UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Examining the Effect of Women's Empowerment on Multidimensional Poverty: Case of South Africa

A research report submitted in partial fulfillment of the

Degree of Master of Commerce (Economics)

In the School of Economics and Finance,

University of Witwatersrand

by

Thonifho Ratshivhanda

Student No: 2162928

(12280 words)

Supervised by Professor Miracle Benhura

Abstract

This study examines the levels and correlations of individual women's empowerment and household level multidimensional poverty in South Africa, overall and by rural/ urban location. The Alkire-Foster (2011) techniques is employed for the construction of the Women Empowerment Index (WEI) and Multidimensional Poverty Index (MPI), and a logistic regression analysis is employed to ascertain whether women's empowerment is negatively correlated to multidimensional poverty. The study uses the 2016 South African Demographic and Health Survey (DHS) dataset and estimates that 3.2% of South African households are multidimensionally poor, with a higher prevalence in rural areas. In both rural and urban areas, the standard of living dimension contributed most to MPI. Regarding WEI, women residing in urban areas (67.3%) are more empowered compared to those residing in rural areas (53.9%), with attitude towards domestic violence dimension contributing most to women's empowerment. Findings from logistic regressions show that women's empowerment is negatively associated with multidimensional poverty in South Africa. Women in older age groups and better paid occupations are associated with lower multidimensional poverty, also non-Black/African women and those residing in urban areas have a lower chance of experiencing multidimensional poverty, than Black/African women and those residing in urban areas. Overall, this study highlights the importance of addressing women's empowerment as a key strategy for poverty reduction in South Africa. The results suggest a need for customised strategies to improve women's empowerment and reduce multidimensional poverty in South Africa's rural and urban areas.

Table of Contents

List of Tables

List of Figures

Chapter one

Introduction

Inequality and poverty have been persistent and deeply entrenched challenges in numerous developing nations, especially South Africa. The end of Apartheid, followed by the first democratic elections in the 1990s and 1994, respectively, has given rise to significant political and social adjustments in South Africa which further exacerbated the persistent challenges faced by South Africa, rendering the country one of the countries with the most disparities and inequalities in the world.

South Africa is burdened with immense disparities and inequality across population and gendered groups, as well as extensively high poverty levels. For instance, women tend to participate less and are likely to be unemployed in the South African labour market in comparison to men (Mosomi, 2019:40). According to South Africa's Human Development Report (2023), a population of 20.5% is below the poverty line in terms of monetary value, 0.9% of the population suffers from severe multidimensional poverty, and a population of approximately 12.2% is vulnerable to multidimensional poverty in 2023.

Women empowerment is the process of enhancing and strengthening women, within the social, political, educational, and economic aspects (Al Khayyal et al, 2020:743). It represents an approach to shifting power dynamics and social hierarchy in favour of the female gender, giving them more control over their lives and resources, which can improve gender equality. It also helps foster economic growth and contribute to poverty reduction (Maligalig et al. 2019). Women's empowerment lays the path for a more fair and prosperous future for all by eliminating power inequalities, resolving disenfranchisement, breaking the cycle of prejudice, and unlocking hidden potential.

Multidimensional poverty aims to provide an in-depth measurement of poverty beyond monetary metrics, encompassing a range of multifarious attributes, such as inadequate financial resources, lack of materialistic necessities, living conditions, social exclusion, and physical/psychological illness (Walker, 2019:35). Rogan's (2016:993) study revealed that according to the National Income Dynamics Study (NIDS) for 2008, the

multidimensional poverty rate for females was significantly 2.3% points higher than that of men in South Africa. According to the World Bank (2018), 4% more women live in impoverished households relative to men, and women of fecund years in comparison to males, are more likely to reside in poverty-stricken households. According to Rogan (2016:995-996), female-headed households had a 22% higher likelihood of being impoverished in monetary terms rather than being multidimensionally poor. Therefore, it is imperative to prioritise effective policy interventions and allocate more resources aimed at reducing gender inequality and addressing factors that negatively affect South African women.

In 2015, South Africa adopted the Sustainable Development Goals, which sought to eliminate poverty, improve equality, promote prosperity, and protect the planet by 2030 (FUND, 2015). These include gender equality and poverty alleviation. This further reinforce the importance of assessing women's empowerment in South Africa, as well as the impact it has on multidimensional poverty. An additional reason for inequality in South Africa is due to the divide between rural and urban areas where the level of multidimensional poverty tends to be higher in rural areas relative to urban areas (Zimbalist, 2017).

Problem Statement

A vast literature on poverty concentrates on overall households and gendered trends, rather than the multifaceted nature of poverty (Rogan, 2016; Omotoso et al., 2022; Cheteni et al., 2019; Kehler, 2001). However, limited research addresses the impact of women's empowerment, age, occupational structure, and ethnicity on multidimensional poverty in South Africa.

Research Questions

- What is the magnitude of women empowerment and multidimensional poverty in South Africa, does it vary between rural and urban areas?
- What is the impact of occupational structure, age groups, population group, and women's empowerment on multidimensional poverty in South Africa?

- What policy interventions are required to improve women's empowerment indicators and reduce multidimensional poverty indicators in South Africa?

This study uses the Demographic and Health Survey (DHS) dataset to examine Women Empowerment Index (WEI) and Multidimensional Poverty Index (MPI) in South Africa. The WEI and MPI, which include categorical variables for rural and urban areas, are constructed using the Alkire-Foster approach. Moreover, the study employs a logistic regression model to assess the correlation between demographic variables, women's empowerment, and multidimensional poverty. This analysis is important for understanding the disparities between rural and urban areas, identifying indicators and dimensions that contribute the most to WEI and MPI, as a result this guides policy interventions to improve women's empowerment and multidimensional poverty in South Africa.

The study is structured as follows: Section 2 discusses the background of the study. Section 3 focuses on the Literature Review, demonstrating knowledge of relevant literature, and its importance, and identifying research gaps. Section 4 describes the Research Methodology, explaining the chosen approach, data description, and analysis techniques. Section 5 discusses the results, while section 6 concludes and draw some policy recommendations.

Chapter two

Background of the study

In recent years, efforts to reduce poverty have gained momentum globally as people are becoming more aware of the multifaceted nature of poverty that extends beyond money-metric measures. As a result, implementing strategies and initiatives aimed at empowering women has gained prominence given its potential to impact various dimensions of deprivations and well-being.

Despite South Africa's post-apartheid economic development progress, it continues to struggle with high levels of deprivations across various multidimensional poverty dimensions, that has unceasingly disproportionately affected women. Understanding the historical context that has shaped these deprivation dynamics and gender inequality in South Africa is essential when conducting a thorough analysis of the relationship between women's empowerment and multidimensional poverty.

According to the Europe Institute for Gender Equality (2019), gender inequality entails not incorporating the interests, needs, and objectives of both men and women, while simultaneously not acknowledging and appreciating the varied perspectives and experiences of various ethnic groups within each gender. In the context of South Africa, gender inequality has an intricate and deep history that dates to pre-colonial times and has evolved during centuries of colonialism, apartheid rule and the transition to democracy. Gender inequality in South Africa is ingrained in ethnic traditions of its diverse groups and cultures, which is aggravated by women's compliance.

In South Africa's pre-colonial era, women played an important role and significantly contributed to the agricultural sector which gave them considerable influence and authority within their communities (Hutson, 2007:83). However, colonialism shifted the economic scene when commercial agriculture was introduced, removing women from their central position in the agricultural sector and weakening their social standing within their communities (Hutson, 2007:83). The gender disparities that existed was codified by the colonial laws, granting women fewer rights than males (Baden et al., 1998). Many

traditional practices such a polygamy perpetuated male dominance, relegating women into submissive positions in households.

In efforts of seeking employment, women began to relocate to urban areas in the 1930s, however rules and regulations that enforced gender inequality made it difficult (Hutson, 2007:84). Rural areas offered limited economic opportunities, spurring urban migration in quest of better opportunities, thus poverty and its multifaceted nature remains high in rural areas relative to urban areas. South African women continue to experience oppression and gender discrimination, despite the considerable changes within the government and the drafting of a new Constitution in the post-apartheid era. However, one of South Africa's post-apartheid system objective is to continue to be devoted to improving gender equality, a fundamental element of the Constitution which guarantees women's equality and authorises affirmative action to combat gender disparities (Hutson, 2007:85).

South Africa's new constitution includes a variety of laws, acts, and legislation aimed at improving and promoting gender equality as well as eliminating discrimination against women across various facets of their lives. South Africa approved and adopted the 'Beijing Declaration and Platform for Action' in 1995, which mandates that governments must guarantee and integrate women's access to political structures and increase their participation in elections and political activities (Sadie, 2020). In addition, the declaration established a goal of having at least 30% female involvement and participation in political decision-making process by 2005 (Sadie, 2020). With the aim of promoting, realising and safeguarding women's rights, South Africa signed 'The Protocol to the African Charter on Human and People's Rights on the Rights of the Women in South Africa' in 2003.

Furthermore, South Africa is a signatory of the 'UN Convention for the Elimination of All Forms of Discrimination Against Women (CEDAW)' which is mandated to eliminate discrimination against women in politics, guarantee equal participation in the creation and execution of public policy, and permit them to hold public office at all levels of government (Sadie, 2020: 123). In August 2008, a protocol on gender and development was developed by the South African Development Community (SADC). Its objective was to have at least 50% representation of women in decision making positions within the public

and private sectors by 2015 (Sadie 2020:123). Governments were also advised to incorporate specific legislative measures and other strategies to guarantee that women have the same and equal opportunities as men in all electoral processes, this includes the administration of voting and elections (Sadie, 2020: 123).

South Africa developed a National Gender Policy framework under the Ministry of Women in the Presidency which outlines the country's vision for achieving gender equality and the steps to realize this vision (Borjesson, 2019:10). This framework tackles a number of national priorities, such as gender relations, poverty, HIV/AIDS, access to resources, employment, and women's political power.

High gendered difference of poverty and the Multidimensional Poverty Index (MPI) for women in South Africa can be linked or associated with historical events related to unequal access to education, resources as well as societal norms that restrict and limit their opportunities. The reduction of multidimensional poverty in South Africa may be attained through women empowerment, because it promotes gender equality and provides women with the necessary tools and opportunities needed to improve their economic and social well-being. As a result, women may now contribute more significantly to economic development, helping to lift households and communities out of poverty.

Chapter Three

Theoretical Framework

Economic theory on women empowerment and multidimensional poverty

This section provides a theoretical framework for comprehending the concepts of women empowerment and multidimensional poverty by exploring the relationship between these two concepts, offering insights into how they are conceptualised interrelated. Furthermore, examining a range of economic theories, delving into their viewpoints on women's empowerment and its potential to alleviate multidimensional poverty. The economic theories to be discussed below include human capital theory, feminist economic theory, capability, and agency approach.

