# THE INFLUENCE OF FLEXIBLE LOANS ON POVERTY REDUCTION AMONG SMALLHOLDER FARMERS IN MACHAKOS COUNTY, KENYA

**BY**

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**MASTER OF SCIENCE (DEVELOPMENT FINANCE)**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN DEVELOPMENT FINANCE IN THE SCHOOL OF BUSINESS AND PUBLIC MANAGEMENT AT KCA UNIVERSITY**

**OCTOBER, 2021**

## DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made, and author duly acknowledged.

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Sign: _____ Date: 13th October, 2021_____

I do hereby confirm that I have examined the master's dissertation of

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And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed

Sign: _____ Date: 15th, October, 2021_____

**Dr. Asenath Onguso**

Dissertation Supervisor

## ABSTRACT

Poverty remains a major prevailing feature among many communities in Kenya with ever increasing economic and social effects in the country. The study's main objective was to evaluate the influence of flexible loans on poverty reduction among smallholder farmers in Machakos County, Kenya. The study's specific objectives were to assess the influence of loan rescheduling, flexible credit limits, flexible terms of credit and flexible repayments on poverty reduction among smallholder farmers in Machakos County, Kenya. The asset scarcity theory, structural poverty theory and expected utility theory anchored the study. The study applied a descriptive cross-sectional survey design where structured questionnaires were utilized to collect quantitative data from households of Muthetheni ward, Mwala Subcounty, Machakos County. The study adopted random cluster sampling to select households that had taken an agricultural loan from microfinance institutions or development finance institutions in the preceding two years. The questionnaire was pre-tested on a sample of farmers and changes were made before the final study. The questionnaire was also examined for both reliability and validity. The collected data was analysed using descriptive and inferential analyses in order to respond to the research questions and test the hypotheses. Statistical package for social sciences (SPSS) was utilized for the study. The results of the analysis were presented in figures and tables. The study findings indicated that loan rescheduling, loan refinancing and flexible repayments option had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya. The findings however, indicated that flexible credit limits had no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya. The study recommends to microfinance and development finance institutions to offer a variety of flexible loan products to smallholder farmers that suit the farmer's needs and characteristics. Regarding loan rescheduling, microlenders should seek to balance between assisting the farmers to repay the loan and the risk inherent in any rescheduled loan. Lastly, the study recommends to national government, county governments and other non-governmental organizations to form funds that will be able to offer flexible repayment options that meet the needs of farmers who have intermittent and seasonal cashflows.



**Key words**: Flexible loans, Poverty reduction, Machakos County

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## DEDICATION

This dissertation is dedicated to my dear wife, Evelyn Nzilani and to my two lovely boys Alpha Ngumbau Felix and Awesome Ngumbau Felix for their invaluable encouragement, support and cooperation throughout my studies. May God Bless you as I would not have made it without you.

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| **CBO** | Community Based Organisation |
| **CDF** | Constituency Development Fund |
| **CFA** | Confirmatory Factor Analysis |
| **KNBS** | Kenya National Bureau of Statistics |
| **LATF** | Local Authorities Transfer Fund |
| **LFI** | Loan Flexibility Index |
| **NGO** | Nongovernmental Organization |
| **PAWDEP** | Pamoja Women Development Programme |
| **SDG** | Sustainable Development Goal |
| **SPSS** | Statistical Package for Social Sciences |
| **VIF** | Variance Inflation Factor |

## OPERATIONAL DEFINITION OF TERMS

**Flexible credit limit –** This is permitting a borrower to borrow beyond their credit limit if the new loan meets certain conditions (Field et al., 2020).

**Flexible loan** – This is a loan with easily modifiable aspects such as repayment period, terms, conditions, grace period and credit limits (Muguchia, 2012).

**Flexible repayment -** This is having varied loan settlements but within the agreed repayment period (Weber & Musshoff, 2013).

**Flexible terms of credit –** A credit policy that is modifiable to suit the characteristics of the borrower (Odhiambo, 2020).

**Loan rescheduling –** This is extending the repayment period of a loan at the request of the borrower or when the lender has evidence that the borrower will not be able to repay the loan on time (Odhiambo & Upadhyaya, 2020).

**Poverty** – Having inadequate resources to meet basic needs including food, clothing, shelter, education and health needs (Elhadidi, 2018).

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Poverty remains a significant challenge in the world today. According to the World Bank (2020), in 2019, around 734 million people or approximately 10% of the global population lived on $1.90 or less in a day. This marks a notable progress from the 1.9 billion or 36% who lived on $1.90 or less in a day in 1990. However, this progress is inadequate to meet the Sustainable Development Goals (SDG) number one which seeks to eradicate all forms of poverty by 2030 (United Nations Development Programme, 2020). Globally, most of the poor are, poorly educated, live in rural areas and are engaged in the agricultural sector (Aguilar & Sumner, 2019). The progress towards ending extreme poverty is slow which implies that there are challenges that hinder the progress.

Microfinance, since its inception by Yunus in 1983, has been a critical tool for poverty reduction in the entire world by empowering people engaged in agricultural and non-agricultural occupations (Imai et al., 2010). However, as the aspirations of millions of micro-loan recipients have evolved, the microfinance industry has not always evolved with them (Barboni, 2020). In most developing countries there has been a technological and economic transformation that has affected the needs and aspirations of microfinance clients. Weber and Musshoff (2013) observed that, as agribusiness and small entrepreneurs emerge, often lacking collateral, they require a more flexible approach to funding.

China is one of the greatest contributors towards ending poverty in the world by contributing to over 70 percent of poverty reduction globally (Weiping, 2018). The country has managed to lift over 500 million of its citizens out of extreme poverty from 1990 and thereby

attaining SDG 1 by 2020 (Kakar, 2021). The key towards effectiveness of poverty reduction in China has been increased government funding for poverty reduction, and innovative and flexible agricultural microloans and subsidies (Kimura, 2021). Besides, poverty reduction initiatives in China have been fuelled by improved contributions by financial institutions through increased flexible loans and assistance to local projects, and investments in rural infrastructure such as communication technology, electricity and roads.

In India, Barboni (2020) noted that microfinance remains a key mechanism that could drive people from poverty, but borrowing microloans on a highly rigid repayment structure still remains. These loans does not offer borrowers sufficient liquidity, to enable them engage in productive and sustainable agribusiness. Most microfinance institutions in India do not offer flexible loans because of the fear of increased default rates. Besides, most lenders are unable to gauge the suitability of borrowers for a more flexible loan. The situation in India contrasts that in Bangladesh where most microfinance institutions have largely adopted the concept of flexible loans (Barboni, 2017). Most microfinance institutions in Bangladesh provide borrowers with a choice of either the flexible or the standard loan contract.

In South American countries of Brazil, Bolivia, Colombia and Peru, microfinance institutions have been mostly successful in poverty alleviation when they focus on tailoring microfinance programs to local social and political conditions (Jouben, 2020). For instance, in Brazil, providing prepayment holidays (grace period) enables borrowers to manage their finances during periods where there is a downturn in agricultural yields or below average revenues. In Bolivia and Colombia, borrowers used the flexible prepayments to capitalise on opportunities to earn above average revenues during periods of high demand, such as during the festival season (Sett, 2020).

