

2019

## **IARIW-World Bank**

Special IARIW-World Bank Conference “New Approaches to Defining and Measuring Poverty  
in a Growing World” Washington, DC, November 7-8, 2019

### **Poverty amongst Women: A Multidimensional Perspective A Case Study in Rwanda**

Nesha Ramful

Chris de Neubourg

Paper Prepared for the IARIW-World Bank Conference

Washington, DC, November 7-8, 2019

# **Poverty amongst Women: A Multidimensional Perspective**

## **A case study in Rwanda**

### **DRAFT**

Nesha Ramful, Chris de Neubourg

[n.ramful@spriglobal.org](mailto:n.ramful@spriglobal.org); [c.deneubourg@spriglobal.org](mailto:c.deneubourg@spriglobal.org)

Tilburg University, Social Policy Research Institute

### **Abstract**

Rwanda is one of Africa's fastest growing country recording consistently high economic growth since the last few years. One of the objective of the country is to achieve the maximum number of the Sustainable Development Goals (SDGs) by the year 2030. In this paper, we focus on the target 1.1.2 of SDG 1 on multidimensional poverty with a focus on women. Using the UNICEF's Multiple Overlapping Deprivation Analysis (MODA) tool and the 2014/15 Demographic and Health Survey, we measure women's multidimensional poverty level. It is found that 65.1% of the Rwandese women are multidimensionally poor and as stipulated by the SDGs, the aim is to halve this percentage by 2030. It is deprivation in the dimensions of Health, Education, Sanitation and Water that are mostly driving this poverty rate. A multivariate logistic regression is used to investigate into the characteristics of the multidimensionally poor women. It is found that there are several demographic (age of the woman, her employment status, number of children, having at least one stunted children), household (gender and education level of household head, household size, presence of a man in household) and geographical (urban/rural and province) characteristics that are significantly associated with a woman's multidimensional poverty level in Rwanda.

**Key words:** Multidimensional poverty, Women, SDG, Rwanda

## 1. Introduction

Sub-Saharan Africa is entangled in a wide array of problems which seem difficult, sometimes impossible, to solve. One of the issues currently glaring the region is the recurrent risks and challenges faced by women generation in and generation out. Other parts of the world, mostly the developed countries, were in the same plight some decades ago. While those developed countries have managed to step out of the vicious circle of never-ending challenges facing women, sub-Saharan Africa could not. The concept of “gender equality” has got such a tight grip that in the midst of fighting gender inequality, many have failed to recognize that men and women have different needs, capacities and contributions that should actually be addressed differently. Poverty, the main fuel behind the ravaging problems in sub-Saharan Africa, is undeniably not gender neutral but if viewed with a gender lens, poverty reduction strategies can be far more efficient and effective.

Adopting a different approach to measuring poverty (instead of the traditional monetary poverty approach) is more desirable to determine poverty among women. It goes without any doubt that poverty for women is multidimensional, many women face deprivations in different dimensions of their well-being. The existing framework of addressing problems facing women is sectorial with each sector responsible for one aspect of well-being of the women. We seem to not notice that it is usually the same group of women that faces several problems at a time. The women deprived in health is usually also deprived in nutrition, water, sanitation, education as well as participation in decision making in the household. In this study, rather than using money, poverty of women will be measured using a multidimensional perspective.

This research also comes on time for the measurement of the Sustainable Development Goal (SDGs) 1.2 (as shown in Box 1) where there is the need to build a multidimensional poverty

### *Box 1: Components of Sustainable Development Goal 1*

#### **Sustainable Development Goal 1: End poverty in all its forms everywhere**

- 1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day.
- 1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.

measurement for women based on national definitions of countries. Countries are then required to

monitor progress in the women poverty rate over the next 15 years so that by 2030, the poverty rate is reduced by at least half.

In this paper, multidimensional poverty for women will be measured and analysed for Rwanda. The Sustainable Development Goal 1, as shown above, emphasize the **national definition** of poverty for women. It is a fact that poverty for women is not manifested in the same way in all countries. Women poverty in Africa is very different from that Europe or Asia. Even within Africa, poverty are different for the different countries – example women poverty in Rwanda is very different from women poverty in Burundi. For this reason, in this study, women poverty is contextualised for one country and dimensions and indicators that is specific to that country and best reflect the poverty status of the Rwandese woman will be used.

The research questions of this study are:

1. What is multidimensional poverty for the Rwandese woman?
2. How to measure target 1.1.2 of SDG 1 on multidimensional poverty for women in Rwanda?
3. What are the characteristics of the multidimensionally poor women in Rwanda?

In the subsequent sections of this paper, a literature review on the situation of women poverty in Africa is shown followed by the methodology and data used to conduct the study. Then, the findings and the results are discussed.

## **2. Literature Review**

### **2.1 Theories and Study Findings on Women Poverty in Africa**

In this section, the theoretical background and empirical evidences on women poverty in sub-Saharan Africa is explored. The theories discussed explain what other researchers have found on the components of poverty for women and which of those components have contributed to make woman remain at the bottom of social hierarchy in sub-Saharan Africa for generations.

### **2.2 Dimensions of Women Poverty in Africa**

Around the world, girls and women face unique challenges in their day-to-day lives. These challenges are personal, practical, economical, social, political and cultural, and particularly acute for women living in sub-Saharan Africa. In understanding the challenges of women, specifically

in Africa, it is important that they are screened using a poverty-lens. This is because, although gender discrimination resulting in greater poverty among women is widespread throughout the developing world, the incidence of women poverty, its depth and women vulnerability is particularly prevalent in most African countries of the tropical belt, albeit with significant rural – urban differences (McFerson, 2010).

The circumstances that define women poverty: “inadequate access to economic resources, including credit, land ownership and inheritance, lack of economic opportunities and autonomy, limited access to education and support services and their minimal participation in the decision-making process”, are a clear description of the challenges that women in Africa are faced with in their daily lives (UN Women, 2015; World Bank, 2000; UNDP, 1995).

The UN’s definition of poverty similarly shows a direct link between deprivations in important dimensions of well-being and poverty. The UN Committee on Economic, Social and Cultural Rights (CESCR) defined Poverty as: “*a human condition characterized by the sustained or chronic deprivation of the resources, capabilities, choices, security and power necessary for the enjoyment of an adequate standard of living and other civil, cultural, economic, political and social rights*” (UNDP, 1995).

In addition, several feminists and scholars have also developed theories on women poverty, the most popular one being the “Feminization of Poverty”.

### **2.3     *The Theory of the ‘Feminization of Poverty’***

The theory of the ‘Feminization of Poverty’ is synonymous with much of the developing world, where females account for half of the world’s population, 70 percent of the poor (Moghadam, 2005). Coined by Diana Pearce in 1976, the term ‘Feminization of Poverty’ was first used to explain the continuous declining economic welfare of specifically the Female-Headed Households (FHHs) in the United States between 1950 and mid-1970s, despite more women participating in the labor market during that period (Pearce, 1978).

This trend is also evident in African societies. According to the World Bank, nearly one in four households are headed by a woman - at 25 percent of all households (World Bank, 2016). Although

the World Bank has classified the FHHs into various categories such as – married women with a non-resident husband (especially polygamous marriages or a husband who migrated for work) or women who choose not to be married or remarried (because they are educated and have social and economic opportunities to back that decision), it specifically notes that single mothers who have not ‘chosen’ headship, but simply have no options – are frequently found to head disadvantaged households (World Bank, 2016).

Feminist activists had earlier done research and found that FHHs and especially the single mother units are usually symptomatic of ‘family breakdown’ (UNIFEM, 1995). It is by no surprise that in some studies, the ‘culture of single motherhood’ has been designated as the ‘New Poverty Paradigm’ (Thomas, 1994; Budowski et al, 2002:31; Chant, 2003). Such situations, according to UNIFEM confirm the strongly grounded notion that dual parenthood (natural/biological), actually reduces on the burden on women raising children, but more importantly, offers children better prospects for a brighter future and wellbeing (UNIFEM, 1995).

The additional element to this situation is that it creates what is today termed as ‘intergenerational poverty’ amongst female-headed households, where poverty is continuously passed on from generation to generation (Chant, 1997b, 1999, 2003).

The lack of social protection also poses a challenge to respond to the needs of the more vulnerable and less visible groups, especially women and children (Hawthorn, 2004, Moghadam, 2005). The situation worsens with the diminishing of the welfare state that has led to the shifting of costs of social protection from the public sector to the households resulting into increased women’s workload within the household (Hawthorn, 2004). Similarly, studies have documented that no matter whether women are doing the same work as men, men tend to receive better and attractive wages, than their female counterparts (Kitty, 1999; Harrington, 2000; Meyer, 2000; Folbre, 2001; Hondagneu-Sotelo, 2001; Parrenas, 2001).

More research has further explained the extent to which women are more prone to vulnerability. For example, women naturally take care of the exhausting and time consuming tasks relating to child bearing and rearing as well as house chores, even in homes where both the wife and husband work fulltime, implying that women are time poor (Benner et al., 1999; Reed et al., 2001).

Sylvia Chant, also identified three main reasons which are likely to exacerbate women's conditions: First, women have less privileges than men; second, gender biases as propelled by society; and third, the heavier workloads worsened by poor wages and socio-economic mobility as dictated by existing cultural, legal and labor market barriers (Chant, 1999, 2003, 2005).

Other scholars seem to supplement Chant's findings adding that these factors are further compounded by women's disadvantages with regard to their lower level of education and training, gender discrimination in the workplace, and the fact that social and labor policies rarely provide more than minimal support for parenting (Dia, 2001; Elson, 1999; Finne, 2001; Kabeer, 2003; also Christopher et al, 2001; England and Folbre, 2002; Folbre, 1994; Rogers, 1995).

According to Chant, such a scenario necessitates that a woman negotiates a balance between building a professional career or bows to society's pressure and demands, which dictate that a woman's primary role is that of child bearing and rearing. Such circumstances tend to exacerbate the existing challenges of a woman requiring her to make a decision on which path she would like to follow (Chant, 2001, 2003). Should a woman decide to balance between the two, scholars have linked the outcome of such a decision to the reason most women are employed in the informal sector. Scholars have explained that the informal sector seems more attractive to the women because it is individual driven, with less demands and targets, but poorly rewarding in terms of wages (IFAD, 1999; ILO, 1996).

In addition, in their attempt to multitask and juggle roles of self-employment, housework, and child rearing, it further compromises women's ability to provide for their families and their overall wellbeing (Chant, 2003).