Human Capital

The first theory under discussion is the human capital theory. Human capital can be defined as the knowledge, skills, attributes, and other traits that an individual can develop or learn to contribute to their productivity (Goode, 1959:149). Investing in women's human capital through avenues such as formal education and on-the-job training is instrumental in advancing women's empowerment, and also an effective approach for reducing multidimensional poverty within households.

As Dercon's (2006) study highlights, the erosion of human capital directly affects the future of multidimensional poverty. Taking into consideration the historical gender-based inequalities faced by women in South Africa, investing in their skills possesses the capacity and potential to expand their access to opportunities, productivity, and participation in the labour market. These benefits provide them with financial resources and empowers them to make informed decisions. For instance, Fleischhauer (2007:9) observes that educated and skilled women tend to have healthier families, are more inclined to prioritise taking their children to school and university, and actively participate in community and economic development. These efforts play a significant role in mitigating the multidimensional nature of poverty notably in South Africa.

Feminist economics theory

The Feminist Economics theory and its diverse approaches can also be employed in explaining how women's empowerment can affect multidimensional poverty. This theory integrates gender and efficiency as a primary analytical category which promotes the overall well-being by prioritising people's lives and treating women as objects of study through attempts to address the economic inequalities that still exist between women and men (Agenjo-Calderon & Galvaez-Munoz, 2019:146).

According to feminist economist Ester Boserup, women's status and position are strengthened when they achieve economic independence through avenues such as employment, education, decision-making autonomy, and capabilities (Sen, 2001:471). Furthermore, women's empowerment results in increased income allocation towards family and personal development, reduced vulnerability to shocks, improved decision-making, and enhanced social inclusion, leading to a reduction in multidimensional poverty.

The capability and agency approach

The capability approach as defined by Amaryta Sen is a comprehensive framework that is used to assess and measure an individual's well-being, social structures, and strategies for societal change; instead of focusing on an individual's or household's material possessions, it emphasizes people's actual capabilities to accomplish and be what they value (Robeyn, 2005: 94). Furthermore, this approach focuses on improving people's way of life/standard of living and removing barriers that hinder their freedom. The capabilities approach is pertinent to both women's empowerment and the assessment of multidimensional poverty, as it offers a more precise understanding of the deprivation that individuals and households experience (Alkire, 2013:102).

Gender is an important component in understanding disparities in capability deprivations, which highlights systemic variations in the freedoms or capabilities (Nussbaum, 2000: 220). Assessing gender-based inequality in capability deprivations requires approaches and techniques beyond measuring income or resources as indicators of freedom, to avoid

the risk of underestimating the level of women's deprivation (Sen, 1992:102). Understanding the elements that contribute to specific capability deprivation among women necessitates an examination of economic and social contexts that either facilitate or hinder improvements in societal attitude towards women empowerment.

It is important to address gender social normal that persist within a society, in order to help women effectively use and benefit from resources, as this significantly impact women's ability to act and make decisions (Kaschek, 2021: 41). This ability to act and make decision can be described as the freedom to pursue essential goals and or values, emphasizing that it involves bringing about change and making decisions, which are closely related to well-being (Kaschek, 2021: 42).

Women empowerment and gender equality are closely related, and this is attained when men and women have equal opportunities, access to resources, capabilities and when women acquire the autonomy to act, and decisions based on these capabilities. The capability approach highlights the importance of individuals/household's capabilities to enhance their well-being, focusing on the freedom to choose and pursue valued goals. Agency on the other hand, refers to the ability to act and bring about change, which is vital for individuals, women in particular, to exercise their capabilities.

Women empowerment dimensions and indicators

Empowerment is a multifaced social process aimed at granting individuals the ability to manage and direct their lives (Page & Czuba, 1999). It entails developing the ability for action, or power within individuals in order to address issues they deem as significant in their lives, communities, and society (Page & Czuba, 1999). In the context where women are marginalised and deemed inferior to man, empowerment is the process of giving women the power and opportunity to be more closely aligned with the power of dominant groups. This study incorporates three dimensions to measure the magnitude of women empowerment in South Africa, namely fertility, economic empowerment, and attitude towards domestic violence.

Fertility

This study examines and makes use of three indicators within the fertility dimension, namely: whether a woman has knowledge of any family planning methods, the age at which a woman had her first child, and how many children does a women desire to have.

Women empowerment and fertility tend to be casually related, with lower fertility contributing to higher levels of women empowerment and vice-versa (Phan, 2013: 50). Furthermore, cultural standards, including high fertility preference and prioritisation for the male offspring tend to influence women empowerment and fertility leading to larger families. Additionally, other dimensions that makes women empowerment such as high level of educational attainment, employment status, autonomy in decision-making, are strongly associated to reproductive characteristics such as lower number of children, planned fertility, marriage age, increased contraceptive usage and birth intervals (Malhotra, 2012; Phan, 2013: 50).

Economic empowerment

Economic empowerment is the process through which individuals experiencing poverty, lack of land ownership, and societal oppression overcome and break-free from these obstacles and achieve freedom, greater independence and improve their well-being/standard of living (Mandal, 2013: 21). This study examines two indicators within the economic empowerment dimension, namely women's level of educational attainment and employment status.

Women's level of educational attainment is a process that enhances and develops the skills and capabilities of women within their community, enabling them to contribute to their personal improvement, and elevate their household status (Habib et al., 2019: 67). Education and literacy enhance women's understanding of their rights, it gives them the autonomy to make informed and rational decisions and enhances women's economic opportunities by strengthening their employment prospects and financial independence. Educated women tend to prioritise investing in their children's education, provide better guidance to their entire family, reducing infant mortality and their attitude towards

domestic violence (Habib et al., 2019: 67). This implies that women's education has the potential to influence other dimensions of women empowerment.

Employment allows women to earn money, making them breadwinners and active contributors to their household, therefore fostering a sense of economic independence (Mandal, 2013: 21). Engaging in the labour market is an effective strategy for enhancing women's empowerment and boosting their bargaining power within and outside their household. According to Sen (2001), when women participate in income-related activities, their empowerment increases, allowing them to make informed decisions within their households, manage assets and participate in development activities (Habib et al., 2019: 68).

Attitude towards domestic violence

Domestic violence encompasses any behaviour or action aimed at exercising dominance, power, and control over an individual (Kiani et al., 2021: 1-2). Domestic violence is usually triggered by an imbalance of power, lack of empowerment, and gender disparities that may exist in a society. This study examines and makes use of four indicators within the attitude towards domestic violence dimension, namely: whether a wife should be beaten if she neglects children; disagrees with her partner if wife goes outside without consulting with the partner; and if she burns food.

Domestic violence has severe repercussions when it comes to their emotional health, mental health, well-being, families, and the community at large (Kiani et al., 2021: 2). According to the World Health Organization (2017) suggests various strategies that can be implemented with the aim of reducing domestic violence against women. These include limiting children's exposure to violence, enhancing communication skills through avenues like training, providing economic support to households, challenging social and cultural norms that reinforce male dominance over female, empowering and educating women, eliminating gender discrimination within the labour market.

Multidimensional poverty dimensions and indicators

A broader and comprehensive method of conceptualising and measuring poverty is by considering the determinants of well-being, standard of living and the access individuals have to these determinant (Dasgupta & Weale, 1992: 119). According to Abdulai and Shamshiry (2014), poverty includes a range of deprivations that affect households, limiting their ability to function, and contribute constructively to society. These range of deprivations can be education, health and standard of living, also regarded as multidimensional poverty. The decision to use a more comprehensive approach in measuring poverty rather than money-metric approach is motivated by various factors, including the limited quality of income and expenditure data in South Africa, as well as the influential works of Sen (1976, 1985, 1992, 1995), which highlights the incorporation of various aspects well-being such education, health, and standard of living when measuring poverty (Batana, 2013: 2).

Education

This study utilises two indicators within the educational dimension in measuring the level of deprivation within a household namely: whether there is a child enrolled in school and the years of educational attainment for household members. The importance of education as a means of eradicating poverty in South Africa is emphasised in the National Development Plan 2030 as it plays a vital role in equipping individuals with the necessary skills and knowledge for better employment opportunities. Moreover, it enables individuals to make informed and rational decisions regarding their health, finances, and quality of life (UNDP, 2030).

The enrolment of children in an education facility is vital in determining the level of deprivation within a household and in eradicating generational poverty in South Africa. It represents access to foundational and basic learning opportunities, which are important for cognitive development and potential future educational attainment. Furthermore, school enrolment, secondary education, is frequently associated with improved social and economic outcomes.

The health dimension of multidimensional poverty index includes a variety of health and well-being indicators such as nutrition and child mortality which are essential when measuring and addressing poverty. According to the World Bank (2003:14), vulnerable and disadvantaged households tend to experience higher rates of child mortality, low nutrition levels, increased illness levels and restricted access to healthcare. Malnutrition increases the risk of illness, and premature death, restricting people's capabilities to make a living, and are a result of poverty and underdevelopment (World Bank, 2003: 57).

Standard of living

In the multidimensional poverty index, the standard of living dimension assesses various elements of a household's well-being and quality of life other than consumption and income levels. This dimension comprises of indicators such as access to electricity, safe drinking water, clean energy for cooking, improved sanitation, access to assets and dwelling type (housing).

The deprivation of access to energy is regarded as energy poverty which is defined as the inability to use modern fuels and lack of basic lighting for households and productive operations (Gaye, 2007). According to Diallo and Moussa (2020), the cost of electricity can be barrier of access, affecting household wealth by influencing labour productivity, gender equality in employment, health outcomes and education. According to Bosch et al., (2001), financial restrictions, as well as cultural, economic, legislative, and institutional conditions contribute to the lack of safe, clean drinking water and sanitation. For instance, in urban areas, households residing in informal settlements may lack access to safe, clean drinking water and sanitation due to the lack of property rights, which precludes utilities from establishing infrastructure (Bosch et al, 2001).

According to Bosch et al., (2001) lack of improved sanitation and safe drinking water can cause water and sanitation-related infections, diarrheal malnutrition, and reduced life expectancy. In terms of educational poverty, it can lead to lower school attendance, especially among girls, due to poor health or water related responsibilities.

Control variables

In this study, a variety of demographic and socioeconomic factors are defined as control variables in order to account for potential confounding effect on the correlation between multidimensional poverty at household level and women's empowerment at individual level.

Age

The age control variable serves as a vital factor in the nexus of women's empowerment and multidimensional poverty; as it significantly influences how women get access to economic opportunities, resources and level of empowerment. Kabeer (2001) explains empowerment as "the process of increasing the capacity or power of individuals or groups to make strategic life choices in a context where this ability was previously denied to them" and age plays an important role in this dynamic. This is supported by empirical data which shows that younger women often have different challenges and opportunities than older women (Jejeebhoy, 2000; Batool & Jadoon, 2018).