Despite the decline in global extreme poverty, it is still persistently high in Africa. The most affected regions in the world are South Asia and Sub-Saharan Africa (World Bank, 2020). Among the 43 nations with the highest poverty levels globally, most of them are those affected by conflicts, fragile or in Sub-Saharan Africa (World Bank, 2020). Sub-Saharan Africa (SSA) has the highest percentage of people living in poverty with 41%, followed by South Asia (15.1%). Besides, in SSA, 388.7 million people were estimated in 2018 to be living below the international poverty line (below US $1.90 per person per day). This represents a poverty head count ratio of 41.0% which is way higher compared with the world's average (10.7%) (Ouyang et al., 2019).

Microfinance has been at the centre of poverty reduction initiatives in most African countries. In Nigeria, microfinance institutions are better placed to reduce poverty than the mainstream financial institutions due to their ability to provide loans with flexible terms which suit the needs of the poor households (Taiwo et al., 2014). However, most microfinance institutions in Nigeria still offer financial products that are still not flexible enough to suit the needs of those living in poverty and their influence on poverty alleviation is therefore, compromised. In south Africa, though microfinance has expanded access to financial services to the poorer sections of the population, its effect in poverty alleviation remains minimal (Dzansi & Atiase, 2014). This is because most microfinance institutions do not adapt their services to the unique needs of their customers.

Poverty reduction remains a top priority in Kenya's development agenda and the government is committed to elimination of poverty by 2030. Since independence, Kenya has been seeking ways to combat poverty and has come up with many ways with little success. At the centre of poverty reduction initiatives in Kenya is microfinance. Microfinance has since the

1990s been promoted as key development strategy for promoting poverty alleviation and economic empowerment of the people economically (Okibo & Makanga, 2014). This is because of its potential to successfully address poverty by providing financial services to households who are not served by the formal banking sector. However, Odhiambo (2019) noted that though microfinance institutions have been there for long, they have not adapted effectively to the changing economic, technological and social environment by adapting their services to provide flexible loans.

Despite the major poverty alleviation initiatives, poverty remains a major prevailing feature among many communities in Kenya with ever increasing economic and social effects in the country. The Kenya National Bureau of Statistics (KNBS) 2020 Comprehensive Poverty Report records that 15.9 million out of 44.2 million of the Kenyan population are poor (Government of Kenya, 2020). Besides, poverty is more prevalent in rural areas among farming households and in informal settlements in urban areas. In Machakos County, the Comprehensive Poverty Report indicated that 59.6% of the residents live in poverty (Government of Kenya, 2020). This is supported by a survey conducted by Machakos County Government in all its eight sub counties, which demonstrated that there are more than 60% of residents who are living in poverty in spite of the national and county government programs that have been established to end the causes of poverty (Machakos County Government, 2018). Reducing poverty has been a goal for international, national and local governmental and nongovernmental organizations in areas where poverty is prevalent. The current study sought to examine the influence of flexible loans on poverty reduction poverty reduction among smallholder farmers in Machakos County, Kenya.

### 1.1.1 Poverty Reduction

Eliminating extreme poverty has been a global priority for some time, highlighted by its prominence in the SDGs. SDG 1 seeks to eradicate all forms of poverty everywhere by 2030 (United Nations, 2015). To attain this goal, United Nations (UN) require all member countries to implement nationally appropriate social protection measures and systems. Significant progress has been made on this front, but there is still a long way to go. Combating poverty efficiently requires an understanding of the root causes of poverty in the socio-economic context it occurs in order to tailor poverty alleviation programs to the needs of poor.

Poverty reduction programs come in many forms, which can and should be tailored to address the context where poverty is being combatted (Singh & Chudasama, 2020). There is no overarching solution, as the context of the socio-economic system directly impact how effective various strategies will be. In Bangladesh, social programs, government policy initiatives and subsidies for smallholder farmers are key poverty reduction in the country (Pradhan et al., 2013). In Laos, livelihood diversification was critical in reducing poverty (Martin & Lorenzen, 2016), while enhancing community involvement in poverty reduction initiatives was essential in reducing poverty in Sri Lanka (Yalegama et al., 2016).

India, Singh and Chudasama (2020) indicated that various community-demand-driven and participatory approaches had been applied to address the multi-dimensional nature of poverty in the country. These include community organisation based micro-financing, social and capability security, good governance and market-based initiatives. Imai et al. (2010) also linked microfinance to poverty reduction in rural areas of India. Moreover, microfinance has also been indicated to be a significant poverty reduction aspect in countries such as Pakistan where farming

households who accessed microfinance had less level of poverty than those households which had limited access to microfinance (Montgomery & Weiss, 2011).

In Sub-Saharan Africa, there have been various initiatives aimed at reducing poverty as the region is one of the poorest in the world. In Tanzania, government led poverty reduction initiatives are based upon increasing access to basic amenities, reducing income poverty and improving government infrastructure (Alobo, 2015). In Kenya, efforts to reduce poverty started immediately after independence and included District Focus for Rural Development Strategy, land resettlement programmes, the social scopes of development initiatives and other targeted initiatives such as local authorities transfer fund (LATF), constituency development fund, local authority undertaken by nongovernmental organizations (NGOs), community-based organizations (CBOs), development partners and communities. Microfinance in general and flexible loans in particular have also emerged as critical tools towards poverty alleviation. Flexible loans have been indicated to lead to improved access to agricultural loans by smallholder farmers in some parts of Kenya (Odhiambo & Upadhyaya, 2020). This study evaluated the influence of flexible loans on poverty reduction.

### 1.1.2 Flexible Loans

Flexible loans are credit facilities that are tailored to address the unique needs of borrowers. The main features of flexible loans include grace period, flexible repayments, loan refinancing, flexible credit limits, loan rescheduling or refinancing when the borrower requires it, and flexible credit terms (Barboni, 2017b). Grace period is the period within which the borrower is not expected to service the loan. Some financial institutions provide grace periods on loans depending on the type of loan granted, the conditions of the borrower or the expectations of the

cash flows from the financed asset. During the grace period, the borrower is not obligated to pay the lender any monies toward the loan, whilst the borrower does not incur any penalties.

Loan rescheduling is another aspect of loan flexibility that a financial institution can extend to its borrowers. Loan rescheduling is when the lender allows for a renegotiation of the repayment period, waiver or reduction of interest rates and penalties (Ankrah et al., 2019). A financial institution can extend the repayment period for a borrower who is facing challenges in meeting the obligations of repayment (Odhiambo & Upadhyaya, 2020). This has the effect of reducing the regular payments that in turn reduces the repayment burden on the borrower. Loan rescheduling is most common when the borrower requests the lender for rescheduling when they are unable to afford the payments or when they are unable to repay the loan on time.

A loan can also be flexed through loan refinancing. Loan refinancing is when the lender provides an additional loan even when the previous loan is not fully settled (Czura et al., 2020). A borrower gets a new debt obligation with favorable terms to replace the current debt obligation. This is conducted to allow borrowers to reduce their regular repayment amounts or receive lower interest rates. Loan refinancing can allow struggling borrowers to receive a longer-term loan with lower monthly payments which reduces their regular cash outflows (Weber & Musshoff, 2013). In such cases of loan refinancing, the total amount being paid is usually higher than before but it is spread over a longer period of time.

Flexible repayment is another form of loan flexibility that financial institutions can extend to their borrowers. Flexible repayment is when the borrower makes unequal regular payments towards the loan obligation but within the set repayment period (Odhiambo, 2019). When the financial institution allows the borrower to make flexible repayment options on their credit facility, this becomes convenient and less stressful on the borrower because they make

repayments based on what they can afford and the conditions of their cash flows (Barboni, 2017b). The borrower can pay mote when their finances are better and less when they have liquidity challenges which is beneficial and efficient to the borrower.

