with a reduction in the gender gap in primary school and an increase in the immunisation rate of children (Beaman et al. 2006). Research conducted by Li-Ju (2008) shows that government spending on education increases when there are more women in parliament. The correlation reported in this paper supports the idea that women's political empowerment is necessary for development, as education is a key factor to reach this goal. Women also focus on families, and when given political power, they will work for the benefit of families and children (O'Neil and Domingo 2015).

Third, women in power promote the rights of marginalised people, including women's rights, which pave the way towards gender equality (International Alert 2012). Women bring their issues to the political agenda and promote different policy priorities. They act in the interest of other women and try to develop policies that will improve their daily life (Duflo 2012). Policies developed by women in politics are aimed at addressing women's needs (Grown et al. 2005). In Rwanda, women who were involved in decision-making passed a bill against gender-based violence in 2006. In Rwanda, the bill against gender-based violence passed by women policymakers is considered as a major change in society, as women contributed to changing a social norm (Wilber 2011). Similarly, women legislators in Kenya passed a sexual offence law in 2006. These two laws passed in Kenya and Rwanda show that women in politics act for the interests of other women and contribute to gender equality, which contributes to development.

It is also worth noting that women's increased political participation can improve the quality of institutions and lead to good governance. This helps to ensure a stronger political and legal system to achieve development. A study conducted in Latin America shows that the involvement of women in politics led to an improvement in the government and a growing trust among the population for the government (Grown et al. 2005). Including women in politics also allows institutions to be more democratic, as there is a better representation of the population (Revenga and Shetty 2012). Evidence has also shown that having women in politics helps to reduce the level of corruption (Dollar et al. 2001).

Finally, another strand of the literature has demonstrated that including women in decision-making positions leads to a change in the perception of women and what they can achieve. A study conducted by Beaman et al. (2009) in India shows that there is a reduction in the gender bias in politics once voters realise that women politicians demonstrate leadership qualities. Districts where women hold leadership positions are more likely to elect more women because the social perceptions of women have changed. The study also shows that people from these districts were more likely to associate women with leadership positions rather than with domestic positions (Beaman et al. 2009). The change of social perceptions also occurs through the impact of women's leadership on girls' aspirations. Girls in Indian villages where women hold political positions have fewer

aspirations to become housewives or have their occupation determined by their in-laws (Beaman et al. 2012). This can be explained by the fact that women in leadership positions serve as role models for young girls and help to develop policies to empower them, allowing them to make their own choices.

3 Data Description

3.1 Measuring Women's Political Empowerment

For the empirical analysis, data on women's political empowerment and data on local development are taken from different sources and combined together. The data cover the period 1997–2016 and include all African countries for which data on political empowerment and local development indicators are available. The main measure of women's political empowerment is the percentage of seats held by women in the national assembly. These data are taken from the World Development Indicators and is available for a wide range of African countries. Over the last decade, many African governments have made remarkable efforts in terms of gender-inclusive political participation, thereby increasing the number of political positions for women. For instance, there has been a significant increase in the number of seats allocated to women in national assemblies. Such an inclusive policy is expected to have a positive effect on women-friendly policies, be they at the national or local level. The scope of this chapter is to investigate the effect of women holding more seats in the national assembly on meeting women's needs at the local level.

Table 18.1 shows the percentage of seats held by women in different African countries. Data for both the years 1997 and 2016 are reported in order to measure progress over this time period. A number of countries have made significant move from 1997 to 2016 in terms of the number of women that have a voice in the national assembly. It can be noted, for instance, that Algeria has increased its percentage of female legislators from 3.2% in 1997 to 31.6% in 2016. These values are 2% and 38.8% for Ethiopia, 5.6% and 31.1% for Cameroon, and 11.7% and 42.7% for Senegal respectively. Rwanda has broken the record by moving from 17.1% to 63.8%, achieving an increase of 46.7 percentage points in the proportion of seats held by women in the national assembly. It is also worth noting that many African countries have surpassed the most advanced countries

Table 18.1 Women representation in national assembly in Africa in 1997 and 2016

Country	*Women_seats [1997]*	*Women_seats [2016]*	*Change [2016–1997]*	*Country*	*Women_seats [1997]*	*Women_seats [2016]*	*Change [2016–1997]*
Algeria	3.2	31.6	28.4	Sao Tome & Principe	7.3	18.2	10.9
Angola	9.5	36.8	27.3	Senegal	11.7	42.7	31
Benin	7.2	7.2	0	Seychelles	27.3	21.2	-6.1
Botswana	8.5	9.5	1	Sierra Leone	–	12.4	–
Burkina Faso	9	9.4	0.4	Somalia	–	13.8	–
Burundi	–	36.4	–	South Africa	25	41.8	16.8
Cape Verde	11.1	23.6	12.5	South Sudan	–	28.5	–
Cameroon	5.6	31.1	25.5	Sudan	5.3	30.5	25.2
Central African Republic (CAR)	3.5	7.2	3.7	Swaziland	3.1	6.2	3.1
Chad	2.4	14.9	12.5	Tanzania	17.5	36.6	19.1
Comoros	0	3	3	Togo	1.2	17.6	16.4
Congo Democratic Republic	–	8.9	–	Tunisia	6.7	31.3	24.6
Congo Brazzaville	–	7.4	–	Uganda	18.1	33.5	15.4
Côte d'Ivoire	8	9.2	1.2	Zambia	9.7	18	8.3
Djibouti	–	12.7	–	Zimbabwe	14.7	31.5	16.8
Egypt	2	14.9	12.9				
Equatorial Guinea	8.8	24	15.2				
Eritrea	21	22	1				
Ethiopia	2	38.8	36.8				
Gabon	8.3	14.2	5.9				
Gambia	2	9.4	7.4				
Ghana	9	10.9	1.9				
Guinea	7	21.9	14.9				

(*continued*)

Table 18.1 (continued)

Country	*Women_seats [1997]*	*Women_seats [2016]*	*Change [2016–1997]*	*Country*	*Women_seats [1997]*	*Women_seats [2016]*	*Change [2016–1997]*
Guinea Bissau	10	13.7	3.7				
Kenya	3	19.7	16.7				
Lesotho	4.6	25	20.4				
Liberia	–	11	–				
Madagascar	3.7	20.5	16.8				
Malawi	5.6	16.7	11.1				
Mali	12.2	8.8	–3.4				
Mauritania	1.3	25.2	23.9				
Mauritius	7.6	11.6	4				
Morocco	0.6	20.5	19.9				
Mozambique	25.2	39.6	14.4				
Namibia	22.2	41.3	19.1				
Niger	1.2	14.6	13.4				
Nigeria	–	5.6	–				
Rwanda	17.1	63.8	46.7				

Source: World Development Indicators

Note: This table shows the percentage of seats held by women at national assemblies

in terms of closing the gender gap in politics. Countries like Rwanda and Senegal are at the top of the list of countries around the world with a high proportion of women holding national assembly seats.

Despite the positive performance observed in many countries, unfortunately there are still countries that have not made significant progress. These include Benin, which has kept the same percentage between 1997 and 2016; Burkina Faso, which has a change lower than 1 percentage point; and Botswana and Côte d'Ivoire, which have a positive change, but limited to 1 and 1.2 percentage points respectively.

It is worth noting that some African countries have experienced a decline in the percentage of seats held by women in the national assembly. For instance, in Mali, this percentage has gone down from 12.2% to 8.8%, recording a decline of 3.4 percentage points. The decrease is greater in Seychelles, where the number has fallen from 27.3% in 1997 to 21.2% in 2016, a decline of 6.1 percentage points. Also, less than 50% of the seats in a given country's national assembly are occupied by women even in countries where there has been a remarkable increase in the proportion of national assembly seats held by women. The exception is Rwanda, where roughly 64% of the seats are held by women. This is one of the countries where women's political empowerment policy is strongly implemented.

Overall, the numbers reported in Table 18.1 show that a significant proportion of countries have made a positive change in the political empowerment of women by increasing their representation in the national assembly. One may wonder to what extent such positive changes may affect the development of African countries. This chapter attempts to shed light on this question, testing whether regions located in countries with a high proportion of seats held by women in the national assembly are more likely to have higher development, especially in terms of items oriented towards women's needs.

The analysis also considers a second measure of women's political empowerment compiled by Varieties of Democracy (V-Democracy) that provides a new approach to conceptualising and measuring democracy. It provides more than 350 indicators starting from 1990, and it covers 177 countries. Some of the indicators measure gender equality in politics and some of them inform us about the extent of women's political empowerment across countries. Women's political empowerment is defined as a process of increasing capacity for women, leading to greater choice, agency and participation in societal decision-making. To create the index of women's political empowerment three key elements are taken into account in

equal measure. These are fundamental civil liberties, women's open discussion of political issues and participation in civil society organisations, and the representation of women in formal political positions. We use the women's political empowerment index (V2X_gender). The index varies between 0 and 1, where a higher number means higher gender equality in politics and 1 indicates full gender equality.

3.2 Measuring Local Development

The data on local development are taken from the Global Data Lab (hereafter GDL), which provides a series of measures at the sub-national level for the majority of developing countries, including those African countries forming the study. Most of the sub-national data are provided at the first-level administrative units, often the regions. Rich information from various household surveys is used to provide aggregated measures at the sub-national level. The chapter focuses on 11 indicators, and many of them are women-friendly measures of development. These indicators are as follows: the percentage of girls aged between 6 and 8 years old who attend school during the year of the interview or attended school during the school year (Girls_6-8_Educ), the percentage of girls aged between 15 and 17 years old who attend school during the year of the interview or attended school during the school year (Girls_15-17_Educ), child mortality rate (Child_mortality) and infant mortality rate (Infant_mortality), the percentage of underweight children (Child_Under_weight) and the percentage of childhood stunting (Child_stunting), women's fertility rate (Fertility_rate), mean age at first birth for women (Women_Mean age first child), women's mean age at first marriage (Women_Mean age first marriage), mean age difference between wife and husband (Mean_age_difference_wife/husband) and, finally, the percentage of households that have access to electricity (Access_electricity).

For each of these measures of local development, the GDL provides the extrapolated data and the real values. Given that household surveys are not run on a yearly basis for most of the countries/regions, the extrapolated data enable one to have as many observations as possible. We will run our estimations using both the extrapolated and the real-values data, although the latter has the disadvantage of significantly decreasing the number of observations.

Table 18.2 shows the descriptive statistics of 11 measures of local development that we are going to consider in this study. The measures reported in the table are the average values over the period 1997–2016. Information

Table 18.2 Descriptive statistics for the indicators of local development

Variable	*No. of observations*	*Mean*	*Std. Dev.*	*Min.*	*Max.*
Girl_15-17_Educ	5185	53.979	23.058	0	98.8
Girl_6-8_Educ	5185	60.098	25.449	0	100
Child_mortality	4015	53.058	36.356	0	242
Infant_mortality	4673	75.485	30.221	3.75	216
Child_Under_weight	4401	19.238	10.615	0	63.3
Child_stunting	4431	36.085	11.415	5	68.1
Fertility_rate	3865	5.235	1.349	1.4	8.8
Women_Mean age first child	4185	19.346	1.152	16.9	23.5
Women_Mean age first marriage	4189	18.432	1.752	13.9	26.9
Mean_age_difference_wife/husband	4952	7.728	2.242	2.4	14.3
Access_electricity	5402	35.585	32.844	0	100
Index of women political empowerment from V-Democracy					
V2X_gender	7477	0.648	0.156	0.232	0.9

Note: This table shows the averages over the period 1997–2016 for the indicators of local development

from the data considered in this study show that there is a total of between 3865 and 5402 observations depending on the measure we consider. On average only 60% of the girls aged between six and eight years old attend school. For girls aged between 15 and 17 years old the school attendance rate is 54%, six percentage points below the former cohort.

This indicates an incidence of school drop-out of girls when they move to higher education. There are many reasons that may explain why girls abandon school and one of these is early and forced marriages, which prevent many girls from pursuing their education to a higher level. The mean age at first marriage as shown in our data is 18 years old, but depending on the region, the age at first marriage can fall to 13–14 years old. It is worth noting that for all these indicators of local development, the standard errors are quite high, indicating a high degree of heterogeneity across the different regions.

The age difference between husband and wife is a key determinant of the distribution of the bargaining power within the household. When the age difference increases in a society it might indicate that girls marry early, or they can be forced to marry older men to provide financial support to their family. In the sample, there is on average a difference of 7.7 years between wives and husbands. The region that has the highest value has an average age difference between husband and wife equal to 14.3 years.

The child mortality and infant mortality rates are 53 and 75 respectively, with significant differences across the regions as indicated by the

high level of the standard deviations. The percentage of underweight children is on average 19.2% against 36% for the percentage of stunted children. The fertility rate is 5.2, meaning that on average each woman gives birth to 5.2 children. The age at the first birth is around 19 years but can be as low as 16.9 in some regions. Regarding access to electricity, the data show that on average 35% of households have access to electricity across the regions, although the standard error is quite high, with a value of 33%.

The next section will discuss the effects that women's political empowerment may have on these local development indicators. Prior to the discussion, the section will first present the specification used for the empirical analysis.

4 Empirical Analysis on the Effect of Women's Political Empowerment on Local Development

4.1 Model of Estimations

The analysis tests whether regions that are located in countries where women hold a higher percentage of national seats are also regions that have a higher level of local development. The data on local development are measured at the regional level while the data on women's political empowerment are measured at the country level. The local development measures include women-friendly indicators relating to both the economic and the social life of women and girls. The data have two levels, where regions are nested within countries. A multilevel model that takes into account the nested structure of the data is proposed.

Let's denote by local_{rct} the measure of local development in a given region r of a country c at time t. Let's define by women_seats_{ct} the percentage of seats held by women in the national assembly in country c at time t. The model of specification is given by:

$$\text{local}_{rct} = \beta_0 + \beta_1 \text{women_seats}_{ct} + X_{ct} + \varepsilon_{rct} + \mu_c + t$$

The main parameter of interest is β_1, which measures the effect of the percentage of seats held by women in the national assembly on the measure of local development. In some of the estimations, additional variables at the country level, such as the income per capita as a measure of the level of development, are controlled for. These variables are in X_{ct}, as shown in

the equation above. The term ε_{rct} is the region-level error term while μ_c captures the country specific effect. In some of the specifications, we use the second measure of women's political empowerment introduced in the previous section.