## **2.4    *Economical Challenges***

The Human Capital Theory (HCT), developed by Pierce-Brown (1998), which, postulates that women who are educated have a higher chance of joining the labor market than the less educated women, was also investigated by Yakubu A. Yakubu (2010) in: "Factors influencing Female Labor Force Participation (FLFP) in South Africa in 2008", concluding that there's a strong link between education and training with FLFP (Yakubu, 2010).

Although literature suggests that there has been an upsurge in women's contribution to modern activities, the FLFP remains low in comparison to the ratio of their male counterparts (Serumaga-Zake and Kotze, 2004, Ntuli, 2004). For example, labor force survey conducted in South Africa in 2004 found 62 percent of males, compared to 46 percent of females in the labor market (QLFS, 2008).

An early proponent of the HCT, Becker (1975) also gave another perspective arguing that women are on average less productive compared to men because they tend to take an employment break for maternity and childcare, in addition to bearing the prime responsibility of unremunerated domestic chores, thus emphasizing the role of education and skills in addressing women economical challenges, as well as the development of human capital (Yakubu, 2010).

Sub-Saharan Africa has the lowest percentage of female youth literacy; the lowest primary school enrolment ratio in the world, while the net secondary school attendance among girls in sub-Saharan Africa is 22 percent, compared with 52 percent in South Asia for example (UNICEF, 2000). Yet studies from the World Bank, World Economic Forum and OECD point to the key economic role played by women as they become productive citizens through education and are able to overcome discrimination: "Educated girls and young women have greater awareness of their rights, and greater confidence and freedom to make decisions that affect their lives, improve their own and their children's health and chances of survival, and boost their work prospects" (UNESCO, 2015). Unfortunately, lack of education and training is robbing women worldwide of their full potential.

In addition, in the remote areas of sub-Saharan Africa for example, one in seven has given birth by the age of 17; women with no education have 6.7 births on average. The figure falls to 5.8 for those with primary education and more than halves to 3.9 for those with secondary education (UNESCO, 2015).

## **2.5 Cultural Challenges**

In a report by the UN Population Fund (UNFPA) in 2000, the agency noted in interviews in Africa and Asia, "the right of a husband to beat or physically intimidate his wife" came out as "a deeply held conviction". Even societies where women appear to enjoy better status "condone or at least tolerate a certain amount of violence against women" (UNFPA, 2000).



Similarly, in a study by the World Health Organization (WHO) and the Joint UN Programme on HIV/AIDS (UNAIDS), domestic violence is a global problem affecting millions of women. In a 2005 study on women and domestic violence, the WHO found that 71 percent of women in Ethiopia and 56 percent of women in Tanzania rural areas reported beatings or other forms of violence by husbands and other intimate partners (WHO, 2005).

WHO reports that violence against women goes beyond beatings. It includes forced marriages, dowry-related violence, marital rape, sexual harassment, intimidation at work and in educational institutions, forced pregnancy, forced abortion, forced sterilization, trafficking and forced prostitution (WHO, 2005).

According to WHO, such practices cause trauma, injuries and death. Female genital cutting, for example, is a common cultural practice in parts of Africa. Yet it leads to “bleeding and infections, urinary incontinence, difficulties with child birth and even death”. The organization estimates that 130 million girls have undergone the procedure globally and 2 million are at risk each year, despite international agreements banning the practice (WHO, 2005).

Scholars have come up with over ten theories of causation to grasp the reasons for domestic violence in human society, among them being, the Culture of Violence Theory, Traumatic Bonding Theory, Marital Power Theory amongst others.

The Feminist Theory, advanced by M. Bograd in ‘*Feminist Perspective on Wife Abuse*’, seems to contextualize the forms of domestic violence being perpetuated in Africa. The theory posits that: “gender inequality is the source of violence against women, and that the social institutions of marriage and family are special contexts that may promote, maintain and even support men’s use of physical force against women” and she identified four common strains to explain it: 1) that intimate partners abuse is a predictable and a common dimension of normal family; 2) women’s experience are often defined as inferior because male domination influences all aspects of life; 3) as a dominant class, men have differential access to material and symbolic resources and women are devalued as secondary and inferior; and 4) the feminist perspective is dedicated to advocacy for women (Bograd, 1988).

## 2.6 Health Challenges

On the African continent, one of the biggest health challenges facing women is the need to improve maternal health (WHO, 2012). Africa chronically fell short of achieving Millennium Development Goal No. 5 that required an average annual reduction of 5.5 percent (the actual annual average reduction in the African region during that period was 2.7 percent), hence failing to meet the global target of 75 percent by 2015 (MDG Report, 2015).

The United Nations report on ‘Trends in Maternal Mortality’ (1990 to 2010) indicates that although sub-Saharan Africa has witnessed a decline in maternal mortality by 41 percent during that period, 42 African women still die during childbirth as opposed to 1 in 2900 in Europe (UN, 2011). More than half of the maternal deaths occur within 24 to 48 hours after delivery due to complications ranging from lack of obstetric care services, unsafe abortions, bleeding, high blood pressure and obstructed labor, which are all preventable, and worse still, occurring among teenage mothers due to the rampant increase in teenage pregnancy (WHO, 2012).

A woman’s life expectancy at birth in more than 35 countries around the world is in upwards of 80 years, but 54 years in the African region (World Bank, 2014). In addition, 99 percent of all maternal deaths that happen each year, almost half a million in total occur in sub-Saharan Africa. The reasons advanced for such challenging statistics have been the prevalence of poverty; combined with economic dependence amongst women in African societies; lack of power and decision-making in the home and communities; and control over sexual and reproductive rights (World Bank, 2014).

The African Union Commission (AUC) also reports that many women in Africa continue to face and experience many different forms of discrimination and marginalization in their day-to-day lives, simply because of their gender: “Each of these individual factors have the potential to negatively impact on women’s physical, emotional and intellectual health and wellbeing, not to mention their ability to be able to build economic independence” (AUC, 2013).

Feminists have viewed the state of women’s health care today as a direct reflection of women’s status and position in society. Kane Low and Kerri Schuiling, also advanced a Feminist Model in “*Women’s Health from a Feminist Perspective*”, which posits that the health challenges of women (as explained above), are a result of society’s oppression or ‘not having a choice’ as manifested in various forms, including a range of extremes from forced marriage, forced sterilization, unfair

labor practices, denial of desired health care providers (Low & Schuiling, 2005). According to them: “these range of extremes express a vast breadth of experiences women may have within the context of patriarchal society that denies them equal access to power, resources, and opportunities for women” (Low & Schuiling, 2005).

In trying to explain the circumstances surrounding women health challenges, in 1976, Robert Connell developed The Gender and Power theory (TGP), in order to explore the depths of sexual inequity as well as gender and power imbalance, in public health research to examine risk factors and biological factors as well as economic, physical and social exposures also termed as ‘acquired risks’ as they relate to women’s health (Connell, 1986).

The theory posits that sexual division of labor that demarcates women and men into gender specific roles where women have been assigned to the unequal and lower paying positions such as childrearing, housework and caring for the sick and elderly are less rewarding in terms of income (Connell, 1986). Furthermore, Connell argues that women who are socio-economically disadvantaged, such as minorities and younger women, and those with economic risk factors such as those living in poverty, less educated, lack health insurance, are more at risk of experiencing poorer health outcomes (Connell, 1986).

## **2.7 Social Challenges**

Despite multi-dimensional effort at various levels and crucial contribution of women to agricultural production in sub-Saharan Africa, from gender analysis, the international development community reports that: “Women face significant barriers in agriculture, especially inequalities in access to land and control over crucial resources and inputs such as land, labor, fertilizer and formal finance”. Women also face barriers to membership in rural organizations and cooperatives, agriculture inputs such as improved seedlings, training and extension marketing services” (ICRW, 2008), and yet, according to the International Food Policy Research Institute (IFPRI), women in Africa contribute 70 percent of food production. They also account for nearly half or all farm labor; 80-90 percent of food processing; storage and transport; as well as hoeing and weeding; but quite often do not have secure access to land (IFPRI, 2017).

The 2004 African Gender and Development Index (AGDI) findings from 12 African countries (Benin, Burkina Faso, Cameroon, Egypt, Ethiopia, Ghana, Madagascar, Mozambique, South

Africa, Tanzania, Tunisia, and Uganda) showed that women's access to land was, on average, less than half of that enjoyed by men (AGDI, 2004).

Similarly, a study by the UN's FAO, in Benin, Burkina Faso, Congo, Mauritania, Morocco, Namibia, Sudan, Tanzania and Zimbabwe also showed that women rarely own land. When they do, their holdings tend to be smaller and less fertile than those of men (FAO, 2011). Both studies concluded that if women farmers had the same access to inputs and trainings as males, overall yields could be raised by between 10 and 20 per cent (AGDI, 2004; FAO, 2011).

According to the Alliance for a Green Revolution in Africa, an NGO that works with small-scale farmers to promote agricultural productivity: "Land rights tend to be held by men or kinship groups controlled by men and women who have access mainly through a male relative, usually a father or husband". Even then, women are routinely obliged to hand over the proceeds of any farm sales to a male and have little say over how these earnings are used. Moreover, such limited access is tenuous and can be quickly lost (AGRA, 2009).

One study by the International Fund for Agricultural Development (IFAD) showed that in Zambia more than one third of widows lost access to family land when their husbands died. "It is this dependency on men that leaves many African women vulnerable." The spread of HIV/AIDS and stigma associated with the disease have only made women's land rights more precarious: "Widows of men who die of the disease have often been accused of bringing the malady into the family, possibly leading to the confiscation of their land and other property" (IFAD, 2008).

Moreover, women's rights to access land is central to their livelihood, and a critical factor in social status, economic wellbeing and empowerment – a social asset, crucial for cultural identity, political power and participation in local decision-making processes (ICRW, 2008).

## **2.8 Political Challenges**

Most African governments have ratified the 1975 Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), which has led to a rise of women leaders on the continent, however, women continue to be disadvantaged when it comes to public participation both in the public and private sectors of society (Maseko, 2013).

The UN Women, reports that even when they are imminently qualified and in spite of the mainstreaming of more women into public life in the last 20 years (2000 - 2015), women remain discriminated against in terms of accessing top managerial and leadership positions (UN Women, 2015). This is even though more women are getting educated and hold more jobs worldwide than ever before (MDG Report, 2015).

Maseko (2013) in: “A Comparative Study of Challenges Faced by Women in Leadership, in South Africa” found that many women fail to make it to leadership/managerial positions because of: “Social and cultural stereotypes, psychological factors, the problem of balancing reproductive and workplace functions and lack of networking”. Other mentioned challenges reported included ‘glass ceiling’<sup>1</sup> or ‘glass cliffs’<sup>2</sup>, the ‘Queen Bee’<sup>3</sup> syndrome, negative perceptions on competencies of women leaders among women themselves and lack of confidence (Maseko, 2013).

