



The Impact of Microfinance Institutions on Poverty Alleviation in Kenya

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**Submitted in partial fulfillment of the requirements for the Degree of Bachelor
of Business Science in Financial Engineering at Strathmore University**

Strathmore Institute of Mathematical Science

Strathmore University

Nairobi, Kenya

January 2025

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ABSTRACT

Microfinance also known as microcredit provides banking services such as microloans, micro-savings accounts and microinsurance to low-income individuals. It is widely regarded to integrate excluded financially underserved populations into the formal financial system. This study evaluated the effectiveness of microfinance institutions (MFIs) in poverty reduction in Kenya using secondary data from the Kenya National Bureau of Statistics (KNBS) and analysed it through probit model regression. The findings reveal a positive relationship between microfinance services and poverty. Specifically, both savings and loans from MFIs show a positive relationship with poverty, indicating that increased access to these financial services is associated with a rise in poverty levels. In contrast, the level of education shows a negative relationship with poverty, indicating that an increase in the level of education leads to a decrease in poverty. Therefore, this study recommends the strengthening of financial literacy programs which would equip users of microfinance services with the knowledge and skills to manage loans and savings effectively, reducing the risk of financial mismanagement. Additionally, implementing policies that promote responsible borrowing and saving, along with stricter regulatory oversight of MFIs would ensure that these institutions serve as tools for sustainable economic development rather than mechanisms that perpetuate poverty.

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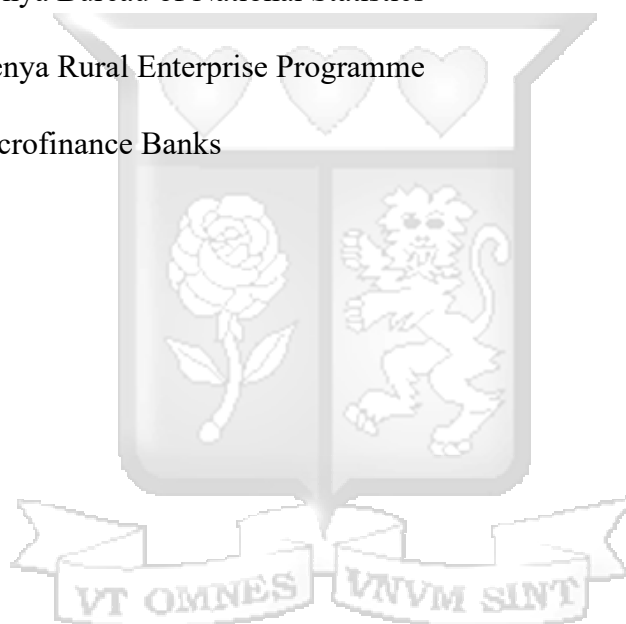
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LIST OF ABBREVIATIONS

MFIs	Microfinance Institutions
NGO	Non-governmental Organization
ROSCA	Rotating Savings and Credit Association
AMFI-K	Association of Microfinance Industry in Kenya
KNBS	Kenya Bureau of National Statistics
K-Rep	Kenya Rural Enterprise Programme
MFBS	Microfinance Banks



CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Poverty is a pervasive issue that undermines the dignity and quality of life for millions worldwide. It exists in various forms and at different levels, affecting people across the globe. According to the World Bank's 2023 estimate, approximately 712 million people live below the poverty line, surviving on less than \$2.15 a day. The World Bank (2000) described poverty as a pronounced well-being deprivation. Those living in poverty are deprived of necessities such as food, shelter, clothing, and clean drinking water. Moreover, they often lack access to essential services like health care, quality education, access to the financial sector, and employment opportunities that are important in improving their human capital and social mobility.

Given the significant impact of poverty on well-being, various multilateral organizations, including the United Nations and World Bank, have made efforts to address these problems and combat poverty. Over the years, numerous poverty reduction strategies and instruments have been developed to enhance the standard of living for the poor and help them break the vicious cycle of poverty.

These strategies include fostering economic growth to increase income and expand employment opportunities, undertaking economic and institutional reforms to enhance efficiency, and optimizing resource utilization. Additionally, they emphasize prioritizing the basic needs of the poor in national development policies, the promotion of microfinance programs to eliminate barriers to innovation, entrepreneurship, and small-scale business, and implementing affirmative actions such as targeted cash transfers to ensure that the social and economic benefits of poverty reduction initiatives reach marginalized populations (Ayoo,2022).

Microfinance, one of the tools employed to alleviate poverty, was institutionalized by Mohammed Yunus in 1976 with the foundation of Grameen Bank in Bangladesh. Also known as microcredit, microfinance provides banking services such as microloans, micro-savings accounts, and microinsurance to low-income individuals. According to Maswari (2013), through microfinance institutions (MFIs), the poor can obtain collateral-free loans at relatively low interest rates and use the money for creating

microenterprises, funding children's education, and improving their standards of living. In general, the goal of microfinance is to ultimately give impoverished people an opportunity to become self-sufficient.