4.2 Estimation Results

Table 18.3 presents the estimation results using the extrapolated data. We only control for the measure of women's political empowerment, which is the share of national assembly seats held by women. In addition, the time, region and country fixed effects are also taken into account. The dependent variables are interchanged across the columns. In columns [1] and [2] the dependent variables are respectively the school attendance of girls aged 15–17 and the school attendance of girls aged 6–8 years old. The estimated coefficients on the variable women's political empowerment are positive and significant in both columns. The magnitudes of the coefficients are also very similar across the two columns. In fact, an increase of 1 point in the percentage of seats held by women in the national assembly increases both the percentage of girls aged between 15 and 17 years old and the percentage of girls aged between six and eight years who attend school by 0.8%.

Women's political empowerment in contrast significantly decreases child and infant mortality rates at the local level. In fact, the results in column [3] and [4] show that a 1-point increase in the percentage of seats held by women in the national assembly decreases the child mortality rate and infant mortality rate by 1.6 and 1.4 points respectively. The percentage of underweight children and the percentage of stunted children are reduced by 0.25% and 0.28 % respectively when the measure of women empowerment increases by 1%—see columns [5] and [6].

Regions that are located in countries with higher women empowerment are also regions that record a lower fertility rate, higher age at first birth and higher age at marriage, and lower age difference between husband and wife. These same regions record a higher percentage of people who have access to electricity.

In Table 18.4, we have included the gross domestic product (GDP) per capita and the second measure of women's political empowerment taken from the Varieties of Democracy (V-Democracy) project, which captures women's civil liberties, women's open discussion of political issues and participation in civil society organisations, and the representation of

Table 18.3 Women-friendly development indicators and female policymakers (I)

	[1]	*[2]*	*[3]*	*[4]*	*[5]*	*[6]*	*[7]*	*[8]*	*[9]*	*[10]*	*[11]*
women_seats	0.819***	0.809***	–1.575***	–1.394***	–0.246***	–0.278***	–0.0182***	0.0191***	0.0351***	–0.0240***	0.441***
	[0.035]	[0.037]	[0.064]	[0.0578]	[0.0191]	[0.0230]	[0.00322]	[0.00194]	[0.00292]	[0.00251]	[0.0462]
Constant	42.85***	48.39***	75.97***	96.35***	23.58***	40.10***	5.563***	19.03***	17.99***	8.030***	28.58***
	[2.672]	[3.084]	[5.010]	[3.754]	[1.344]	[1.454]	[0.175]	[0.142]	[0.223]	[0.296]	[3.992]
Time effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	4869	4869	3809	4417	4130	4154	3678	3954	3958	4655	5106
No. of countries	49	49	39	47	46	46	39	39	39	48	50

Notes: School attendance of girls aged 15–17 is the dependent variable in [1] while school attendance of girls aged 6–8 is the dependent variable in [2]. Child mortality is the dependent variable in [3] while infant mortality is the dependent variable in [4]. Underweight children is the dependent variable in [5]. Stunted children is the dependent variable in [6]. Fertility rate is the dependent variable in [7] while age at first birth is the dependent variable in [8], age at first marriage in [9], age difference between husband and wife in [10] and, finally, access to electricity in [11]. Standard errors are within brackets. * is the significance at 10%, ** at 5% and *** at 1%

Table 18.4 Women-friendly development indicators and female policymakers (II)

	[1]	*[2]*	*[3]*	*[4]*	*[5]*	*[6]*	*[7]*	*[8]*	*[9]*	*[10]*
women_ seats	0.605***	–1.386***	–0.229***	–0.0136***	0.0290***	0.638***	–1.550***	–0.236***	–0.014	0.0390***
	[0.0566]	[0.104]	[0.0317]	[0.00505]	[0.0047]	[0.120]	[0.196]	[0.0609]	[0.00926]	[0.00887]
v2x_gender	40.31***	–0.0344	2.857	–0.579	0.732	30.63**	22.42	–3.47	0.635	0.375
	[8.248]	[15.55]	[4.607]	[0.658]	[0.700]	[15.43]	[30.03]	[7.766]	[1.161]	[1.300]
income_ per_capita	0.0021**	–0.00617***	–0.00270***	–0.00021***	0.00069***	0.0039***	–0.0076***	–0.0031***	–0.0003***	0.0008***
	[0.0009]	[0.0018]	[0.0005]	[0.0000]	[0.0000]	[0.001]	[0.0026]	[0.0007]	[0.0001]	[0.0001]
Constant	15.74***	81.53***	24.18***	6.076***	16.87***	18.83*	71.05***	29.04***	5.377***	16.92***
	[5.981]	[10.63]	[3.105]	[0.439]	[0.472]	[10.07]	[19.55]	[5.042]	[0.751]	[0.846]
Time effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	3024	2583	2656	2462	2637	648	551	614	513	561
No. of countries	36	32	35	32	32	34	30	33	30	30

Notes: School attendance of girls aged 15–17 is the dependent variable in [1] and [6]. Child mortality is the dependent variable in [2] and [7]. Children underweight is the dependent variable in [3] and [8]. Finally, age at first marriage is the dependent variable in [5] and [10]. In columns [1]–[6] we use the extrapolated data while in columns [7]–[10] we use the real-values data. Standard errors are within parentheses. * is the significance at 10%, ** at 5% and *** at 1%

women in formal political positions. In addition, columns [6]–[10] used the real-values data instead of the extrapolated data. This reduces significantly the total number of observations available in the sample because survey data are not collected on a yearly basis.

Overall, the results point in the same direction as the previous findings, where seats held by women in the national assembly increase the provision of women-friendly goods and services at the local level. It is however important to note that some of the estimated coefficients are lower than the coefficients obtained in the previous table. For instance, an increase in the percentage of national assembly seats held by women increases school attendance of girls aged 15–17 by 0.6 while this value was 0.8 previously. The second measure of women's political empowerment is significant in few cases, and when it is, the sign of the effect is similar to the ones obtained with the main measure of women's political empowerment, which is the percentage of seats in the national assembly held by women. We can also note that the level of development matters too. Regions that are situated in countries with a high level of income per capita are also regions that register a high level of local development.

Overall, the empirical analysis has provided evidence that women's political empowerment boosts local development, and particularly it enhances women's and girls' well-being such as school attendance, child and infant mortality, fertility rate, age at first birth, early marriage and age difference between husband and wife.

5 Conclusion

The role of women in the process of development has been confirmed in various studies, and evidence has strongly demonstrated that greater bargaining and decision-making power for women is accompanied by higher human development. Inclusiveness towards women is also much needed in the political arena, where many women still lag behind their male counterparts. Women's access to politics and their involvement in public policy decision-making is very limited in many African countries. Over the last decade significant progress has been made by many African governments in terms of increasing the number of women politicians and the number of policymaking decision positions for women. Indeed, the distribution of public resources across sectors depends strongly on the gender of the policymakers, and therefore, including different segments of the population may ensure that development is inclusive and benefits the society as a whole.

One of the policies for women's political empowerment in African countries has been to increase the number of seats held by women in national assemblies. However, despite anecdotal evidence on the effect of such a policy on development, there exist few studies that have empirically documented the effects of having more women policymakers on the provision of public goods and services. This chapter focused on this policy and tested whether having more women in the national assembly increases the provision of public goods and services that are friendly to women. For the empirical analysis, data on the percentage of seats held by women in national assemblies at the country level are merged with data that measure local development at the sub-national level. These measures of local development include variables that are related to women's needs such as girls' schooling, fertility, child and infant mortality, and early marriage. The findings show a beneficial effect of having more women in parliament on all the indicators of women's well-being. The empirical analysis reveals that regions that are located in countries with a higher percentage of seats held by women in the national assembly are also the regions that record a lower fertility rate, higher age at first birth, lower incidence of early marriage and lower age difference between husband and wife. A higher percentage of people residing in these regions have access to electricity.

The results in this chapter have many implications for a number of SDGs, since promoting women's full and effective participation and equal opportunities for leadership in national assemblies will contribute positively to the SDG targets 1.B, 3.2 and 4.5, among others. The SDG target 1.B seeks for sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies. Results in this chapter have shown that more gender-inclusive national assemblies may help to advance gender-sensitive human development. The SDG target 3.2 seeks for the prevention of deaths of newborns and children under five years of age. This chapter strongly supports that including more women in the national assembly helps to eradicate child and infant mortality. Moreover, the results have shown that women's presence in the national assembly promotes more enrolment of girls at school, a key target in SDG 4.5.

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CHAPTER 19

Pathways to Political Empowerment: An Examination of Factors That Enable Women to Access Political Leadership Positions in Kenya

Lanoi Maloiy

1 Introduction

This chapter aims to examine the factors that enabled 18[1] Kenyan female political leaders interviewed for this study to emerge as leaders. The motivation for this study is to examine the factors that assisted Kenyan women to attain leadership positions. Most studies that focus on women and leadership in Africa have examined the barriers that women face when seeking political office (Nkomo and Ngambi 2009). There is a paucity of literature on the factors that aid women in emerging as leaders and attaining leadership positions in the Kenyan context. To this end, most studies have focused on Southern Africa. These studies cite family support and personal characteristics as factors that enable women to attain leadership positions (Doubell 2011). In addition to these factors, marital status, the use of networks, government strategies, and organisational structures and attitudes have been beneficial for women in leadership in the South African context. Other studies that examine the factors that enable women to

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attain leadership positions largely focus on the West, specifically North America (Gomez et al. 2001; Keown and Keown 1982; Madsen 2008; Woo 1985).

The specific enabling factors that this chapter will discuss include a family legacy of leadership and personality traits that have motivated leadership ambitions. This chapter aims to examine the aforementioned enabling factors that have empowered and enabled 18 Kenyan female political leaders to attain political leadership positions. These factors demonstrate how women in Kenya can achieve leadership positions through family support and through personality traits that can assist them in overcoming challenges that they face in seeking leadership in the Kenyan context. Such factors are linked to Sustainable Development Goal (SDG) 5, which seeks to tackle gender inequality for girls and women. Understanding the factors that empower women to seek political leadership position is important because it can increase women's and girls' well-being, as shown in the previous chapter. Furthermore, seeing women in leadership positions motivates other women and girls to seek leadership positions. Family background and personality traits that motivate women to seek leadership positions dovetail with Goal 5, as it seeks to counter gender discrimination and address gender inequality in the face of patriarchal attitudes and structures. The study employs a feminist research methodology. Feminist research aims at examining focused women's experiences and seeks to address gender inequities in society (Fonow and Cook 1990). This study fits this description because it seeks to explore the issue of the underrepresentation of women in political leadership positions and subsequently recommend strategies that can help them to emerge as leaders. Feminist research may use any tools to collect information on women, and this study relied on face-to-face interviews and a desk review.

2 Literature on Enabling Factors

Literature on the factors that help women attain leadership positions are scarce globally and particularly in Africa (Doubell and Struwig 2014). Little attention has been paid to the backgrounds of female political leaders (Jalalzai 2004). The lack of studies is more pronounced concerning African female leaders. Most studies undertaken in this area tend to focus on barriers that women seeking leadership positions face (Nkomo and Ngambi 2009). There is a need for studies that identify factors that enable women to access and retain leadership positions in Africa. Gender equality

is a significant part of the SDGs Agenda 2030, including Goal 5 of the Sustainable Development Goals, which focuses on gender equality; having more women in public decision-making roles is important for attaining gender equality. Moreover, a woman who has attained a leadership position is likely to encourage acceptance of women in leadership roles and increase the likelihood that more women will occupy similar positions (Jalalzai 2004).

Research undertaken largely in Western countries cites family support and personal characteristics as factors that help women attain leadership positions (Gomez et al. 2001; Keown and Keown 1982; Madsen 2008; Woo 1985). In the South African context, family background and personality traits are enabling factors among other elements such as networks, government initiatives, organisational culture and family assistance as the most significant factors for women accessing leadership positions (Doubell 2011). In a study of global women leaders, education and economic status were identified as enabling factors for women gaining access to prominent political positions (Jalalzai 2004). A family background of leadership has also proved a significant enabling factor for women political leaders, particularly in the contexts of Latin America and South Asia (Jalalzai 2004). Families are highly significant in the African worldview: through family, character development takes place. Wolkowitz (1987) stated that 'family is not always a site of oppression for women, for in many societies women's position in the family gives them access to political power' (p. 206). Jalalzai (2010) defined these ties as 'marital or blood connections' (p. 149).

Furthermore, Richter (1991) asserted that a family background of leadership and involvement in independence movements has been a facilitating factor for South Asian political leaders such as Benazir Bhutto. A family legacy of leadership is advantageous not only for female leaders but for male leaders as well (Jalalzai 2010). For instance, Ian Khama of Botswana is the son of the country's first president, Seretse Khama. Wolkowitz (1987), in her case study of Indian female political leaders, suggested that daughters benefit more than sons from these familial connections, especially if the family has no eligible males. Moreover, family connections to leadership are particularly beneficial to female leaders in volatile political contexts and developing countries (Jalalzai 2013). Richter (1991) suggests that political leadership in developing countries is 'more personal and familial' (p. 538). Howard Chua-Eoan (1990) stated:

> For much of the Third World, the idea of the nation-state has not evolved too far from the idea of kingdoms; rulers are still heads of extended tribes or vast families, rather than chief executives of their machinery of government. (p. 30)

This still holds true for many leaders in Africa, as relatives and clan members feel a sense of ownership about attained political leadership positions and its accompanying privileges (Kuada 2010).

Personality traits are also a facilitating factor for women attaining leadership positions. For instance, self-confidence and the ability to overcome challenges are enabling factors for female leaders (Aycan 2004; Doubell 2011; Gomez et al. 2001; Moshupi 2013). In a study of successful women in the Americas, self-confidence was an indicator of leadership ability, as was resilience and effective decision-making (Fox and Gregory 2006). At the same time, in a study of high-achieving Latin American women, a number of the women credited parents with instilling self-confidence, while others found acquiring self-confidence a process aided by key people and events (Gomez et al. 2001). It is against this literature that this chapter is set, with a view of investigating these factors. This study seeks to explore these enabling factors within the Kenyan context, particularly using data from 18 women interviewed for this study, which defines enabling factors as factors that aid women to attain political leadership positions.