A flexible credit limit or line of credit allows the borrower to exceed their credit limits if the new loan meets certain conditions. This is a form of flexibility that allows the borrower to access finances to meet some emergency needs or worthwhile and extraordinary investments (Odhiambo & Upadhyaya, 2020). Though a financial institution sets the maximum it can lend to a certain borrower based on their credit history, the financial institution can relax this limit when the borrower is faced with extraordinary circumstances that need extra financing or when the borrower has an emergency that requires immediate cash outlay (Czura et al., 2020). However, most financial institutions set some restrictions on such loans that exceed the borrower's credit limit.

Flexible terms of credit is when the lender relaxes some terms to give credit to a client with unknown or doubtful credit creditworthiness (Czura et al., 2020). Flexible credit terms allow the borrower to select the payment terms that suits them and spread the repayment burden with a choice of daily, weekly or monthly payments. However, when flexing credit terms, the financial institution must ensure that the terms are flexible enough to enable the institution to attract quality borrowers, but firm enough to ensure that only calculated risks are taken (Ndegwa et al., 2020). Besides, the terms should be flexible enough to reflect the unique challenges of the institution's borrowers.

### 1.1.3 Machakos County, Kenya

Machakos County is in the former eastern province and amongst the 47 counties in Kenya. Kenya National Bureau of Statistics (2019) indicates that the county has a population of

1,421,932. The county borders Embu County to the North, Kiambu and Nairobi counties to the west, Makueni County to the South, Kitui to the east, Makueni to the south, Kirinyaga and Murang'a Counties to the northwest and Kajiado County to the southwest. The county has a climate that is largely semi-arid with the main economic activity being subsistence agriculture by smallholder farmers. Crops mostly cultivated in the County are maize, millet, green grams, sorghum and other drought-resistant crops.

Machakos County has eight subcounties that are Masinga, Kangundo, Yatta, Kathiani, Matungulu, Machakos Town, Mavoko and Mwala. Mwala Sub County is the poorest among the Sub Counties in Machakos Country at 61.5% (Machakos County Government, 2018). The subcounty has seven wards that are Muthetheni, Mbiuni, Kibauni, Masii, Mwala, Wamunyu, Mbiuni and Vyulya. The study will be conducted in Muthetheni ward which has a poverty level of 62.1% (Machakos County Government, 2018). The ward has a population of 13,367 people in 3,234 households. The ward has an area of 65.3 square kilometres and has a population density of 205 persons per square kilometer (Kenya National Bureau of Statistics, 2019). Muthetheni ward will be selected for the study due to the high poverty rate despite the various initiatives to reduce poverty in the ward.

There are various initiatives implemented in Muthetheni Ward to eradicate poverty which include the Constituency Development Fund (CDF), free primary education, Local Authorities Transfer Fund (LATF), rural electrification program, and community based initiatives by NGOs, CBOs, Development Partners and communities (Machakos County Government, 2018). However, these initiatives have not been able to reduce poverty. Since provision of micro credit to smallholder farmers has been indicated to be effective in poverty reduction in various

jurisdictions, this study assessed its efficacy in reducing poverty in the Muthetheni Ward, Mwala Subcounty, Machakos County.

## 1.2 Statement of the Problem

Since independence, Kenya has been seeking ways to combat poverty and has come up with many initiatives with little success. In Muthetheni Ward of Mwala Sub County, Machakos County 62.1% of residents, who are mostly smallholder farmers, are living in poverty in spite of the various strategies, policies and initiatives by national and county governments and NGOs to reduce poverty amongst the smallholder farmers (Machakos County Government, 2018). With a population of 13,367, this implies that 8,300 people in the ward live in poverty. The ward is among the poorest in Mwala Sub County and Machakos County. This high poverty incidence rate is experienced despite the various interventions by government and NGOs to reduce poverty in the ward.

Poverty is linked with negative conditions such as inadequate nutrition, substandard housing, inadequate child care, food insecurity, unsafe neighbourhoods, and lack of access to health care, which adversely affects development of children and the standard of life of those living in poverty (United Nations Development Programme, 2020). It is therefore essential to end all forms of poverty as envisaged in SDG 1 (United Nations, 2015). While there have been various programs in Kenya that are designed to reduce poverty levels, these programs have not been able to reduce poverty levels to attain the midterm objectives of the SDGs (World Bank, 2019).

There had been various studies on poverty reduction strategies in Kenya. However, most of these studies such as Nyamboga et al. (2014), Koech (2014) and Ngumbo et al. (2017) had

largely focused on assessing the effectiveness of poverty reduction initiatives and hence leaving conceptual gaps. In Brazil Sett (2020) conducted a comparative analysis of standard and flexible microfinance loan contracts in contributing towards poverty alleviation. The study left some conceptual gaps as it only focussed on flexible repayments and flexible terms, and did not consider loan rescheduling and flexible credit limits which will be included in the current study. Further, Odhiambo and Upadhyaya (2020) assessed the influence of flexible loans on access to agricultural credit and poverty alleviation in Siaya County, Kenya. This study left some contextual gaps as it was conducted in Siaya County which has different context to Machakos County Kenya. The available studies, therefore, do not explain how flexible loans to smallholder farmers has contributed to poverty reduction in a county with a very high poverty incidence like Machakos County. This study hence sought to determine the influence of flexible loans on poverty reduction among smallholder farmers in Machakos County, Kenya

### 1.3 Objectives of the Study

The study's main objective was to evaluate the influence of flexible loans on poverty reduction among smallholder farmers in Machakos County, Kenya

The specific objectives of the study were;

i) To determine the influence of loan rescheduling on poverty reduction among smallholder farmers in Machakos County, Kenya
ii) To evaluate the influence of flexible credit limits on poverty reduction among smallholder farmers in Machakos County, Kenya
iii) To determine the influence of loan refinancing on poverty reduction among smallholder farmers in Machakos County, Kenya

iv) To establish the influence of flexible repayment terms on poverty reduction among smallholder farmers in Machakos County, Kenya

### 1.4 Research Questions

i) What is the effect of loan rescheduling on poverty reduction among smallholder farmers in Machakos County, Kenya?

ii) How does flexible credit limits influence poverty reduction among smallholder farmers in Machakos County, Kenya?

iii) What is the influence of loan refinancing on poverty reduction among smallholder farmers in Machakos County, Kenya?

iv) How does flexible repayments influence poverty reduction among smallholder farmers in Machakos County, Kenya?

### 1.5 Significance of the Study

This study was justified since there have been various initiatives implemented in Muthetheni Ward to eradicate poverty which include the Constituency Development Fund (CDF), free primary education, Local Authorities Transfer Fund (LATF), rural electrification program, and community based initiatives by NGOs, CBOs, Development Partners and communities with limited success (Machakos County Government, 2018). These initiatives have not been able to reduce poverty. Since provision of micro credit to smallholder farmers has been indicated to be effective in poverty reduction in various jurisdictions, this study was justified to assess its efficacy in reducing poverty in the Muthetheni Ward, Mwala Subcounty, Machakos County.

The findings from this study will be valuable to the government which is the key policymaker regarding poverty reduction in the country. These findings will inform on the application of flexible loans and their effectiveness in poverty reduction initiatives in Muthetheni Ward. The government could use the findings to incorporate support for flexible loans into its poverty reduction strategy papers to enhance their effectiveness in poverty alleviation. Besides, the national government can apply the findings to determine the best approach to operationalize flexible loans in poverty reduction initiatives among smallholder farmers.