MFIs now serve over 10 million households worldwide. Despite the financial constraints of their clients, MFIs have successfully extended credit to low-income households while maintaining high repayment rates and financial sustainability. This success is the innovative use of peer group lending, where loans are allocated to at least two individuals with little or no collateral, relying instead on social capital. In this model, peers act as co-applicants and, in many cases, share joint liability for the loan (Gomez & Santor, 2008).

The microfinance revolution has reshaped poverty alleviation strategies in many countries by providing substantial flows of credit to low-income groups and households that are typically excluded from conventional financial systems. Bangladesh is the starkest example of a very poor country, where currently roughly one-quarter of rural households are direct beneficiaries of these programs (Maswari, 2013).

Operations of MFIs in Kenya trace back to 1984, with the start of the Kenya Rural Enterprise Programme (K-Rep) as a non-governmental organization (NGO) support program for small and micro enterprises founded by World Partners (Cherotich, 2013). The Association for Microfinance Institutions Kenya (AMFI-K) is a member-based organization that was established and registered in 1999 under the Societies Act to build the capacity of the Kenyan microfinance industry. As of June 2021, the Association for Microfinance Institutions had a total of 59 members, categorized as 2 commercial banks, 12 microfinance banks (MFBs), 39 credit-only microfinance institutions (COMFIs), 1 Sacco, 3 wholesale microfinance institutions (WMFIs), and 2 developmental institutions. According to CBK, as of December 31st, 2023, the number of deposit-taking MFIs in Kenya was 14, with 11 holding nationwide licenses and 3 holding community microfinance bank licenses.

Despite the presence of numerous MFIs in Kenya, poverty remains widespread, particularly in rural areas. According to the Kenya Poverty Report (2021), the overall

poverty rate for individuals at the national level was 36.1% (9,504,830 individuals). In rural areas, the poverty rate was higher at 40.7% (15,426,409 individuals), while in urban areas, it was 34.1% (5,150,085 individuals). Additionally, 5.8% of the population, was classified as hardcore poor at the national level, with 7.8% (4,134,780 individuals) in rural areas and 1.5% (795,150 individuals) in urban areas.

Microfinance has become very important in global poverty reduction debates. The prevailing assumption is that providing low-income households with access to credit enables them start micro-entrepreneurship, which in turn increases their income. However, existing research on this relationship remains limited, with many findings being highly contested. To date, no comprehensive study has shown a strong, robust positive impact of microfinance on poverty reduction. Nonetheless, several studies suggest the possibility of a positive impact of microfinance on poverty reduction (Maswari, 2013). Additionally, many studies indicate a positive correlation between microfinance growth and poverty reduction in various regions. However, despite the expansion of MFIs, poverty rates have continued to rise in many areas. The simultaneous growth of microfinance in several African countries alongside persistent poverty raises questions about its overall effectiveness in achieving its intended goals (Makunyi, 2017). Given these concerns, this study seeks the effectiveness of MFIs in Kenya in reaching low-income populations and reducing poverty levels.

1.2 Problem Statement

Poverty is a deeply rooted issue that affects countless individuals and communities around the world, and Kenya is no exception. The persistence of poverty in Kenya is driven by various factors, including a high degree of inequality in income, unequal access to resources, and unequal access to economic and social goods and services. Additionally, contributing factors include lack of education, lack of job opportunities, unfavourable climatic conditions, and poor government planning and interventions. MFIs are financial instruments like loans, savings, insurance, and other financial products that are designed specifically for the poor. If all microfinance providers in the country were genuinely involving the poor in the identification and design of their products, the country would likely see a significant reduction in the number of people living below the poverty line.

According to the Financial Stability Report, as of December 2022, the microfinance industry had total assets of KES 70.427 billion. Despite the industry's growth, it faces several challenges, including high interest rates on loans, limited outreach, insufficient funding, high operational costs, and the financial illiteracy of clients. Microfinance institutions are largely located in urban areas. This uneven distribution highlights the limited access many poor people have to microfinance services.

The most controversial topic of microfinance is the balance between social and financial efficiency. The achievement of social goals lies in offering credits to the poorest individuals, provided that non-market interest rates remain low. On the other hand, financial efficiency reflects the price of credit that covers invested costs increased by adequate profit without the necessity of subsidies from external counterparties. The commercialization of the microfinance sector and the need for self-financing force MFIs to prefer solvent debtors and seek faster growth, creating trade-offs between achieving social objectives and maximizing financial returns. Serving the very poor with small-scale services remains a tough business and often entails charging high fees or depending on steady subsidies (Janda, 2014). This raises the question: does microfinance genuinely benefit the poor or primarily serve the interests of the more affluent? Thus, this study aims to evaluate whether microfinance institutions effectively support low-income individuals or cater more to wealthier clients.