3 Method

This study is largely a feminist qualitative study that used desk review and interview data to understand the emergence of 18 women political leaders in Kenya. The study's feminist methodology focuses on exploring women's experiences and creating knowledge that aims at addressing patriarchal structures and attitudes in society that often create barriers for women (Brayton n.d.; Daly 2000). This methodology, while conforming to disciplinary standards, aims at giving female participants a voice, which is in keeping with feminist research (Kamau 2010). The study relies on face-to-face interviews of 18 women in political leadership and activism. The author of the chapter conducted face-to-face interviews in Nairobi and other locations such as Nyeri and Narok. Participants received information sheets and signed an informed consent sheet, giving permission to be recorded. The interview questions focused on the challenges and the enabling factors that influenced women's emergence as leaders. Table 19.1 below indicates the political profile or positions of the 18 women interviewed for this study.

Table 19.1 Political profile of female political leaders interviewed

Kenyan female political leaders: political profile (n = *18*)	N[a]
Member of Parliament aspirant	2
Member of Parliament	2
Nominated member of Parliament	2
Chair of national women's organisation and political associations	2
Commissioners	2
Activists	2
Councillors	2
Senators	2
County women's representative	1
Deputy governor	1

[a]Number of women in given position

4 Findings

4.1 Family Background

This section describes the results of this study, while the next section discusses the lessons learned from the results. The findings from this study indicate that family background is a significant enabling factor for participants. Table 19.2 provides an overview of the family background of the 18 female leaders interviewed. The most common finding was evidence of a family member who had worked for Europeans and had been involved in the Mau Mau resistance. In Table 19.2, three participants listed a family background in church leadership. One participant discussed her interaction with the church, which involved reading Bible passages and leading a small group. This in turn helped her develop her confidence and public speaking abilities:

> I was this confident person because I was confident from home … and you are confident everywhere else and … so slowly it makes you have leadership qualities. (Una[2])

Participant data indicate that family background was influential in enabling female leaders' leadership journeys. Backgrounds including parental legacies such as a chiefly heritage or involvement in church leadership promoted the emergence of leadership among many women. Participant responses also demonstrated that parents' positive socialisation

Table 19.2 Family background of female political leaders interviewed

Kenyan female political leaders' family background (n = *18*)[a]	*Selected example provided*	N[b]
Worked for Europeans	Father worked for Europeans at the Royal Golf Club	5
Mau Mau involvement	Grandmother provided food to fighters	4
Church leadership	No additional detail provided	3
Freedom fighter	Grandfather a freedom fighter	3
Chief/head of clan	Senior chief (maternal line) worked with colonial administration	3
Teaching/educational leadership	Mother a teacher	3
Political involvement/working in government	Father contended for political office in 1969; worked as an adviser for the Obote administration	3
Trader	Grandmother provided food for the fighters; she was also a trader	2
Traditional spiritual leader	Traditional healer, sage and spiritual leader	1
Villager elder	Father member of the local *baraza* (village assembly leader)	1
Business leadership	No additional detail provided	1
Military involvement	Sultans/heads of the clan involved in decision-making; father also in the military	1

[a]Some women leaders provided more than one response

[b]Number of women leaders with family members (including parents, grandparents, aunts and uncles)

tended to instil self-esteem, confidence and a love of learning while simultaneously creating pathways to education and leadership. Lora's excerpt describes this relationship:

> So my parents have never participated in politics and whatever but they'd be in leadership, church leadership, school leadership and you know but not hard politics.… and … we have grown up in an environment where you are allowed to express yourself, [to] challenge, I mean we would have meetings every so often and they would say okay our parents would ask [us] to challenge what we think they are not doing right in terms of whatever, that confidence, it built a lot of confidence and a personality that really doesn't feel intimidated by leadership you know so that has helped.

A traditional leadership background was also notable among some of the participants. Chieftaincy or village leadership among family members often exposed participants directly or indirectly to Western education. Gina, for example, speaks about the opportunities afforded her mother, and later herself, because she came from a chieftaincy background:

> Because for me to be a woman leader is a lot also to do with opportunity, [it] is a lot to do with what is in you, [it] is a lot to do with your socialisation, is also a lot to do with opportunity. You know so that my mother having gone to school [she] had a chance to desire more and greater for me and the reason she went to school and she was a teacher all the time until she retired has a lot to do also with having come from a chief's family. Not only did my grandfather understand the need for education having perhaps associated with people outside of his immediate community but also he had the ability and it wasn't a lot of financial ability that was required but I think it still did take some ability to be able to take children to school because they were options, the options were working on the farms and what have you.

These traditional leadership backgrounds are useful for navigating the challenges of the leadership landscape in Kenya. For example, male support through lineage ties provides a form of protection for female leaders; in particular, it shields them from physical abuse in the community, as the next excerpt from Queen demonstrates:

> My protection in leadership nobody could dare show a finger to me because my dad was there, and I also made sure that what I was doing was always right because to be a leader in [name] community you must have protection.

4.2 Personal Traits

The interview results indicate that personal characteristics such as self-confidence and resilience are enablers for the female leaders in this study. Participants possessed confidence and resilience, which facilitated the emergence of the 18 female political leaders interviewed. This section begins with a discussion of the personal characteristics of self-confidence and resilience.

4.2.1 Personal Characteristic: Self-confidence

Self-confidence is an important enabling factor for anyone seeking political leadership. It helps with the demands of political leadership, as the excerpts below confirm:

> As a woman you need to be born with it and to acquire it when you go out to the society and if you are not confident they will bring you down, they will bring you down literally the men will bring you down. (Ivy)

> First you have to have that confidence, I had confidence that I can lead my people. (Sue)
>
> So yes self-confidence, the capacity to be able to speak out, capacity to be able to speak in public and education is critical. (Tia)

The participants discussed two types of confidence: first, confidence in themselves; and second, confidence in their abilities to perform leadership tasks. The participants' responses are important in reinforcing the value of having confidence not just in oneself but also in one's ability to perform leadership tasks. Below, Nadia explains how she acquired the confidence that enabled her to overcome the demands of the Kenyan political leadership landscape:

> So if I hadn't like affirmed myself, read Louise Hay, [and] started to say I am powerful, I am good, I am important, I am intelligent, I can do this, those things would have really put me down because a lot of women are put down [by] a lot of abuses in politics.

For those not innately possessed of confidence, Nadia implies that confidence can be acquired along the way.

4.2.2 Personal Characteristic: Resilience

Participant responses identified resilience as an enabler for women accessing political leadership positions. Resilience can be defined as the ability to spring back or recover from adversity or stressful events (Garmerzy cited in Mathew 2009, p. 59) For instance, two participants suggest:

> The first thing you do as a woman when you get into politics in this country, if you don't have a thick skin don't, you need 20 layers of this skin you have to have hippopotamus-like skin and that's why I am telling you, you have to be tough, if you are not a strong character don't do it, don't do it. (Dina)
>
> [W]e always have to wear what we call the crocodile skin, so that you do not hear what people are saying, but you focus and just deliver what is supposed to be delivered. (Eve)

From the aforementioned excerpts, it can be surmised that female leaders described or envisioned resilience as developing a 'thick skin', or wearing a 'crocodile skin'. Additionally, from their perspective, resilience can be described as the ability to withstand abuse and criticism while attaining leadership positions. This also constitutes resilience when one

considers the concept of positive adjustment or being able to 'bounce back' after facing adversity (Miller and MacIntosh 1999). As Una explains:

> Thick skin definitely you need it, […] and you know also the fact that throughout our lives in one way or another as you try to be a leader, there [are] definitely people who try to bring you down, people who smear you with scandalous stuff, so with time you just become thick-skinned for the women who have made it to where they are right now so that is just an attribute in themselves which definitely helps them.

These excerpts reveal that participants have two opposing beliefs regarding resilience. First, it is important to acquire resilience prior to achieving political leadership. Second, an acquisition of resilience is an arduous process. It was proposed that the development of resilience in the context of this study appears to be a process—in particular, a process of devising constructs or making meaning of adverse circumstances through self-talk to ensure continued resilience.

The current study found that female leaders used self-talk as a way of making meaning of difficult circumstances and moving towards achieving their set goals or targets. The use of words such as *thick skin*, *hippopotamus skin* and *crocodile skin* provides evidence of the meaning-making and subsequent self-talk required for attaining leadership positions. Participants expressed the belief that a 'thick skin' was a necessary component for success in leadership, particularly for the Kenyan context. Mary's response demonstrates this requirement:

> If you are not able to face those challenges then don't interfere … then don't go out if you don't want to be intimidated, if you don't want to be abused these things are there but one must be very strong you know.

Participants' responses suggest that female leaders go through an internal process that integrates key events to develop resilience and adaptive capacity. For example, Pearl discusses the stigma of not having been circumcised. The stigma Pearl faced served to strengthen her determination to attain a leadership position and enabled her to face the difficult circumstances of subsequent election campaigns:

> Even as I vied for the parliamentary seat and I know it came into play. I tried the first time in '97 and I tell you my life was open for everybody to just see that you are uncircumcised and all this but I wanted to tell them there is

> something more than circumcision of the body, circumcision of the mind and to me circumcision of the mind is education so I really feel the stigmatisation built a hardened character in me.

Another participant reflected on how a key event, standing for a parliamentary seat, helped her develop resilience. Although she was unsuccessful, through this defeat, she subsequently developed a determination that enabled her to continue moving forward:

> Then 1997, I vied, I did well, very, very well but that was the period of Kenyan African National Union (KANU) … though I didn't go through it was an eye opener for me in terms of knowing that women are really discriminated because you are single they do not have children, you live with your mother, though it started to harden me to actually say I am a leader, I am single and I am a leader I mean even at home I am seen as a leader. (Nadia)

The findings suggest that participants went through an internal process of affirmation; by passing through some difficult situations, they learned to use the process of affirmation in their current situation and future events. Therefore, the research findings from this study suggest that self-talk and the processes of meaning-making are important for developing resilience and subsequently for pursuing leadership in the Kenyan context, particularly for women attaining political leadership positions.

5 Discussion

Family background for this study incorporates a family legacy of leadership, involvement in Mau Mau/independence movements, spiritual/traditional leadership and interaction with European settlers. This research's view is that this background is associated with educational opportunities. For instance, having family members working for European settlers resulted in exposure to education and opportunities. Interaction with European settlers is considered significant, as through this interaction, Africans were exposed to Western education and governance, which enabled them to operate in post-colonial Kenya.

When it comes to a legacy of leadership, interview data suggest three underpinning concepts for female political leaders: (1) a legacy of leadership legitimises the female leader's position, (2) female leaders are able to benefit politically from a legacy of leadership and (3) in a patriarchal cul-

ture, the acknowledgement and approval of male leaders is necessary for female leaders to gain access to leadership positions. Kinship and lineage ties are central to Kenyan leadership: through lineage and kinship ties, women can exert influence over males in the community (Sudarkasa 1986). The strength of these kinship ties also means that males are responsible for the women in their lineage. Hence, female leaders are protected by kinship ties to male authority figures in the community, illustrating Sudarkasa's (1986) concept of kinship ties as the main ordering principle in African societies.

In patriarchal communities such as India and Pakistan, female political leaders like Benazir Bhutto (Pakistan) and Indira Gandhi (India) were able to attain political leadership positions because of their families' history of leadership; this association legitimises female leaders (Anderson 1993; Everett 1993). Richter (1991) proposed that female leaders are perceived as legitimate and respectable when they take the place of an absent male leader, which constitutes 'proximity to established male power' (p. 528). Female leaders tend to benefit from this proximity in various ways. Through their family associations, their gender does not become an issue because they are legitimised as political candidates (Haack 2014). At the same time, female political leaders are associated with the qualities or the legacy of the male leader. Through these family associations with leadership, female leaders can capitalise on a family name and legacy, and thus, the road towards political leadership is less complicated than it would be without these connections (Jalalzai 2013).

In this current study, female leaders' comments are consistent with the conclusions of Scheper-Hughes' (2008) research that individuals had to be socialised for toughness and needed to normalise challenging events to survive. When the female leaders in this study discussed the circumstances they faced, they cited evidence of traumatic events and subsequent normalisation under the belief that it 'went with the territory'. Through such self-talk, women were able to 'override' feelings of shame that they might experience upon entering a perceived 'unrespectable' domain such as politics. Self-talk is also important in developing a 'thick skin', which has enabled these female political leaders to withstand public abuse and negative perceptions of women who engage in politics. A study of 20 high-achieving Latin American women also found evidence of self-talk as a means of dealing with difficulties (Gomez et al. 2001). Through self-talk, the Latin American women were able to reframe the hurdles they faced, such as racism and financial constraints, to move ahead.

6 Conclusion

Evidence suggests that family background and personal attributes have been enabling factors for the Kenyan female political leaders interviewed for this study. This research found family background and family ties to leadership to be significant factors for women in attaining political leadership positions. This study, however, took a broader definition of family ties to leadership by examining traditional leadership and involvement in the freedom movement as part of leaders' family background. Scholars have noted the significant role that families play in the African context; many have emphasised that family and kinship ties have upheld African states in the midst of economic hardships and political upheaval (Harden 1990; Mbigi 2005; Njoh 2006). Given the family's critical role, family background is important for leadership development in the Kenyan context.

Personal characteristics such as self-confidence and resilience enable belief in oneself even when the barriers seem overwhelming. Moreover, resilience has played a significant role in helping this study's participants to attain leadership roles. This study's participants described resilience as having a 'thick skin' or 'crocodile skin'. Resilience also involved a self-talk mechanism that enabled some of the female leaders to focus on their goals and overcome the barriers they faced.

This study's findings are important for gender equality and Agenda 2030 because the presence of women in public decision-making is significant for gender equality. One of the key drivers is greater representation and visibility in public life for women (United Nations High-Level Panel 2016). To this end, more examination of the drivers or facilitating factors for women to attain political leadership is necessary.