Younger women often face more significant hurdles than older women, such as lower levels of education, job experience, and social connections, especially in developing nations. These challenges can limit their empowerment and increase the likelihood of household poverty. Research consistently shows that younger women generally have less empowerment compared to their older counterparts, who often enjoy better status, rights, and decision-making power (Jejeebhoy, 2000; Batool & Jadoon, 2018). Therefore, considering age is essential when examining the link between women's empowerment and multidimensional poverty.

Occupational group

A key factor in understanding the relationship between women empowerment and poverty is occupational groups. The principal occupation of a household head often shapes the household's economic stability, financial stability as well as access to opportunities. Households involved in self-employment and informal employment tend to face different economic challenges relative to households who are dependent on formal employment.

According to Husain (1998) study, the household head's occupation can serve as an initial endowment, impacting the success of efforts to improve household welfare. By accounting for occupational groups, this study gains a clearer understanding of how various economic activities influence women empowerment and household poverty levels, leading to a more thorough analysis.

Population group

When examining the nexus between women empowerment and poverty, population group plays an important role since various groups often face unique historical and socioeconomic challenges. For example, in South Africa, the lingering repercussions of apartheid have resulted in major inequalities in access to education, job opportunities and economic resources, more particularly among Black/African communities (Haq et al., 2018). These historical inequalities have shaped today's socioeconomic landscape, therefore affecting how different ethnic groups experience empowerment and poverty. By using population group as a control variable, researchers can aid society to better understand inequities, making empowerment projects more effective for different sectors of the community (Haq et al., 2018).

Women Empowerment and Multidimensional Poverty

This study focuses on the two UNDP's Sustainable Development Goals 2030 in assessing the relationship between women empowerment and multidimensional poverty. Goal 1 aims to eliminate extreme poverty and decrease the number of people or households living in poverty in all its multifceted dimensions, while Goal 5 seeks to eradicate gender inequality and empower all females by addressing discrimination, violence against women and eliminating harmful practices towards women (SDG, 2019).

Empowering women by providing them with education and skills enables them to generate an income by finding better employment opportunities and attain financial independence. This type of economic empowerment serves as an initial stage for women to actively participate in household decision-making, leading to the allocation of resources towards education, basic needs, and health. Women empowerment goes beyond

individual upliftment; it entails breaking down the complex structure and nature of multidimensional poverty, gradually paving the way for a more equitable and prosperous future for all South African citizens.

Empirical overview

Women Empowerment Index

This section provides a comprehensive summary of existing empirical studies related to women empowerment by exploring international studies first, followed by South African literature, to develop a broad understanding of women's development and the dimensions used to measure the Women Empowerment Index (Roy et al, 2018). Varghese (2011) conducted a study a women empowerment study in Sonar, Oman and the findings reveal that women are more empowered in household and economic decisions relative to social empowerment (Varghese, 2011: 45). Furthermore, there is a positive relationship between income, education, work status and asset ownership with women empowerment (Varghese, 2011:45). A study conducted in the rural West Bengal in India reveals that educated Self Help Groups members tend to have better empowerment scores, and rural Self Help Groups have better financial access (Roy et al., 2018) Another study conducted within 26 African countries, investigated the association between women's empowerment and early childhood development, with a focus on children aged 36 to 59 months using National Health Survey's data (Ewerling, 2020).The study discovered that higher levels of women empowerment are associated with improved literacy-numeracy skills in children, particularly in the social dependence domain (Ewerling, 2020).

Thobejane et al., (2023) conducted a study in South Africa, Gauteng region using The Women Empowerment in Agriculture index (WEAI) to quantify the magnitude of empowerment levels among commercial farmers. The study findings suggests that factors like time constraints and workload hinder empowerment, while productivity, leadership, ownership, income, and time utilization are important for their empowerment. Furthermore 85% of the participants felt empowered, and the rest did not due resource constraints and insufficient support from the Department of Agriculture.

The measurement of women empowerment is vital and can help and guide policymakers in choosing initiatives and strategies that prioritise improving aspects of well- being and empowerment that were lacking (Thobejane et al., 2023; Ewerling, 2020; Roy et al., 2018; Varghese, 2011). Furthermore, the dimensions and indicators of empowerment deficits vary across different areas.

Multidimensional poverty Index

Recently, studies have taken a more comprehensive approach in measuring poverty, recognising the multifaceted nature of poverty. Measuring poverty using the Multidimensional Poverty Index allows for a more precise assessment and understanding of the diverse manifestations in which individuals experience poverty. This broader approach considers factors like education, health, standard of living and asset ownership. Furthermore, the measurement of MPI serves as a valuable tool for researcher and policymakers to quantify these deprivations across different populations (Santos & Villarto, 2018; Megbowon, 2018).

An important point that these studies highlight is that poverty is uniformly distributed. Abubakar's (2022) study highlights the significant variations in poverty rates across different regions. This emphasizes the need for geographically targeted interventions that address the unique challenges that various regions face. Furthermore, according to the Oxford Poverty and Human Development Initiatives, urban areas tend to be deprived in aspects such as child mortality and malnutrition, while rural areas tend to be deprived in areas such as lack of basic infrastructure, and services like electricity sanitation, and safe drinking water. According to Ayevbuomwan et al. (2016) study, empowering women is essential to ending the cycle of poverty, especially through avenues such as educational attainment and access to resources. This highlights the importance of implementing policies and strategies that promote women's education and economic opportunities especially in emerging economies.

Studies conducted by Megbowon (2018) and Santos & Villarto (2018) demonstrate the efficacy of initiatives that improve access to employment opportunities and sanitation and education. Through the identification and resolution of these variables, policymakers can

formulate more efficacious approaches to reduce poverty. The studies forementioned underscore the multifaceted nature of poverty. By employing the MPI and acknowledging regional, sectoral, and gender-based variations, these studies provide valuable insights for policymakers crafting effective poverty reduction strategies that address the root causes of poverty in all its dimensions.

Relationship between women empowerment and multidimensional poverty in South Africa

The body of research below identifies a literature gap on the effect of women empowerment on multidimensional poverty, particularly in South Africa, within rural and urban contexts. Several studies highlight a positive correlation between women's empowerment and poverty alleviation (Nadim & Nurlukman, 2017; Biswal et al., 2023). Improvements in women's empowerment and reduction in the multifaceted nature of poverty requires factors such as income generation, high levels of educational attainment, and increased autonomy in decision making (Nadim & Nurlukman, 2017; Biswal et al., 2023). According to Shahbaz et al., (2017), social barriers such as limited education and restricted mobility, and economic barriers such as financial dependence can make it difficult for women to achieve empowerment.

From the research above, policy recommendations include promoting and increasing access to education, microfinance initiatives, and increased participation in women's decision-making process (Nadim & Nurlukman, 2017; Biswal et al., 2023; Niaz & Igbal, 2019). According to Zanbak & Soycan (2023) study, it is essential to address social dimensions such as safety, housing, and education that affects and contributes to women's poverty. This analysis of existing literature lays the groundwork for further investigation into ways to empower women and reduce multidimensional poverty in South Africa, with a focus on the unique problems that women face in urban and rural environments.

Chapter Four

Research design

This study uses quantitative methods to investigate the level and effect of women empowerment and/on multidimensional poverty in South Africa, further comparing rural and urban areas. The Alkire Foster (2011) method is utilised in measuring the magnitude of women empowerment and multidimensional poverty by constructing indices for both social phenomena.

The Alkire-Foster method is a technique for constructing multidimensional indices that, in this case, measures poverty and women empowerment by combining information and data from several dimensions and indicators (Alkire et al., 2015). This approach captures the various facets of deprivations and empowerment that individuals or households may experience, leading to a more comprehensive understanding of empowerment and poverty that may exist within South Africa. The Women Empowerment Index (WEI) and the Multidimensional Poverty Index (MPI) are constructed in a similar manner, except for their distinct dimensions, indicators, and cut-offs. There are additional steps in constructing the indices using the Alkire-Foster technique which are elaborated on below, however the three main steps in the construction of the indices include selecting dimensions and indicators, determining cutoffs for the indicators, and calculating the indices.

The 'Counting Approach' within the Alkire-Foster method is employed in this study in involves identifying households or individuals who are deprived in each dimension based on specific indicators, and then summing these counts to create a multidimensional poverty measure (Alkire et al., 2015:1). This approach is broken down into the following six steps:

Step one: Defining the relevant dimensions and indicators (Alkire et al., 2015:1).

Step two: Establishing a set of weights one for each indicator, xi (Alkire et al., 2015:1). The sum of the weights should equate to one - ∑wi=1

Step three: Creating binary deprivation scores for the indicators, with 1 indicating deprivation and 0 indicating non-deprived (Alkire et al., 2015:1). If a person's achievement in an indicator, xi , is below the deprivation cutoff zi (xi<zi), the person is considered to be deprived and a dummy variable Ii is set to 1; otherwise, Ii is set to 0.

Step four: Summing up the weighted deprivations value to get a deprivation score (Alkire et al., 2015:2).

The deprivation score, ci, is the sum of the weighted deprivation for each household.

$Ci=\sum^{m}_{i=1} w_i I_i$

Step six: Establishing a poverty threshold score, above which a household is considered poor (k=1/3), respectively (Alkire et al., 2015:2). If ci>=k, the person is considered poor.

Ci(k) = ci if ci>=k 0 if ci

Poverty headcount ratio (H): H=q/n, where q is the number of multidimensionally poor, and n is the number of households.

Intensitiy of poverty (A): A=∑(ci(k))/q, indicating the fraction of indicators in which the multidimensionally poor household is deprived.

MPI: MPI = H x A, reflecting both the proportion of the population that is multidimensionally poor and the average proportion of weighted deprivation the person experiences.

The methodology employed in constructing the MPI is akin to that of WEI, differencing primarily in the assignment scores and cutoffs. In constructing WEI, a score of 1 is assigned if an individual is empowered and a score of 0 is assigned if otherwise. A cut-off value of 0.67 is utilized in WEI, whereby an individual is considered empowered if their score exceeds the cut-off value. Furthermore, the MPI is constructed at a household level and WEI is constructed at an individual women level. Dimensions and indicators used for the indices are discussed below.

Description of the dataset

This study utilises data from the 2016 Demographic and Health Survey (DHS) conducted in South Africa. The Demographic and Health Survey (DHS) is a collection of nationally representative household surveys on a variety of different topics in a specific county that has been conducted in more than 85 countries, since 1984 (Corsi et al., 2012:1602). The DHS gathers both objective and self-directed data on a variety of health and demographic topics such as fertility, reproductive health, maternal and child health, reproductive health, nutrition, adult health behaviours, women empowerment, and poverty-related variables through nationally representative household surveys (Corsi, 2012: 1602).