1.3 Research Objectives

1.3.1 General Objective

The general objective of this study is to evaluate the effectiveness of microfinance institutions in reducing poverty and whether these institutions provide services that meet the needs of the poor.

1.3.2 Specific Objectives

The study seeks to:

To determine the significance of loans issued by microfinance institutions in poverty alleviation.

To determine the impact of savings from a microfinance institution in poverty alleviation

1.4 Significance of Study

Microfinance programs and institutions have increasingly become a key element in strategies to reduce poverty and promote micro- and small-enterprise development. However, their impact remains debated, with mixed evidence on their effectiveness in improving economic outcomes for low-income individuals. As a result, evaluation of microfinance initiatives is essential for researchers, policymakers, MFIs, and development practitioners (Cherotich, 2013). This study will provide policymakers with insights into the relationship between microfinance and poverty, enabling them to design targeted policies that address the specific needs of marginalized and underserved communities. Moreover, it equips MFIs with a deeper understanding of their clientele, allowing them to refine financial products, improve accessibility, and implement responsible lending practices. By bridging the gap between financial inclusion and sustainable poverty reduction, this study contributes to the development of a more equitable and effective microfinance sector.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the relevant literature on the role of microfinance institutions in poverty alleviation, drawing on the work of several scholars worldwide. The first part reviews the fundamental theories, while the second part reviews the various empirical studies carried out by researchers.

2.2 Theoretical Framework

This section reviews existing theories relating to the role of microfinance institutions in poverty alleviation.

2.2.1 Group Lending Model

This model was developed by Muhammed Yunus when he established Grameen Bank in 1983. It aims to address the challenge that borrowers in a microfinance bank are too poor to offer collateral. Hence, to reduce loan default, the model advocates for offering loans to people in groups of five who support each other to ensure every member's loan is repaid. The key feature of this model is joint liability, where all group members are treated as being in default if any member of the group does not repay their loan. According to Cherotich (2013), joint liability can help alleviate the major problems facing lenders in screening, monitoring, auditing, and enforcement by utilizing the local information and social capital that exists among borrowers.

Group lending is designed to work in such a way that in a group of five, only two members receive a first loan, for which they are given six weeks to begin repaying the principal and interest before the remaining members in the group become eligible for receiving loans. Therefore, if one member fails to repay their loan, then all members in the group risk not receiving any loan at all. Additionally, group members are expected to cover the cost if someone is unable to pay. This model encourages borrowers to make use of their loans by starting businesses that generate income to repay their loans. Hence, this model encourages repayment and fosters financial discipline.

The model assumes that group members will work together and help each other in case one member fails to repay their loan, ensuring overall loan repayment. It posits that loans will be repaid if borrowers act as guarantors for each other. The assumption that offering microloans to borrowers improves their standards of living aligns well with the study. However, this model fails to specify the criteria used to identify genuinely poor individuals within a group. Additionally, it overlooks the cost incurred by microfinance institutions in the event of a loan default.

2.2.2 Microfinance Theory

Muhammed Yunus developed this theory in 1976. It aims to provide financial services to poor and low-income households that do not have ready access to formal financial institutions. Microfinance institutions succeed where modern banks have failed because they have learned five key lessons: how to accommodate collateral substitutes as an effective basis for client selection, how to use self-interest to manage risk and maintain high on-time recovery rates, how to minimize the cash cost of making small loans and collecting small savings, how to mobilize peer pressure and social background to enforce contractual obligations, and how to segment the market to remain focused on the poor yet target the well-motivated.

This theory implies that poor people should have the opportunity to participate in the financial sector. It assumes that providing poor people with financial services will enable them to start businesses, which will increase their income, therefore improving their standards of living and reducing poverty. According to Heath (2019), microfinance allows the poor to get out of poverty through their efforts by providing them with the financial means to realize their entrepreneurial potential. Thus, this theory posits that the poor can pull themselves out of poverty if they have access to financial services.

This theory aligns well with this study as it suggests that offering financial services to the poor provides them with opportunities to engage in income-generating activities, thereby improving their standards of living. However, this theory fails to address the need for financial literacy services. Financially illiterate households and those with

lower cognitive abilities are found to have difficulties managing their daily expenditures, economic transactions, and financial resources (Askar et al,2020).