In Africa, leadership is associated with masculinity, and the belief that men make better leaders than women, despite Africa witnessing 13 female leaders, both as Head of State and government and at Regional block levels (Maseko, 2013). In addition, countries such as Senegal, South Africa, Botswana, Mozambique, Kenya and Rwanda with high levels of women’s representation in parliament, with Rwanda being the only country in the world with the highest number of women in parliament, but still, women representation and participation in public sphere remains low (Maseko, 2013). Hojgaard (2002) argues that the cultural structure of leadership in Africa itself initiates the differences.

Although affirmative action programs have played a critical role in opening up opportunities for women and minorities to begin to take up their rightful place in society, equal opportunity for women is still a long way off (NWLC, 2000). According to the National Women’s Law Centre, discrimination against women is deeply rooted in the African society. Though much progress has been made especially in employment, education and business areas, sex discrimination persists today (NWLC, 2000).

---

<sup>1</sup> Merriam Webster Dictionary defines the ‘Glass Ceiling’ as an intangible barrier within a hierarchy that prevents women or minorities from obtaining upper-level positions

<sup>2</sup> ‘Glass Cliff’ is used with reference to a situation in which a woman or member of a minority group ascends to a leadership position in challenging circumstances where the risk of failure is high.

<sup>3</sup> ‘Queen Bee’ is used to describe a woman in a position of authority who treats subordinates more critically if they are female

For example in South Africa, affirmative action obscures the complex nature of discrimination experienced by black women by class, role, culture and focuses only on gender and race. Serote (1994), in: “Affirmative action and Black women in South Africa”, concluded that affirmative action instead marginalized Black women, by strengthening White women and Black men’s social status over Black women: “It shifted power between groups, and in the end solidified White women’s power” (Serote, 1994).

She adds that it is documented that several debates took place within university and academic environments, a place where Black women were excluded and the dominant groups being White men, followed by White women, and then Black women. The private sector was not any different as it was void of Black women’s voices; multinationals started to hire and train Black male managers and there was criticism that standards were falling (Serote, 1994).

Women in civil society have also particularly been found to be prone to targeting, intimidation and harassment in comparison to their male counterparts. According to a 2011 report by the World Alliance for Citizen Participation, even in countries that have ratified laws and protocols on the protection of women’s rights, the risk of these women human rights defenders operating in situations of conflict increases manifold (CIVICUS, 2011).

The report found that such women are viewed with distrust and vilified as spies, traitors or women of loose morals who do not conform to societal norms (CIVICUS, 2011). In Egypt, Tunisia, and Kenya, their dissenters have labeled their respective organizations as ‘training grounds for lesbians’. The report also cites the Democratic Republic of Congo and Sierra Leone, as countries where these women are continuously confronted with sexual harassment and assault with only minimal response from their respective governments (CIVICUS, 2011).

## **2.9 Concluding remarks**

Given the above findings, it becomes increasingly clearer that women face a distinct set of challenges that men do not face at all or, as in the case of health and cultural challenges, they face in much smaller numbers than women. Second to this observation is that African women face unique challenges as compared to women in developed and other western parts of the world, characterized by poverty and vulnerability. This therefore points us to the need to accurately measure women poverty for a country based on its country specific characteristics which will put

the country on track towards achieving the Sustainable Development Goals and effectively target the most vulnerable women in the country.

### **3. Data and Methods**

In this paper, multidimensional poverty for women will be measured for Rwanda using the Multiple Overlapping Deprivation Analysis (MODA) developed by De Neubourg et al (2013). MODA is a quantitative methodology developed by UNICEF research office in Florence to measure poverty among children. The tool builds on the work of other multidimensional measures for child poverty including the Bristol method and Alkire-Foster's MPI (Alkire & Roche, 2011; Gordon, 2003). In this study, a Women Multiple Overlapping Deprivation Analysis (W-MODA) will be conducted. This methodology provides a comprehensive approach to the multidimensional aspects of poverty and deprivation. It encompasses a large set of tools used in multidimensional poverty and deprivation analyses, ranging from deprivation headcounts in each dimension of well-being via multiple deprivations overlap analysis to multidimensional deprivation ratios (in the literature often referred to as 'indices') and their decompositions. The W-MODA methodology adopt a holistic definition of women well-being, concentrating on the access to various goods and services and the rights of the women which are crucial for their welfare. Along with monetary consumption-based approaches, it will provide a more comprehensive picture of the woman's well-being. It recognises that a woman's experience of deprivations is multi-faceted and interrelated, and that such multiple, overlapping deprivations are more likely to occur, and with greater adverse effects, in more socio-economically disadvantaged groups.

W-MODA emphasises that the well-being of a woman cannot be compartmentalized into sectors (e.g. health, sanitation, and education) and that the multiple aspects of women's lives needs to be placed simultaneously at the centre of any deprivation analysis.

W-MODA has four main characteristics that may be distinguished from existing studies. First, MODA will concentrates on the woman as the unit of analysis, rather than the household. Women experience deprivations and poverty differently from men and since the existing methodologies calculates poverty at household level, it is difficult to make a difference between poverty amongst men and women.

Second, MODA enhances knowledge of compartmentalised or sector-by-sector approaches (e.g. nutrition, health and education) with an overlapping deprivation analysis. This analysis indicates which of the multiple facets of women poverty are experienced simultaneously and gives insight into the various levels of severity of deprivation.

Third, MODA supports the focus on equity, because it allows to concentrate on highly deprived groups in the society, and to create profiles which assist in determining their geographical and social position. The deprivation overlaps and profiles reveal specific characteristics of deprived women and can help to point towards mechanisms for effective policy design.

Fourth, MODA intends to analyse women deprivation by identifying deprived women from a multidimensional perspective. The MODA methodology is designed to be used in a specific country setting using recent and high quality survey data and making country specific choices on age groups, dimensions, indicators and thresholds. Besides country specific applications of the MODA methodology, it has also been used for cross-country comparison purposes.

The first step in doing a multidimensional poverty analysis is select a list of dimensions and indicators that are reflective of the situation of women in the country. Demographics and Health Survey (DHS) datasets collected in 2014/15 by the National Institute of Statistics in Rwanda (NISR) will be used for this study; it is a set of recent databases rich in data for women (data has been collected for 14,808 women and the sample is representative both at the country and province level). The databases have been studied and after consultation with local stakeholders in Rwanda<sup>4</sup> and based on international standards of the World Health Organization (WHO), UN and convention of Human Rights, a list of dimensions and indicators that will be used to capture multidimensional poverty of the Rwandese woman is provided in Figure 1 and Table 1. The unit of analysis will be a woman defined, in this study, as an individual aged 15+ years.

---

<sup>4</sup> The choice the dimensions and indicators that are reflective of deprivations amongst women has been done mostly by the Rwandese stakeholders so that the poverty rates are calculated based on national definitions as required by the SDGs. It is also to be noted that the selection of the dimensions and indicators are mostly data driven.



Figure 1: Dimensions of well-being used to capture women poverty in Rwanda



Table 1: List of all selected dimensions, indicators and threshold used to measure the well-being of women in Rwanda based on Demographic and Health Survey (DHS) 2014/2015

List of dimensions and indicators measuring women well-being using Rwanda DHS 2014/2015 datasets			Age group	
			15-49 years	50 years and above
Dimension	Indicator	Deprivation Threshold (The woman is deprived if ...)		
Nutrition	Body Mass Index	The Body Mass Index (BMI) of the woman is less than 18.5	X	
	Short stature	The height of the woman is less than 145 cm	X	
	Anemia	The woman had anemia	X	
Health	Health insurance	The woman is not covered by health insurance	X	X
	Mosquito net	The woman did not sleep under a treated mosquito net during the night before the survey	X	X
	Maternal Health	The woman did not get adequate prenatal, postal and skilled birth assistance during delivery	X	
	Access to health care	The woman has serious problems to access health care services because of the following problems: getting permission to go to the doctor, getting money needed for advice or treatment, the distance to health facility, not wanting to go alone	X	
	Knowledge about HIV/AIDS transmission and prevention methods	The woman does not have knowledge on HIV/AIDS transmission and its prevention methods	X	
Education	School attendance	The girl (15-17 years) did not attend school during the current year.	X	
	Primary school attainment	The woman did not complete primary education	X	X
	Literacy	The woman cannot read cannot read a simple sentence	X	
Water	Drinking water source	The woman lives in a household where the main source of drinking water is unimproved (WHO). Improved water sources : piped water into dwelling, piped water into yard/plot, public tab/standpipe, tube well or borehole, protected dug well, protected spring, rainwater) Unimproved water sources: unprotected well, unprotected spring, tanker	X	X

		truck, cart with small tank, surface water (River/Lake/Pond/Stream/Irrigation Channel), other		
	Distance to drinking water source	The woman lives in a household where the distance to the drinking water source is as follows: Urban areas: Child lives in a household where the distance to the drinking water source is more than 200m Rural areas: Child lives in a household where the distance to the drinking water source is more than 500m	X	X
Sanitation	Toilet type	The woman lives in a household which usually uses unimproved toilet facility. Improved toilet facility: toilet facility, flush to piped sewer system, flush to septic tank, flush to pit latrine, flush but don't know where, ventilated improved pit latrine, pit latrine with a slab, composting toilet Unimproved toilet facility: flush to somewhere else, pit latrine without slab or open pit, no facility, bush or field, bucket toilet, hanging toilet or hanging latrine, other	X	X
	Cleanliness of toilet facility	The woman lives in a household where toilet facilities are not dry and clean (with urine or excreta, with flies).	X	X
Housing	Indoor pollution from cooking fuel	The woman lives in a household where solid cooking fuel is used and cooking is done inside the household	X	X
Information	Access to information devices	The woman lives in a household where there is no radio, television, mobile or computer		X
	Access to the media	The woman is not exposed to any one of the following media source: Reads newspaper or a magazine at least once a week, watches television at least once a week, listens to the radio	X	
Knowledge on family planning	Use of contraceptive measures	The woman has unmet need for birth spacing and limiting	X	
	Access to contraceptive measures	The woman cannot buy contraceptive measures if she wants to	X	

The women have been divided into 2 age groups because the DHS questionnaires are designed in a way that more specific data is collected for women aged 15-49 years. Although there is less data on the older women (50 years and above), it is deemed important to also study their level of poverty especially because elderly women are usually vulnerable groups amongst which poverty is accentuated.