In the construction of the MPI, this study incorporated a variety of DHS datasets. For the measurement of child nutrition and child mortality, the study utilizes the child recode (KR) and the birth recode (BR), respectively. Furthermore, the study integrates data from the individual women (IR) and men recode (MR) to determine the number of people who have reported the death of a child. The household member recode serves as the foundation for the MPI, it is used to merge the datasets, and is pivotal in constructing indicators related to the education and standard of living dimension. In the construction of the WEI, this study utilizes the individual women recode (IR) dataset to measure the indicators within each dimension. Lastly, the study merges the Household member (PR) and the Individual Women (IR) recode in estimating and regressing the correlation of women empowerment and multidimensional poverty in South Africa.

Study Variables

Multidimensional Poverty Index

This study measures multidimensional poverty at household level by constructing a multidimensional poverty index following steps highlighted earlier. Welfare dimensions used in constructing the index are a) education, b) health, and c) standard of living. Each dimension has an equal weight of 1/3. Table 1 displays the multidimensional poverty dimensions, indicators, and weights employed in this study. These selections have been guided by the insights gained from the DHS datasets, and the existing literature (Alkire,

2021; Santos et al., 2018; Fransman & Yu, 2019; Alkire & Housseini, 2014). Deprivation cut-offs for the indicators are discussed below.

***Table 1**: MPI dimensions, indicators, weights*

Dimensions	Indicators	Weights (1/3) each
Education	Child enrolment	1/6
	Years of education	1/6
Health	Child nutrition	1/6
	Child mortality	1/6
Standard of living	Access to electricity	1/18
	Access to safe drinking water	1/18
	Access to improved sanitation	1/18
	Access to clean cooking fuel	1/18
	Type of dwelling (housing)	1/18
	Possession of assets	1/18

Education

Education is mandatory for all South African children aged 7 to 15 as per the South African Schools Act of 1996 (Republic of South Africa, 1996). In this study, a household is considered as deprived if at least one child aged seven to fifteen years is not enrolled in school, and in such cases, assigned a score of one. Conversely, a household is considered not deprived if all children between the age of 7 and 15 within a household are enrolled in school, therefore they are assigned a score of 0. A household is also

deprived in education, if there is no adult member who has completed at least 10 years schooling.

Health

The second dimension selected to measure the multidimensional poverty index is health which is proxied by the following indicators, namely, child nutrition and child mortality. A household is nutrition deficient and considered as deprived if a child within the household has a Weight-Age Standard Deviation (WAZ), Heigh-Age Standard Deviation (HAZ), Weight-Height Standard Deviation (WHZ) score of -2 or lower. The child mortality indicator is categorized as follows, a household is considered deprived and assigned a score of one if any women in the household has had a child who died aged 0 to 18 years, and if not a score of zero is assigned and considered as not deprived.

Standard of living

The third dimension selected as a measurement of multidimensional poverty index is the household's standard of living which is proxied by the following indicators: if the household has access to electricity, safe drinking water, clean energy for cooking, improved sanitation, type of dwelling (housing) and possession of assets.

A household is deprived if it has no access to electricity. The electricity indicator will be coded as follows: a categorical value of 1 is assigned to household with no access to electricity, and a value of 0 is assigned households with access to electricity. The sanitation indicator incorporates the type of toilet facility the households use and is coded as follows: a categorical value of 1 is assigned and considered deprived if a household does not have access to flush toilet, and a value of zero is assigned if the household has access to a flush toilet. The third indicator assesses whether the household has access to safe and clean drinking water is coded as follows: a categorical value of 1 is assigned if a household does not have access to piped water in a dwelling or in the yard, and a value of 0 is assigned if the household has access to piped water in a dwelling or in the yard.

The fuel for cooking indicator takes into consideration what type of method is used when cooking. This indicator is coded as follows: 1 – the household is considered deprived if it uses paraffin, wood, coal, dung, other, or none, and 0- if the household uses electricity, gas, or paraffin for cooking. If a household does not own at least two of the following assets – television, radio, telephone, cell phone, fridge, bicycle, and vehicle- a score of one is assigned and the household is considered as deprived. Conversely, a score of zero is assigned and considered as not deprived if a household owns two or more of the assets above. A score of one is assigned if the roof, floor, or walls are constructed of low quality material, and a score of zero is assigned if the floor, roof, or walls are constructed for considerable good quality material for the type of dwelling indicator.

A household is considered multidimensional poor if it is deprived in at least 0.33 of the weighted deprivations. This study makes use of the Adjusted Headcount Ratio for interpretation.

$M_0 = H * A$

Poverty Intensity (A) measures the average degree of deprivation experience by individuals or households living in poverty, whereas Poverty Incidence (H) indicates the proportion of the population that is multidimensionally impoverished.

Women Empowerment Index

This study measures women empowerment by considering individual women within the domestic context by creating a women empowerment index using the following dimensions: a) economic empowerment, b) attitude towards domestic violence, and c) fertility. Each dimension has an equal weight of 1/3. We note that while the MPI focusses on deprivation cut-offs within dimensions/ indicators of the index, the WEI in this study focusses on empowerment cut-offs within dimensions/ indicators of the index. That is, for the MPI deprivations are coded as 1 while not deprived is 0, conversely for WEI empowered is denoted as 1 while not empowered is 0.

Generally, if a woman is empowered in the i^{th} indicator, then Xi is set to the value 1; and if an individual is disempowered, Xi is set to the value 0. The cut-off point for a woman to

be categorised as empowerment is if she is empowered in at least 2/3 of the weighted empowerment indicators. The measure interpreted for analysis is calculated similarly to M0 under the MPI. Therefore, the individual empowerment score ranges from 0 to 1, where 0 denotes disempowerment and 1 denoted empowerment across all indicators taken into consideration.

Table 2 below displays the women empowerment dimensions, indicators, and weights employed in this study. The cut-offs for empowerment within the indicators are discussed below.

***Table 2**: WEI dimensions, indicators, weights*

Dimensions	**Indicators**	**Weights (1/3) each**
Economic Empowerment	Level of educational attainment	1/6
	Employment status	1/6
Attitude towards domestic violence	Whether wife should be beaten if she neglects children, argues with her partner, goes out without telling her partner, and burns food	1/3
Fertility	Knowledge of modern fp methods	1/9
	Age at first birth	1/9
	Ideal number of children	1/9

Economic empowerment

In this study, economic empowerment has been selected as a dimension to measure women's empowerment, proxied by employment status, and education levels as indicators.

This study assigned the following scores: 0 - if a woman is not employed, and 1 - if she is employed. Women's level of educational attainment is coded and categorised as follows: 0 - women with less than a primary education, 1 – women with at least a completed primary education.

Attitude towards domestic violence

Women's attitudes towards domestic violence indicators are compressed as follows: whether a wife should be beaten if she neglects children, if she argues with her spouse, if the wife goes outside without telling partner/spouse, and if she burns food. This has been categorised as follows: 0 - affirmative responses from women and 1 - negative responses from women.

Fertility

Fertility represents a dimension that holds the potential to influence women's empowerment, and proxies used include a woman's awareness of available contraceptive methods, the age at which she had her first child and her desired number of children. The coding approach is structured as follows: 0 - when a woman is not aware of any modern family planning methods, and 1 - when a woman's aware of any modern family planning methods.

An important measure of the fertility dimension is age at first birth, and in accordance with Nyathi and Benhura (2021), a code of zero is assigned if the age at first birth was less than 21 years, a code of one if the age at first birth is from the age of 21 years. A desire for a smaller family size is viewed as more empowered, as they may have more influence over family planning choices, due to lesser financial implications. The categorisation of the desired number of children is as follows: The coding for empowerment regarding the

ideal number of children desired as follows: 0 - if women desire more than three children, one if the women desire less than three children.

Analysis Approach

The Logistic regression is employed to regress the relationship between women empowerment and the multidimensional poverty index in both rural and urban areas of South Africa. This study employs the Logit regression model because it extends multiple regression analysis techniques to situations where the outcomes variable or dependent variable is categorical, in this case the MPI dummy variable (Dayton, 1992:2). Furthermore, this study utilises marginal effects in the logit regression model because it offers a clearer interpretation of how independent variables influence the probability of the categorical outcome (Mood, 2010:73). Unlike using coefficients obtained directly from logit regression model results, which expresses changes in log odds, therefore making it difficult for interpretation (Mood, 2010:73).

The aim is to assess whether there is a statistically significant relationship between variables such as age (AGE), occupation (OCC), population group (PG), women empowerment (WE) and multidimensional poverty. The econometric model is specified as follows:

$$MPI_i = \alpha_1 + \beta_2 AGE_i + \beta_3 OCC_i + \beta_4 PG_i + \beta_5 WE_i + \epsilon_i \qquad (1)$$

Where, α1 indicate a constant, β2 to β5 indicates the coefficients of the explanatory/independent variables, and ϵi indicate the error terms within the econometric model above.

This study incorporates demographic variables also known as control variable: Age variable is categorised in 5-year intervals from 15 to 49 years, derived from the DHS dataset; occupational groups, which is also sourced from the DHS dataset, however ‘clerical’ occupation is grouped with ‘professional, technical, and managerial’ group, and those in working in the agricultural sectors are grouped together; population groups which focuses on individuals who identify as Black/African and those who do not.

Age

This study will use age as one of the control variables, encompassing individuals from the age of 15 – 19 years, as delineated in the Demographic and Health Survey (DHS) data. The reference group for age is women aged 15-19 years.

***Table 3**: Age description*

Variable	**Description**	**Code**
Age	15-19	0
	20-24	1
	25-29	2
	30-34	3
	35-39	4
	40-44	5
	45-49	6

Occupational group

The occupation variable in the econometric model will be represented as dummy variables. Dummy variables also known as binary variables with values of 0 or 1 that represents categories inside a category variable in this case occupation variable (Skrivanek, 2009). The reference group for occupational group is women who are unemployed. The occupation variable is assessed and coded in the manner shown in Table 4 below:

***Table 4**: Occupational group*

Variable	Description	Code
Occupational group	Unemployed	0
	Professional, technical, clerical, and managerial	1
	Agricultural (Self-employed and unskilled)	2
	Household and domestic	3
	Services	4
	Skilled manual	5
	Unskilled manual	6
		7

Considering the list of occupation variables, the econometric model will be as follows: The variable B3OCC2 is a set of dummy variables that represent the occupation variables. Each variable will take in the value of 1 if the individual falls into that occupation category and 0 if otherwise. The dummy for unemployed workers is omitted from the regression analysis as it serves as a base category.