2.2.3 Rotating Savings and Credit Association Model

This model was developed by Clifford Geertz in 1962. It aims to provide financial support and promote savings among its members. It is mostly used by individuals who do not have access to the formal credit market due to a lack of collateral security and the inadequate availability of formal financial sectors. Additionally, rotating savings and credit association models (ROSCAs) have no provision for the time value of money and no interest earned on the savings. This model was developed to encourage regular savings among members, helping them accumulate funds for future use. This model acts as an informal financial institution where individuals make contributions and withdrawals to and from a common fund.

A rotating savings and credit association is an association formed by a core of participants who agree to make regular contributions to a fund that is given, in whole or in part, to each contributor in a rotation (Ardener, 1964). Rotating savings and credit associations come in two main forms: The first type allocates funds using a random method, where the winner of the first rotation is excluded from the next rotation and the second type is bidding allocation, where the individual who receives the fund in the present period does so by bidding the most in the form of a pledge of higher future contributions to the association or one-time side payments to other Rosca members.

This model assumes that people from low-income households save for future use and can cope better in unforeseen circumstances. The many occasions when the poor need lump sums of money are life-cycle events, emergencies, and opportunities (Babajide, 2016). ROSCAs operate similarly to microcredit schemes, with the key difference being that in ROSCAs, the lump sum is earned with no interest rate, thus removing all constraints for people from poor backgrounds in accessing a financial sector. This model posits that poor people have some surplus to save; hence, they join groups and contribute a fixed amount at regular intervals.

2.3 Empirical Framework

2.3.1 Impact of Microfinance Institutions

Stewart, Rooyen, & Wet (2012) conducted a study on the impact of microfinance in Sub-Saharan Africa by focusing on 10 countries: Ethiopia, Ghana, Kenya, Madagascar, Malawi, Rwanda, South Africa, Tanzania, Uganda, and Zimbabwe. The study focused on evaluating the impact of either micro-credit or micro-savings interventions with or without related programs using a comparative study design. It evaluated the impact of these financial services by comparing recipients with non-recipients, focusing on client outcomes rather than the performance of microfinance institutions.

The findings revealed that microfinance has both positive and negative effects on the poor people it purports to help. Microcredit has both positive and negative impacts on the incomes of poor people while micro-savings appear to have no significant impact on income levels. Although both microcredit and micro-savings have positive impacts on the levels of poor people's savings, they also lead to an increase in clients' expenditure and their accumulation of assets, leading to a decrease in their income. Stewart, Rooyen, & Wet (2012) conclude that micro-savings and microcredit should not be promoted as poverty reduction tools.

Maswari (2013) studied the importance of microfinance institutions in Kisii County and obtained the same results as Mutua (2017) and Okibo & Makanga (2014): that there is a positive impact of microfinance institutions on poverty alleviation. Maswari (2013) employed a casual study approach to explore relationships between variables and conducted a multiple regression analysis with poverty alleviation as the dependent variable and savings, credit, training services, and insurance as the independent variables. The results revealed that credit facilities had the highest impact on poverty alleviation, followed by the personal savings of individuals. Additionally, Maswari (2013) recommends that microfinance institutions can be empowered through the provision of finances, which can be advanced to customers as credit to facilitate rapid economic growth.

In contrast, Shakir (2022) conducted a study on the impact of microfinance on the poor in Kenya and found that while microcredit can have positive effects, it may also cause more harm than good if the loan is spent on consumption rather than investment. Therefore, Shakir (2022) suggests that microfinance should not be considered as the sole solution for rescuing the poor from the chains of poverty. Instead, other structural solutions should be sought to address the root causes of poverty effectively.

Okibo & Makanga (2014) studied the effects of microfinance institutions on poverty reduction in Kenya by focusing on the Pamoja Women Development Program (PAWDEP), located in Kiambu district. The study adopted a descriptive survey design, targeting administrators and customers of PAWDEP and its branches in Kiambu, Thika, and Limuru. Okibo & Makanga (2014) utilized the ordinary least squares regression, with credit facilities as the independent variable and income, poverty levels, and economic and sustainable development as the dependent variable. The findings revealed that some of the strategies employed by PAWDEP to reduce poverty include granting loans with very low interest rates to women, helping them start and grow their businesses, and educating their children. Additionally, the findings are the same as those of Mutua (2017), who revealed that participation in microfinance services, such as microloans, increased customers' income levels, with the average income rising to Ksh21,782.6 after taking a loan.

Mutua (2017) conducted a study on the effect of microfinance services on poverty reduction in Makueni County. The study adopted a descriptive research design and collected data from 2,448 customers across 6 microfinance institutions in Makueni. Mutua (2017) utilized the ordinary least squares regression, with poverty reduction (measured by total income earned by users of microfinance services) as the independent variable and micro-credit, micro-insurance, savings, and training as the dependent variables. The findings revealed that micro-credit services play a great role in poverty reduction in Makueni County. Additionally, the findings revealed that increased savings correlate with higher loan amounts, leading to improved standards of living through the establishment of income-generating venues.