As shown in Table 1, each dimension of well-being is measured by indicators depending on available data in the survey. For each indicator, there is a threshold determining whether the woman is deprived or not in that indicator. If a woman is deprived in at least one of the indicators, the woman will be considered as deprived in the dimension (the union approach of the MODA methodology).

**A woman will be considered as multidimensionally poor if she is deprived in at least 3 of the total number of dimensions.**

Using MODA, women's deprivations is analysed by: 1) Calculating the percentage headcount rates of children deprived in individual sectors or single dimensions; 2) Analysing women's multiple deprivations by calculating three multidimensional poverty indices based on Alkire and Foster (2011). The deprivation headcount ratio by single indicator and dimension are calculated using the formula:

$$h_{j,r} = \frac{q_{j,r}}{n_{j,r}}$$

$$q_{j,r} = \sum_{i=1}^{n_r} y_j$$

where  $h_{j,r}$  is the headcount ratio of women deprived in a dimension,  $j$ , of the reference women population,  $r$ ;  $q_{j,r}$  is the number of women who are deprived in a dimension  $j$  of the reference women population  $r$ ;  $n_r$  is the total reference women population  $r$ ;  $y_j$  is the deprivation status of a woman  $i$  in a dimension  $j$ , where  $y_j = 1$  if  $x_j < Z_j$  (deprivation) and  $y_j = 0$  if  $x_j \geq Z_j$  (no deprivation);  $x_j$  is the value of dimension  $j$  for the woman  $i$ ;  $Z_j$  is the threshold of deprivation for the dimension  $j$ . Calculating the headcount ratio by indicator involves the same formula based on the reference population with respect to the indicator instead of the dimension. Indicators are chosen to minimise missing values, which are treated as missing in the single-dimension analysis.

Observations with missing values in an indicator are excluded to ensure that the analysis is specific to the deprivation status of the individual woman for whom the indicator or dimension is relevant.

The second part of the analysis counts the total number of deprivations experienced per woman, and calculates the deprivation headcount ratio of the total number of women deprived at each level of poverty intensity according to the poverty cut-off,  $k$ , presenting the overall multidimensional poverty distribution. Missing values in individual dimensions are assigned a value of “0” (non-deprived), to ensure all dimensions have the same number of observations (de Neubourg et al., 2013). Resulting deprivation headcount rates in the multidimensional analysis represent a slight underestimation of the single-dimension analysis. An overlap analysis calculates the headcount rate of women deprived in all permutations of any three or more dimensions at a time. The Alkire-Foster indices calculated are the deprivation headcount ( $H$ ); the average intensity of deprivation ( $A$ ); and the adjusted deprivation headcount ( $M_0$ ).  $H$  is the poverty headcount at each selected deprivation cut-off,  $k$ .  $A$  measures the breadth of deprivation among those who are multidimensionally deprived according to the cut-off  $k$ , and is the sum of all deprivations among children counted as deprived, as a share of the sum of all possible deprivations among those deprived in at least  $k$  dimensions. As a product of  $H$  and  $A$ ,  $M_0$  calculates a poverty index that is sensitive to both the incidence and breadth of women’s poverty.

In order to answer the 3<sup>rd</sup> research question on the characteristics of multidimensionally poor women, we perform multivariate logistic analysis to estimate separate models to analyse the relationship between multidimensional poverty for the woman and her demographic, household and geographic characteristics. The models are estimating for different categories of women namely:

- Model 1: Single women below 30 years
- Model 2: Women in union (including married women or in cohabitation) aged 15-49 years
- Model 3: Women not in union (widows/divorcees/separated) aged 15-49 years
- Model 4: Old-aged women (50+ years)
- Model 5: Women with children under 5 years

Different multivariate logistic analysis were conducted for each of the above-mentioned 5 categories of women to study the dynamics of their characteristics affecting each groups.

The dependent variable is binary variable denoted whether the woman is multidimensionally poor or not. The explanatory variables are demographic characteristics (measured by age of the woman, employment status & sector of employment, number of children, whether the woman experience early first pregnancy (pregnancy before the age of 18 years), her decision making power and whether she had stunted children or not), household characteristics (gender of the household head, education level of the household head, household size (measured by number of household members), presence of a man in the household and geographic characteristics (measured by area of residence (urban/rural) and province).

Except for woman's age, number of children and household size which are continuous, all other variables are specified as discrete and binary. All regressors were tested for collinearity and exhibit a Pearson's correlation coefficient of  $r < 0.5$ . We reported the marginal effects expressed as a percentage point (pp) change in the probability of being multidimensionally given a one-unit change in the regressor, holding other regressors constant.

### **Limitations of Study**

As explained in the literature review, women poverty consists of deprivations in several dimensions of well-being. Due to data limitations, some dimensions, although considered as important could not be kept in the analysis because either they were not captured in the data or they were not collected for all women in the sample. For example, data on the domestic violence were collected only for a sub-sample of the women in the dataset. For further research, it would also be good to complement the study with qualitative research which could explain the reasons behind the figures.

## Results

The results of the study is structured in three parts. Part A shows the measurement for the target 1.1.2 for Sustainable Development Goal 1, that of measuring the proportion of multidimensionally poor women in Rwanda in 2015. Part B goes in detail in explaining multidimensional poverty for each of two age groups of women, 15-49 years and 50 years and above. In Part C, the characteristics of the multidimensionally poor women are determined.

### Part A: The Measurement of the Sustainable Development Goal 1.1.2

The first SDG aims at ending poverty in all its forms everywhere. Particularly relevant for this study is the target 1.1.2 of SDG 1, which aims at reducing at least by half the proportion of men, women, and children living in poverty in all its dimensions according to national definitions. There is a need to empirically measure the baseline status of woman poverty, in all its form, to inform a better targeting of policy actions aiming at reducing women poverty as per the SDG 1, target 1.2. The main objective of this study is to set the baseline figure for the multidimensional poverty among Rwandese women, to allow for policy implementation and future monitoring of progress in achieving the development agenda for women as per the SDG target above.

The baseline figure for multidimensional women poverty in Rwanda is 65.1%, representing the proportion of women deprived in at least 3 out of the total dimensions of well-being used. According to SDG 1, target 1.2, the aim is to progressively reduce this proportion of multidimensional poor women by at least half to 32.55% by 2030.

*Table 2: Multidimensional Poverty Rate for the measurement of the target 1.1.2 of SDG 1*

<b>Reference rates for target 1.1.2 of the SDG 1 (based on Rwanda Demographic and Health Survey 2014/15)</b>				
			<b>2015</b>	<b>2030</b>
<b><i>SDG 1</i></b>	<b><i>Description of the target</i></b>	<b><i>Poverty threshold</i></b>	<b><i>Poverty rate (Reference rate)</i></b>	<b><i>Poverty rate (Aim to achieve)</i></b>
Target 1.1.2	The proportion of women of all ages living in poverty in all its dimensions according to national definitions	Deprivation in at least 3 out of the total number of dimensions	65.1%	32.55%

Table 3: Multidimensional Poverty Rate for the measurement of the target 1.1.2 of SDG 1, by area and province

		<b>Multidimensional Poverty for Women:</b> <i>The proportion of women of all ages living in poverty in all its dimensions according to national definitions</i>	
		<b>2015</b>	<b>2030</b>
		<b><i>Poverty rate (Reference rate)</i></b>	<b><i>Poverty rate (Aim to achieve)</i></b>
Area	Rural	70.8%	35.4%
	Urban	35.0%	17.5%
Province	East	63.6%	31.8%
	North	66.3%	33.2%
	West	74.6%	37.3%
	South	70.4%	35.2%
	Kigali City	33.2%	16.6%

The disaggregation of the multidimensional poverty rate by geographical location (see Figure 3) shows wide disparities between urban and rural areas and across provinces. The proportion of multidimensionally poor women is doubled in rural areas (70.8%) in comparison with urban areas (35.0%). With regards to regions, Kigali city is far better off with only 33.2% of multidimensionally poor women followed by the East and North province where the proportions are 63.6% and 66.3% respectively. More than 7 out of 10 women in the West and the South regions have been identified as multidimensionally poor.



## **Part B: Multidimensional Poverty Analysis by age group**

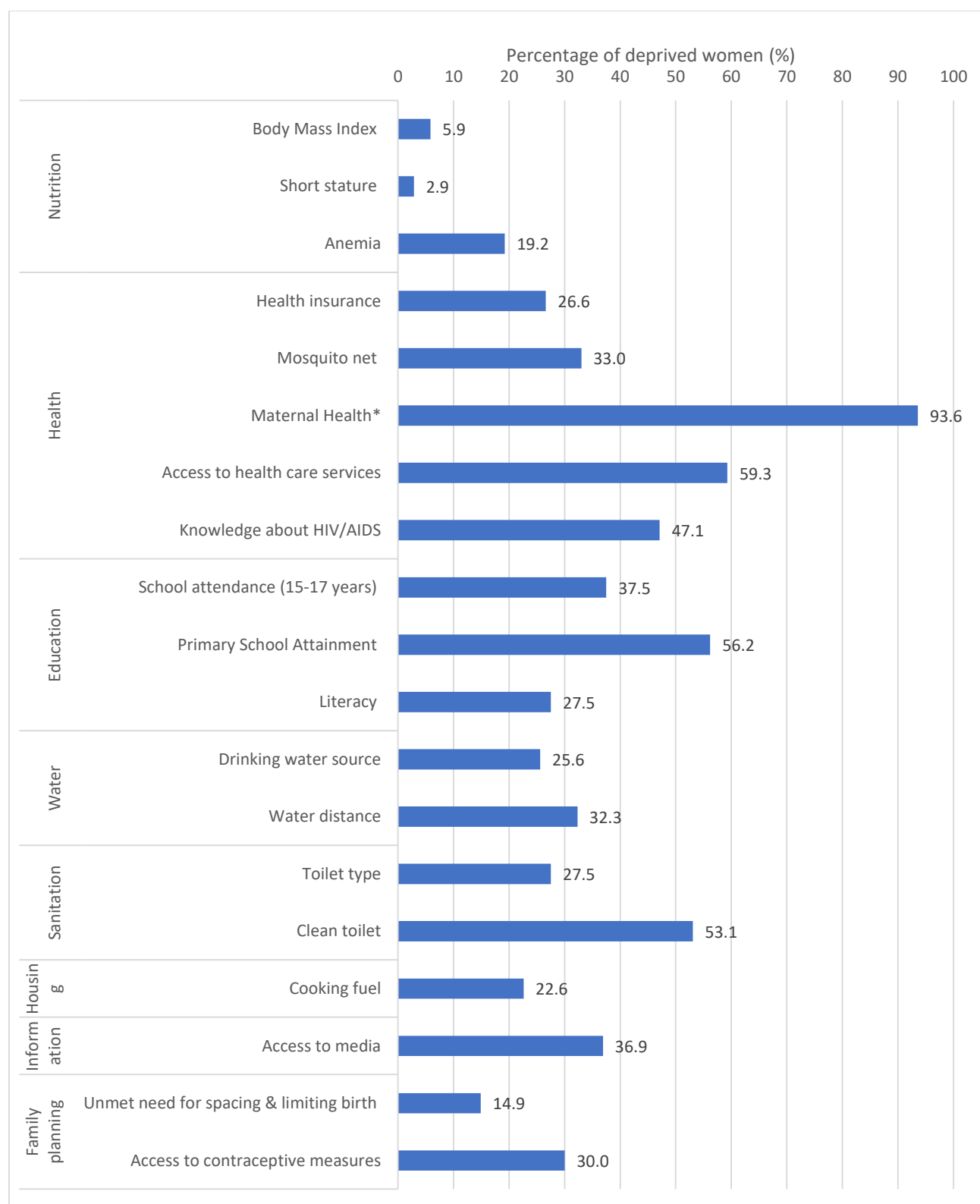
### **(1) Deprivation rates by indicators and dimensions**

Figure 2 and Figure 3 shows the percentage of women deprived in each indicator used in the analysis for the age group 15-49 years and 50+ years respectively. As specified in the methodology, using the union approach, indicators are then grouped into dimensions whereby a woman will be considered as deprived in the dimension if she is deprived in at least one of the indicators.