Population Group

The population group variable is assessed and coded in the manner shown in Table 5 below and the reference or base category is individuals who identify as Black/African.

Variable	**Description**	**Code**
Population group	Black/African	0
	Not Black/African (white, coloured, Indian/Asian, Other)	1

Using a summing approach, the equation below captures all demographic factors, such as age, occupation, population group, and women's empowerment.

$MPIi = \alpha 1 + \beta_2 \sum_{i=1}^{6} AGEi + \beta_3 \sum_{i=1}^{6} OCCi + \beta_4 PG_i + \beta_5 WE_i + £_i$

Comparison of rural and urban area

To assess whether the correlation between women empowerment and multidimensional poverty differs between rural and urban areas, we include an interaction term for women empowerment and rural area dummy variables in the regression model. This assists to show whether rural households are also more vulnerable in this indicator compared to urban areas, thereby supporting more effective and equitable poverty reduction measures by analysing this link.

$MPIi = \alpha 1 + \beta_2 \sum_{i=1}^{6} AGEi + \beta_3 \sum_{i=1}^{6} OCCi + \beta_4 PG_i + \beta_5 WE_i + \beta_6 Rural_i + \beta_7 (WEI * Rural_i) + £_i$

As a cautionary note, this study's regression analysis of the effect of women's empowerment on multidimensional poverty may suffer from omitted variables. Unobservable variables could also influence both women's empowerment and multidimensional poverty. Additionally, there is a potential for reverse causality, where multidimensional poverty might also influence women's empowerment. However, due to

data limitations, this study cannot control for these challenges. The results are therefore more indicative rather than definitive of the actual relationship between women's empowerment and multidimensional poverty.

Chapter five

Discussion of results

Multidimensional poverty index

The multidimensional poverty index results are derived using a poverty threshold of 33%, indicating that households are considered multidimensionally poor if their weighted deprivation count is at least one third of the sum of all weighted deprivation which equates to one. This study considers different cutoffs to assess the robustness of the results, as discussed in one of the following sections. The following discussion primarily examines the overall MPI for household heads, in both rural and urban areas.

Overall picture by households

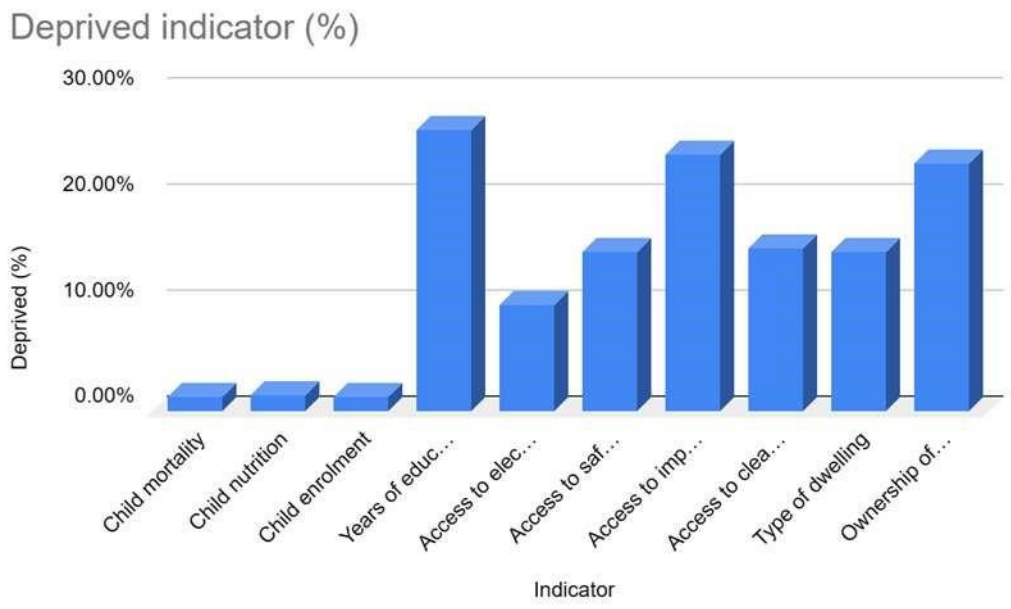
This study first constructed the Multidimensional Poverty index (MPI) for all de jure South African individuals in the dataset, which comprised approximately 37,802 observations. The resulting poverty headcount index (M0), which represents the proportion of individuals living in multidimensional poverty, was estimated around 3.4%. However, the main objective of this study is to analyse and apply the MPI specifically to household as proxied by household heads. In this subset of the data, which consists of a sample of 11,012, the M0 for households was found to be approximately 3.2%. This suggests a slightly lower frequency of multidimensional poverty among household than in the general population investigated.

Decomposing Multidimensional Poverty Index by dimensions and indicators

The decomposition of the multidimensional poverty index (M0) allows for an assessment of the contribution of each dimension to the multifaceted nature of poverty. Table 6 below presents the contribution of each dimension - education, health, and standard of living – to the overall M0, disaggregated for rural and urban areas. Figure 1 provides a visual presentation of the percentage of deprived households in each indicator. The results show that the largest amount of deprivation is evident in the years of schooling indicator, which is approximately 26.48% of households. Following that, access to improved sanitation is

the second greatest indicator with the highest deprived households, impacting around 24.09% of households. In contrast, the results reveal that household are the least deprived in the child mortality and child enrolment indices, with deprivation rates of 1.24% and 1.34%, respectively.

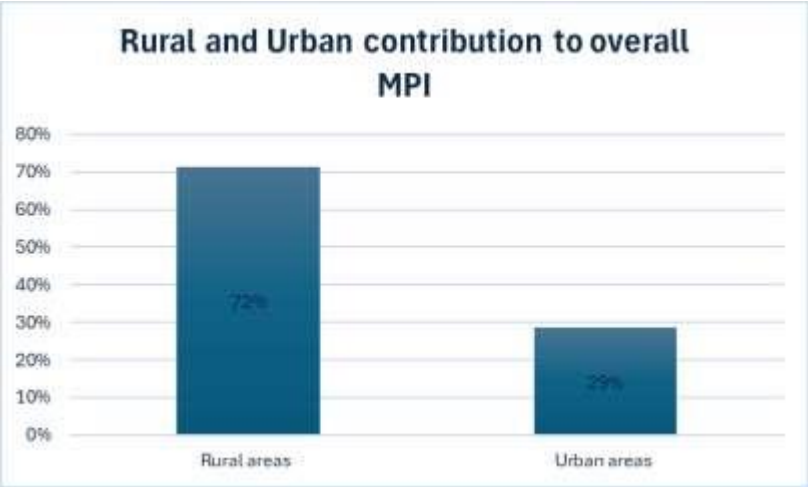
***Figure 1**: Deprived percentage as per indicators*



Decomposing Multidimensional Poverty Index by dimensions and indicators (rural and urban areas)

Figure 2 depicts the MPI results for households residing in rural areas and urban areas. As mentioned above, the M0 across all households was recoded at 3.2%. Among rural households, 71.5% of households contributed to the overall MPI score with an M0 of 5.6%, demonstrating that multidimensional poverty is more prevalent to rural areas. In comparison, 28.6% of household residing in urban areas contributed to the overall MPI score with an M0 of 1.5%, indicating a lower but still considerable prevalence of multidimensional poverty in urban contexts. The study's findings align with those of Jackson and Yu (2023), which indicated that MPI estimates are more pronounced for rural areas relative to urban areas in South Africa with a difference of 12%.

***Figure 2**: Rural versus Urban areas (MPI)*



Across all households, the standard of living dimension contributes most to the overall M0, accounting for 51.5%. Similarly, in rural areas, the standard of living dimension has the highest contribution at 52.8%, while in urban areas, it accounts for 48.3% of the M0. The health dimension follows, contributing 42.5% to overall poverty in all households, 40.9% in rural households, and 46.4% in urban households. Conversely, the education dimension has the lowest contribution, at 6% for all households, 6.3% for rural households, and 5.3% for urban households.

These findings highlight the varying impacts of each dimension on poverty across different geographical settings, providing valuable insights for targeted policy interventions. This finding is similar to that established by Alkire and Santos (2010), where the standard of living dimension was the most significant contributing factor to multidimensional poverty in their analysis of 55 countries out of 104 countries. This results also implies that households resulting in rural areas lack essential infrastructure and resources that supports well-being. Households residing in rural areas contribute more to health-related dimensions relative to households residing in urban areas, this can be due to restricted healthcare access, insufficient infrastructure, lower health educational levels, and low sanitation. However, households residing in urban areas contribute more to education dimension relative to rural areas.

***Table 5**: Contributions of dimensions and indicators to MPI*

MPI Indicator	Overall	Urban area	Rural area
Health dimension	**0.060**	**0.053**	**0.063**
Child mortality	0.027	0.023	0.029
Child nutrition	0.033	0.030	0.034
Education dimension	**0.425**	**0.464**	**0.409**
Child enrolment	0.038	0.060	0.029
Years of education	0.387	0.404	0.380
Standard of living	**0.515**	**0.483**	**0.528**
Access to electricity	0.082	0.097	0.076
Access to safe drinking water	0.079	0.041	0.094
Access to improved sanitation	0.069	0.111	0.053
Access to clean cooking fuel	0.081	0.034	0.100
Type of dwelling (housing)	0.084	0.077	0.087
Ownership of assets	0.120	0.123	0.118

Women empowerment index

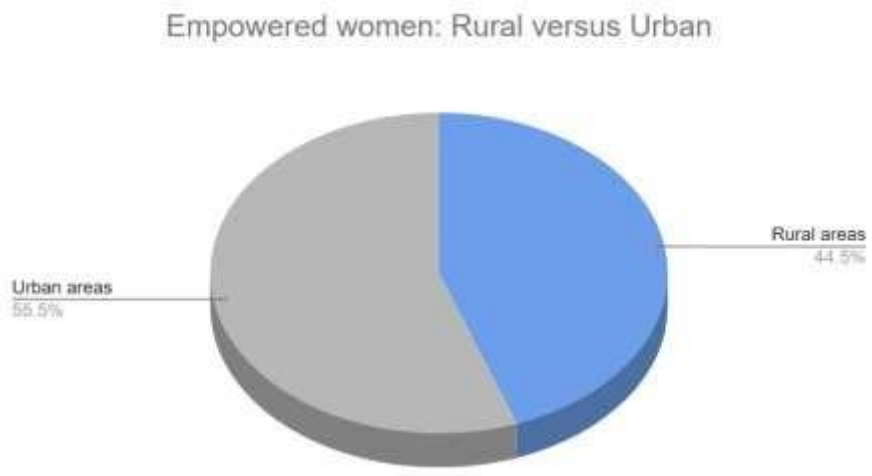
The women empowerment index results are derived using an empowerment cutoff of 67%, indicating that individual women are classified as empowered if their weighted

empowered count is at least two thirds of the sum of all weighted empowerment across indicators which equate to one. This study considers different cutoffs to assess the robustness of the results, as discussed in one of the following sections. The following discussion focuses on individual women in South Africa, in both rural and urban areas.