Christenson (2017) studied microfinance institutions and poverty reduction in Nigeria by investigating the relationship between access to microfinance institutions and poverty reduction in Nigeria at a state level. Christenson (2017) adopted a descriptive research design, targeting 36 states in Nigeria and one federal territory. Christenson (2017) used ordinary least squares regression with poverty level as the dependent variable and access to microfinance institutions, education, unemployment, and agriculture as the independent variables. The study had control variables such as education, unemployment, and agriculture. The results revealed that there is a negative relationship between access to microfinance institutions and poverty in Nigeria, indicating that an increase in microfinance services leads to a decrease in poverty. These findings correspond with the findings from Mutua (2017), Okibo & Makanga (2014), and Maswari (2013).

Kasali (2020) studied the impact of microfinance loans on poverty alleviation in southwest Nigeria by using primary data collected in three states. Kasali (2020) utilized the propensity score matching methodology to analyse the results. The study therefore revealed that microfinance loans have favourable contributions to poverty alleviation in south-west Nigeria, but there is still a need for government aid to make the poor people benefit more from microfinance loans. Additionally, the availability of more infrastructural facilities and a more enabling environment would encourage the establishment of more microfinance institutions in rural areas.

Chikwira, Vengesai, & Mandude (2022) examined the role of microfinance in poverty alleviation in Zimbabwe by analysing the causality between microfinance and poverty reduction. The study focused on how MFI loan growth, small and medium enterprises (SMEs) growth, and agricultural output affect the poverty rate in Zimbabwe by using the vector autoregressive model to test the causal relationship between the dependent and independent variables. The findings revealed that while the growth of MFI loans contributes to increased poverty in the long run, poverty reduction can be achieved through the expansion of SMEs and agricultural output.

2.3.2 Microfinance Loans and Micro-Savings on Poverty Reduction

Ochieng (2012) carried out a study on the effect of microfinance loans on poverty reduction by analysing primary data collected from K-Rep bank clients within Kwangware and Kibera. The study examined how factors such as business environment, rural finance, expansion and growth of community businesses and branch networks, training and capacity building, and customer awareness influence poverty reduction. Poverty reduction was measured by using the bank's growth over the years, community growth, and the change in the living standards of clients. The findings revealed that microfinance loans have a great impact on the lives of people, as seen by the growth of some communities. Additionally, microfinance loans help in business expansion among the poor, which later increases their standards of living.

Ampah, Ambrose, Omagwa, & Frimpong (2017) conducted a study on the effect of access to credit and financial services on poverty reduction in Ghana. The study adopted an explanatory research design to explain how access to credit and financial services affects income, consumption expenditure, the acquisition of business assets, and the ability to educate children. The findings revealed a weak positive correlation between access to credit and income growth, an increase in consumption expenditure, and the acquisition of business assets. However, the study found a strong positive correlation between access to credit and the ability to educate children.

Josphat (2018) examined the influence of access to microfinance loans on poverty reduction and the growth and improvement of people's living standards through services offered by microfinance institutions in Kuria West Constituency. The study focused on how access to business loans, access to asset finance, access to home improvement loans, and access to school fee loans reduces poverty. The findings revealed that access to microfinance loans led to a decrease in poverty in Kuria West. For instance, business loans helped individuals in the target group engage in business activities that generate income for them, and access to home improvement loans led to improvements in living conditions, from living in shanties to permanent dwellings, leading to an improvement in the living standards of their target group.

Masuda (2021) conducted a study on the role and impact of saving groups in escaping poverty, arguing that loans are a major factor in preventing the poor from escaping from poverty and proposing that breaking free from loans should be treated as the first step in breaking free from poverty. The study investigated the impact of NGO-supported micro-savings groups on poverty and looked at how participants alleviated their poverty. The findings revealed that participating in saving groups led to decreased poverty and reliance on borrowing from financial institutions and relatives. This made participants more independent and encouraged them to participate in activities that generate income.

2.4 Summary of Literature

The empirical studies on microfinance discussed above provide evidence of the positive impact MFIs have on poverty alleviation. The studies examining the effects of micro-savings and microloans indicate that these financial services greatly contribute to reducing poverty. However, some studies have highlighted that participation in MFIs can lead to increased poverty in the long run and caution against promoting microcredit as a solution for the poorest clients. These findings contribute to the ongoing debate about the true impact of microfinance on poverty alleviation.