The study findings could also be of value to the Machakos County Government. With the advent of devolution, the county government has some responsibility for some devolved functions and development activities. The findings will inform the government on the effectiveness of flexible loans in poverty reduction programmes in the ward. This will provide evidence that the county government can use to improve formulation, execution and evaluation of these programmes while incorporating flexible credit facilities and processes.

Poverty reduction programmes implementers such as microfinance institutions, government agencies, NGOs, community-based organizations and the community will find the study valuable. These implementers will get a deeper insight into the importance of flexible loans in poverty reduction initiatives in Muthetheni Ward. They will also understand the level of flexibility of loans accessed by various smallholder farmers in the ward. These stakeholders can use these findings to enhance or advocate for improved flexibility of loans provided to smallholder farmers.

Lastly, the study findings will be a significant addition to the existing empirical evidence on the influence of flexible loans on poverty reduction among smallholder farmers. This would be significant to scholars, development finance professionals, academicians, and researchers. The

academicians, scholars, and development finance professionals will get insights into the effect of flexible loans in poverty alleviation in Muthetheni Ward. This could form a basis for improvements. Besides, the study will have suggestions for further research that researchers can explore in the future.

### 1.6 Scope of the Study

The study was limited to assessing the effect of flexible loans on poverty reduction among smallholder farmers in Machakos County, Kenya. The study's subject scope was limited to establishing the influence of loan rescheduling, flexible credit limits, loan refinancing and flexible repayment terms on poverty reduction among smallholder farmers in Machakos County, Kenya. The unit of analysis was the household while the unit of observation was the household head. The study location was Muthetheni Ward in Mwala Sub-County which was the poorest ward in Machakos County. The study did not include the other wards in Mwala Sub County which are Mbiuni, Kibauni, Masii, Mwala, Wamunyu, Mbiuni and Vyulya. The study was conducted through a survey in July and August, 2021 and covered those who had accessed a loan in the preceding two years (2019 – 2021).

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

The review of extant literature on flexible loans and poverty reduction is presented in this chapter. First presented is the theoretical review which provides the two theories that were used to anchor the study. The chapter also includes empirical review which is structured according to the study's specific objectives. Besides, the research gaps that emanate from the past studies, the conceptual framework that guided the study and the operationalization of the variables are provided in the chapter.

## 2.2 Theoretical Review

This study was anchored on three theories; asset scarcity theory, structural poverty theory and utility theory. The discussion of these three theories including their proponents, development, their key propositions and their application to the current study is provided in this section.

### 2.2.1 Assets Scarcity Theory

The asset scarcity theory is a contemporary theory on poverty by Barbier (1989), but which originated from the works of Harvey (1974) on the link of resources to poverty. The major proposition of the theory is that asset scarcity explains poverty and social exclusion. The general theory underlying this is that households which own an adequate level of assets are less affected by fluctuations in their incomes since asset holdings can be varied. Hence, the risk of becoming poor when they are hit by a negative income shock is lower than for asset-poor households

(Singh & Chudasama, 2020). In this context, Odhiambo (2019) notes that the lack of income diversification resulting from the holding of too few liquid and long-term assets affects both the probability of becoming poor and the length of poverty episodes, especially when the principal economic activity is not secure and a family's own internal situation is prone to instability (a common trait among poor households).

Barbier (1989) indicates that poverty is perpetuated buy not only the inability to accumulate private assets but also social assets (such as health and education) that matters in increasing both poverty rates and their persistence. Furthermore, a household's stock of wealth might play a large role in causing and perpetuating poverty for yet another reason: since assets can be transferred from one generation to the next, they might reduce social mobility across time. These points apply to differing degrees to all types of economically-valuable assets, ranging from cash to human capital. Moreover, material assets, such as cash, are also associated with human capital. This is because it affects the ability of the household to acquire human capital such as skills, training and education.

The poor are characterised by finding it difficult to save, which means that they are often without bank accounts and, moreover, may face discrimination in financial markets. Accordingly, to reduce asset poverty, one could consider the implementation of poverty eradication initiatives that encourage the poor to accumulate private and social assets (Stoian et al., 2012). The poor would also benefit from having access to the range of ancillary services that the availability of banking offers, such as lower interest rates and flexible repayment plans, which can protect against income shocks and in the longer term enable them to start a self-reinforcing asset accumulation process that can eventually lead to a sufficient level of wealth so as to counteract the effects of income fluctuations (Nawaz, 2010). In this respect, the

development of micro credit or credit unions that provide flexible loans can play an important role.

The asset scarcity theory was used in this study to explain how flexible credit limits and loan refinancing could improve access to credit for the farming households and enable them to acquire farming and other assets, and thus play a vital role in poverty reduction among the smallholder farmers in Machakos County, Kenya. This implies that farmers with no access to flexible loans, may have reduced access to farm inputs and be unable to cater for basic needs such as food, clothing and education, and therefore are more expected to remain in poverty and pass that poverty to future generations.

### 2.2.2 Structural Poverty Theory

The structural poverty theory by Rank et al. (2003) explains that poverty is caused by structural failings in the economic, social and political aspects of a nation that causes some people to be discriminated and marginalized. This view is supported by Alobo (2015) that poverty is a structural phenomenon and people in poverty because they are in economic and social systems that deprive them of inadequate income. One of the major causes of poverty is discrimination of the poor from mainstream financial systems which deprive them of resources that could enable them to move out of poverty.

The structural poverty theory also indicates that there are other structural factors that can cause poverty which include vicious circle of poverty, macroeconomic policies, the reproduction of the class system, economic structure and institutionalized discrimination (Elkins, 2014). One of the most prominent structural factors that influence poverty is discrimination form the mainstream financial system. This makes small holder farmers to be unable to move away from

the vicious circle of poverty. This has to a large extent been addressed by microfinance institutions which have enhanced access to finance from smallholder farmers who are shunned by mainstream financial institutions (Weber & Musshoff, 2013).

The structural poverty theory was applied in the study to explain the role played by loan rescheduling and flexible repayments as critical factors that enhance income smoothing and reduce income fluctuations among smallholder farmers. These aspects of flexible loans can enable the smallholder farmers top smoothen their income and hence reduce poverty. When financial institutions permit smallholder farmers to reschedule their loans when faced with low incomes, it enables them to use the limited income for other aspects such as health, food, and education which are essential in poverty reduction. Besides, enabling smallholder farmers to make flexible repayments permits them to align loan repayments with their incomes and thereby enabling them to effectively allocate their limited resources for poverty reduction.

### 2.2.3 Expected Utility Theory

The expected utility theory by Neumann and Morgenstern (1953) is one the pillars of modern finance and economics which provides a normative model of rational choice. The main proposition of the theory is that individuals makes choices between various preferences based on the expected value from the preferences (Feldman, 2006). The individual therefore, selects the alternative that maximizes their welfare or benefit (Peterson, 2009). The theory however, assumes that the individual has information about all the possible alternatives, can rank all the possible alternatives in terms of preference, that a mix is preferred and the individual is rational (Buchak, 2013). The expected utility theory is widely applicable in decision making under uncertainty.