For women aged 15-49 years, the dimensions having the highest deprivation rates (see Figure 4) are Health (77.2%), Sanitation (60.6%) and Water (46.5%). The high deprivation in the dimension of Health is mostly driven by lack of health insurance (26.6%), no access to mosquito nets (33.0%), inadequate maternal health (measured by pre-natal, skilled birth attendance and post natal care) (93.6%), poor access to health care services and low knowledge about HIV/AIDS (47.1%).

For women aged 50+ years, the highest deprivation rates are recorded in the dimensions of Education (86.4%), Sanitation (60.2%) and Water (52.8%). The dimension of education is measured by the indicator “primary school attainment”; it is encouraging to observe that for the next of cohort of 15-49 years, the deprivation rates is much less standing at 56.2% as compared to 86.4% for women aged 50+ years. The deprivation rates in the sanitation and water dimensions are high for both age groups. Although adequate sanitation and water are important for all individuals of any gender and of all ages, it particular affects women because usually they are assigned the task of walking long distance to fetch water and it can be dangerous for them if they do not have access to toilets at home since using shared toilet increases the changes of infection and open defecation in isolated places and especially at night can be perilous.

Figure 2: Deprivation rates by indicators, 15-49 years



\* as a % of women who have given birth in the last 5 years

Figure 3: Deprivation rates by indicators, 50+ years

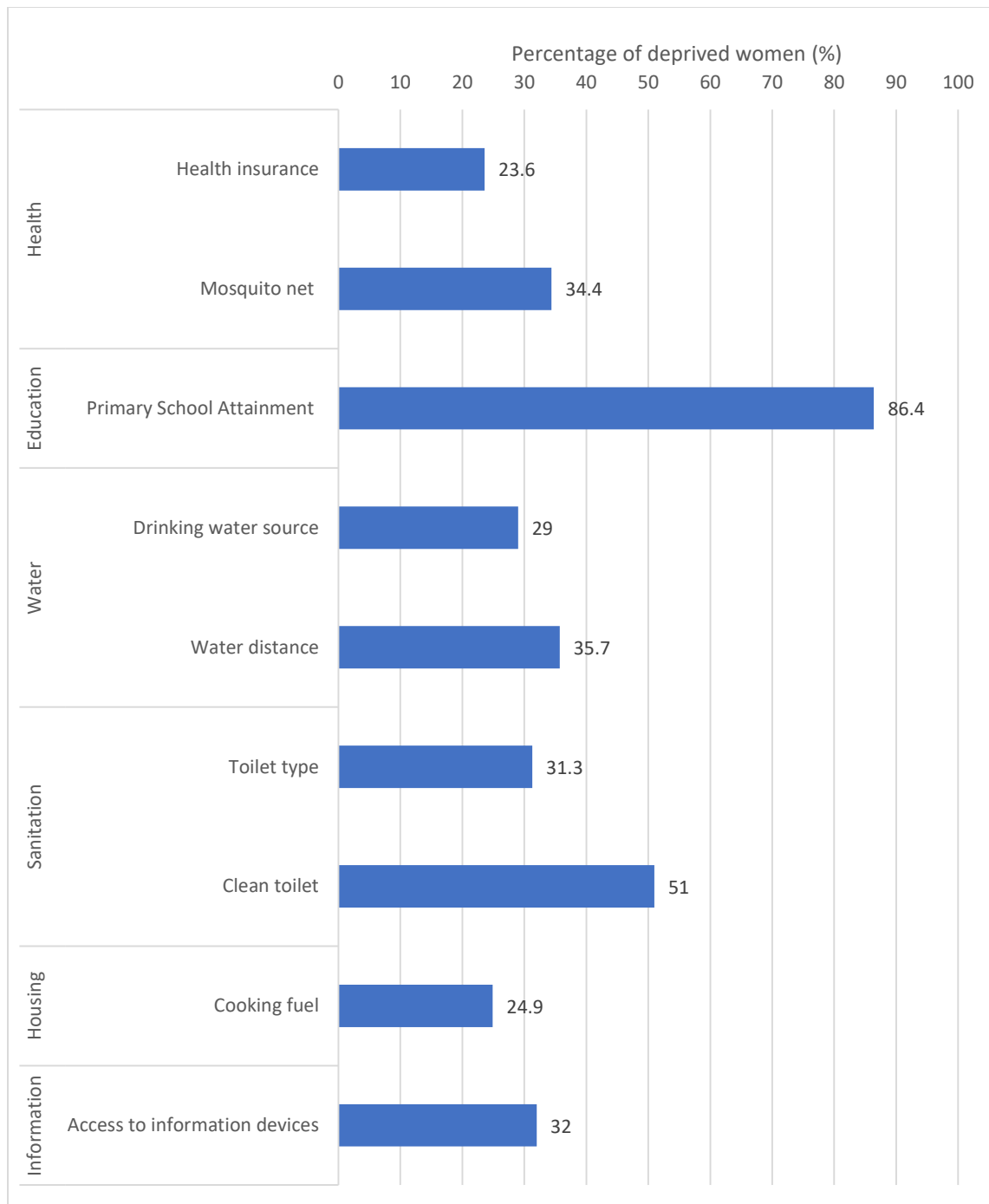


Figure 4: Deprivation rates by dimensions, 15-49 years

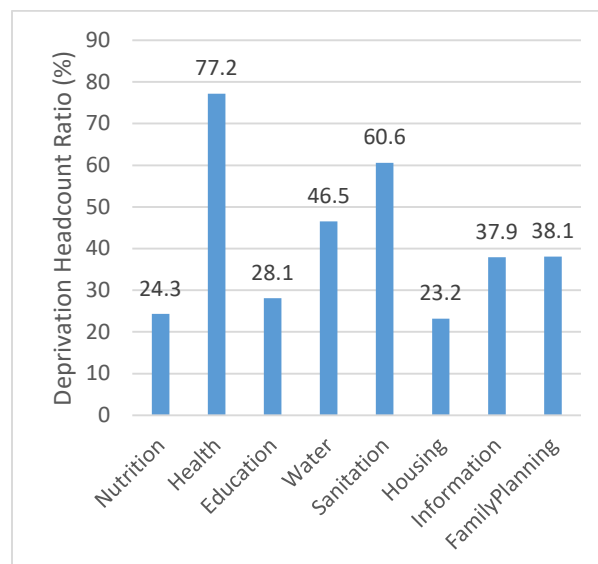
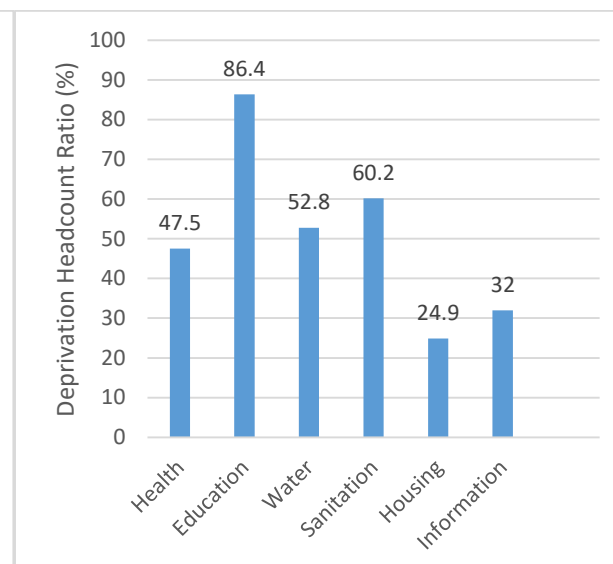


Figure 5: Deprivation rates by dimensions, 50+ years



### (1) Deprivation distribution

The deprivation distribution is shown in Figure 6 and 7 for the age group 15-49 years and 50+ years respectively. It is observed that the majority of women are deprived in 2-4 dimensions. Only 3.7% and 3.3% of women aged 15-49 years and 50+ years suffers from no deprivations. The majority of them faces at least one deprivation. Around 10.9% of women in the age group 15-49 years faces 6-8 deprivations simultaneously while around 16.8% of women aged 50+ years experiences 5-6 deprivations. There is even a small fraction of the population that suffers from deprivation in all dimensions of well-being (0.5% for women aged 15-49 years and 3.9% for women aged 50+ years). Women suffering from so many deprivations simultaneously are very vulnerable and will normally have low life expectancies.