2.5 Conceptual Framework

The variables of interest in this study include savings from a microfinance institution, income, loans received from a microfinance institution and the level of education. A binary variable termed poor will be derived from the income variable to categorize individuals based on their economic status. This variable will take two values: 1 representing the probability of being poor and 0, representing the probability of not being poor. The classification will be based on the poverty thresholds defined by the Kenya Poverty and Equity Assessment (2023). Specifically, individuals earning below the average income levels of Ksh3,947 and Ksh7,193 in rural and urban areas respectively will be categorized as poor.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter outlines the method that will be used for the study, and it entails the following structure: the research design, the target population, the sample, data collection, and data analysis. It consists of the steps that will be followed and the tools that will be used to generate, collect, measure, and analyse data.

3.2 Research Design

This study adopts a descriptive research design. This is because the purpose of this study is to provide an empirical analysis of the relationship between poverty and microfinance institutions. According to Cherotich (2013), descriptive research is an investigation in which quantitative data is collected and analysed to describe specific phenomena in their current trends, current events, and linkages between different factors at the current time.

3.3 Population and Sample Selection

The Kenya Integrated Household Budget Survey (KIHBS) aims to monitor development initiatives by collecting data from different households across different domains including national, urban and rural areas. The survey done encompasses a broad range of variables such as household characteristics, housing conditions, education, general health characteristics, nutrition, household income and credit, and household expenditures. However, the main target population for this study are individuals within the surveyed households who access microfinance institutions and utilize services such as savings and loans.

3.4 Data Types and Sources

Data can be classified into two categories: primary and secondary. This study will rely on secondary data obtained from the Kenya National Bureau of Statistics (KNBS), utilizing existing household surveys conducted in the country. These surveys used provide comprehensive insights into a wide range of socio-economic indicators, such as demographic, education, health, household consumption, expenditure patterns and sources of household income.

The Kenya Integrated Household Budget Survey (KIHBS) is conducted after every three years with the first one being in 2006 and the latest in 2021. This study will focus on the years 2009, 2013 and 2016. These years were selected due to the availability of key variables relevant to the research objectives and years such as 2006 and 2019 have missing data which would bring problems during the analysis of data.

3.5 Definition of Variables

The dependent variable in this study is poverty which is a binary variable with two outcomes: the probability of being poor and the probability of not being poor. The independent variables include savings from microfinance institutions, loans received from microfinance institutions and the education level of individuals using microfinance services.

Savings from microfinance institutions are used to determine whether they contribute to financial stability and improve the living standards of poor people. Loans received are analysed to determine whether access to microfinance loans enhances income-generating activities thereby improving the living standards of poor people or it provides potential risks such as over-indebtedness which may trap recipients in a cycle of poverty. Additionally, the level of education is used to evaluate its influence on the effective utilization of microfinance services. This involves examining whether individuals with higher education levels are better equipped to manage loans and savings efficiently, leading to improved financial outcomes. Conversely, the study also investigates whether limited education hinders financial literacy and decision-making, potentially exacerbating poverty rather than alleviating it.

3.6 Data Analysis

This study will adopt an ordered probit model regression because the dependent variable, poverty, is binary, taking on one of two possible values: being poor or not being poor. The probit model is a widely used approach for binary response analysis and is typically estimated using maximum likelihood estimation (MLE). By using the probit model, this study aims to provide robust estimates of the determinants of poverty, offering better insights into the variables' effects on the likelihood of being poor.

This analysis was based on the model specified as follows:

Equation 1

$$Y * t = \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \dots + \beta_k X_{kt} + C_1 + \mu_{1it}$$

$$t = 1, 2, 3, 4 \dots T$$

Where:

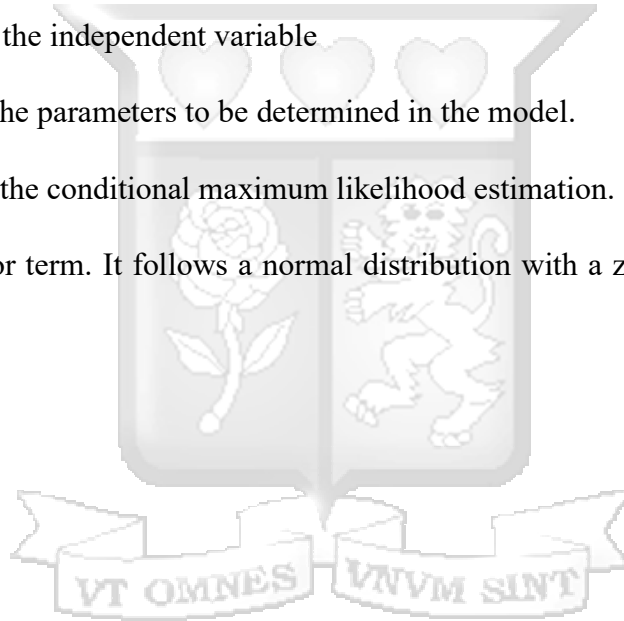
$Y * t$ is a dummy variable representing the dependent variable. It represents the risk or chance of being in poverty at time t .