The expected utility theory is applicable to borrowers in making decisions regarding loans by microfinance institutions. When seeking a loan from a microfinance institution, the borrower is uncertain about the future revenues and cash flows and hence their ability to repay the periodic instalments (Odhiambo, 2019). They would therefore prefer the flexible loans that would provide them with a grace period, flexible repayments and flexible credit limits to act as a form of insurance when their revenues and cash flows cannot be able to meet the regular standard repayments (Barboni, 2017). Besides smoothing their cash inflows and outflows, the flexible contract would enable them to enjoy peace of mind, and use some of the cash they could have used to repay loans to improve their lives hence reducing poverty levels.

The expected utility theory was applied in the study to link loan rescheduling and flexible prepayment terms to poverty reduction. When a microfinance institution offers a borrower a standard or a flexible loan contract, the borrower is expected to select the flexible contract as it will enable them to pay less when their revenues are low and more when revenues are high. Besides, the flexible contract allows the borrower to reschedule payments when they are facing loan repayment challenges. This enables them to use the little money they have to cater for their social needs or take advantage of investment opportunities that can bring higher revenues in future, and thus promoting poverty reduction.

### 2.3 Empirical Review

This section provides a review of empirical literature pertinent to the study problem. The review is structured according to the research objectives and provides a clear linkage between the predictor and response variables of the study. After the review of the empirical studies, the

knowledge gaps that exists in these studies are identified. Besides, the study provides the procedures and processes that were undertaken in order to fill those gaps.

### 2.3.1 Influence of Loan Rescheduling on Poverty Reduction

In Colombia, Field et al. (2020) assessed the influence of flexible credit on performance of entrepreneurs. The study involved 2,482 applicants who were provided with flexible contracts with flexible offers, flexible contract with standard offers and standard loan contracts with standard offer. The study established that for those provided loans with flexible contracts, they had the option of paying only the interest on the loan and postpone principal repayment for a maximum of three times in a year. Moreover, borrowers with the flexible contracts could choose to extend repayment of the principal instalments even beyond the loan period, basically prolonging the loan period. The findings indicated that those with flexible loan contracts were able to smoothen their cash flows and thereby enabling their business to withstand shocks compared to those with standard contracts.

In Brazil, Warby (2014) investigated the mechanisms through which microfinance influences poverty reduction. The study surveyed small and micro businesses and farming households in Brazil. A structured questionnaire was used to collect data and chi square test used to analyse the data and test hypotheses. The findings determined that microfinance institutions are able to significantly reduce poverty due to their flexibility in loan approvals and demand for loan repayment. When borrowers request for loan rescheduling, most microfinance institutions grant the request which provide the borrower with more time to recover their lost earning capacity. This in effect smoothens the income of the borrower and thereby reducing or eliminating the bouts or episodes of poverty.

In South Africa, Dzansi and Atiase (2014) assessed the role of flexible microfinance in poverty reduction among small scale agricultural households. The study was a case control study that included borrowers with standard loan contracts in the control group and borrowers with flexible loans contracts. The study determined that borrowers with flexible contracts reported significantly higher crop yields and revenues compared to the borrowers with standard loan contracts. The reason for the difference was given as those with flexible contracts being able to reinvest cash into profitable investments when they arose and paying back loans when there were no profitable investments opportunities.

In Nigeria, Ebimobowei et al. (2012) assessed the role played by flexible microfinance on poverty reduction among women involved in small scale businesses in Bayelsa state. The study applied a descriptive survey design to assess the relationship between the extent of loan rescheduling and poverty reduction in Bayelsa amongst the female entrepreneurs. The study used a sample of 286 women involved in small enterprises in Bayelsa State. Data was collected using a structured questionnaire and analysis of the data was through descriptive statistics, analysis of variance and chi-square statistics. The study findings determined that there was a significant association between poverty reduction and the extent of loan flexibility in terms of extent of rescheduling accepted by the microfinance institutions. Loan rescheduling enabled the women to pay lesser amounts over a long time and hence being able to invest the surplus cash in their businesses for increased profitability. However, loan rescheduling was also associated with the level of default.

A study in Tanzania by Kaseva (2014) examined the influence of flexible microfinance on poverty reduction among small scale traders in Kinondoni District. The study was a case of Africa Microfinance Limited. Data for the study was collected using questionnaires from 115

microfinance clients and interviews of 3 loan officers. The study established that individual's income increases as a result of access to a flexible loan with restructuring option. The study also determined that even though most of the loan beneficiaries were living in poverty, only the ones with higher education, high cash flow and high collateral appeared to be the successful ones.

In Siaya County, Kenya, Odhiambo (2019) assessed the influence of flexible loans on loan accessibility and poverty reduction among smallholder farmers in the county. The study established that loan rescheduling did not have an influence on access to credit for smallholder farmers in the county. The study had applied a cross-sectional survey design where data collection was through structured questionnaires. The study sample was 103 smallholder farmers who had been selected using simple random sampling method. The average loan flexibility among the farmers was 0.419 which was computed using the Loan Flexibility Index (LFI). Though access to credit differed education, gender, wealth status of households and types of credit, loan rescheduling did not have a significant effect on access to credit. Odhiambo (2020) further indicated that loan rescheduling among farmers involve having the option to renegotiate with the financial institution to extend the repayment period of the loan when the farmer faces shocks that affect their income, crops or animal yield.

Ochieng (2012) explored the influence of flexible microfinance loans on poverty reduction amongst the urban poor areas of Kenya. Specifically, the study examined how loan rescheduling by microfinance institutions enabled people to cope with poverty. The study applied a case study research design and collected both qualitative and quantitative data from K-Rep bank clients within the Kibera and Kawangware informal settlements of Nairobi. The study applied descriptive statistics, cross tabulations and chi square tests to analyse the collected data. The study findings indicated that microfinance loan rescheduling was strongly and positively

associated with poverty reduction. When K-Rep clients were challenged in meeting their loan repayments, the loans were rescheduled which enabled them to use the released cash flows to cate for their household needs.

### 2.3.2 Influence of Flexible Credit Limits on Poverty Reduction

Having flexible credit limits means that borrowers can access more credit when they have exceptional circumstances such as an emergency, even when they have exhausted their previous credit limit. This could help the borrower to cope with the emergency and cater for the repayment later and thus enabling them to satisfy their livelihood needs effectively (Odhiambo, 2020). In Brazil, Sett (2020) conducted a comparative analysis of standard and flexible microfinance loan contracts in contributing towards poverty alleviation. The study applied a questionnaire survey to collect data and used t test to assess the difference between the two forms of contracts. The study established that there were significant differences between the two types of contracts and their effectiveness to alleviate poverty. The flexibility of credit terms depending on the character, social and economic aspects of the borrower enhance access to microloans which enhanced the incomes and of the borrowers thus improving their standard of living.

A study in Peru by Marr (2017) investigated the role played by microfinance institutions in poverty alleviation in the farming households of the country. The study population was potato farmers in the Puno area who were provided with structured questionnaires. The study applied chi square, t tests and ordinal regression to analyse the collected data. The study findings established that both standard and flexible microfinance had successfully attained its dual objective of poverty reduction and financial sustainability. Further results from the t tests indicated that there was a significant difference in poverty reduction between those who had

flexible contracts compared to those who had standard microfinance contracts. Those with flexible contracts reported higher increase in incomes compared to those with standard contracts.