Figure 6: Deprivation distribution, 15-49 years

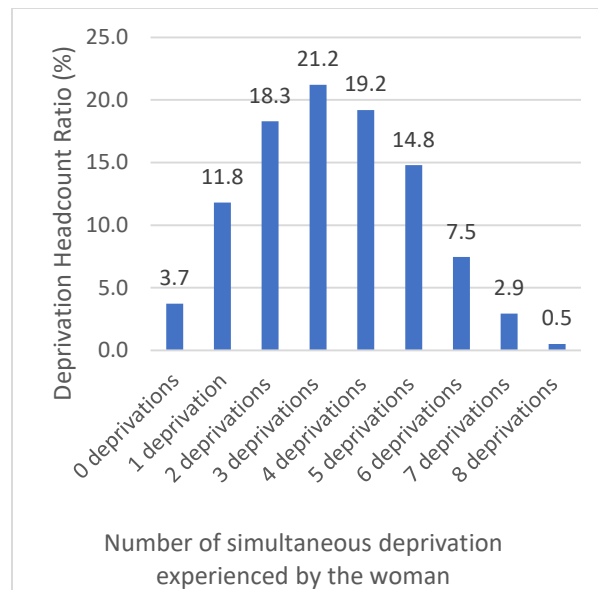
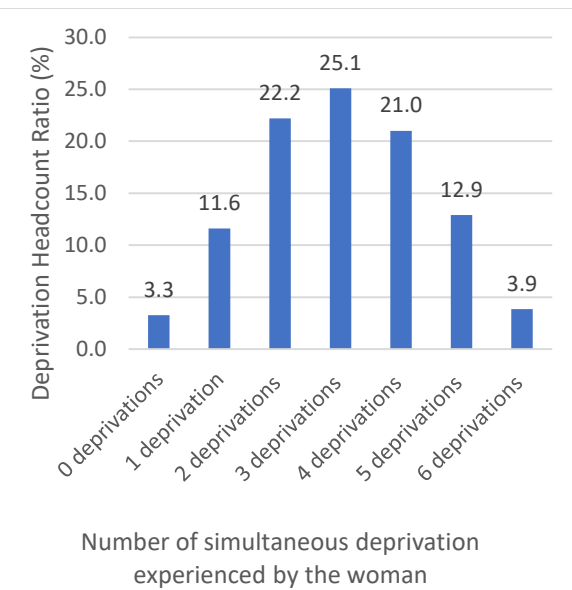


Figure 7: Deprivation distribution, 50+ years



### (1) Deprivation indices

As illustrated in the methodology chapter, the MODA analysis generates 3 types of indices (see Table 4). Different thresholds can be used to define multidimensional poverty; if a cut-off of 1 deprivation is used, 96.3% of women aged 15-49 years will be termed multidimensionally poor, if a cut-off of 2 deprivations is used, 84.5% of women ages 15-49 years will be termed multidimensionally poor and so on. In this study, a cut-off of 3 deprivations is used such that 66.2% and 62.9% of women are defined as multidimensionally poor (H). Those multidimensionally poor women are deprived in 53.7% (4.3 out of 8 dimensions) and 65.5% (3.9 out of 6 dimensions) of the total number of dimensions used for the age group 15-49 years and 50+ years respectively (A). M0 is an index combining both the headcount (H) and the intensity (A) of deprivation reflecting the overall situation of multidimensional poverty, it can be used for comparison purposes. For example, a higher M0 in rural areas (see Figure 8 and 9) shows that rural women are worse-off as compared to urban women. With regards to provinces, Kigali city is better off than all other provinces with a low M0 (of 0.145 for women aged 15-49 years and 0.232 for women aged 50+ years). The worse-off provinces are West and South for women of both age groups.

Table 4: Deprivation indices

Threshold to define multidimensional poverty	Women aged 15-49 years				Women aged 50+ years			
	Multidimensional deprivation headcount (H), %	Average no. of deprivations among the deprived (A)	Average intensity among the deprived (A), %	Adjusted multidimensional deprivation headcount (M0)	Multidimensional deprivation headcount (H), %	Average no. of deprivations among the deprived (A)	Average intensity among the deprived (A), %	Adjusted multidimensional deprivation headcount (M0)
Deprived in at least 1 dimension	96.3	3.5	43.2	0.416	96.7	3.1	52.2	0.505
Deprived in at least 2 dimensions	84.5	3.8	47.5	0.401	85.1	3.4	57.1	0.486
Deprived in at least 3 dimensions	66.2	4.3	53.7	0.355	62.9	3.9	65.5	0.412
Deprived in at least 4 dimensions	44.9	4.9	61.3	0.275	37.8	4.6	75.8	0.287
Deprived in at least 5 dimensions	25.8	5.6	69.7	0.180	16.8	5.2	87.2	0.146
Deprived in at least 6 dimensions	10.9	6.4	79.6	0.087	3.86	6	100	0.039
Deprived in at least 7 dimensions	3.5	7.2	89.4	0.031				
Deprived in all 8 dimensions	0.5	8.0	100	0.005				

Figure 8: M0 by area and province, 15-49 years

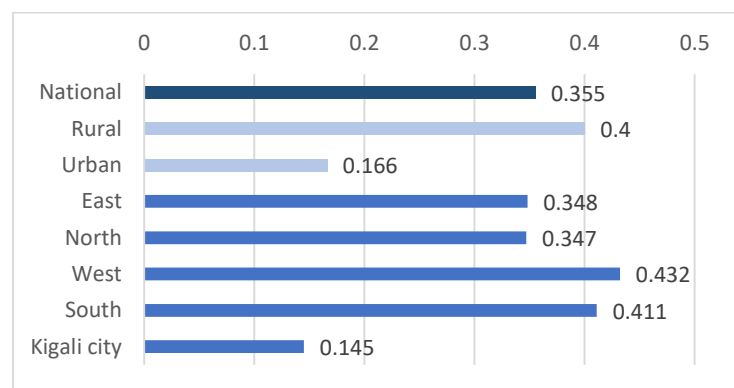
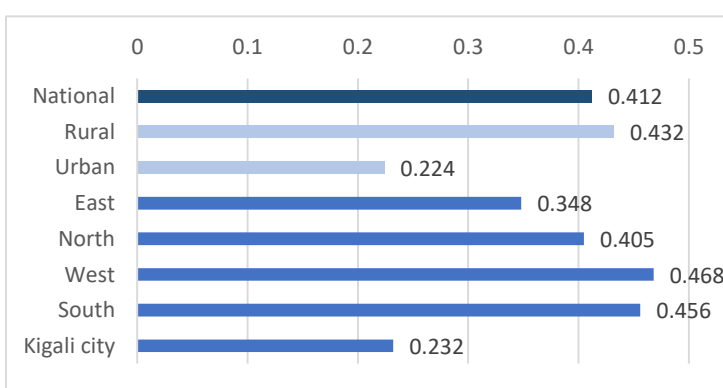


Figure 9: M0 by area and province, 50+ years



## **Part C: Characteristics of the Multidimensionally Poor Women**

Table 5 shows the results of the multivariate logistic regression estimating the average marginal effects of the relationship with the multidimensional poverty status of the women and her demographic, household and geographical characteristics in Rwanda. Five models with different profiles of women (namely single young unmarried girls and women of less than 30 years, married women (15-49 years), widows/divorcees/separated women (15-49 years), old aged women (50+ years) and women with children under 5 years (15-49 years)) are run in order to analyse the characteristics of the women that are related to her multidimensional poverty situation.

### ***Demographic characteristics***

**Age of the woman.** The age of the woman affects the multidimensional poverty status of only single young & unmarried women of less than 30 years [Model 1; AME=-0.110; SE=0.024;  $P<0.01$ ] and old-aged women of 50+ years [Model 4; AME=-0.029; SE=0.010;  $P<0.01$ ] at the 1% level of significance. The average marginal effect is negative for the variable and positive for the age squared implying a quadratic relationship between age and multidimensional poverty for both groups of women. Women in early adulthood have a lower probability of being multidimensionally poor; as the women age towards her 30s, her likelihood of being multidimensional poor increases (Model 1). Similarly for the old-aged women, it seems that there is a negative relationship between age and poverty when the woman is in her fifties but as she gets older, her likelihood of being multidimensionally poor increases. There is no significant relationship between age of the woman and multidimensional poverty for the other categories of women.

**Employment status and sector.** The employment status of the women is related to her multidimensional poverty level for all the five categories of women. There is a higher likelihood of the women to be multidimensionally poor if she works in the sector of agriculture (as compared to unemployed women) [Model 1-3, 5; AME>0,  $p>0.01$ ]. On the other hand, the probability of being poor is lower when the woman is employed in the non-agricultural sector. Given that the women in the agricultural sector are worse-off than even the unemployed ones (probably because there is another income earner in the household), it would be useful to design programmes to improve their level of well-being which specifically target women working in those sectors.

Table 5: Average marginal effects measuring the relationship between women multidimensional poverty status and her demographic, household and geographical characteristics

		Dependent variable: Multidimensional poverty (deprived in 3+ dimensions)									
		Model 1: Single girls & women (<30 years)		Model 2: Married women (15- 49 years)		Model 3: Widows/Divorcees /Separated (15-49 years)		Model 4: Old aged women (50+ years)		Model 5: Women with children under 5 years (15-49 years)	
	Characteristics of the woman	AME	SE	AME	SE	AME	SE	AME	SE	AME	SE
Demographic characteristics	Age of the woman	-0.110***	(0.024)	-0.014*	(0.008)	-0.015*	(0.008)	-0.029***	(0.010)	-0.014	(0.014)
	Age squared of the woman	0.002***	(0.001)	0.000	(0.000)	0.000	(0.000)	0.000***	(0.000)	0.000	(0.000)
	Employment status & sector										
	Unemployed women (category 0)										
	Employed in agriculture	0.099***	(0.025)	0.055***	(0.015)	0.059***	(0.015)			0.055***	(0.017)
	Employed in non-agriculture	-0.040	(0.026)	-0.076***	(0.019)	-0.075***	(0.018)			-0.061***	(0.020)
	Number of children	0.203***	(0.025)	0.044***	(0.005)	0.044***	(0.005)			0.041***	(0.007)
	Early first pregnancy	-0.097*	(0.060)	-0.006	(0.026)	-0.008	(0.026)			-0.004	(0.030)
	Decision making power			-0.029	(0.013)					-0.024	(0.015)
	Women with stunted/non-stunted children										
	No stunted children (category 0)										
At least 1 stunted child									0.049***	(0.016)	
Household characteristics	Gender of household head										
	Male (category 0)										
	Female	0.062**	(0.026)	0.123***	(0.025)	0.072	(0.046)	0.010	(0.021)	0.085	(0.061)
	Education level of hh head										
	No education (category 0)										
	primary education	-0.105***	(0.002)	-0.190***	(0.022)	-0.193***	(0.022)	0.154***	(0.016)	-0.195***	(0.029)
	secondary education	-0.220***	(0.033)	-0.320***	(0.027)	-0.325***	(0.027)	-0.523***	(0.055)	-0.309***	(0.034)
	higher than secondary education	-0.293***	(0.043)	-0.511***	(0.045)	-0.519***	(0.045)	-	-	-0.446***	(0.049)
	Household size	-0.017	(0.015)	-0.018	(0.015)	-0.018	(0.015)	-0.039***	(0.021)	-0.035**	(0.017)
Presence of a man in the hh	-0.004	(0.029)			-0.067*	(0.054)	-0.080***	(0.021)	-0.030	(0.070)	
Geographical characteristics	Area										
	Urban (category 0)										
	Rural	0.181***	(0.023)	0.094***	(0.017)	0.095***	(0.017)	0.177***	(0.023)	0.083***	(0.019)
	Province										
	Kigali city (category 0)										
	South	0.063*	(0.033)	0.102***	(0.023)	0.102***	(0.023)	0.163***	(0.036)	0.090***	(0.025)
	West	0.151***	(0.033)	0.014***	(0.024)	0.141***	(0.024)	0.191***	(0.036)	0.114***	(0.025)
	North	0.069**	(0.034)	0.060**	(0.025)	0.060**	(0.025)	0.101***	(0.038)	0.071***	(0.027)
East	0.042**	(0.035)	0.017	(0.023)	0.017	(0.023)	0.047	(0.038)	0.0432*	(0.025)	
	Number of observations	2366		4044		4057		3339		2903	
	Prob > F	0.000		0.000		0.000		0.000		0.0000	
Standard errors in parentheses		*** p<0.01, ** p<0.05, * p<0.1									



**Number of children.** It is found that a particular characteristic of multidimensionally poor women are those with many children [Model 1-3, 5; AME>0,  $p>0.01$ ]. Addressing the issues facing women with many children is recommended; there can be programmes targeting women with for example more than 3 children.