Overall picture for individual women, in rural and urban areas

This study constructed a women empowerment index for all individual women in South Africa, using the same methodology as the Multidimensional Poverty index, with a sample size of 5672. The findings revealed that approximately 61.4% of the women in South Africa are empowered, indicating an M0 of 0.614. Figure 3 provides a visual presentation of all the proportion of empowered women in South Africa, highlighting the difference between those who reside in rural and urban areas. According to this study's findings, women residing in urban areas are more empowered relative to those residing in rural areas, with a difference of approximately 11% points.

***Figure 3**: Rural versus Urban area*

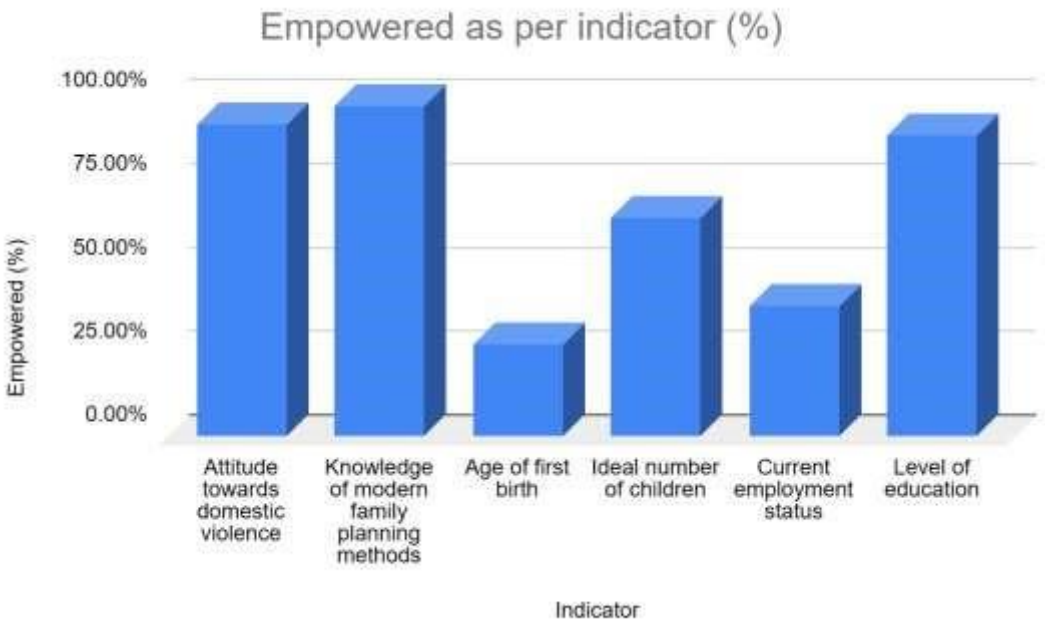


Decomposing Women Empowerment index by dimensions and indicators

The deconstruction of the Women Empowerment Index (M0) facilitates for an assessment of the various contributions of each dimension to the varied character of empowerment. The tables and figures below show the contributions of the economic, attitude towards domestic violence, and fertility components to the overall M0, broken down by rural and urban areas.

Figure 4 depicts the percentage of individual women in South Africa across various indicators. According to the findings, knowledge of any family planning methods has the highest empowerment rate, at 99.88% suggesting that women are knowledgeable of any modern family planning methods whether through the radio, clinics, community groups and television. Followed by attitude towards domestic violence as the second highest empowerment indicator, with 93.62% of empowered women. In contrast, empowerment rates are the lowest for age at first birth (27.73%) and employment status (39.02%) among women. These findings highlight the necessity to target certain areas in order to increase overall empowerment levels.

***Figure 4**: Empowered as per indicator (%)*



From the sample of individual women in South Africa and table 5 below, it is evident that attitude towards domestic violence dimension makes the largest contribution to the overall WEI (M0), accounting for 40.9% of the index. This highlights the critical impact that views about domestic abuse have in affecting women's empowerment levels. In rural areas, attitudes regarding domestic violence contribute the most to the M0, accounting for 41.8%. Similarly, in urban regions, this dimension comprises 40.3% of the M0. These findings highlight the need of changing attitudes about domestic abuse in attempts to empower women, particularly in South Africa.

***Table 6**: Contributions of dimensions and indicators to WEI*

WEI indicator	**Overall**	**Rural area**	**Urban area**
Attitude towards domestic violence	***0.409***	***0.418***	***0.403***
Fertility Empowerment	**0.295**	**0.290**	**0.298**
Knowledge of modern family planning methods	0.136	0.139	0.134
Age at first birth	0.046	0.041	0.049
Ideal number of children	0.113	0.110	0.115
Economic Empowerment	**0.296**	**0.292**	**0.299**
Employment status	0.097	0.090	0.101
Level of educational attainment	0.199	0.202	0.198

Descriptive statistics for demographic variables

This section provides the descriptive statistics of socio-demographic variables used in the regression analysis. It is important to note that integrating multidimensional poverty and women empowerment datasets resulted in the reduction of observations to 5638, those residing in rural areas are 2371 and those residing in urban areas 2997. From table 8 below, the p-values for the t-test are less than 0.05 meaning that there is statistical difference in the means between rural and urban areas Thus, constructing the multidimensional poverty index and women empowerment index from the merged dataset is critical for the regression analysis of this study.

***Table 7**: Descriptive statistics for demographic variables*

Variables	**Mean**	**Mean (R)**	**Mean (U)**	**P-value (ttest)**
Population group				
Black/African	0.877	0.978	0.800	0.000
White	0.021	0.008	0.031	
Coloured	0.093	0.014	0.156	
Indian/Asian	0.009	0	0.125	
Population group				
Black/African	0.877	0.978	0.800	0.000
Not black/African	0.123	0.022	0.202	

Age group				
15-19	0.038	0.048	0.030	0.000
20-24	0.136	0.145	0.128	
25-29	0.194	0.201	0.190	
30-34	0.187	0.196	0.180	
35-39	0.155	0.138	0.170	
40-44	0.148	0.139	0.156	
45-49	0.141	0.134	0.147	
Occupational groups				
Not working	0.589	0.641	0.549	0.04
Professional, managerial, technical, clerical	0.138	0.086	0.057	
Agricultural	0.018	0.030	0.009	
Household and domestic	0.056	0.055	0.057	
Services	0.081	0.066	0.093	
Skilled manual labour	0.022	0.017	0.025	
Unskilled manual labour	0.096	0.105	0.089	

Descriptive statistics for multidimensional poverty and women empowerment

This section provides the descriptive statistics, the Multidimensional Poverty Index (M0), the Women Empowerment index, the deprived percentage of households, and the percentage empowered of the women within a household within each indicator of the sample size post-merge in table 8 and table 9 provided in the appendix respectively. This study utilizes the M0 presented in this section to analyse the influence of women empowerment and other demographic variables on multidimensional poverty.

Multidimensional Poverty Index

The MPI (M0) for the post-merge sample size of the South African household is 0.035 (3.5%) which is slightly higher than the M0 pre-merge by approximately 0.3% points. Table 8 found in the appendix illustrates the household percentage deprived for the overall households, those residing in rural areas and those residing in urban areas. Table 8 shows that the highest deprived indicator for all the South African households is improved sanitation (21.61%), followed by ownership of assets (20.53%) which is different from the initial MPI in figure 1.

Furthermore, households are the least deprived in the child enrolment indicator and child nutrition indicator, meaning that 97.76% of households have children aged 7 to 18 currently enrolled in an education facility and 96.27% of households have children with a WAZ, HAZ, WAH that is under 2 standard deviations below the mean. Households in rural areas are mostly deprived of safe cooking fuel (38.17%) and access to safe drinking water (35.77%). In contrast, these households are least deprived in child enrolment (2.49%) and child nutrition (5.44%). Households residing in urban areas are most deprived of the following indicators: improved sanitation (23.56%) and ownership of assets (15.85), respectively. In contrast, these households are least deprived in the following indicators: child enrolment (2.04%) and child nutrition (2.37%).

Women Empowerment Index

The WEI (M0) for the post-merge sample size of South African women within a household is 0.606 (60.6%) which is slightly lower than the M0 pre-merge by approximately 0.8% points. Table 9 in the appendix illustrates the women's empowerment percentage within a household, those residing in rural areas, and those residing in urban areas. Table 9 shows that the highest empowerment indicator for all the women is knowledge of any modern family planning methods (99.87%), followed by attitude towards domestic violence (93.52%) which is similar to the initial WEI in figure 3.

Furthermore, these individuals are the least empowered in the age at first birth (27.78%) and employment status (36.42%) indicator. Women residing in rural areas are mostly empowered of knowledge of any family planning methods (99.92%) and attitude towards domestic violence (91.90%). In contrast, these individuals are least empowered in age at first birth (22.61%) and employment status (30.96%) which is similar to the initial WEI in figure 3. Women residing in urban areas are most empowered of the following indicators: knowledge of any modern family planning methods (99.83%) and attitude towards domestic violence (94.79), respectively. In contrast, women within the households are least empowered in the following indicators: age at first birth (31.87%) and employment status (40.74%).

Regression analysis

Several studies have consistently shown that women's empowerment significantly contributes to the alleviation of multidimensional poverty (Bhoganadam et al., 2014; Biswel et al., 2023; Wei et al., 2021). This emphasises the importance of empowering women as a key strategy is combating poverty from various dimensions. This study finds a notable correlation between multidimensional poverty and women empowerment, alongside other demographic variables such as occupation groups, age groups, and population group. The study employs a logistic regression model with categorical variables, using a binary variable for those who are multidimensional poor (1) and those who are not (0) as the dependant variable, and independent variables consisting of women empowerment, age, occupation groups, and population groups. Furthermore,

marginal effects of the logistic regression are estimated to aid in interpreting the results in a linear context. The results of the logit regression analysis are given in Table 11.