Taiwo et al. (2014) evaluated the influence of flexible microfinance on poverty reduction among small scale farmers in Southwest Nigeria. specifically, the study assed the role of credit with flexible credit limits and line of credit with microfinance institutions enabled the farmers to alleviate poverty in their households. The study was based on field data collected through questionnaires. Analysis of the data was through cross-tabulations and frequency counts, while hypothesis testing was through an ordinary least squares (OLS) econometric model. The study determined that loan flexibility in terms of credit limits did not have any significant effect on poverty reduction (measured through increased incomes).

In a study in Madagascar, Weber and Musshoff (2013) evaluated the influence of loan volume rationing and have flexing credit limits influenced credit access to small scale farmers in the country. The study findings indicated that farmers in agricultural finance firms with flexible microfinance loans had a significantly higher probability of accessing credit than those financial institutions providing standard microfinance loans. This improved access to loans could assist smallholder farmers to improve their investments in farms which could increase their yields and hence reduce their levels of poverty.

Mecha (2017) investigated the effect of provision of flexible micro-credit to the poor women and youth living in rural areas of Kisumu County, Kenya, contributed towards poverty reduction. The study focussed on two facets of flexibility; having flexible credit limits and credit terms. The study was a survey of youth and women groups engaged in farming and other economic activities. The findings showed that allowing the youth and women groups to borrow over the credit limit when the loan met some conditions was critical as it boosted the groups in

financing emergencies or taking advantage of profitable ventures. This enhanced the earnings of 55% of the groups and hence empowered them by reducing their poverty levels.

Okibo and Makanga (2014) probed the effects of microfinance institutions on poverty reduction in Kenya. The location of the study was Kiambu County, Kenya and it focussed on loans provided to women and women groups by the Pamoja Women Development Programme (PAWDEP). The study applied questionnaires to collect quantitative data and interviews to collect qualitative data. Findings indicated that the women who had received loans from PAWDEP were of the opinion that the loans had enabled them to invest in their microbusiness and this significantly reduced poverty levels in the county. Specifically, the study determined that provision of lines of credit with flexible limits depending on the nature of loan was crucial in poverty reduction as this enabled the women to deal with emergencies that could have caused income shocks if not addressed.

Bansal and Bansal (2012) conducted a study in India that sought to investigate the influence of flexible credit terms in microloans on poverty reduction amongst small enterprises. The study was a cross sectional survey of small businesses that operated along Hema Majra Road, Mullana, Ambala, in Haryana India. The data for the study was collected using questionnaires that were addressed to the owners of the small businesses. The study determined that flexible terms of credit in microfinance can be considered an important component for an effective poverty reduction strategy. The study further established that efficient provision and access to flexible microcredit was instrumental in enabling the small businesses to take advantage of investment opportunities and hence increase their revenues and profitability.

### 2.3.3 Influence of Loan Refinancing on Poverty Reduction

Loan flexibility in relation to loan refinancing option has been a subject of various studies. A study in Bangladesh by Jain (2020) assessed the role of microfinance as a poverty alleviation tool by focussing on its capacity to provide flexible loans to borrowers in rural areas. The study focussed on smallholder rice farmers who had accessed credit with different levels of flexibility from microfinance institutions. The study findings showed that having loan refinancing options terms enabled many rice farmers to replace existing burdensome loans with new ones which had better terms. This enabled them to save on loan service costs and hence use the saved amounts to pay for inputs and labour. This enabled them to significantly improve their yields, and thereby contributing significantly towards poverty alleviation. Having loan refinancing options is where the financial institution provides borrowers with option to replace their current loan obligation with one that has more favourable terms. Through this process, a borrower takes out a new loan to pay off their existing debt, and the terms of the old loan are replaced by the updated agreement. This enables borrowers to redo their loan to get a lower monthly payment, different term length or a more convenient payment structure. This would enable borrowers with burdensome loans to replace those loans with new loans with better terms and thus enable them to support their needs (Ankrah et al., 2019).

In Vietnam, Le (2017) assessed the role of flexible microfinance in poverty reduction in the country's smallholder farming population. The study was a cross sectional survey of farmers who had accessed credit from cooperatives, groups or microfinance institutions. The study established that the microfinance industry had evolved significantly in Vietnam from its early roots as a social movement into a multidimensional financial services industry catering for the people living in poverty. The study further determined that providing loan refinancing options to

the farmers who were burdened by existing loans enable farmers to have access to loans that enabled them reduce household poverty in the rural areas of Vietnam.

Mphaka (2017) assessed the influence of microcredit on improvement in welfare and poverty reduction amongst community-based groups in Rwanda. The study also investigated the effect of loan flexibility on default rates. The population of the study was 4 staff members of the Adventist Development and Relief Agency (ADRA Rwanda), 12 borrower community-based groups, and 6 MFI leaders. The study collected data using semi structured interviews and focus groups. Analysis of the collected data was through content analysis and methodological triangulation. The study findings determined that the MFIs included in the study provided a combination of standard and flexible loans contracts. The findings also determined that a sustainable microfinance institution can significantly reduce poverty by providing flexible microfinance loans that clients can use to start and grow their microbusinesses and thereby positively enhance their income and improve their lives. Most prevalent flexibility component was having loan refinancing options that were offered to struggling borrowers. However, the study established that flexibility of loans was positively associated with default rates. This was however mitigated by loan monitoring.

Kasali et al. (2015) conducted a study in Nigeria that examined the contribution of microfinance towards poverty alleviation. The study was conducted on small scale farmers that engaged in sorghum and millet production. To collect data, the study applied interviews and questionnaires, and a probit model applied in analysing the collected data. The study established that microfinance Institutions are more accessible to small scale farmers due to their flexibility in relation to providing services that are not usually available from mainstream financial institutions such as loan refinancing. Loan refinancing enabled farmers to reduce their monthly repayments

which enabled the farmers to use the increased resources to procure inputs and resources that increased their productivity and provided them the capacity to procure necessary facilities and assets.

A study in Ghana by Leticia (2012) investigated the means through which microfinance is a means to poverty alleviation. The study was a case of Masara N‘Ariziki Farmers Association. The study used a focus group method of data collection with a sample of 100 respondents. The study findings showed that all the respondents unanimously agreed that it was very profitable and lucrative to deal with the microfinance institution as it provided loans with flexibility options such as loan refinancing. The study also determined that the flexibility of the microfinance in providing loans enabled the farmers to access quality seeds, improve their crop yields, have a sustainable income and have better economic lives.

Haji (2013) conducted a study in Zanzibar that assessed the contribution of microfinance institutions to poverty reduction in the South District. The study population were owners and managers of small enterprises. The study applied a mixed methods research design where data was collected using questionnaires and interviews. Analysis of the collected data was through multiple regression analysis and thematic summary analysis. Study findings revealed that microfinance institutions have transformed the lives of people living in poverty in a positive way. Specifically, the study determined that through flexible loans with refinancing options, MFI clients had enhanced their capital invested, incomes, and had enabled the entrepreneurs to expand their businesses. The study however, established that some loan conditions like grace period for loan repayment, loan collateral, and coverage of the MFIs were limiting factors that hindered the poor from accessing loans.

### 2.3.4 Influence of Flexible Repayment Terms on Poverty Reduction

Flexible repayment allows borrowers repay loans at their own pace and time, but within the loan term. This could help borrowers as they will not be obligated to pay the loan when their incomes can barely cover the repayments and leave them with cash to sustain their livelihoods. Flexible loans with flexible repayments enable entrepreneurs to cope with unexpected shocks to income and to invest more productively (Field et al., 2020). A study on smallholder farmers in Pakistan by Czura et al. (2020), however did not support this findings. The study established that though flexible repayment schedules enable farmers to invest the borrowed funds in risky but profitable projects, they erode the repayment morale which is detrimental to the farmers in the long term.