Notes

1. Eighteen women were interviewed because this was the number reached when saturation occurred. Saturation is a term referred to in qualitative interviewing when no new information arises from the interviews (Guest et al. 2006).
2. The names used here are pseudonyms to ensure the participants' anonymity.

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CHAPTER 20

It Is All about Power: Corruption, Patriarchy and the Political Participation of Women

Ortrun Merkle and Pui-Hang Wong

1 Introduction

With the 1995 Beijing Declaration and Platform for Action, the Millennium Development Goals (Goal 3) and the Sustainable Development Goals (SDGs) (Goal 5), more attention has been paid to gender equality in the international arena. One fundamental aspect of achieving this equality is increasing the level of political participation of women. Within this discourse two seminal studies, Dollar et al. (2001) and Swamy et al. (2001), bring about a new focus: the potential of women in politics as an anti-corruption force. They argue that, on average, women are less likely to engage in corruption than men and that achieving higher rates of political participation of women will decrease levels of corruption in society. This argument, also known as the "fairer-sex hypothesis", was quickly picked up by the World Bank, which identified gender equality as an important tool to curb corrup-

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tion (King and Mason 2001). Since then there have been heated debates about the nexus of corruption and gender. One of the most prominent criticisms is that the focus on latent gender differences oversimplifies a complicated relationship and is counterproductive for the fight against corruption and in efforts aimed at increasing women's political participation. However, research that analyses this relationship is limited. This chapter asserts that most of the existing research on corruption and gender simplifies the understanding of gender by focusing solely on women and, only in rare instances, on gender, namely socially constructed roles, activities, attributes, behaviours, personality traits, relationships, power and influence that a society conceptually attributes to men and women (Prince 2005) and gender dynamics.

Gender is an institutionalized "multilevel system of differences and disadvantages that includes socioeconomic arrangements and widely held cultural beliefs at the macro level, ways of behaving in relation to others at the interactional level, and acquired traits and identities at the individual level" (Ridgeway 1997, p. 219). Yet, the discussion on corruption typically treats gender as a one-dimensional variable and neglects the role of underlying dynamics. This chapter addresses this gap by arguing that, in order to understand how corruption (i.e. the abuse of power) works, one must have a better understanding of how power is distributed within society. Therefore, this chapter argues that rather than being a question of inherent gender differences, both the question of acceptance of corruption and that of women's political participation are linked to an underlying patriarchal system. Using a gender-centred theory, such as patriarchy, will deepen the understanding of "the complex ways that gender interacts with other social conditions and processes" (Hunnicutt 2009, p. 556).

This study investigates the correlation between attitudes towards female political leadership and the acceptance of corruption. The study hypothesizes that both corruption and women's political participation are essentially questions of how power is distributed within society and therefore influenced by patriarchic structures. It finds that men and women who agree that men are better political leaders than women are more likely to condone corruption. This suggests that underlying patriarchal norms influence attitudes towards corruption. These findings provide new insights on the relationship between higher political participation of women (SDG target 5.5.) and lower corruption levels (SDG target 16.5). The chapter is organized as follows: Section 2 discusses the theoretical argument while Sect. 3 introduces the data and methodology. A discussion of the findings is presented in Sect. 4, and Sect. 5 concludes the chapter by providing policy recommendations.

2 Corruption and Patriarchy as Asymmetric Power Relations

According to Rothstein and Teorell (2008), a political process can be divided into an input side (access to power) and an output side (exercise of power). Corruption takes place in the exercise of power, as reflected in the majority of corruption definitions, for example, Transparency International (para. 1, n.d.) defines corruption as "the abuse of entrusted power for private gain". Hence, in the corruption literature, the exercise of political power is frequently scrutinized. Surprisingly, even though most definitions refer to corruption as an abuse of power, the existing literature is usually completely detached from the aspect of access to power, and discussions about the dysfunction of the governing process routinely neglect questions about the distribution of power. Some researchers even explicitly exclude these questions. Rothstein (2011) and Rothstein and Teorell (2008), for example, discuss the concept of "quality of government" as the opposite of corruption in terms of impartiality. In their view, the principle of impartiality is upheld when "government officials shall not take into consideration anything about the citizen/case that is not beforehand stipulated in the policy or the law" (Rothstein and Teorell 2008, p. 170). This definition focuses on the question of how authority is exercised without looking at who exercises this authority. While in the ideal case of a perfectly functioning government this can be logical, the definition gets problematic in the instances where officials violate this ideal state.

As feminist research has shown, the argument that one can look at exercise of power independently is a gross oversimplification, and for good reason, the question of who has access to the political system and how access is granted are fundamental debates in political science. Most researchers agree that the underlying principle of how a state should be governed is that of political equality, that is, equal access to political powers for all groups within the state, which is not synonymous with democracy. While democracy certainly does provide the best opportunity for political equality, it is not, by default, a guarantee that all groups are included. For women, democracy has been shown to have a positive effect, but it is not by itself sufficient for equality (i.e. Friedman 2000; Goetz and Hassim 2003; Matland and Montgomery 2003; Waylen 2003).

A state can only have legitimacy if all groups are included in the political process; hence, the political participation of women is a building block of state legitimacy (Thomas 2005). In democracies, both men and women per-

ceive the government to be more legitimate if a sufficient number of women are represented, since the proper representation of disadvantaged groups indicates that the majority can trust that their interests are properly heard (Schwindt-Bayer and Mishler 2005). In 1861, John Stuart Mill argued that "in the absence of its natural defenders, the interest of the excluded is always in danger of being overlooked; and when looked at, is seen with very different eyes from those of the persons who it directly concerns" (Mill 2015 [1861], p. 216). Importantly, while a small number of women holding political office can already achieve positive outcomes for women, a "critical mass", i.e. a certain number of female politicians seems to be needed to achieve lasting societal impact (Bratton and Ray 2002; Schwindt-Bayer and Mishler 2005, p. 424). This is one of the rationales behind gender quotas, which have become increasingly important to ensure a faster increase in the number of women in parliament (Bauer and Burnet 2013). Yet, this is only useful if attention is also paid to the question of which women are actually joining the political sphere, as power structures within society often grant different access to women with different ethnic, religious, economic and political backgrounds.

Despite the established positive impacts of women's political participation, there are many roadblocks that affect how small the window is for women to be politically engaged. For instance, a woman's decision to seek political office often includes more deliberations about family-related obligations unlike a man's decision. Yet Fulton et al. (2006) argue that women are more aware of the benefits that holding elected office provides and have a deeper sense of responsibility once they do hold the job. Political institutions and culture also can act as obstacles. Many researchers find that electoral systems have an impact on the political participation of women (Matland and Brown 1992; Norris 1985; Rule 1994), as do party size and orientation (Kittilson 2006). The political culture also has a direct effect on how individuals see their representatives and what qualifications and characteristics they expect. Fox and Lawless (2004) point out that the socialization of politics is still biased towards allowing more men to participate in the process, and the paradigm that men are more suited for holding public office remains in place. This paradigmatic thinking has an impact on not only parties' candidate selection but also potential female candidates, who often feel less qualified for public office than men with similar experience and education.

The reasons that women do not (yet) participate enough are centred firmly around sexist stereotypes. While sexism is often understood as hostility against women, many of these sexist stereotypes are not at first

sight understood as negative and are much subtler. In a seminal study, Glick and Fiske (1996) distinguish two types of sexism: hostile and benevolent. Hostile sexism is prejudice. By contrast, benevolent sexism is associated with positive feelings, which tend to elicit prosocial behaviours such as helping. However, benevolent sexism evokes traditional stereotypes and can be equally damaging; for example, it usually projects the image of the man as the provider and a woman as his dependent, being nice but incompetent at many important tasks (Glick and Fiske 1996). Therefore, both hostile and benevolent sexism are driven by a patriarchal structure, which places women in a subordinate position and creates dependency to consolidate men's structural power and violates the principle of equality. Consequently, patriarchy is not a simplistic concept of "bad" men having power over "poor" women. On the contrary, patriarchy can be understood as a complex system of power relationships where "both men and women wield varying types and amounts of power" (Hunnicutt 2009, p. 565). Patriarchy should also not be seen as a static system; rather, it is a continuously evolving web of ideas and relationships (Enloe 2017, p. 16).

In short, ignoring the power access problem and neglecting the power structure in politics will prevent a deeper understanding of how corruption is embedded in society. Hence, this chapter hypothesizes that both the idea of the importance of equal participation of women and the view on the acceptability of corruption speak to the question of how patriarchy is embedded in the structure of society. Therefore, unlike what the fairer-sex hypothesis suggests, gender differences—be they inclination to sacrifice personal gains or disparity in self-control—do not explain tolerance towards corruption. Rather, it is underlying patriarchal norms that matter for the persistence of corruption. This chapter is looking at views on women as a representation of the underlying patriarchal structure and tests the following hypothesis: *People who agree that men are better politicians than women are more likely to condone corruption.*

3 Data and Methodology

Data for this chapter come from the latest wave of the World Values Survey (2010–2014) (Inglehart et al. 2014). The World Values Survey database consists of nationally representative surveys conducted in about 100 countries using a common questionnaire. This study only includes surveys for sub-Saharan Africa countries. Countries for which surveys are available are Ghana, Nigeria, Rwanda, South Africa and Zimbabwe. The analytical sample used for the analysis contains 9827 observations from these countries.

This study investigates the correlation between attitudes towards women's political leadership and attitudes towards corruption. It does not claim causality and only uses regression analysis to identify a pattern, while accounting for various factors. The empirical analysis pools individual responses across the five sub-Saharan Africa countries and includes dummy variables for each country to account for country heterogeneity. The dependent variable is the attitude towards corruption. Respondents were asked to indicate whether they think "[s]omeone accepting a bribe in the course of their duties" is justifiable. Responses are reported on a ten-point Likert scale, where 1 indicates "never justifiable" and 10 "always justifiable". Given the number of possible responses, the variable is treated as an ordered response, since about 80% of the responses take an extreme value (i.e. scales 1 and 2).

The key independent variable denotes the attitudes towards women's political leadership. The measure is derived from a question, which asks respondents to indicate whether they agree with the following statement: "On the whole, men make better political leaders than women do". Responses are reported on a four-point Likert scale, where 1 indicates "strongly agree" and 4 "strongly disagree". Given the small number of possible responses, treating the variable as continuous imposes a strong linearity assumption on the relationship between the dependent and independent variables; that is, the effect of a one-point increase from "strongly agree" to "agree" is the same as the one from "agree" to "disagree". The assumption is likely to be untrue. Therefore, five dummy variables are created and used to avoid making this bold assumption. Each dummy variable corresponds to a scale point, plus an additional one that pools "missing" and "do not know" together. The baseline is "agree" and is omitted in regression models to avoid perfect multicollinearity.

Several control variables are also included in the analysis. The gender of the respondent is controlled for since women and men may respond differently, according to the fairer-sex hypothesis (Dollar et al. 2001). The other control variables include age, marital status, religiosity and employment status (i.e. employed, unemployed, inactive). People who are the chief wage earner of a household and work in a certain sector may have a higher exposure to corruption in their workplace. To account for the potential differences in responses, both variables are included in the regression. Moreover, since the income level of the respondent was not captured in the survey, self-reported class levels are used to proxy the economic well-being of the respondents. Possible responses are "upper class", "upper middle", "upper lower", "working class", "lower class" and "don't

know". The baseline is "lower class". Education can be a powerful policy tool to combat corruption (Eicher et al. 2009). To control for the effect of education, the variable is included as well. The original survey response has nine categories, ranging from 1 (no formal education) to 9 (university-level education, with degree). For simplicity, the education level is coded as a continuous variable. Finally, people who thought that "having a strong leader who does not have to bother with parliament and elections" is a good (or bad) way of governing the country may have a stronger opinion about corruption. A set of five variables is created to control for this effect (very good, fairly good, fairly bad, very bad, don't know). The baseline is "very bad".

Due to the ordinal nature of the dependent variable, an ordered logit model is used in the analysis. Furthermore, a multilevel logistic regression is utilized as a robustness check to accommodate the hierarchical structure of the data. More specifically, in the context of survey data analysis, individuals are usually found to be influenced by a common set of contextual factors; for example, people living in one region are subjected to the same policy. This feature of the data makes responses from the same region correlated. If the correlation is particularly strong, the usual ordered logit model will lead to smaller standard errors and hence inaccurate hypothesis-testing results (Steenbergen and Jones 2002). Under this circumstance, a multilevel model might be superior to the usual ordered logit model, as it can explicitly model this kind of dependency and, at the same time, account for unobserved heterogeneity. The model looks similar to the usual ordered logit model, but with a constant containing a random component, which is allowed to vary across region j in which respondent i lived. This random component is assumed to have zero mean and its variance is estimated explicitly.