X_{it} represents the independent variable

β_i represents the parameters to be determined in the model.

C_1 represents the conditional maximum likelihood estimation.

μ_{1it} is the error term. It follows a normal distribution with a zero mean and constant variance.



CHAPTER FOUR: DATA ANALYSIS AND RESULTS

4.1 Introduction

This chapter deals with the research findings and the results of the data analysis. The study findings are presented on the role MFIs play in alleviating poverty in Kenya.

4.2 Descriptive Statistics

From the summary statistics, the poor variable is a binary outcome variable coded as 0 and 1, where 1 indicates the probability of being poor and 0 indicates the likelihood of not being poor. The average total income was ksh10,086, with a minimum of ksh30 and a maximum of ksh800,000. The high kurtosis level of 283.9181 for total income indicates a heavily tailed distribution, suggesting the presence of significant outliers and highlighting the substantial income disparity among respondents. Similarly, the average total expenditure was ksh11,197, ranging from a minimum of ksh0 (indicating no recorded spending in some cases), to a maximum of ksh812,500. The kurtosis level of 238.845 for total expenditure further signals the presence of extreme values in the data. Additionally, categorical variables such as Level of Education, Savings from Microfinance Institutions (Savings_MFI), and Loans from Microfinance Institutions (Loan_MFI) were initially recorded as string variables. To facilitate numerical analysis, these variables were converted into numerical values by assigning unique numerical codes to each category within these variables.

Figure 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ID	8,868	44.73094	32.04818	1	113
Year	8,868	2011.521	2.009143	2009	2016
County	0				
Levelofedu~n	0				
Levelofedu~l	8,868	3.192264	1.495348	0	7
Income	8,868	10086.16	26470.14	30	800000
Poor	8,868	.6690347	.4705871	0	1
savings_MFI	0				
savings_MF~l	8,868	1.970343	.1955869	1	3
loan_MFI	0				
loan_MFINu~l	8,868	1.973839	.1881605	1	3
TotalExpen~e	8,863	11197.11	25498.64	0	812500

4.3 Regression Analysis

To demonstrate how MFIs contribute to poverty alleviation, this study conducted an ordered probit regression. The model used is a binary response model meaning that the dependent variable can only take two variables, 0 and 1. The binary outcome of the dependent variable was modelled based on the Kenya Poverty and Equity Assessment 2023, whereby the poverty threshold was found to be Ksh3,947 and Ksh7,193 in rural and urban areas respectively. An individual whose earnings are below the poverty line is poor. The results of the ordered probit regression are illustrated in the figure below:

Figure 2: Regression Analysis

Ordered probit regression					
Log likelihood = -5520.5487					
		Number of obs	=	8,868	
		LR chi2(3)	=	218.78	
		Prob > chi2	=	0.0000	
		Pseudo R2	=	0.0194	
Poor	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
savings_MFINumerical	.2843581	.0968899	2.93	0.003	.0944574 .4742589
loan_MFINumerical	.1204079	.1009239	1.19	0.233	-.0773994 .3182152
LevelofeducationNumerical	-.1260289	.0092888	-13.57	0.000	-.1442347 -.1078231
/cut1	-.0492277	.1527364			-.3485855 .2501302

The likelihood ratio chi-squared value and the p values are suitable in describing the fit of the model's goodness of fit. In the model, LR chi-squared denoted as LR chi2(3) represents the result of a chi-squared test used to evaluate the explanatory power of the

model. The chi-squared value was 218.78. The p-value associated with the Chi-squared value denoted as $\text{prob} > \chi^2$, tests the null hypothesis that the model with the predictors is not an improvement over a model with only an intercept. The p-value is 0.0000, which is less than the common threshold of 0.05 indicating that the null hypothesis is rejected suggesting that the model, with its set of predictors, significantly improves the fit compared to a model that includes only the intercept, thus supporting the inclusion of the independent variables in explaining the dependent variable.

Based on the results above, the coefficient of savings from a microfinance institution is statistically significant with a coefficient of 0.2844, indicating a direct relationship between poverty and savings. This means that an increase in savings from a microfinance institution increases the probability of being poor by 28.44% holding other factors constant. Contrary to the expected outcome, these findings imply that savings from microfinance institutions may not play a significant role in reducing poverty. These results align with the research findings of Stewart, Rooyen, & Wet (2012) who argue that micro-savings programs should not be heavily promoted as tools to alleviate poverty. Furthermore, their work suggests that microcredit is also not a suitable solution for addressing the needs of the poorest clients.