A study in Bangladesh by Abu (2020) investigated the impact of flexible microfinance on poverty reduction at the macro level in comparison with the traditional banking services. The stud applied secondary data from 1983-2016. Analysis of the data was through three-stage least squares regression model, and a vector auto regression granger-causality test. The study findings indicated that flexible microfinance had not had a significant impact on poverty reduction which are the similar results with traditional banking products. The findings in this study hence questioned the effectiveness of flexible microfinance in reducing poverty.

Sett (2020) in a study in Brazil established that flexibility to restructure the amount of repayments depending on evolving contingencies lessens financial stress and encourages those living in poverty to invest in higher income generating opportunities without a commensurate increase in penalties or rates of default. The study also determined that flexibility in repayments provide insurance against adverse circumstances, and alleviate immediate financial stress. This is

critical in smoothening incomes so as to maintain acceptable living standards and prevent the borrowers from sliding back to poverty during periods of reduced revenues.

A study in Ethiopia by Mayoux (2020) investigated the influence of flexible loans on improvement of living standards and poverty reduction amongst women owned small enterprises in Addis Ababa. Specifically, the study assessed how flexible repayments influenced poverty levels. The study applied questionnaire to collect primary data. Analysis of the data was through linear regression and correlation analysis. The study results indicated that flexible microfinance did not have a significant impact on poverty reduction. However, the findings indicated that when flexible microfinance is combined with empowerment interventions, it becomes a significant tool for financial sustainability and poverty alleviation. Providing women entrepreneurs with flexible repayment option enabled them to reduce their risk in periods of poor revenues, thus enabling them to cater for their social and household needs, even during the periods that their businesses did not perform well.

In Ghana, Bakare (2017) assessed the influence of microfinance on poverty reduction among farming households. The study was based on a questionnaire survey of 320 farmers and 10 semi-structured interviews with loan officers in the microfinance institutions. The findings from the study determined that there was a significant association between the microfinance loans and wellbeing of the recipient farmers. One of the vital aspects of the loans was flexibility in repayments which reduced payment stress when the farmers did not have adequate cash flows to meet the repayments. This enabled them to roll over the payments to future months without incurring penalties. Flexible repayments were important as they did not force the farmers to sell off their assets to meet the prepayments, or incur extra penalties for the delayed or reduced prepayments.

A study in India by Erica Field et al. (2016) assessed the influence of microfinance repayment schedules on poverty alleviation amongst the rural poor in West Bengal, India. The study applied structured questionnaire to collect data using a descriptive cross sectional design. The study applied ordinal regression to analyse the collected data. The findings indicated that most microfinance institutions still followed a rigid contract model while providing loans to their members. This involved clients making equal daily, weekly or monthly instalments that started immediately after loan disbursement. However, there were a few microfinance institutions that provided flexible contracts where borrowers made unequal instalments but the loans had to be completely repaid within the agreed time. The findings determined that borrowers who were provided with the flexible contracts were able to align their cash flows with the repayments and hence were able to deal with income shocks better. The study found that flexibility of the loan contract had a significant influence on income levels and poverty reduction.

In Sri Lanka, Tilakaratna (2012) evaluated the dynamics and dimensions of flexible microfinance and its effect on poverty reduction. The study applied a mixed methods research design and applied both secondary and primary data sources. The study population was MFI clients in Colombo. The study findings revealed that the microfinance sector provided more flexible loan products than the conventional financial sector. The MFI sector hence served the poor segments of the clientele. The study determined that most MFI clients preferred MFIs to conventional financial institutions due to the flexible products that MFIs offered. The study further established that clients who received flexible loans from MFIs were able to invest the funds in risky and profitable investments and thus able to earn more than those who were provided with standard loan contracts.

### 2.3.5 Influence of Flexible Loans on Poverty Reduction

A study assessing the effect of flexible microloans on performance of micro, small and medium enterprises (MSMEs) and poverty alleviation was conducted by Layyinaturrobaniyah et al. (2020) in West Java. The study purpose was to determine the effect of flexible microcredit and the performance of MSMEs on poverty eradication amongst the people living in the Jatigede Reservoir, Sumedang, West Java community. The population of study was 100 people that had been affected by Jatigede dam. The study gathered data using a questionnaire. Data collected was analysed using partial least squares structural equation model (PLS-SEM) with SmartPLS version 3.0 for windows. The study findings showed that flexible microcredit and the performance of MSMEs jointly influenced the poverty level. Key aspects of flexible microcredit included flexible repayments and having flexible credit terms.

In Turkey, Båge (2018) assessed the role of microloans on poverty reduction in farming households. The study was a cross sectional survey that sought data from both female and male heads of households who were members of microfinance institutions. Interviews and questionnaire were used to collect data. The analysis was conducted through chi square statistics, descriptive statistics and thematic summary analysis. Study findings determined that poor rural people require access to a wide variety of financial services, not just conventional credit. Having loans that are unique to the needs of the recipients was critical in enabling them to use the loans to improve their farming income and standard of living. However,, the study determined that flexible loans provided to men did not have an effect on poverty reduction, which was contrary to the flexible loans provided to female recipients. The study concluded that, by having access to safe and flexible loans, poor rural people can take advantage of economic opportunities, cushion themselves against shocks and plan for their future.

A study by European Bank for Reconstruction and Development (2015) in 41 emerging and developing economies across the world assessed the influence of flexible microcredit on poverty eradication and improvement of standard of life. This study used leading microcredit institutions n the countries and focussed on organized female groups. The study was descriptive in nature and the sample size was 877 female participants in the 42 countries. The study use logistic regression to assess the effect of flexible microcredit on welfare and poverty reduction. The findings of the study demonstrated that providing poor people with flexible microcredit does not lead to a significant rise in household income. Besides, the study determined that flexible loans did not have significant benefits to the women recipients in terms of female empowerment or education. However, the study determined that flexible microcredit enabled low-income households to cope better with risk and to enjoy greater flexibility in how they spend and earn money.

A study in Ghana by Seddoh (2014) investigated the effect of flexible microfinance loans by microfinance institutions in Lower Manya Krobo municipality on poverty reduction amongst women. The study applied a descriptive research design and selected a sample of 180 through random sampling. Data for the study was collected using structured questionnaire. The findings from the study indicated that flexible loans from the microfinance scheme were positively associated with improvement of beneficiaries' lives. The loan flexibility was in terms of flexible repayments, rescheduling and having a grace period. This enabled the loan beneficiaries to align their cash flows with the flexible loan repayments.

Field et al. (2013) assessed the influence of loan flexibility in the classic repayment structure of loans on agricultural households in India. The study assessed whether unequal instalments based on the borrower's needs, or having a grace period influenced investments and

income improvement. The findings from the study showed that permitting clients a grace period before they begin repayment enabled them to invest most of the loaned funds into more profitable ventures. Moreover, allowing borrowers to have flexible repayment enabled them to reduce payment when incomes were low and increase payments when incomes were high. This contributed to a 16-19% increase in household incomes.

Another study in India by Devaraja (2011) investigated the mechanisms through which microfinance institutions act as poverty reduction tools. The study was conducted on members of microfinance institutions in Mysore Town of Southern India. Data was collected from small business owners in the town. Data was collected using structured questionnaires using a correlational research design. The findings from the study established that most microfinance institutions in the town provided both flexible and standard contracts. The key features of flexibility included grace period, flexible repayment period and flexible credit limits. However, the study noted that the outreach of flexible loans was too small and hence did not have any effect on poverty reduction.