**Women with stunted/non stunted children.** Further, women having at least one stunted child as compared with those having no stunted children are also more likely to be multidimensionally poor [Model 5; AME=0.049; SE=0.016;  $P<0.01$ ]. The highly significant relationship between stunting and the poverty status of the mother signals for immediate actions given that the impact of stunting on the physical and cognitive development of the child on the future generation can be detrimental to the quality of the future labour force and thus economic growth. Providing nutritional and food programmes to both children under 5 and their mothers are recommended; such initiatives can take the form of cash plus programmes with food supplements as one of its core elements.

The variables “age at first pregnancy” and “decision making power of the woman in the household” are not significantly related to her multidimensional poverty level.

### ***Household characteristics***

**Gender of the household head.** It is further noted that at the 5% level of significance, women living in female headed households have a higher probability of being poor when it comes to single girls & women below the age of 30 years and married women [Model 1 and 2; AME>0;  $P<0.05$ ]. However for other categories of women, there is no significant relationship between the gender of household head and woman poverty.

**Education level of household head.** There is a strong negative association between education level of the household head and women poverty. The higher level of education of the household head, the lower the likelihood that the woman will be multidimensionally poor for all groups of women [Model 1-5; AME<0;  $P<0.01$ ]. At each higher level of education, the size of the average marginal effects gets bigger suggesting that a woman living in a household with a household head with primary education is better off than one with no education and a woman living with a household head with secondary education is better off than one with primary education and so on. The women having a household head having higher than secondary education are the most better off in all five models.

**Household size.** The household size (in terms of number of household members) significantly affects poverty level of only old age women (50+ years) and women with children under 5 years. The results show that for those two categories of women, the higher the household size, the lower the level of poverty of the woman. This findings is consistent with the studies on poverty (both multidimensional and monetary) conducted by NISR (2017) in Rwanda where it is also found that a higher number of household members is related with lower level of poverty. More research needs to be done to find out the reasons behind this relationship.

**Presence of a man in the household.** At the 1% level of significance, there is less likelihood of a woman to be poor when there is a man in the household only for old aged women (50+ years) [Model 4; AME=-0.080; SE=0.021;  $P<0.01$ ]. For all other categories of women, the presence of a man in the household is not significantly related to their poverty level.

### ***Geographical characteristics***

At the geographical level, it is found that women living in rural settings are significantly worse off as compared with those from urban areas [Model 1-5; AME>0;  $P<0.01$ ]. The likelihood of being multidimensionally is greater for all procinces as compare with the capital of Kigali city [Model 1-5; AME>0;  $P<0.1$ ], however it is noted that the women from the West and South provinces are more affected with a higher average marginal effects.

## Conclusion

In this paper, target 1.1.2 of the Sustainable Development Goal 1, on the multidimensional poverty for women is measured using the Multiple Overlapping Deprivation Analysis (MODA) methodology. Rwanda is used as a case study and it is found that 65.1% of the Rwandese women are multidimensionally poor, that they face at least 3 deprivations in their dimensions of well-being. The level of multidimensional poverty is mostly driven by deprivations in health, education, sanitation and water. It is further found that, on average, a multidimensionally poor woman aged 15-49 years is deprived in 4.3 out of 8 dimensions while for a woman aged 50+ years, her depth of deprivation is, on average 3.9 out of 6 deprivations.

A multivariate logistic regression is used to investigate into the characteristics of multidimensionally poor women. It is found that women in early adulthood have a lower probability of being multidimensionally poor as compared to women in their late twenties. This shows that there has been progress over time. Similar results are also found for old-aged women (50+ years) where it is observed that the older the woman, the more chances that she is multidimensionally poor. Women working in the agriculture sector are the worse-off and are most likely to be poor. Higher number of children born from a woman results in an increased probability of being multidimensionally poor. Further, there is a significant correlation between a mother's multidimensional poverty level and her child's stunting status. Single women younger than 30 years and married woman are more likely to be poor if the household head is female; this suggests for more support to be provide to female headed households. The education level of the household head is a significant determinant of the level of women poverty; the more educated the household head, the better off are the women living in that household. Higher household size is associated with lower poverty level of the woman. It is further found that there is less likelihood for a 50+ year old woman to be poor if there is a man in the household; the relationship between presence of a man and multidimensional poverty for other categories of women are insignificant. At the geographical level, wide disparities are found with rural women and those from the West and South province having higher likelihood of being multidimensionally poor.

## References

- Addressing the challenges of Women's Health in Africa. Report of the Commission on Women's Health in the African Region. (World Health Organisation, Regional Office for Africa, 2012).
- Affirmative Action and what it means for Women. Affirmative Action in Education Resource Factsheet
- Africa Commission on Human and People's Rights (2003). 'Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa,' Maputo. <http://www.achpr.org/english/women/protocolwomen.pdf>
- Ajit Zacharias, Rania Antonopoulous and Thomas Masterson, 2012. Why Time Deficits Matter: Implications for the Measurement of Poverty (Annandale-on-Hudson, New York, Levy Economics Institute of Bard College and United Nations Development Programme).
- Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurements. *Journal of Public Economics*, 95(7-8), 476–487. doi:10.1016/j.jpubeco.2010.11.006
- Alliance for a Green Revolution in Africa (AGRA), (2007). *AGRA Annual Report 2007*. Nairobi.
- Asian Development Bank (ADB) (2000) Women in Pakistan: Country Briefing Paper (Manila: ADB Programmes Department [West] and Office of Environment and Social Development).
- Becker, G. (1975). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. New York: National Bureau of Economic Research (NBER).
- Benner, Chris, Brownstein, Bob and Dean, Amy (1999) *Walking the Lifelong Tight: Negotiating Work in the New Economy*. Working Partnerships USA and the Economic Policy Institute. San Jose, California.
- BRIDGE (2001) Briefing Paper on the 'Feminisation of Poverty' (prepared for the Swedish International Development Cooperation Agency). BRIDGE Report No.59 (Sussex: Institute of Development Studies).
- Budowski, Monica and Rosero Bixby, Luis (2003) 'Fatherless Costa Rica? Child Acknowledgement and Support Among Lone Mothers', *Journal of Comparative Family Studies*, 34:2, 229-54.
- Buvinic, Mayra and Gupta, Geeta Rao (1993) 'Responding to Insecurity in the 1990s: Targeting Woman-headed Households and Woman-maintained Families in Developing Countries'. Paper presented at the International Workshop 'Insecurity in the 1990s: Gender and Social Policy in an International Perspective', London School of Economics and European Association of Development Institutes, London, 5-6 April.
- Chant, Sylvia (1999) 'Women-headed Households: Global Orthodoxies and Grassroots Realities', in Haleh Afshar and Stephanie Barrientos (Eds) *Women, Globalisation and Fragmentation in the Developing World* (Houndmills, Basingstoke: Macmillan) 91-130.
- Chant, Sylvia (2003) *Female household headship and the feminisation of poverty: facts, fictions and forward strategies*. New Working Paper Series, Issue 9, ISSN: 1470-8515. Gender Institute, London School of Economics and Political Science, London, UK.
- Christopher, Karen; England, Paula; McLanahan, Sara; Ross, Katherin and Smeeding, Tim (2001) 'Gender Inequality in Affluent Nations: The Role of Single Motherhood and the State', in Koen Vleminckx and Tim Smeeding (Eds) *Child Well-Being in Modern Nations* (Bristol: The Policy Press).
- Civicus, 2011. Challenges faced by women in civil society in Africa: [http://www.civicus.org/view/media/Challenges\\_Faced\\_by\\_Women\\_in\\_Civil\\_Society\\_in\\_Africa.pdf](http://www.civicus.org/view/media/Challenges_Faced_by_Women_in_Civil_Society_in_Africa.pdf)
- Convention on the Elimination of All Forms of Discrimination Against Women: <http://www.un.org/womenwatch/daw/cedaw/text/econvention.htm>.

Economic Commission for Africa, Recent Trends in National Machineries for Gender Equality in Africa, (Addis Ababa, 2011).

Elson, Diane (1999) 'Labour Markets as Gendered Institutions: Equality, Efficiency and Empowerment Issues', *World Development*, 27:3, 611-27.

England Paula and Folbre Nancy (2002) 'Involving Dads: Parental Bargaining and Family Well-Being', in Catherine Tamis-LeMonda and Natasha Cabrera (Eds) *Handbook of Father Involvement: Multidisciplinary Perspectives* (Mahwah, New Jersey: Lawrence Erlbaum Associates).

Enrique Garcia, 2014. World Health Organization Bulletin: Intimate partner violence against women and victim-blaming attitudes among Europeans (WHO, Geneva, 2014).

Eva Feder Kittay, *Love's Labour: Essays on Women, Equality, and Dependency* (New York: Routledge, 1999)

Finne, Giselle (2001) 'Feminisation of Poverty' (Geneva: World Alliance of YMCAs, Global Programmes and Issues) (<http://www.ywca.int/programs>).

Folbre, Nancy (1994) *Who Pays for the Kids? Gender and the Structures of Constraint* (London: Routledge).

Foster, J (1998) "What Is Poverty and Who Are the Poor? Redefinition for the United States in the 1990s." *The American Economic Review*. May pp. 335-341.

Global and Regional Estimates of Violence Against Women. *Prevalence and health effects of intimate partner violence and non-partner sexual violence*. WHO, 2013.