4 Findings and Discussion

Estimation results are reported in Table 20.1. Model (1) includes only the key independent variables and country dummies as covariates. It shows that people who strongly disagreed that men are better political leaders are also less likely to think that corruption is justifiable than those who agree. The estimate is statistically significant at the 1% level. The findings lend support to the hypothesis that perceptions of corruption and attitudes towards women's political leadership are related to underlying norms, that is, patriarchy. The coefficient of the dummy variable "disagree" is negative

Table 20.1 Relationship between attitude towards women as political leaders and corruption

	(1)	*(2)*	*(3)*
	Ordered logit	*Ordered logit*	*ML ordered logit*
Men better (don't know)	−1.013***	−0.764***	−0.527**
	(0.082)	(0.067)	(0.186)
Men better (strongly agree)	−0.208	−0.173	−0.098
	(0.119)	(0.124)	(0.051)
Men better (agree)	Baseline	Baseline	Baseline
Men better (disagree)	−0.385	−0.364*	−0.373***
	(0.215)	(0.171)	(0.050)
Men better (strongly disagree)	−0.630**	−0.501*	−0.468***
	(0.238)	(0.209)	(0.070)
Female		0.027	0.034
		(0.056)	(0.040)
Age		−0.008***	−0.006***
		(0.001)	(0.002)
Education		−0.029	−0.035**
		(0.023)	(0.011)
Religious (Yes = 1)		−0.057	−0.136*
		(0.062)	(0.066)
Married		−0.162***	−0.144***
		(0.042)	(0.043)
Chief wage earner (Yes = 1)		0.047	0.073
		(0.057)	(0.047)
Work (not working)		Baseline	Baseline
Work (government)		0.093	0.104
		(0.145)	(0.084)
Work (private sector)		0.021	−0.002
		(0.202)	(0.067)
Work (non-profit)		0.132	0.112
		(0.252)	(0.082)
Employed		0.109	0.048
		(0.066)	(0.064)
Unemployed		0.011	−0.011
		(0.062)	(0.058)
Inactive		Baseline	Baseline
Strong leader (don't know)		−0.467	−0.234
		(0.277)	(0.150)
Strong leader (very good)		0.678***	0.607***
		(0.159)	(0.061)
Strong leader (good)		0.761***	0.706***

(*continued*)

Table 20.1 (continued)

	(1)	*(2)*	*(3)*
	Ordered logit	*Ordered logit*	*ML ordered logit*
		(0.192)	(0.055)
Strong leader (bad)		0.434**	0.370***
		(0.134)	(0.053)
Strong leader (very bad)		Baseline	Baseline
Upper class		0.323**	0.382**
		(0.117)	(0.128)
Upper middle		0.297*	0.273***
		(0.145)	(0.067)
Lower middle		0.216	0.198***
		(0.114)	(0.055)
Working class		−0.064	−0.049
		(0.064)	(0.055)
Lower class		Baseline	Baseline
Class (don't know)		0.831***	0.821***
		(0.105)	(0.158)
Ghana	−0.605***	−0.672***	
	(0.046)	(0.044)	
Nigeria	−0.028	−0.233***	
	(0.040)	(0.039)	
Rwanda	0.386***	0.275**	
	(0.038)	(0.101)	
South Africa	1.349***	1.176***	
	(0.164)	(0.184)	
Zimbabwe		Baseline	Baseline
var(μ_j)			0.738***
			(0.173)
N	9827	9776	9776
No. of regions	–	–	39
Log-likelihood	−16,736	−16,417	−16,433
LR test (*p*-value)	0.000	0.000	0.000

Notes: The dependent variable is the justifiability of accepting a bribe. The variable is on a 10-point Likert scale, where 1 means never justifiable and 10 always justifiable. Robust clustered standard errors in parentheses in Models (1) and (2); $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

but not statistically different from that for the baseline, "agree", at the 5% significant level. Another interesting finding is that people in Rwanda and South Africa are more likely to condone corruption than people in Zimbabwe. As discussed in previous chapters Rwanda and South Africa are

among the world leaders in terms of shares of women in parliament, yet they still have relatively high levels of corruption, further contradicting the simplistic view that increasing the number of women in parliament will lead to lower corruption levels or more critical attitudes towards corruption.

Results from Model (2), which adds further controls to the estimation, are consistent with previous findings. The coefficients of interests, "disagree" and "strongly disagree", have the expected negative sign and are statistically significant at the 5% level.

In further analysis, the average marginal effects are obtained. The marginal effect is negative when the "justifiability" level (scale of the dependent variable) is at 2 or above—recalling that 1 means "always justified" and 10 "always unjustified". Based on the marginal effects, respondents who strongly disagreed that men are better politicians than women are about 1.3% more likely (baseline = 4%) to disapprove corruption than those who agree with the statement.

To improve statistical inference, Model (3) includes a region-level mixed effect in the regression model. The log-likelihood of the model improves, suggesting that the model is superior to the one without the mixed effects. Results from the likelihood ratio test also suggest that the model is better than the one without the multilevel feature. Results are very similar to those obtained from Model (2). The estimates are also more precise and statistically significant at the 0.1% level. The previous findings are robust to unobserved heterogeneity.

Interestingly, results from both Models (2) and (3) suggest that women are equally likely as men to condone corruption, a finding that contradicts the fairer-sex hypothesis proposed by Dollar et al. (2001). This is in line with the previous research by Alhassan-Alolo (2007), who finds that women in public positions in Ghana do not have different ethical principles than their male counterparts and that both sexes are equally likely to act unethically when societal constructs call for it. Similarly, McCabe et al. (2006) show that, in the U.S., "expressive traits and egalitarian gender-role attitudes contribute to both men's and women's propensity to perceive unethical workplace behavior as unethical" (p. 101) rather than gender alone. Goetz (2007) further argues that in a "female-dominant working environment, or where women professionals are dealing with women clients or with a socially inferior class, women professionals are not averse to extorting unofficial 'payments' for services that ought to be provided as a right" (p. 101). Additionally, results from the present study

suggest that people who agree that men are better political leaders than women are more likely to condone corruption, regardless of gender. This is in line with an essential aspect of patriarchy, a system that can only exist as long as it is reinforced by men and women alike (Enloe 2017). Previous research on the relationship between corruption and political participation, which criticizes the overly naive view by authors such as Dollar et al. (2001), argued that the relationship between gender and corruption is rooted in the fairness of the system (Sung 2003) and in opportunity (Alhassan-Alolo 2007; Bjarnegård 2013), not in gender differences. And while a fairer, more equal system and access to opportunities for all are essential in fighting corruption, the findings in this chapter suggest that in order to change views on corruption, a fairer system that gives opportunities for participation to women (such as in Rwanda) is not enough when underlying power dynamics, that is, patriarchy, are not addressed.

Other authors also hint at the role underlying gender norms might play in the relationship between corruption and gender. Esarey and Chirillo (2013) argue that women's behaviour is marked by societal rules more than by their gender, and therefore, women are much more aware and reluctant to commit acts of corruption when it is systematically seen as immoral. However, if corruption is the modus operandi in the system, they are less likely to abstain from the practice. Echazu (2010) posits that women's behaviour is more honest and reliable probably because they are a minority. This minority bias makes them more aware and sensitive to breaking the rules. So rather than intrinsically being more prone to honesty, it is their current situation that makes them act less corrupt. Alatas et al. (2009) conducted surveys and found that gender differences regarding corruption are not equally present in all societies. They argue that this could be due to "the differing social roles of women across cultures" (Alatas et al. 2009, p. 678). They state that "in relatively more patriarchal societies where women do not play as active a role in the public domain, women's views on social issues may be influenced to a greater extent by men's views. In such societies, one would expect to see less of a gender difference in behavior toward corruption in comparison with societies where women feel more comfortable in voicing their own opinions" (Alatas et al. 2009, p. 678). This view is supported by the present study's findings showing that men's and women's attitudes on corruption and the participation of women are very similar.

Attitudes are not static and are heavily influenced by other factors such as education, which has been included as a control variable. As expected,

education has a negative effect on attitudes towards corruption in Model (3), consistent with findings from Eicher et al. (2009), although the statistical significance and size of the factor are weaker than what previous research suggested (e.g. Truex 2011). Patriarchy is not a static system and explicitly does not only focus on the domination of men over women but shows a complicated web of power relationships, where "different resources of protection and resistance are available to men and women in different social positions. For women of privilege, class confers power on subordinated women. For more disadvantaged women, subordinated status creates opportunities for resistance" (Hunnicutt 2009, p. 565). Hence, one cannot look at the role of patriarchy without also analysing economic class as an additional layer in this analysis. One may think that a wealthier person may be more likely to benefit from corruption, as they have access to corruption networks or, as Lui (1985) argues, they have higher time costs, which make them more willing to pay a bribe to economize time on the queue. Consistent with the idea that class does shape attitudes towards power, the results show that individuals in the upper class are more likely to condone corruption than individuals in the lower class. Interestingly, the attitudes towards corruption of respondents working in the government or public institutes are not significantly different from those of people working in non-profit organizations. This result is in contrast to what Bardhan (2006) proposes but consistent with the argument that attitudes towards corruption and participation of women are based on underlying societal norms rather than on the workplace.

5 Conclusion

This study's findings strongly suggest that patriarchal structures can be linked to views on corruption. While previous research already linked stereotypes about female political candidates and the perception of political corruption (Barnes and Beaulieu 2014; Esarey and Schwindt-Bayer 2018), this study takes it further by connecting attitudes towards women's political leadership with attitudes on corruption. Showing how patriarchy and corruption are connected will help in "exposing ways patriarchal systems are being perpetuated today [and] will enable us to more effectively challenge and dismantle them" (Enloe 2017, p. 17). While corruption, gender equality and women's political participation in particular are all issues worth addressing in their own right, this study shows that changing attitudes towards women in politics, and therefore challenging patriarchal

structures, can also change attitudes towards corruption and, therefore, is expected to have a multilayered positive effect on development. Findings from the analysis clearly support the hypothesis that patriarchal norms play a role in how one judges corruption.

Findings from this chapter therefore have several implications. Firstly, they suggest that a more bottom-up policy approach is important to successfully change attitudes towards corruption. Rather than relying on the (few) female politicians to break the old boys' network and to fight against corruption, policymakers should also promote the changing of gender norms at the grass-root level and change the climate of corruption through a large-scale socialization process. While the traditional top-down approach has the drawback of relying on the minority in a network to induce changes, which has proven to be difficult, the proposed bottom-up approach tries to transform the social perception from within and avoids counting only on the few. This is more likely to produce a more durable outcome by reducing the risk of reversal due to a sudden drop in the percentage of female politicians in the national parliament or disappointment with women participating in the same corrupt networks.

Secondly, this chapter argues that changing attitudes towards participation of women in all spheres of society will also help change attitudes towards corruption. There is a second benefit to thinking about both issues as a question of patriarchal norms rather than inherent gender differences. Making anti-corruption the standard-bearer of the need for women to join the political sphere can backfire (Alhassan-Alolo 2007). Since women are not necessarily less corrupt, this might hurt not only anti-corruption efforts but also the goal to involve women in politics. Instead, the main argument could be that women diversify the thinking of the government and play a decisive role in the creation of multidimensional politics, which benefits society as a whole (Sung 2006). All in all, women are equally corrupt as men given the opportunity and power structure. To successfully fight against corruption and improve the political participation of women, underlying structures need to be addressed.

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CHAPTER 21

Facts, Narrative and Action on Gender Equality in Modern Africa: A Sociological Approach to Priorities and Omissions

María José Moreno Ruiz

1 Contestation and Resistance of Historically Shaped Gender Inequalities

Gender equality is a topic admitted to the discussion tables of corporations, governments and academic institutions across the world. The women's movement, which includes intellectuals advocating for women's rights, organized activists building structures to magnify their voices and just emboldened individual women opening new paths for others by breaking societal corsets designed to shape their lives, has had an undeniable success in shaping public debates and political agendas at all levels.

Women have challenged the unfairness of the "gender social contract" that supposedly prolonged hierarchical gender roles, building on "natural"

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dispositions and biological differences of men and women. The social contract theory in political philosophy established that a person's moral, social or political obligations are dependent on an actual or hypothetical agreement amongst individuals defining the rights and duties of each, including the ruled and rulers, to make a civilized society possible. In the same way, the "gender social contract" was supposed to build on complementarity between men and women to create harmonious, well-functioning societies. Women pointed to specific clauses of the hypothetical contract to be reviewed across the board, amongst them gender gaps in income and access to resources, quality employment, decision-making and the share of voice, the distribution and value of domestic care and overall unpaid work, autonomy, and sexual and reproductive health and rights. These issues, with some variations, are common today in the gender debates in North and South, East and West Africa. However, both the prioritized topics and the perspectives displayed to contest the discrimination of women and gender hierarchies have changed through history, which is to say through time and, to a certain extent, geographies.

Feminism, the range of socio-political movements and thought advocating the equality of opportunities, rights and value between men and women in different world regions, in particular, identified and studied since the nineteenth century, evolved in reaction to the gendered structures and dynamics of the societies in which they were embedded. The contestation of gender hierarchies in those scenarios was also shaped by hegemonic paradigms of understanding. Women advocating for equal pay in the Industrial Revolution or demanding the right to participate in suffrage had necessarily different concerns and discourse from those Arab nationalists in the mid-twentieth century who strived for the social and political advancement of women while promoting Arab nationalism. Understandably, early activists for women's rights focused on different topics than the leaders of the #MeToo movement.

If the first waves of feminism took pride in their collective voice as feminists, following both backlash and the social transformation, at present even those people advocating for gender equality, women's rights and a wider possibility of expression and opportunity for men and women are often reluctant to use the term "feminism" (Rampton 2015). In a time characterized by theories praising individualism, and "self-made" identities, in the so-called Western world, and despite the ongoing contestation of inequality and gender practices, some people have abandoned the term, and often the political positioning associated to it. This is because it has

been linked with exclusion of men, by focusing disproportionately on women, and also with the exclusion of non-binary gender identities.

In the Global South and in Africa in particular, some people reject the term "feminism" and the practice of women, and some men, demanding equal rights because they have been dismissed by associating them with "destructive radicalism" or "foreign ideologies". Gender equality is strategically treated by its opponents as an external threat to gendered norms and hierarchies, sacralized as "culture". Often when people from their community voice a concern about gender inequality, they are told that they have been "Westernized", and therefore devoid of legitimacy. Religious and nationalist movements, in the North and the South, are usually structured along rigid gender lines, which are presented as ideal, and therefore "the end of history".

The reviling of the term "feminism" and even the expression "women's rights" or the political approach to confront hierarchies between men and women deserves attention. The preference for a technical perspective around the designation of "gender sensitivity", which includes the "empowerment of women" through training, micro-credits and access to jobs and markets in order to allow "inclusive growth" through "smart economics", is well articulated in contemporary public discourses on development, international relations and even philosophy based on values and rights rooted in dominant economic imaginaries. The common understanding and practice of "gender sensitivity" is unfortunately not always gender transformative, as it does not transform the power relations between men and women, and often fails to address other lines of power, inequality or exclusion in a given society.

The 2030 Sustainable Development Agenda enshrines gender equality as a collective objective for humanity. Gender hierarchies and the resistance to them are global. However, their expression and intensity are diverse in different geographies, as they result from and intersect with traditions, social norms, productive structures, resource and voice distribution, power ladders and dominant paradigms of thought and understanding. In order to look into the contemporary debate and action on gender equality in Africa, this chapter is structured as follows. After this introduction, the next section provides an outlook of the gender gaps and their intersection with another axis of inequality such as socio-economic or geographic disparities. The section will highlight priorities, discourses and strategies while pointing out perceived omissions. Section 3 will identify contemporary global and continental trends likely to influence the

focus and action in the area of gender inequality, and therefore relevant areas for future research in the field. The final section summarizes the conclusions of this research.