***Table 8**: Impact of women empowerment and demographic variables on multidimensional poverty*

Variables	Coefficient	Std. error	P-value
Age (Ref: 15-19 years)			
Age (20-24 years) dummy	-0.057	0.029	0.050
Age (25-29 years) dummy	-0.086	0.028	0.002
Age (30-34 years) dummy	-0.090	0.028	0.001
Age (35-39 years) dummy	-0.088	0.030	0.002
Age (40-44 years) dummy	-0.057	0.030	0.055
Age (45-49 years) dummy	-0.080	0.029	0.005
Occupation (Ref: Unemployed)			
Professional, managerial, clerk and technical	-0.074	0.006	0.000
Agricultural	0.145	0.046	0.002
Household and domestic	0.035	0.023	0.129
Services	-0.034	0.012	0.003
Skilled manual	-0.070	0.009	0.000
Unskilled manual	-0.016	0.014	0.246
Population group (Ref: Black/African)			
Not black/African	-0.022	0.0123	0.048

Rural or urban area (Ref: Rural area) Urban area	-0.011	0.031	0.725
Interaction between WEI and urban area	-0.081	0.045	0.071
Women Empowerment	-0.050	0.008	0.000

The regression model that this study applied is statistically significant at 5% significance level. A statistically significant relationship is found between multidimensional poverty index and categorical variables representing age, occupation groups (except household and domestic, and unskilled manual), and population groups (expect for those who are not black/African). The regression coefficients for all age categorical variables are negative, indicating an inverse relationship with MPI, suggesting that older age groups are associated with lower multidimensional poverty compared to the base category (15-19 years old women).

This study also found that certain occupation groups in South Africa have different relationship with multidimensional poverty. Specifically, women working in the household, domestic and agricultural sector have similar chances of being in households with multidimensional poverty as the base category, unemployed people. This could be attributed to the lower income typically associated with these occupations as well as the fact that they are usually associated with informal jobs, which may limit households' ability to access the necessary financial resources to improve their standard of living, health, and education.

However, the other occupation groups are positively correlated with alleviating poverty with, professional, managerial, technical, and clerical; and skilled manual labour contributing the highest in reducing multidimensional poverty within a household, by 7.43% and 7.00% points, respectively compared to the base category. Given the current state of the labour market, one plausible reason for this tendency is that these occupational groupings are mostly associated with formal employment, which frequently demands higher education levels, ranging from a matric certificate to a bachelor's degree

at minimum. As a result, income levels often ascend in tandem with educational achievement, providing these women with the tools to improve their standard of life and address any areas of deprivation.

The findings also show that women who do not identify as Black/African have lower chances of experiencing multidimensional poverty by 2.23% points relative to those who identify as Africa/Black. This study's findings reveal that women residing in urban areas are associated with lower household multidimensional poverty than those in rural areas, by approximately 1.09% points. Furthermore, women who are empowered and reside in urban areas have a positive relationship with alleviating household multidimensional poverty, by approximately 8.11% points compared to empowered women residing in rural areas.

More importantly, the study also noted that taking into consideration all the dimensions of women empowerment that this study utilizes, women empowerment is associated with a reduction of multidimensional poverty by approximately 5.66% in South Africa. This finding aligns with previous studies by Wei et al. (2021), Arora and Arora (2012), Ayevbuomwan et al. (2021), Mohanty et al. (2013), Tripathy (2015), Biswal et al., (2023), and Alemu et al., (2020).

Sensitivity check

This study assesses and evaluates results robustness through sensitivity checks in two sections. First, it evaluates multidimensional poverty index and women empowerment index using cutoffs of 20% and 50% for MPI, and 60% and 80% for WEI. Additionally, this study also examines the effect of women empowerment on multidimensional poverty using the cutoffs mentioned above. The Multidimensional Poverty Index (M0) for all South African households using 20% and 50% cutoffs is 6.3% and 1.0% respectively. The Women Empowerment Index (M0) for women within households using 60% and 80% cutoffs is 69.1% and 31.7%, respectively.

The changes in the proportion of the women and household population deemed as deprived at different cutoff values suggests that the MPI and WEI is sensitive to the choice

of the cutoff value. A higher cutoff (50%) results to a lower estimate of deprivation (M0) and a lower cutoff (20%) results to a higher estimate of deprivation (M0). A higher cutoff (80%) leads to a lower estimate of empowered women, and a lower cutoff (60%) leads to a higher estimate of women empowerment. This sensitivity suggests that the selected cutoff value can have substantial impact on the MPI and WEI outcomes for women and households. However, the percentage deprived and empowered as per indicators and dimensions within different cutoffs remain consistent.

Chapter six

Conclusion and recommendations

This study set to explore the magnitude of women's empowerment and multidimensional poverty in South Africa, as well as the correlation of women empowerment and reduction in multidimensional poverty. It measures the level of women empowerment and multidimensional poverty by applying the Alkire-Foster method. Furthermore, the binary logistic method is employed in examining the relationship between women empowerment and reduction in multidimensional poverty. Data for analysis were obtained from the 2016 Demographic and Health Survey for South Africa (DHS).

The results show that for overall South Africa, the level of multidimensional poverty is 3.2%, where rural households contributed to the MPI score by approximately 71.5% and urban households contributed to the MPI score by 28.6%. In contrast the magnitude of individual women who were empowered in South Africa was 61.4%, the variation of empowered women residing in urban and rural areas was approximately 11% points, where those in urban areas where more empowered relative to those in rural areas.

Due to a reduced sample size post-merging datasets for analysis, the Women Empowerment Index (WEI) decreased to 60.6% and Multidimensional Poverty Index (MPI) increased to 3.5%. The marginal effects of the logit regression confirms that the empowerment of individual women within a household has a statistically significant negative correlation with multidimensional poverty in South Africa, in rural and urban areas. Furthermore, women who are empowered and residing in urban have a statistically significant positive correlation with the multidimensional poverty alleviation relative to empowered women residing in rural areas.

The study's findings highlight the importance of implementing initiatives tailored to enhance empowerment levels of South African women, especially those residing in rural areas. These initiatives ought to address the particular difficulties that rural women encounter, such as restricted access to economic, healthcare, and educational possibilities. By implementing these initiatives, the government can help bridge the gap

in women's empowerment between urban and rural areas. This can aid in reducing multidimensional poverty in South African households leading to more equitable and inclusive development. In conclusion, this study is not without limitations. For instance, the dimensions of women's empowerment employed for analysis have been limited by data availability. Due to very few responses to questions on agency/decision making within the household, we omitted this dimension from the study. Hence, we encourage future studies to include the dimension in analysis should data allow.

It is important to acknowledge the limitations imposed by the exogeneity assumption inherent in the logit regression model used in this study. The study recognizes that a more nuanced approach is required, due to the possibility of simultaneous causality, where latent factors influence both women's empowerment and multidimensional poverty, or reverse causality. To address these concerns and reduce the likelihood of biased estimates, future studies should consider using advanced econometric methods such as instrumental variable regression, as this approach strives to achieve more precise estimates of the impact of women's empowerment on multidimensional poverty. However, it is important to recognize that, despite the issue of endogeneity, the preliminary findings from the logit regression still offer valuable insights into the relationship between women empowerment at individual-level and multidimensional poverty at household-level and provides a foundation for further investigation.

LIST OF REFERENCES

Abdulai, A. M., & Shamshiry, E. (2014). Linking sustainable livelihoods to natural

Abubakar, I. R. (2022). Multidimensional poverty among Nigerian households: Sustainable development implications. Social Indicators Research, 164(2), 993- 1014.

Agenjo-Calderón, A., & Gálvez-Muñoz, L. (2019). Feminist economics: Theoretical and political dimensions. American Journal of Economics and Sociology, 78(1), 137- Robeyns, I. (2003). Sen's capability approach and gender inequality: selecting relevant capabilities. Feminist economics, 9(2-3), 61-92.6.

Al Khayyal, A. O., Alshurideh, M., Al Kurdi, B., & Salloum, S. A. (2020, September). Women empowerment in UAE: A systematic review. In International Conference on Advanced Intelligent Systems and Informatics (pp. 742-755). Cham: Springer International Publishing.

Alemu, B. T., & Singh, S. P. (2020). Household empowerment and multidimensional poverty in rural Ethiopia: a principal component analysis. PalArch's Journal of Archaeology of Egypt/Egyptology, 17(6), 44-69.

Alkire, S. (2013). Choosing dimensions: The capability approach and multidimensional poverty (pp. 89-119). Palgrave Macmillan UK. 51

Alkire, S., & Foster, J. (2011). Understandings and misunderstandings of multidimensional poverty measurement. The Journal of Economic Inequality, 9, 289- 314.

Alkire, S., & Housseini, B. (2014). Multidimensional poverty in sub-Saharan Africa: Levels and trends.

Alkire, S., & Kanagaratnam, U. (2021). Revisions of the global multidimensional poverty index: indicator options and their empirical assessment. Oxford Development Studies, 49(2), 169-183.

Alkire, S., & Santos, M. E. (2010). Acute multidimensional poverty: A new index for developing countries.

Alkire, S., Foster, J. E., Seth, S., Santos, M. E., Roche, J., & Ballon, P. (2015). Multidimensional poverty measurement and analysis: Chapter 5–The Alkire-Foster counting methodology.

Alkire, S., Foster, J. E., Seth, S., Santos, M. E., Roche, J., & Ballon, P. (2015). Multidimensional poverty measurement and analysis: Chapter 4–Counting approaches: definitions, origins, and implementations.

Arora, S., & Arora, S. (2012). Role of micro-financing in women empowerment: An empirical study of urban Punjab. Pacific Business Review International, 5(1), 46-60.

Ayevbuomwan, O. S., Popoola, O. A., & Adeoti, A. I. (2016). Analysis of women empowerment in rural Nigeria: A multidimensional approach. Global Journal of Human Science: C. Sociology and Culture, 16(6), 35-48.

Baden, S., Hasim, S., & Meintjes, S. (1998). Country Gender Profile: South Africa. Brighton: Institute of Development Studies.

Batana, Y. M. (2013). Multidimensional measurement of poverty among women in Sub-Saharan Africa. Social Indicators Research, 112, 337-362.

Batool, S. A., & Jadoon, A. K. (2018). Women's empowerment and associated age-related factors. *Pakistan Journal of Social and Clinical Psychology*, *16*(2), 52-57.

Bhoganadam, S. D., Malini, H., & Rao, D. S. (2014). Women's empowerment and economic development. EXCEL International Journal of Multidisciplinary Management Studies, 4(8), 100-107. 52

Biswal, S. N., Mishra, S. K., & Sarangi, M. (2023). Does Women's Empowerment Influence Multidimensional Poverty? Empirical Insight from Rural Odisha of India. Pertanika Journal of Tropical Agricultural Science, 31(2).

Börjesson, I. (2019). Democracy and Gender Equality in South Africa: A Case Study about South Africa's consolidation of democracy with the perspective of gender equality.

Bosch, C., Hommann, K., Rubio, G. M., Sadoff, C., & Travers, L. (2001). Water, sanitation and poverty. Draft chapter. Washington DC: World Bank.

Cheteni, P., Khamfula, Y., & Mah, G. (2019). Gender and poverty in South African rural areas. Cogent Social Sciences.