González de la Rocha, Mercedes (1994b) 'Household Headship and Occupational Position in Mexico', in Eileen Kennedy and Mercedes González de la Rocha, *Poverty and Well-Being in the Household: Case Studies of the Developing World* (San Diego: Centre for Iberian and Latin American Studies, University of California San Diego) 1-24.

Gordon, D., Nandy, S., Pantazis, C., Pemberton, S., & Townsend, P. (2003). *Child Poverty in the Developing World*. Bristol, UK: The Policy Press.

Hawthorne, Susan, 2004. "Wild Politics: Beyond Globalization," *Women's Studies International Forum*, August, vol. 2, 3.

Hojgaard, L. (2002). Tracing Differentiation in Leadership. An Analysis of Differences in Gender Composition in Top Management in Business, Politics and the Civil Service. *Gender, Work and Organization* 9 (1): 35-48.

IFAD (2008). Developing countries to make use of \$US200 million initiative to increase food production quickly. [www.ifad.org/media/press/advisory/2008/07.htm](http://www.ifad.org/media/press/advisory/2008/07.htm)

International Food Policy Research Institute (IFPRI), 2017. Visioning the future of Food Security. Critical drivers to 2050, key vulnerabilities, and needed policy interventions. Policy Paper, No. 3677

International Fund for Agricultural Development (IFAD) (1999) *The Issue of Poverty Among Female-headed Households in Africa* (Rome: IFAD) (<http://www.ifad.org/gender/learning/challenges/women/60.htm>).

International Labour Organisation (ILO) (1996) 'All Women are Working Women: The Feminisation of Poverty' (Geneva: ILO) (<http://www.ilo-mirror.cornell.edu>).

Kane Low and Kerri Schuiling, 2005. *“Women’s Health from a Feminist Perspective. Introduction to Gynecologic Health. Jones & Bartlett Learning LLC*

Landsberg-Lewis, 1998. Bringing equality home: Implementing the Convention on the Elimination of All Forms of Discrimination against Women, CEDAW. New York, United Nations Development Fund for Women [UNIFEM], 1998. [pg 44]

Li, X., Gan, C., & Hu, B. (2011). The impact of microcredit on women's empowerment: evidence from China. *Journal of Chinese Economic and Business Studies*, 9(3), 239-261.

Madonna Harrington Meyer, ed., Care Work: Gender, Labor, and the Welfare State (New York: Routledge, 2000)

Mala Htun and Laurel Weldon, 2012, “The Civic Origins of Progressive Policy Change: Combating Violence against Women in Global Perspectives 1975-2005,” *American Political Science Review*, vol. 106, issue 3, (August 2012).

Manyire, H (2013) “A Situational Analysis of the State of Sexual and Gender Based Violence in Uganda with Special Focus on Health Services” A Consultancy Report Commissioned by Reproductive Health Uganda, Kampala

Mary Hallward-Driemeier, Tazeen Hasan and Anca Bogdana Rusu, 2013. “Women’s Legal Rights Over 50 Years: Progress, Stagnation or Regression?” Policy Research Working Paper, No. 6616 (Washington, D.C., World Bank Group)

Maseko, T. I. (2013). A comparative study of challenges faced by women in leadership. A case study of Foskop and the Department of Labour in Mhlathuze Municipality. A Dissertation submitted in accordance with the requirement for the degree of Masters in Commerce in the Faculty of Commerce, Administration and Law at University of Zululand.

McFerson, Hazel M. (2010). Poverty Among Women in Sub-Saharan Africa: A Review of Selected Issues. *Journal of International Women's Studies*, 11(4), 50-72. Available at: <http://vc.bridgew.edu/jiws/vol11/iss4/4>

Michele Bograd, 1988. *Feminist Perspective on Wife Abuse*. Sage Publications, Inc.

Moghadam, Valentine (1997) *The Feminisation of Poverty: Notes on a Concept and Trend*. (Normal: Illinois State University, Women’s Studies Occasional Paper No.2).

Moghadam, Valentine, 2005. “The ‘Feminization of Poverty’ and Women’s Human Rights,” *Papers in Women’s Studies and Gender Research*, No. 2, July.

Mona Harrington, *Care and Equality: Inventing a New Family Politics* (New York: Routledge, 2000)

Naila Kabeer (2003) *Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A Handbook for Policy-makers and Other Stakeholders* (London: Commonwealth Secretariat)

Nancy Folbre, *The Invisible Heart: Economics and Family Values* (New York: The New Press, 2001)

Neubourg, C. d., Bradshaw, J., Chzhen, Y., Main, G., Martorano, B., & Menchini, L. (2012). Child deprivation, multidimensional poverty and monetary poverty in Europe. Florence, Italy: UNICEF Innocenti Research Centre.

Neubourg, C. D., Chai, J., Milliano, M. d., & Plavgo, I. (2013). Step by step guidelines to the Multiple Overlapping Deprivation Analysis (MODA). Innocenti Working Papers. Retrieved from <https://www.unicef-irc.org/publications/695/>

Neubourg, C. d., Chai, J., Milliano, M. d., Plavgo, I., & Wei, Z. (2012). Cross-country MODA study: Multiple Overlapping Deprivation Analysis (MODA). Technical note. Working paper 2012-05. Retrieved from <https://www.unicef-irc.org/publications/696/>

Ntuli, M. (2004). "Determinants of South African Women's Labour Force Participation, 1995–2004." Discussion Paper No. 3119. Cape Town: University of Cape Town Press and IZA.

OECD, 2012. Organisation for Economic Co-operation and Development, Gender, Institutions & Development Database (GID-DB).

Overseas Development Institute 2001. Social Protection Concepts and Approaches: Implications for policy and practice in International Development.

Pamela Loprest, *How Are Families That Left Welfare Doing? A Comparison of Early and Recent Welfare Leavers*, The Urban Institute, 2001 Reform," 2000.

Pearce, Diana (1978) "The Feminization of Poverty: Women, Work, and Welfare," *Urban and Social Change Review* (February, 1978): 30

Pierce-Brown, R. (1998). "An Application of Human Capital Theory to Salary Differentials in the Accounting Profession." *Women in Management Review*, Vol.13, No. 5, pp. 192–200.

Pierrette Hondagneu-Sotelo, *Domestica: Immigrant Workers Caring and Cleaning in the Shadow of Affluence* (Berkeley: Univ. of California Press, 2001)

Power, J. (1993). The report on rural women living in poverty. Rome: International Fund for Agricultural Development.

Reed, Deborah and Van Swearingen, Richard (2001) "Poverty in California: Levels, Trends, and Demographic Dimensions." *California Counts: Population Trends and Profiles*. Public Policy Institute of California. San Francisco, California. pp. 4

Rhacel Satazar Parrenas, *Servants of Globalization: Women, Migration, and Domestic Work* (Stanford: Stanford Univ. Press, 2001)

Robert W. Connell, 1987. Gender and Power. *NWSA Journal*. Vol. 1. No.2 (Winter, 1988 - 1989), pp. 326-329

Rogers, Beatrice (1995) 'Alternative Definitions of Female Headship in the Dominican Republic', *World Development*, 23:12, 2033-9.

Serumaga-Zake, P-A. E. and Kotze, D. (2004). "Determinants of Labour Force Participation for Married Women in South Africa." *Journal for Studies in Economics and Econometrics*, Vol. 28, No. 3, pp. 99–111.

Stavrova and Ehlebracht (2016). Cynical beliefs about human nature and income: Longitudinal and Cross-Cultural Analyses. *Journal of Personality and Social Psychology*.

Tarr-Whelan, H. 2016. The Impact of the Beijing Platform for Action: 1995 to 2010. Source: [http://www.americanbar.org/publications/human\\_rights\\_magazine\\_home/human\\_rights\\_vol37\\_2010/summer2010/the\\_impact\\_of\\_the\\_beijing\\_platform\\_for\\_action.html](http://www.americanbar.org/publications/human_rights_magazine_home/human_rights_vol37_2010/summer2010/the_impact_of_the_beijing_platform_for_action.html)

Thomas, Susan (1994) 'From the Culture of Poverty to the Culture of Single Motherhood: The New Poverty Paradigm', *Women and Politics*, 14:2, 65-97.

UN Women analysis of Demographic Health Surveys. Data from most recent survey between 2009 and 2014.

UN Women, 2015. The Beijing Declaration and Platform for Action turns 20: A summary of the Report of

the Secretary-General on the 20-year review and appraisal of the implementation of the Beijing Declaration and Platform for Action and the outcomes of the twenty-third special session of the General Assembly (E/CN.6/2015/3). (New York: UN Women)

UNDP. (2016). Human Development Report 2016: Human Development for Everyone. Retrieved from New York: [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf)

UNESCO, 2015. Education for All, Global Monitoring Report (GMR)

UNFPA, 2000. Adolescent Girls in Disaster & Conflict. Interventions for Improving Access to Sexual and Reproductive Health Services - See more at: <http://www.unfpa.org/publications/adolescent-girls-disaster-conflict#sthash.nz4Drisq.dpuf>

United Nations (UN) (2000) The World's Women 2000: Trends and Statistics (New York: United Nations).  
United Nations Children's Fund (UNICEF) (1997) Role of Men in the Lives of Children: A Study of How Improving Knowledge About Men in Families Helps Strengthen Programming for Children and Women (New York: UNICEF).

United Nations Department of Public Information (UNDPI) (2000) 'Women 2000: The Feminisation of Poverty - Fact sheet No.1' (<http://www.un.org/womenwatch/daw/followup>).

United Nations Development Programme (UNDP) (1995) Human Development Report 1995 (Oxford: Oxford University Press).

United Nations Development Programme (UNDP) (2001). Human Development Report 2001 (Oxford: Oxford University Press).

United Nations Fund for Women (UNIFEM) (1995) The Human Cost of Women's Poverty: Perspectives from Latin America and the Caribbean (Mexico City: UNIFEM).

Waldorf, 2005. Pathway to Gender Equality: CEDAW, Beijing and the MDGs. New York, United Nations Development Fund for Women [UNIFEM], [2005]. 44 p

Women of Colour Resource Centre, "Statement of the United Nations Committee for the Elimination of Racial Discrimination," 2000.

Women, Food Security and Agriculture in a Global Market Place. International Centre of Research on Women (ICRW) – 2008, Page 10.

World Bank, 2014. Women, Business and the Law 2014: Removing Restrictions to Enhance Gender Equality: Key Findings, (London, Bloomsbury Publishing, 2014).

Yakubu, 2010. Factors Influencing Female Labour Force Participation in South Africa in 2008. The African Statistical Journal, Volume 11, November 2010