2 The Gender Landscape of Modern Africa

Describing the gender landscape in Africa is not an easy task. As the saying goes, "Africa is not a country" but a vast and diverse continent with regions and nations with different dynamics. Hans Rosling (Rosling et al. 2018) alerted us to how inaccurate our mental models are when looking at the world, amongst others, by using classical divisions obsolete in many ways, of "developed" and "developing" countries, amongst others, or encapsulating the African continent as a continent of endemic poverty, corruption and despair. Life expectancy is 22 years longer in Cape Verde than in Swaziland. Botswana has been one of the top performers in respect of sustained economic growth, democracy and peace since independence. The Democratic Republic of Congo has a markedly different experience. Assumptions about the continent tend to require exclusions, addenda and explanations (Rosling in We Magazine Africa 2010). Elites across Europe, Africa, Asia and Latin America have lifestyles more similar amongst themselves than with people in their own countries at the foot of the socio-economic ladder. In order to better elucidate the continent's gender setting and trends, some facts and statistics across different issues on gender inequality are presented below.

Human development indicators on the continent are low. Out of 31 low human development countries, 28 are in sub-Saharan Africa (SSA) (2016, HDR Report). Globally, the only region where income poverty has not fallen since the 1990s, measured in absolute numbers of people in poverty, is Africa.

Gender patterns are observable in human development indicators. Despite the gains in universal education at the primary level, the reductions in gender gaps in secondary and university education, and a high participation of women in the labour force in most SSA countries, women continue to have limited access to quality employment, resources, property and share of voice. With female labour force participation and fertility being amongst the highest in the world in most sub-Saharan countries, women in poverty are also "time poor" due to the double demands of productive/paid work and domestic and unpaid work.

Women typically spend at least three more hours daily than men on unpaid work in developing countries (UN, World's Women 2015) including on household chores, activities such as fetching water and fuel and caring for children and elderly relatives, which reduces their availability to engage in paid work, education, leisure and self-care. In urban areas with more diversity in economic attainment, middle- and upper-class families engage paid domestic work, in which the lines of gender and socio-economic inequality are observable: women in poverty are over-represented in such work. In some urban settings, paid domestic work constitutes a very popular occupation for women, but one that is poorly valued and remunerated, and in general lacking in social protection. The women and men in better-off households can profit from existing intersectional inequalities, which include gender and socio-economic gaps and urban-rural divides, and buy cheaply, often at working poverty wages, the assistance of women in difficult economic situations for household and care tasks. The vulnerability of women in poverty and the dysfunction of the labour market intersect, providing cheap employment to more accommodated families, which can offer individual advantages for those households in the short term. In the middle and long term, however, it exacerbates and reinforces a two-speed economic development or, quite simply, socio-economic and opportunity inequality, which risks excluding entire swathes of the population.

For women as a collective, this arrangement establishes disparities amongst the practical interests of the diversity of women at different ends of the economic ladder, and it makes the emergence of a strong intra-gender solidarity more unlikely. Gaps in voice amongst women of different socio-economic classes can maintain and even increase these inequalities: women at the top of the ladder have more personal incentives to lobby for affirmative action and quotas for women in political decision-making than to advocate for decent jobs for the paid domestic workers they employ. Women domestic workers face additional difficulties, including a "voice deficit", as their extraction and conditions hinder the acquisition of skills such as leadership, effective communication and organizing, lobbying and advocacy, negotiating and public speaking (V. Kanyoka 2017). International inequality trends, together with gender norms and stereotypes in both countries of origin and destination jobs, also create a demand in more developed countries for lower-paid women domestic and care workers from the Global South. The divergence of situations and interests hampers the improvement of conditions and rights of poor women from developing regions, such as Africa.

The profile of paid domestic work in Africa is only one example of the precarious insertion of women in the labour market in the continent. African women are also the majority of those engaged in subsistence agriculture and amongst those who work for relatives, which typically is unpaid. In SSA between 30% and 55% of all employed women are "contributing family workers", exceeding the proportion of men by about 20 percentage points (UN, World's Women 2015). Women are typically engaged in subsistence agriculture, producing over 70% of Africa's food (Abbas in WEF 2018), yet they remain marginalized in issues such as land rights, capital and credit, access to technology, labour and support services. These restrictions on access prevent gender equality, food security and overall economic development and social progress. The narrative and "essentialization" of women as being altruistic family caretakers, who "help" their husbands to provide, contribute to the dynamics of women in subsistence agriculture and other poorly paid and valued occupations. The feminization of agriculture in Africa is linked to the out-migration of men to urban areas due to lack of economic opportunities that are considered "dignified" for men. Rural women are losing out in relation to rural men in respect of non-agricultural, more productive and better-paid jobs. They continue working in agriculture in unfavourable conditions because of a combination of gender norms and discriminatory laws and practices related to inheritance, access to land, property and production factors. This situation prompts caution when interpreting data of women's majority presence in the rural labour market as "women's economic empowerment". In Morocco, only 26% of the total active labour force is female; in Mozambique, up to 55% of women are in the active population (World Bank 2017). However, it may be mistaken to assume that women are more "economically empowered" in Mozambique than in Morocco. Women in the labour force in many countries have more command over resources and personal autonomy than women with no access to income, but presence in the labour force cannot be equated with women's "emancipation".

Within the European Union and in North America around 46% of the labour force is female. In the Middle East and North Africa, the percentage is only 20%, and in South Asia, it is 25% (World Bank 2017). When we look at the data by income level and not by region, we obtain interesting correlations: it is in low-income countries where women have the highest participation in the labour force, namely 47%, considerably superior to the percentage of women in the labour force in lower-middle-income

countries, which is 32%. Women in upper-middle-income countries constitute 42% of the labour force. A close examination of the data on the female share of the active population indicates that the participation of women in the labour market is affected by multiple factors. In low-income countries, where poverty is high, most women do not have the option of forgoing a paid job. Often, they are forced to accept occupations with wages below the poverty line. Potential workers' resources, status and expectations before taking, or refusing, available jobs will influence their participation in the labour market. In SSA working poverty remains the main concern for millions. Men, because of social status perceptions, may refuse jobs that women will have to accept. Poor men's public status may suffer if they accept jobs considered demeaning for them, while women in poverty may be judged if they refuse whatever employment they are offered. Taking into account the over-representation of women in the lowest paid, and the least socially valued, occupations, such as subsistence agriculture or paid domestic work, an effective way to improve women's conditions, empowerment and advancement towards decent work would be the application of universal measures regarding minimum wages and social protection. Raising minimum standards for all is often a very effective gender equality mainstreaming action.

Raising the minimum standards at the workplace is not a panacea for the achievement of gender justice and women's access to income. Upon close examination of data on female participation in the labour market, we can infer that poverty and need are not the only variables pushing women in low- and lower-middle-income countries to engage or not in paid labour. Statistics of female participation in the market indicate that the Arab world has the lowest participation of women in the labour force in the world, at 20%, close to Pakistan at 22% or India at 24.5%. These data point to gender social norms, and not only income poverty as a factor preventing women access to employment.

In respect of women's share of voice and representation, aggregated figures indicate that the average percentage of women in parliaments in Africa is comparable to that of other world regions, and still far from parity. In November 2018, the percentages of women for occupying offices in single, lower and upper houses combined were 42.3% in Nordic countries, 30% in the Americas, 26.6% in Europe (excluding Nordic countries), 23.6% in sub-Saharan Africa, 19.4% in Asia and 17.8% in Arab states (Interparliamentary Union, "Women in national parliaments" November 2018). Women in Africa constitute, as indicated above, 23.6% of the

national parliaments; 19.7% of them occupied ministerial positions in 2017, having first surpassed this percentage in 2012 after seven years of rapid progress (IPU-UNWOMEN 2017). At the local government level there is no reliable information on the female percentage of advisers, which constitutes an important knowledge gap. Averages however cannot hide considerable differences between African countries in women's access at specific levels of decision-making. Intra-country gaps have also been identified when accounting for the presence of women at different levels of political representation. Rwanda, the world leader in the percentage of women in parliaments, reached 61% of women in the lower house. Other countries in the continent such as South Africa, Namibia or Senegal have more than 40% of women in their national parliaments (IPU 2018). Despite the attainment of significant percentages of women in national politics in some countries, access to voice and representation remains a challenge. In most African countries, women are significantly under-represented in decision-making positions such as legislators, senior officials and managers in the public and private sector, and are over-represented in positions that are characterized by low pay, long hours and lack of social protection (UN-World Women's Report 2015).

Intra-country differences in women's access to voice can be observed in the case of Rwanda: despite the country leading in the percentage of women in parliaments, this apparent "empowerment" has not reached women from other backgrounds. The progress that has been made in "women's leadership (at the national level) has not filtered to the lower levels of government or other areas such as higher education, the police, the armed forces or the private sector" (Abbott et al. 2015). The application of quotas in a number of countries in national politics has yielded significant results; however, this mechanism is not applied in other fields. In fact, in Rwanda, rural women continue to face extreme hardship, with over 70% of women living in rural areas, where poverty is heavily concentrated. They are usually employed in subsistence agriculture. When domestic and unpaid work is counted, on average, women work about 20 hours more per week than men do. Rwandan rural women are also benefiting less than their male counterparts from non-farm employment created, which, in general, offers better conditions (ibid.).

It is reasonable to expect more gender sensitivity and engagement from women when they achieve a critical mass in decision-making at the national level. Such cases have been documented: women in different countries have joined forces across party lines to support initiatives dealing with drinking water, childcare, elimination of gender-based violence, parental

leave, gender equality laws and electoral reform (UNWOMEN 2017). However factors that can affect these outcomes are the difference amongst women's positions and interests, and the diverse degree of functionality and weight of institutions such as parliaments. The rift in experience and context dividing women belonging to higher socio-economic groups in national politics and rural women and women in poverty searching for a voice is so wide that intra-group "gender" solidarity and identification is not obvious in other cases.

Women's lack of economic and educational empowerment and voice is correlated with relational and reproductive disempowerment. Shortage of quality and affordable family planning services, together with poor education on sexual and reproductive health in a context of gender inequality, hinders the relational and reproductive empowerment of African women, and especially for those in a situation of poverty and vulnerability, such as young women or those living in rural areas. There are additional aspects acting systemically and eroding both gender equality and women's relational and reproductive empowerment. Amongst these factors, the following have been described in specialized literature: the widespread use of gender-discriminatory family codes (including civil and common law, customary and religion inspired laws); the relative prevalence of child and forced marriage amongst girls, often negotiated by male "heads" of households; the persistence of female genital mutilation; widespread criminalization of abortion and its practice in unsafe conditions; "slut-shaming"/victim-blaming of women even in cases of sexual violence and rape; and existing social pressure to endure violence from an intimate partner or arrangements little liked by most women, such as polygamy.

Although with significant differences within and between countries, Africa continues to have the world's highest fertility rates (births per 1000 women) and the highest percentages in unmet reproductive health needs, which are measured as the rate of women who would like to prevent or delay pregnancy but do not use any method of contraception, revealing a gap between intention and behaviour. Lack of access to information and family planning services hinders the ability of women and couples to plan their lives, while increasing vulnerability to unintended pregnancies, sexually transmitted diseases (including AIDS), childbirth-related complications and deaths, and unsafe abortion, amongst others. Unmet needs for family planning and unintended pregnancies are also related to abortion. Just over 15% of pregnancies in Africa end in abortion; the percentages are 23% and 24% respectively in North and Southern Africa. The continent

has the highest number of abortion-related deaths, with an estimated 9% of all maternal deaths in 2014 (Guttmacher Institute 2018). In 2017, the demand for family planning satisfied by modern methods reached an average of 56% in the continent. However, it was less than 50% in 46 countries, the majority of which are in Africa (UNPD Population Facts 2017a). According to the United Nations Population Division (2017), women in SSA have an average of five children in their lifetime, compared to a global average of 2.5 children. Some African countries such as South Africa, Mauritius, Rwanda, Seychelles and Morocco have completed a demographic transition, reducing both mortality and fertility (Mueni 2016, Wilson Center). West and Central Africa have the highest levels of unmet family planning needs at 24%. Unmet needs have declined in all world regions since 2000 except in West and Central Africa. The world regions with the fastest decline in unmet needs since 2000 are also in Africa: East and Southern regions (UNFPA 2016). The lack of access to family planning despite the desire to prevent or delay pregnancy penalizes women at the intersection of inequalities: women in rural areas, in poor households and deprived of education have lower levels of contraceptive use (UNFPA 2016). In-depth case studies in Nigeria and Ethiopia (ibid.) found that a considerable number of women, and their partners, were opposed to the use of contraception. The main reasons reported for abstaining from contraception were breastfeeding, fear of side effects, religious grounds, fatalistic approaches to pregnancy and the lack of knowledge.

Rapid population growth takes place in a context massive unemployment and precarious employment, food security concerns and a provision of services, such as education and health, that is inadequate to satisfy growing needs. The concentration of the global population growth in the poorest countries and communities challenges the capacity of governments and stakeholders to implement the 2030 Agenda for Sustainable Development (UNPD, World Population Prospects 2017b).

Women's autonomy and relational and reproductive empowerment are at stake when high fertility rates occur due to unmet family planning needs. Unplanned births are more likely to occur with women in situations of poverty, as described above, as with women who have limited room to negotiate with their partners in situations of gender-based violence, child/forced marriages and other situations of power asymmetry. Studies carried out in some African countries show that men tend to desire a higher number of children than women. The examination of desired fertility in Burkina Faso and Ethiopia showed that in Burkina Faso, the

average husband desired 3.7 children more than his wife, while in Ethiopia, the average desired fertility gap by gender was 2.1. Related research has also established that gaps in desired fertility are bigger between men and women in polygamous situations (Doepke and Tertilt 2018).