Corsi, D. J., Neuman, M., Finlay, J. E., & Subramanian, S. V. (2012). Demographic and health surveys: a profile. International journal of epidemiology, 41(6), 1602- 1613.

Dasgupta, P., & Weale, M. (1992). On measuring the quality of life. World development, 20(1), 119-131

Dayton, C. M. (1992). Logistic regression analysis. Stat, 474, 574.

Dercon, S. (2006). Risk, growth and poverty: What do we know, what do we need to know. Department of Economics, Oxford University, 148, 1-27.

Diallo, A., & Moussa, R. K. (2020). Does access to electricity affect poverty? Evidence from Côte d'Ivoire. Economics Bulletin. European Institute for Gender Equality. (2019). Glossary & Thesaurus. Retrieved 2019-12-03 from https://eige.europa.eu/thesaurus/terms/1168

European Institute for Gender Equality. (2019). Glossary & Thesaurus. Retrieved 2019-12-03 from https://eige.europa.eu/thesaurus/terms/1168

Ewerling, F., Lynch, J. W., Mittinty, M., Raj, A., Victora, C. G., Coll, C. V., & Barros, A. J. (2020). The impact of women's empowerment on their children's early development in 26 African countries. Journal of global health, 10(2). 53

Fleischhauer, K. J. (2007). A review of human capital theory: Microeconomics. University of St. Gallen, Department of Economics Discussion Paper, (2007-01).

sahFransman, T., & Yu, D. (2019). Multidimensional poverty in South Africa in 2001– 16. Development Southern Africa, 36(1), 50-79. FUND, S. (2015). Sustainable development goals. Available at this link: https://www. un. org/sustainabledevelopment/inequality.

Fund, S. (2015). Sustainable development goals. *Available at this link: https://www. un. org/sustainabledevelopment/inequality*.

Gaye, A., 2007. Access to Energy and Human Development. Hum. Dev. Rep. 20072008, Human Development Report Office OCCASIONAL PAPER.

Goode, R. B. (1959). Adding to the stock of physical and human capital. The American Economic Review, 49(2), 147-155.

Habib, K., Shafiq, M., Afshan, G., & Qamar, F. (2019). Impact of education and employment on women empowerment. European Online Journal of Natural and Social Sciences: Proceedings, 8(3 (s)), pp-62.

Abrar ul haq, M., Jali, M. R. M., & Islam, G. M. N. (2019). Household empowerment as the key to eradicate poverty incidence. *Asian Social Work and Policy Review*, *13*(1), 4-24.

Husain, A. M. (1998). Poverty alleviation and empowerment. *The Second*.

Hutson, S. (2007). Gender oppression and discrimination in South Africa. Essai, 5(1), 26.

Jackson, S., & Yu, D. (2023). Re-examining the multidimensional poverty index of South Africa. *Social Indicators Research*, *166*(1), 1-25.

Jejeebhoy, S. J. (2000). *Women's autonomy in rural India: Its dimensions, determinants, and the influence of context*.

Kabeer, N. (2001). Discussing women's empowerment: Theory and practice.

Kaschek, T. S. (2021). Exploring the experiences of female small-scale organic cocoa farmers about gender-based inequality in agency and empowerment in light of the Sustainable Development Goal 5: A case study from rural Ghana.

Kehler, J. (2001). Women and poverty: the South African experience. Journal of international women's studies, 3(1), 41-53.

Kiani, Z., Simbar, M., Fakari, F. R., Kazemi, S., Ghasemi, V., Azimi, N., ... & Bazzazian, S. (2021). A systematic review: Empowerment interventions to reduce domestic violence?. Aggression and violent behavior, 58, 101585.

Malhotra, A. (2012). Remobilizing the gender and fertility connection: The case for examining the impact of fertility control and fertility declines on gender equality. Fertility and Empowerment Work Paper Series, 001-2012. 54

Maligalig R, Demont M, Umberger W J, Peralta A. 2019. Off-farm employment increases women's empowerment: Evidence from rice farms in the Philippines. Journal of Rural Studies, 71, 62–72.

Mandal, K. C. (2013, May). Concept and Types of Women Empowerment. In International Forum of Teaching & Studies (Vol. 9, No. 2).

Megbowon, E. T. (2018). Multidimensional poverty analysis of urban and rural households in South Africa. Studia Universitatis Babes Bolyai-Oeconomica, 63(1), 3- 19.

Mohanty, S. R., Das, B., & Mohanty, T. (2013). Empowerment of women in rural Odisha through micro-enterprises. IOSR Journal of Humanities and Social Sciences, 12(1), 1-8. https://doi. org/10.9790/0837-1210108

Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. European sociological review, 26(1), 67-82.

Mosomi, J. (2019). An empirical analysis of trends in female labour force participation and the gender wage gap in South Africa. Agenda, 33(4), 29-43.

Nadim, S. J., & Nurlukman, A. D. (2017). The impact of women empowerment on poverty reduction in rural area of Bangladesh: Focusing on village development program. Journal of Government and Civil Society, 1(2), 135-157.

Niaz, M. U., & Iqbal, M. (2019). Effect of microfinance on women empowerment: A case study of Pakistan. Available at SSRN 3419834.

Nussbaum, M. (2000). Women's capabilities and social justice. Journal of human development, 1(2), 219-247

Omotoso, K. O., Adesina, J., & Adewole, O. G. (2022). Profiling gendered multidimensional poverty and inequality in post-apartheid South Africa. African Journal of Science, Technology, Innovation and Development, 14(2), 564-576. 55

Page, N., & Czuba, C. E. (1999). Empowerment: What is it. Journal of extension, 37(5), 1-5.

Phan, L. Y. (2013). Women's empowerment and fertility changes. International Journal of Sociology of the Family, 49-75.

Rogan, M. (2016). Gender and multidimensional poverty in South Africa: Applying the global multidimensional poverty index (MPI). Social Indicators Research, 126, 987-1006.

Robeyns, I. (2005). The capability approach: a theoretical survey. *Journal of human development*, *6*(1), 93-117.

Roy, C., Chatterjee, S., & Dutta Gupta, S. (2018). Women empowerment index: Construction of a tool to measure rural women empowerment level in India. Available at SSRN 3357543.

Sadie, Y. (2020). Women and Electoral Politics. Brittle Democracies, 115-146.

Santos, M. E., & Villatoro, P. (2018). A multidimensional poverty index for Latin America. Review of Income and Wealth, 64(1), 52-82.

Sdg, U. (2019). Sustainable development goals. The energy progress report. Tracking SDG, 7, 805-814.

Sen, A. (1976). Poverty: an ordinal approach to measurement. Econometrica: Journal of the Econometric Society, 219-231. 56

Sen, A. (1985). A sociological approach to the measurement of poverty: a reply to Professor Peter Townsend. oxford economic Papers, 37(4), 669-676.

Sen, A. (1992). Missing women. BMJ: British Medical Journal, 304(6827), 587.

Sen, A. (1995). Inequality reexamined. Harvard university press.

Sen, A. (2001). The many faces of gender inequality. New republic, 35-39.

Shahbaz, B., Naz, M., Umber, S., & Amir, R. M. (2017). Determinants of women's empowerment and poverty reduction: a case study of rural Faisalabad, Punjab. Pakistan Journal of Agricultural Sciences, 54(1).

Skrivanek, S. (2009). The use of dummy variables in regression analysis. More Steam, LLC.

Thobejane, K., Swanepoel, J., Van Niekerk, J., & Van Der Merwe, H. (2023). Measuring women's empowerment in agriculture in the Gauteng Province of South Africa. South African Journal of Agricultural Extension, 51(3), 161-185.

Tripathy, U. (2015). Socio-economic profile of SHGS on women empowerment: Case Study of three SHGS in Sambalpur District of Odisha, India. International Research Journal of Social Sciences, 4(5), 99-108.

Tunstall, R., Bevan, M., Bradshaw, J., Croucher, K., Duffy, S., Hunter, C., ... & Wilcox, S. (2013). The links between housing and poverty: an evidence review. York: Joseph Rowntree Foundation. UNDP (United Nations Development Programme). (2023). 2023 Global Multidimensional Poverty Index (MPI).

UNDP (United Nations Development Programme).

Varghese, T. (2011). Women empowerment in Oman: A study based on Women Empowerment Index. Far East Journal of Psychology and Business, 2(2), 37-53.

Walker, R. (2019). Multidimensional poverty: Whose poverty is it?. In *Routledge international handbook of poverty* (pp. 33-48). Routledge.

Wei, W., Sarker, T., Żukiewicz-Sobczak, W., Roy, R., Alam, G. M., Rabbany, M. G., ... & Aziz, N. (2021). The influence of women's empowerment on poverty reduction in the rural areas of Bangladesh: Focus on health, education and living 57 standard. International journal of environmental research and public health, 18(13), 6909.

Word Health Organization. (2017). Global strategy for women's, children's and adolescents' health (2016–2030). https://www.who.int/life-course/partners/global-strategy/en/.

World Bank. (2018). World development report 2019: The changing nature of work. The World Bank.

World Health Organization. (2003). Poverty and health. World Health Organization.

Zanbak, M., & Soycan, S. (2023, September). Econometric analysis of factors affecting women's multidimensional poverty. In Women's Studies International Forum (Vol. 100, p. 102800).

Zimbalist, Z. (2017). Analysing post-apartheid poverty trends by geo-type, 1997–2012: The understated role of urbanisation and social grants. *Development Southern Africa*, *34*(2), 151-167.

Appendixes

***Table 8**: Multidimensional Poverty (deprived %) post*

MPI Indicators	Deprived (%)	Deprived (R) (%)	Deprived (U) (%)
Health dimension			
Child Mortality	4.14%	5.74%	2.87%
Child Nutrition	3.73%	5.44%	2.37%
Education dimension			
Child Enrolment	2.24%	2.49%	2.04%
Years of schooling	16.64%	21.05%	13.15%
Standard of living			
Access to electricity	10.25%	14.72%	6.71%
Access to safe drinking water	17.55%	35.77%	3.14%
Improved sanitation	21.61%	19.15%	23.56%
Type of dwelling (housing)	15.00%	21.89%	9.54%
Type of cooking fuel	19.19%	38.17%	4.17%
Ownership of assets	20.53%	26.44%	15.85%

***Table 9**: Women Empowerment (%) post*

WEI Indicators	Empowered(%)	Empowered (R)(%)	Empowered (U)(%)
Economic dimension			
Employment status	36.42%	30.96%	40.74%
Level of education	89.96%	86.76%	92.49%
Attitude towards domestic violence	93.52%	91.90%	94.79%
Fertility			
Knowledge of modern FP methods	99.87%	99.92%	99.83%
Age at first birth	27.78%	22.61%	31.87%
Ideal number of children	44.79%	61.41%	75.81%