The results indicate a positive relationship between loans received from a microfinance institution and poverty. The coefficient of 0.1204 suggests that a unit increase in loans from a microfinance institution increases the probability of being poor by 12.04% holding other factors constant. These findings challenge the expectation that microfinance loans help alleviate poverty, highlighting the potential for unintended outcomes when loans are used to pay debts and not utilized to start income-generating activities. These results are consistent with the research by Shakir (2022) and Ampah, Ambrose, Omagwa, & Frimpong (2017) who emphasize that access to credit and financial services alone does not guarantee improvements in living standards. Specifically, when loans are not utilized for productive purposes such as income-generating activities or the acquisition of business assets.

The level of education has a negative relationship with poverty. The coefficient of -0.126 implies that a one-unit increase in education increases the probability of not

being poor by 12.6% holding other factors constant. This aligns with the widely recognized expectation that education reduces poverty by equipping individuals with skills, knowledge, and opportunities that lead to better income-generating activities. Education not only contributes to improved economic opportunities but also enhances individuals' financial decision-making abilities, fostering behaviours like saving, budgeting, and investing in productive ventures. Although financial literacy was not a focus of this research, its importance as a tool for enabling individuals to make informed financial choices remains undeniable.

This study employed an ordered probit model to estimate the marginal effects of the independent variables. Marginal effects from an ordered probit regression provide key insights into the practical significance of the probit model's results. Marginal effects indicate the change in the probability of an outcome occurring when the value of an independent or explanatory variable increases by one unit, holding other factors constant. In this case, the ordered probit model focuses on an ordinal dependent variable with two categories: 0, representing not being poor, and 1, representing being poor. The results are published in the table below:

Figure 3: Marginal Effect Results

dy/dx w.r.t. : savings_MFINumerical loan_MFINumerical LevelofeducationNumerical
1._predict : Pr(Poor==0), predict(pr outcome(0))
2._predict : Pr(Poor==1), predict(pr outcome(1))

	Delta-method					
	dy/dx	Std. Err.	z	P> z	[95% Conf. Interval]	
savings_MFINumerical						
_predict						
1	-.1010169	.0343733	-2.94	0.003	-.1683873	-.0336466
2	.1010169	.0343733	2.94	0.003	.0336466	.1683873
loan_MFINumerical						
_predict						
1	-.0427743	.0358442	-1.19	0.233	-.1130278	.0274791
2	.0427743	.0358442	1.19	0.233	-.0274791	.1130278
LevelofeducationNumerical						
_predict						
1	.0447712	.0032023	13.98	0.000	.0384947	.0510476
2	-.0447712	.0032023	-13.98	0.000	-.0510476	-.0384947

These results align with those obtained from the ordered probit model. In this context, predict 1 represents the probability of not being poor, while predict 2 represents the

probability of being poor. The marginal effects indicate the change in probabilities associated with each variable. Specifically, the probability of being poor increases by 10.10% for savings, 4.28% for loans, and decreases by 4.48% for the level of education. These findings highlight the varying impact of each variable on poverty status, with savings and loans being associated with an increased likelihood of poverty, while education demonstrates a decreased likelihood of poverty.



CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions of the study

The purpose of this study was to determine the role of microfinance institutions in poverty alleviation and specifically focus on whether savings and loans from MFIs are beneficial to poor people and whether they help them to improve their standards of living. This study was carried out using secondary data obtained from KIHBS focusing on the years 2009, 2013 and 2016.

The findings of this study reveal a paradoxical relationship between microfinance services and poverty. Specifically, both savings and loans from MFIs show a positive relationship with poverty, indicating that increased access to these financial services is associated with a rise in poverty levels. In contrast, the level of education shows a negative relationship with poverty, indicating that an increase in the level of education leads to a decrease in poverty. These results imply that rather than alleviating poverty, MFIs may inadvertently contribute to financial distress, potentially due to factors such as high interest rates, poor financial literacy and unsustainable debt accumulation. These findings raise concerns about the effectiveness of microfinance as a poverty reduction strategy in Kenya and highlight the need for reforms to enhance the impact of MFIs.

5.2 Recommendation

This study recommends the strengthening of financial literacy programs which would equip users of microfinance services with the knowledge and skills to manage loans and savings effectively, reducing the risk of financial mismanagement. Additionally, improving loan structuring by offering lower interest rates, flexible repayment terms and tailored financial products could mitigate the risk of over-indebtedness. Furthermore, implementing policies that promote responsible borrowing and saving, along with stricter regulatory oversight of MFIs would ensure that these institutions serve as tools for sustainable economic development rather than mechanisms that perpetuate poverty.

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