Africa is the world's region with highest fertility rates for women between 15 and 19 years old. The adolescent fertility rate in SSA, or babies born for every 1000 women between these ages, in 2015 was estimated at 101 SSA (World Bank, Adolescent Fertility Rate). Adolescent pregnancies do not occur evenly: there are up to three times more adolescent pregnancies in rural and indigenous populations, and global data indicate that teen motherhood is higher in communities affected by lack of education and employment (WHO 2018). A comprehensive study on adolescent pregnancy in Africa identified the following factors as increasing teenage pregnancy rates: poverty, sexual advances from older men, coercive sexual relations, unequal gender power relations, peer influence, religious context, early marriage, lack of parental counselling and guidance, parental neglect, low self-esteem, lack of access to education, lack of comprehensive sexual education, substance abuse, lack of access to contraceptives, and youth-unfriendly health workers and reproductive services (Yakubu and Salisu 2018). In the light of these findings, one could say that as it takes a village to educate a child, it takes a community to protect that child from an unintended pregnancy. The prevention of teenage pregnancy is a women's rights priority and a development issue. Adolescent pregnancy is linked to previous and further vulnerabilities for young mothers. They encounter more obstacles to their education and therefore lose out in employment later, suffer stigma in their communities and rejection from their relatives and/or peers, and are at greater risk of gender-based violence or experience health complications for themselves and their babies (WHO 2018).

Schools and communities can have an important responsibility in empowering girls and healthy relationships from a young age. A body of research though has documented widespread sexual harassment of girls, and in some cases that of boys, in communities, and in exchange for better grades in the school system. This has been documented in such diverse countries and regions as Ethiopia, Ghana, Tanzania, South Africa, Morocco, Egypt and West Africa (Kosar and Le-Mat 2017; Morley 2011; Devers et al. 2012; Cals-Avon-Ford Foundation 2014; Ayoubi Idrissi 2014). Internalized effects of sexual abuse have been described in the literature, and they include guilt, self-loathing, depression and anxiety. Low

self-esteem has also been related to self-harm and unintended pregnancies. A qualitative study on sexual harassment where boys, girls and teachers in Ethiopia were interviewed found that sexual abuse dynamics in school tended to identify "nature", "biological urges" or psychological needs as driving boys' and male teachers' harassment of girls. However, when they cited young women involved in these situations, a deficiency, such as lack of assertiveness or character failure, was evoked (Kosar and Le-Mat 2017). The common occurrence throughout the continent suggests insufficient debate on the prescription and reality regarding culture, personal rights, youth sexuality and gender power relations. This is especially true in poor communities and schools. Enhanced dialogue could prevent the commodification of women's bodies and sexuality, which may lead to individual and collective harm later in life.

Violence, a common denominator of power relationship dynamics such as racism or colonialism, is also present in gender relations. According to recent statistics (World Bank 2016), 51% of African women report that being beaten by their husbands or intimate partner is justified in at least one of these situations: if they go out without permission, neglect the children, argue back, refuse sex or burn food. Overall women's acceptance of gender violence differs greatly, from 77% in Mali and Uganda to 13% in Malawi. Yet, on average, African women's acceptance of intimate partner violence in some situations is more than twice the average in the rest of the developing world. The afore-cited World Bank report identifies some patterns influencing or correlating African women's acceptance of gender-based violence in Africa: acceptance is 7.6% lower in upper-middle- and high-income countries. It is higher amongst younger women, uneducated women and women in resource-rich and fragile states. The acceptance of wife beating tends to be higher amongst women than amongst men: a study of the available statistics for 18 countries from SSA (Alesina et al. 2016) found that 46% of women justified wife beating in at least one circumstance, while the percentage for men was 34%. The same study found that in bride price-paying societies, the likelihood of justifying a husband's choice to beat his wife declines by six percentage points for the male sample and also the number of circumstances in which men justify beatings. Inequality in access to resources in a given society can be correlated with the higher incidence of gender-based violence, and employed women, irrespective of the husband's employment, are at a high risk of abuse in communities with a higher acceptance of wife beating, in what may be

related to a backlash of men, who feel traditional gender roles are being challenged (Cools and Kotsadam 2017).

Gender hierarchies in Africa, as in other continents, are embedded in social and economic structures and dynamics. They tend to reinforce gender inequality systemically, "naturalizing" unequal opportunities, roles, value and positions for men and women. Paradigms of understanding and "common sense" are also rooted in given historical contexts. The comprehension about what is fair or acceptable, or even how "universal" universal human rights really are, changes through time and geography and, in the process, benefits some causes and collectives over others. Voice, or the capacity to shape the public agenda influencing content and outcomes, is not evenly distributed in unequal systems. Actors disputing paradigms of understanding and resources develop strategies, actions and discourses in concrete contexts. The next section reflects on the global and continental trends likely to influence the focus and outcomes around gender equality in modern-day Africa and therefore well deserving of reflection and debate amongst stakeholders engaged in advancing gender equality as a public good.

3 Current Trends Influencing Gender Relations and Narrative in Africa

This section identifies the global and continental trends influencing the gender debates and action in contemporary Africa. Progress towards gender equality in the continent will benefit from further applied research on the implications of these trends and the appropriate response measures to advance gender equality in their context. These include the following: (1) depoliticization and technocratization of debate and action around gender equality, (2) increase of identity politics and religious discourses opposing gender equality, (3) rise of hyper-masculinity and authoritarian models and discourses in global politics and (4) the hegemony of economic and economist imaginaries marginalizing other perspectives from the development and human development discourse.

The depoliticization of gender equality involves responses to gender inequality via technocratic discourses that remove the focus from the advantages that inequality gives to some groups, emphasizing a win-win world instead, through gender equality advancement. Strategies for progress towards gender equality include training, developing tools and the

reinforcement of a group—namely women—that needs to overcome something. No comparable measures are adopted for men to change their behaviour dynamics to prevent the implications for gender power relations. When, for example, the lack of drinking water forces members of communities to fetch it from far away, a gender analysis may demonstrate that the "traditional gender distribution of work" means that only the women will walk several kilometres every day, carrying heavy loads, and invest considerable time on the task. A technocratic gender discourse may identify the need to develop appropriate technology to ease women's burdens but typically would not include the convenience of distributing this unpaid work between women and men more evenly. This detour of gender power relations can be observed in the gender analysis invoked by development organizations or specialists in a number of fields, including political representation and women's access to land and inheritance, or relational, sexual and reproductive health and rights. The concentration on "pragmatic" approaches, the "low-hanging fruit", and the avoidance of issues uncomfortable to some parties may have led to a neglect of matters requiring long-term, structural solutions.

The use of "identity politics", including religious identities, as a currency in public debates and paradigms of understanding when it comes to equal access of men and women to resources, autonomy or voice has important implications. The narratives promoted by these movements and collectives tend to present gender inequality in access to opportunities, resources and voice as "complementarity". According to the *Oxford English Dictionary* complementarity refers to "a relationship or situation in which two or more different things improve or emphasize each other's qualities". Groups resisting the advancement of gender equality refer to the "complementarity" of roles and qualities in men and women, accepting gender differences but denying or minimalizing hierarchies and power relations. Groups ascribing to identity politics or using traditional religious framing often present gender gaps and roles as part of a wealth of tradition and pride to be conserved and protected from external forces and also individuals within the community who may have been influenced by "foreign ideologies". Although understanding and interpretations are also disputed internally in these groups, it is relevant to observe, for example, how the Vatican discourse has emphasized the equal dignity of men and women as persons but in the context of "physical, psychological, and ontological differences" between the sexes, which often align with what today are considered by many as "gender stereotypes". This interpretation

is not far from those promoted by the hierarchies of other religious traditions such as Islam or Judaism, or groups defending ethnic particularities and customs. The common denominator is that they tend to essentialize women as mothers and nurturers. Identity politics and "theological anthropology" are mobilized thereafter to influence gender debates and practices locally and globally, including in secular settings such as the United Nations (UN) conferences on women's rights and population, or in national elections and political and public/opinion debates in countries such as Nigeria, South Africa, Colombia, the United States and many others.

According to global surveys, Africa, together with the Middle East, is the most religious region in the world. With Christianity and Islam as the major religions, most Africans define themselves as deeply religious. In some countries, as in most of North Africa, there is a state religion, which is presented as the source of the law. It shapes family codes that typically govern issues asymmetrically for men and women, such as marriage, divorce, guardianship and inheritance. In other countries in SSA, although without a state religion, the public communications of authority figures are embedded in religious imaginaries. Both in Christianity and in Islam, there are different thought streams on gender equality. However, the "sacralization" of gender hierarchies by some religious interpretations, as a form of identity politics, hinders open public debate on social change and deters social research in different gender-relevant areas.

The lack of a rational and composed public conversation on sexual and reproductive issues from a gender and rights perspective has been related to religious archetypes and interpretations. Inertias in this field place a special burden on women's bodies and autonomy amidst disquieting statistics on unmet needs for family planning, child marriage and pregnancy, sexually transmitted diseases (including AIDS) and unsafe abortions. Over-legislation and over-criminalization of relationships tend to be consistent with gender hierarchies. Some examples of this phenomenon are the illegalization of sexual relations between unmarried consenting adults (Mauritania, Morocco, Egypt), calls for pregnant girls to be legally excluded from school (Tanzania), criminalization and stigmatization of single mothers and their children (North Africa), persecution of sex workers without addressing end demand, victim-blaming in cases of sexual violence and persecution of same-sex adult couples. The knowledge and proposal capacity in this area in the continent would also be enhanced through an informed social debate on the individual and social effects of polygamous marriages, particularly taking into account the consistency of

research findings of poorer mental health, well-being and general outcomes for women and children in polygynous families (Al-Sharfi et al. 2015).

The rise of hyper-masculinity and populisms in the global political scene and the "disturbing retreat" of democracy (The Economist 31 January 2018) are likely to have profound consequences for the overall debate on inequalities, and that of specific gender inequality in the continent. Research on hyper-masculinity has associated it with values and behavioural traits such as toughness, risk-taking, the need to avoid femininity, homophobia and control of women's sexuality (Archer 2009; Promundo-UNWOMEN 2017). The values identified have important implications for international relations and solidarity as well as for gender equality.

Finally, this chapter recommends further research and practical proposal on multidisciplinary approaches to development and social justice debates, including gender equality. Mainstream orthodox economics has dominated for decades the public debate defining priorities, strategies and "delayable" topics. This is a matter of consequence. Contemporary mainstream economics science is built upon emphasizing deductive modes of analysis and "elegant" theoretical foundations over "reasoning and problem solving based in observation and evidence" (Leape in Coyle 2012). This trend has sidelined other relevant perspectives when addressing social and development challenges and dynamics, including socio-anthropological, historical, philosophical or social psychology, thus preventing a comprehensive and far-reaching understanding of development and gender issues. Discrimination against women in access to land would be objectionable because it is expensive for the economy and damages agricultural productivity, gender-based violence is costly in terms of days of work lost or public health and legal services or police forced to become engaged, and "unlocking" the productive potential of women will support the fight against poverty. Although these approaches may seem to converge with a gender equality and social justice framing, emphasizing the economic benefits of women's rights and gender equality might also entail ethical and intellectual shortcomings.

Economists can run regressions to determine if low wages of women attract foreign investment or not, if gender wage gaps hinder sector growth and if ocean pollution slows economic growth. However, the economic argument should not be the only ground on which public policies and public goods can be decided upon. Elomäki (2015), in analysing the framing of the European Union's gender policies since 1980, concludes

that the economic case for gender equality is ubiquitous, and in the worst-case scenario, it is the equivalent of "selling gender equality to decision-makers and neoliberalism to women's organizations". The economic case for gender equality and the promotion of the "inclusion of women" for "smart economics" sake could end up sidelining the principles of social and gender justice, which were at the basis of the historical struggle against gender hierarchies and patriarchy in the first place.

4 Conclusion

Available data in a variety of fields in which gender inequality is displayed and reinforced, such as sexuality and reproductive health and rights, gender-based violence and access to resources and share of voice, indicate the need to reconsider and qualify some assumptions common to gender narratives and practices. Comprehensive multidisciplinary approaches question the tendency to equate the participation of women in the labour market with female economic empowerment; the expectation that gender solidarity necessarily extends across other divisions, such as socio-economic positions; or the presentation of gender equality as a social and economic transformation to deliver an evenly distributed successful outcome for all.

The achievement of gender equality requires expert knowledge and research. However, technocratic approaches by themselves have limitations when it comes to address gender power relations and to set a social justice and rights agenda that is in alignment with the 2030 Sustainable Development Agenda. Global and continental trends transforming societies, international relations and paradigms of thought need to be examined from a gender perspective in order to develop appropriate action for progress.

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PART VIII

Conclusion

CHAPTER 22

Conclusion

Maty Konte and Nyasha Tirivayi

The journey towards gender equality and the empowerment of women is a centrepiece of the human development agenda in Africa and the global development agenda. This is reflected by both the commitment to gender equality and the empowerment of women and girls directly espoused by Sustainable Development Goal (SDG) 5 and indirectly by many other SDG targets. Likewise, the African Union's Agenda 2063 emphasises equal gender access to resources and opportunities across its seven aspirations. Research on gender equality and women empowerment is therefore crucial for informing gender-responsive policymaking and for monitoring the attainment of the SDGs. It is in this spirit that the book's chapters have contributed to the research agenda, which is to investigate some of the pertinent issues related to the empowerment of women and girls in Africa. The book's contributors have addressed a number of issues targeted in the new global development agenda, including climate change and gender, women's land ownership and agricultural productivity, maternal health and education, discrimination in the labour market and informal work, bargaining power and decision-making, and women's political empowerment. Cross-cutting issues pertaining to harmful practices that

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may hinder the progress towards gender equality and women empowerment were addressed across these topics.

1 Summary of Key Findings and Their Relevance to SDG 5

Part II on climate change and gender contained three chapters on the relationship between climate and gender. First, Archibong explored the effects of climate-induced diseases on the gender gap in human capital investment and especially child marriage, which has been identified as a harmful practice by Target 5.3. The author found that income effects from the 1986 meningitis outbreak (due to climate change) in Niger resulted in the early marriage of girls in exchange for a bride price. Second, Mbaye analysed the relationship between weather shocks and women empowerment. The study discussed weather-induced income shocks to domestic violence, early marriage, and fertility decisions. These issues are addressed by Targets 5.3 and 5.6, respectively. In the last chapter, Schwerhoff and Konte reviewed the literature on women's vulnerability to climate change. They found that gender differences in vulnerability to climate change can be explained by women's limited access to resources and several types of cultural restrictions that limit women's capacity to react to environmental change. This chapter is directly linked to Targets 5.1, 5.A, and 5.C, which respectively seek to tackle gender discrimination, create reforms that give women access to natural resources, and ensure the adoption of sound policies and enforceable legislation for the promotion of women empowerment.

Part III investigated the relationship between land entitlement rights and agriculture. Chapter 5 by Mwesigye, Guloba, and Barungi examined the effects of inequalities in access to land ownership on productivity in Uganda, whereas Chap. 6 by Melesse and Awel focused on this issue in Ethiopia and Tanzania. The former chapter found that, in Uganda, granting female land rights enhances productivity, but ownership rights are more critical than use rights. The latter chapter showed that land tenure significantly and positively affects female-headed households. These two chapters provide insights on Target 5.A, which promotes reforms that give women equal rights to economic and natural resources, particularly access to ownership and control over land. While these chapters contained studies conducted in East Africa, the relationship between land ownership and women empowerment affects many African countries. Hence, it is important to further investigate this relationship in other African countries.

Part IV contained four chapters on maternal health and education. In Chap. 7, Sidze, Mutua, and Donfouet found that a significant number of poor pregnant women in sub-Saharan Africa (SSA) countries with high maternal mortality still lack access to quality maternal health services because of poor financing strategies. This finding is relevant to Target 3.8, which promotes universal health coverage and financial risk protection and access to quality essential healthcare services. The importance of reproductive health rights is demonstrated by the manner in which Target 5.6 intersects with Targets 5.3 and 3.7. Tirivayi's study of barriers and facilitators of contraceptive use in countries in SSA in Chap. 8 exemplifies this intersection with findings that own and partner education, visits to health facilities, urban area living, and media outlets are facilitators of modern contraceptive use among married adolescent girls. In Chap. 9, Koissy-Kpein conducted a literature review on gender inequalities in education. The chapter points to Target 5.3 because the latter states that damaging traditions and practices that are faced by women and girls, such as female genital mutilation and child marriage, continue to affect girls' education. The findings in this chapter are also related to Target 5.1, which aims for the end of all forms of gender discrimination; Target 5.2, which aims to combat violence against women; Target 5.3, which aims to eliminate child marriage; and Target 5.3, which aims to end female genital mutilation/cutting. In Chap. 10, Daffé and Diallo analysed gender disparities in information and communication technology (ICT) in Senegal. They found that illiteracy, computer illiteracy, language barriers, and poverty contributed to women's inability to use ICT equipment, even when it was available in the household. The findings in this chapter uniquely identify with SDG 5.B, which aims to enhance the use of ICT to empower women.

In Part V, the authors discussed gender inequality in labour market participation and in unpaid care work in Africa. In Chap. 11, Ntuli and Kwenda critically reviewed the literature on gender gaps in employment in SSA. Evidence from the literature showed that patterns and correlates of gender wage gaps in SSA are similar across countries. Additionally, they found that women in Southern Africa and East Africa suffer more gender wage discrimination. Next, in Chap. 12, Fotso, Somefun, and Odimegwu investigated the effect of child illness or disability on adult employment in South Africa. They found that a child's serious illness or disability increases the odds of the father working and reduces the odds of the mother working. In Chap. 13, Baldé used empirical evidence to analyse the determinants of unpaid care work inequality faced by women in Senegal. The

results indicated that women involved in unpaid activities are less likely to be formally employed. Last, in Chap. 14, Pickbourn used a field study from Ghana to explore the links between rural–urban informal employment and women empowerment. The chapter emphasised that the relationship between rural-urban migration and women empowerment is complex. That is, neoliberal economic policies in Africa have failed to address employment issues in rural areas; as a result, African women are increasingly participating in migration flows. Although nonagricultural economic activities have provided women with higher earnings, permanent migration does not offer upward mobility for many of these women. These four studies provide insights on Targets 5.1 and 5.4, which respectively aim to reduce gender discrimination and time spent on unpaid domestic care work.

Part VI consisted of three empirical chapters that analysed the relationship between different measures of women empowerment and household well-being. Chapter 15 by Chisadza, Yitbarek, and Nicholls investigated the relationship between women empowerment and child obesity in Comoros, Malawi, and Mozambique. The study did not find a significant relationship in Malawi. However, it did find that mothers with no education were less likely to have obese children in Comoros, whereas illiterate women in Mozambique were likely to have obese children. In Chap. 16, Nanziri examined the financial inclusion of women in Zambia and found that fewer women use formal financial services compared to men. The study also showed that financially included female-headed households significantly enjoy a better quality of life. In Chap. 17, Kponou complemented the above studies by empirically analysing the issue of women's bargaining power using nationally representative household data from Benin, Mali, and Togo. The results point to an increase in household well-being when women have decision-making power in household expenses. In sum, the evidence in this part provides insights on Target 5.1, which promotes the ending of discrimination against women and girls, and Target 5.4, which promotes shared responsibility within households, thus allowing women the opportunity to seek employment.

Part VII contributed to the literature on women in politics and societies. In Chap. 18, Konte conducted a multicountry analysis to show that political empowerment of women enhances girls' educational attainment, reduces fertility rates and child and infant mortality rates, and decreases the incidence of early marriage. This study is linked to Target 5.5, which promotes women's participation and equal opportunities for leadership at all levels of decision-making in political, public, and economic spheres. It also provides

insights on Targets 5.3 (early marriage) and 5.6 (access to sexual and reproductive rights). Chapter 19 by Maloiy adopted a feminist methodology to explore 18 Kenyan female political leaders' experiences. Results from the study showed that family background and personal traits were enabling factors of female political leadership. In Chap. 20, Merkle and Wong investigated the issue of gender and corruption and found strong indications that patriarchal structures and acceptance of female political leadership can be linked to acceptance of corruption. Both Chaps. 19 and 20 contributed insights to Target 5.5, which seeks to ensure women's full and effective participation in all levels of political, economic, and public life. Finally, Moreno Ruiz in Chap. 21 adopted an intersectional gender perspective to identify trends that depoliticise and technocratise gender narratives in the wake of identity politics and religious interpretations of gender injustices. The chapter shows how these ideologies have an impact on women's reproductive rights, economic and education empowerment, early marriage, female genital mutilation, employment, and gender-based violence, among other things. These issues are universally congruent with Targets 5.1, 5.2, 5.3, 5.4, 5.5, and 5.6. Although the SDGs provide a specific direction to achieve gender equality and empower all women and girls (SDG 5), achieving this goal requires the attainment of the other SDGs. Therefore, some of the findings in this book may have implications for the other SDGs.

2 Summary of Key Findings Related to Other SDGs

SDG 1 can be linked to findings in Chaps. 4, 5, 15, and 17. More specifically, Target 1.4 seeks to ensure that all men and women, and in particular, the poor and vulnerable, have equal rights to economic resources as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services, including microfinance. Findings in the first two chapters on land ownership among women and agriculture productivity and, in Chap. 16, on women's financial inclusion and quality of life have policy implications that relate to this target. Moreover, Target 1.B aims to create sound policy frameworks at the national, regional, and international levels based on pro-poor and gender-sensitive development strategies to promote accelerated investment in poverty eradication actions. Chapter 18 has shown that women political empowerment may help in reaching this target.

Policymakers interested in achieving SDG 2 may find some recommendations in the findings of Part III on female land ownership and agriculture and of Chap. 15 in Part VI on women empowerment and obese children. Part III has direct implications for Target 2.3, which seeks to double agricultural productivity and incomes of small-scale farmers to alleviate poverty. Target 2.2, which intends to end all forms of malnutrition by 2030, can be associated with the findings in Chap. 15, which show a negative relationship between mother empowerment and obesity in Comoros, Malawi, and Mozambique.

This book has also provided some lessons for people who are interested in SDG 3. Chapter 7 in Part IV has implications for several targets, including Target 3.1, which seeks to reduce the global maternal mortality ratio to less than 70 per 100,000 live births; Target 3.2, which aims to end preventable deaths of newborns; and finally, Target 3.8, which aims to achieve universal health coverage. Furthermore, Chap. 8 in Part IV on barriers to and facilitators of contraception use among married adolescent girls provided some lessons for Target 3.7 on universal access to sexual and reproductive healthcare services, including family planning.

Part IV of the book also includes chapters on education and ICT that are relevant for SDG 4 on equality of education and for its different targets that emphasise the fundamentality of equal access to education for everyone at all levels. For instance, Chap. 9 by Koissy-Kpein aligns with Targets 4.1, 4.2, 4.3, 4.7, and 4.B, while Chap. 10 by Daffe and Diallo calls for women's policies in the implementation of Target 4.4 (and Indicator 4.4.1), which promotes the acquisition of technical skills such as ICT skills, and Targets 4.B and 9.C (SDG 9), which emphasise the importance of ICT.

The research in Part V addressed the challenges and barriers faced by women in the labour market and the issue of unpaid care work. Therefore, it provided information that can be used by scholars and policymakers who are interested in further research and/or in the implementation of policies related to SDG 8. For instance, Chaps. 11 and 13 concluded with policy recommendations aligned with Target 8.5 that aims for the achievement of full and productive employment and decent work regardless of gender, age, and physical condition, and equal pay for work. These chapters focused on the labour market of women in Africa and tackled the gender dimension in Target 8.5. Furthermore, Chap. 14 focused on the employment and working conditions of rural-urban migrant women and made some recommendations that can be linked to Target 8.8, which

seeks to protect labour rights and promote safe and secure working environments for all workers, including women migrants. More relevant policy information for SDG 8 can be found in Chap. 16 in Part VI on women's financial inclusion and quality of life and can be linked to Target 8.10, which highlights the importance of strengthening the capacity of domestic financial institutions to encourage and expand access to banking, insurance, and financial services for all.

SDG 10 includes a number of targets, for which some of the findings in this book may serve as policy guidance. Target 10.2 promotes the empowerment and economic, social, and political inclusion of all the segments of the population regardless of characteristics such as gender. In Part VI, Chap. 16, Nanziri noted that financially included female-headed households enjoy a significantly better quality of life than their financially excluded female counterparts. There are obstacles to women's full participation in African society, and the results and conclusions across the chapters call for women's economic, social, and political empowerment in Africa. Further, Target 10.4 advances some solutions for inclusion by seeking the adoption of policies, especially fiscal, wage, and social protection policies. The findings in Part IV provide some recommendations that are related to these solutions.

Part II of the book includes chapters on climate change addressing questions that have major implications for SDG 13 on climate action. In line with Target 13.1 (strengthening resilience and adaptive capacity to climate-related hazards and natural disasters), Chap. 3 posits that understanding whether adverse shocks have gender-differentiated effects is crucial for building women's resilience. Chapter 4 recommends ways in which women can be positive agents of change in climate change adaptation strategies. This is in line with a number of targets in SDG 13, including Target 13.B, which seeks to promote mechanisms for raising capacity for effective climate change–related planning and management in the least developed countries and in Small Island Developing States by focusing on women, youths, local and marginalised communities, and so on.

Target 16.7 of SDG 16 seeks to ensure responsive, inclusive, participatory, and representative decision-making at all levels. The findings in Chaps. 18 and 19 in Part VII underscore the rationale behind Target 16.7. Although Maloiy reported in Chap. 19 that family background is a major obstacle to achieving full empowerment and participation, empowering women and promoting their full participation in decision-making, as indicated by Konte in Chap. 18, has a multiplier effect on economic

development, women's and children's health, education, and so on. This can further lead to a reduction in corruption, which is a major obstacle to economic development and is deeply rooted in patriarchal structures (see Chap. 20).

Overall, the book's findings also confirm the cross-cutting nature of SDG 5. The twin aims of achieving gender equality and empowering women have a multiplier effect based on their links to several other goals in the SDGs. There is a dimension of gender to every development endeavour. Achieving SDG 5 is therefore a precondition and, in some cases, a contributing factor to attaining Target 1.B of Goal 1; Targets 2.2 and 2.3 of Goal 2; Targets 3.1, 3.2, 3.3, 3.7, and 3.8 of Goal 3; and Targets 4.1, 4.2, 4.3, 4.5, 4.7, and 4.B of Goal 4. Other targets include Targets 8.5 and 8.7 of Goal 8; Targets 10.2 and 10.4 of Goal 10; Target 12.2 of Goal 12; Targets 13.1 and 13.B of Goal 13, and Targets 16.5 and 16.7 of Goal 16.

3 Moving Forward

This book's findings acknowledge that women play an important role in Africa's development. Although this conclusion is in line with evidence in the previous literature, it is interesting that the findings across the chapters have been linked to various targets among the 17 goals of the global development agenda. Because gender is a cross-cutting issue, the findings demonstrate the need for effective policies that go beyond SDG 5 to achieve gender equality and the empowerment of women.

New research should provide more guidance on how governments can finance the global development agenda without neglecting the gender cross-cutting dimension. Research must ascertain how African governments can incorporate effective and gender-responsive budgeting in their fiscal policies that aligns with all the gender-sensitive SGD targets. Gender budgeting needs to be implemented not only across different sectors in the economy but also across subnational levels to ensure an inclusive gender budgeting policy in which nobody is left behind. Achieving successful gender budgeting strategies requires political leaders and policymakers who understand the needs of women and girls. They should also recognise the medium- and long-term development benefits that can be gained by increasing girls' and women's well-being.

Uganda and Rwanda are among the few African countries that have achieved successful gender budgeting policy implementation at the central

and local government levels (Stotsky et al. 2016). Although these countries may serve as examples for comparable African countries that seek to undertake successful practices, accurate and gender-disaggregated data need to be made consistently and constantly available across sectors and localities to track the living conditions of the most vulnerable women and girls. This data stream may help in the choice and implementation of gender budgeting and gender-responsive policies in response to SDG targets. Efforts to obtain good and representative individual and household data should be included in gender equality and women empowerment policies.

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