### 2.4 Research Gaps

The reviewed studies left various contextual, methodological and conceptual gaps which the current study sought to fill. Among the contextual gaps, studies like Weber and Musshoff (2013) in Madagascar, Field et al. (2013) in India, Bakare (2017) in Ghana, and Czura et al. (2020) in Pakistan were conducted in other countries that may have different social, political, economic and technological characteristics from Kenya. This may make the findings from such studies to be not generalizable to the Kenyan context. Moreover, most of the studies had been conducted in other sectors apart from farming. For instance, the study by Muguchia (2012)

assessed the effect of flexible loans on mortgage uptake and homeownership. This hence justified this study to evaluate the contribution of flexible loans towards poverty reduction in Machakos County, Kenya.

The reviewed studies also left some methodological gaps. For instance, the study by Odhiambo (2020) conducted a multiple linear regression but had collected ordinal data. An ordinal regression model would have been more appropriate in such an instance. Besides, the study by Field et al. (2020) applied chi square analysis which is appropriate in studies that seek to assess the relationship between one and another. However, in studies seeking to assess the influence of one variable on another chi square statistics may not be appropriate. Moreover, the study by Kasali et al. (2015) conducted in Nigeria applied a probit model which is appropriate when the dependent variable can take only two values. However, the current study, the probit model may not be appropriate since the dependent variable will take on more than two values. These gaps therefore justified the current study to assess the influence of flexible loans on poverty reduction using a multiple regression model.

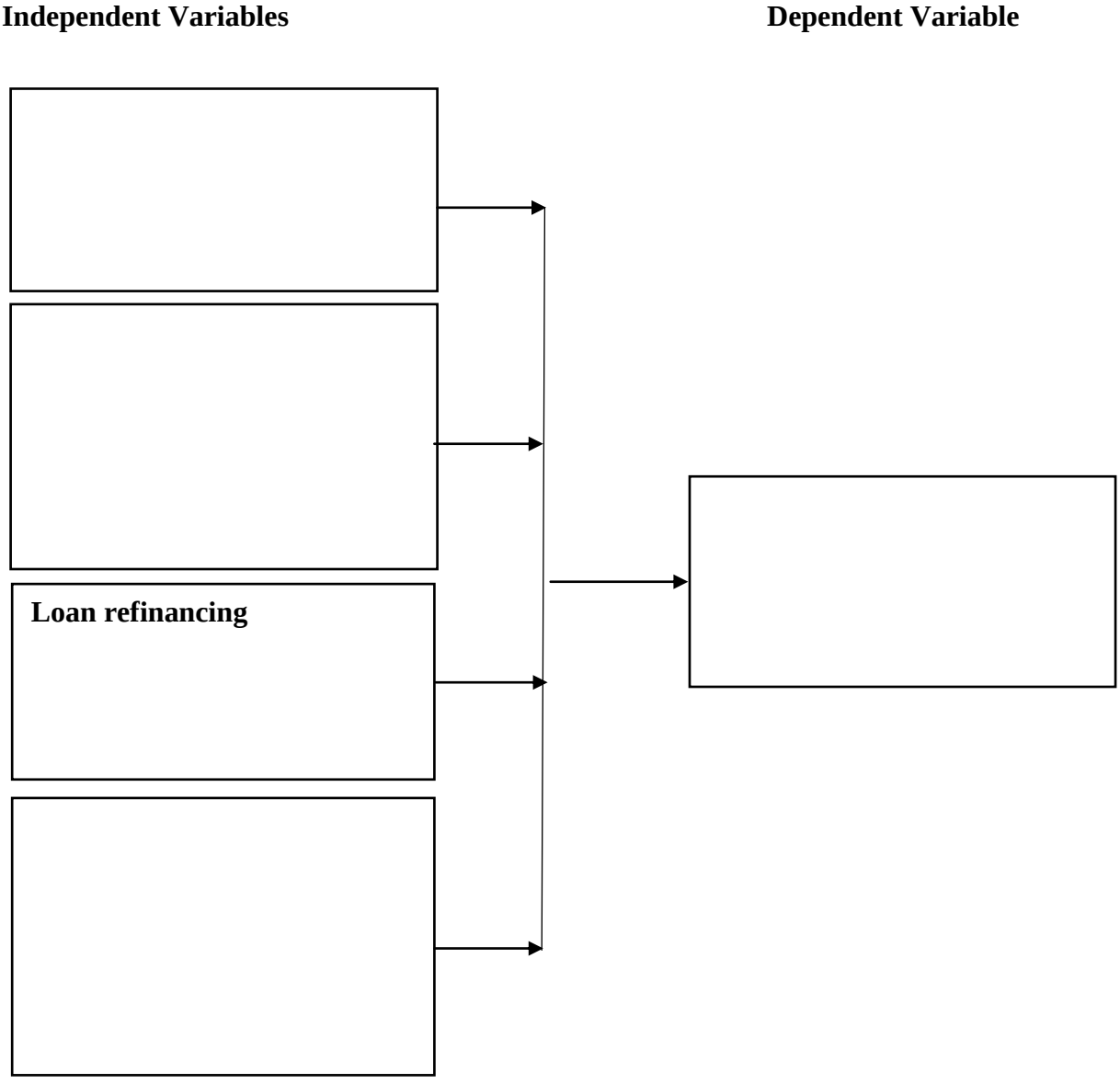
The reviewed studies also left some conceptual gaps that the current study sought to fill. For instance, the studies by Field et al. (2020) and Warby (2014) only focussed on loan rescheduling as the only form of loan flexibility, and thereby leaving out other vital loan flexibility aspects such as flexible repayments, flexible credit limits and flexible terms of credit. Another study Kasali et al. (2015) conducted Nigeria only focussed on flexible terms of credit while the study by Bakare (2017) focussed only on flexible repayments. This study sought to plug these gaps by determining the influence of loan rescheduling, flexible credit limits, flexible terms of credit and flexible repayments on poverty reduction among smallholder farmers in Machakos County, Kenya.

## 2.5 Conceptual Framework

The study's conceptual framework is provided in Figure 1. This provides the hypothesized association between the study's predictor and response variables. The predictor variables in the study are loan rescheduling, flexible credit limits, loan refinancing and flexible repayment terms. These are major aspects of flexible loans. The response variable in the study is poverty reduction. The study hypothesizes that loan rescheduling, flexible credit limits, loan refinancing and flexible repayments will have a joint effect on poverty reduction among smallholder farmers in Machakos County, Kenya.

**FIGURE 1**

**Conceptual Framework**




***Source: Author (2021)***

## 2.6 Operationalization of Variables

This section provides the procedure for measuring and operationalizing the study variables. Table 1 provides the indicators, measures and levels of measurement of the study

variables. - The researcher should use this part to clearly show how each of the variables in his study will be operationalized.

**TABLE 1**

**Operationalization of the Variables**

| Variable | Measurement | Level of measurement |
|---|---|---|
| Loan rescheduling | • Loan extension facility<br>• Ease in repayment plan adjustment<br>• Cost of extension | • Ordinal measurement scale (5-point Likert scale questions) |
| Flexible credit limits | • Regularity in adjustment of loan limits<br>• Cost of exceeding credit limit<br>• Ease of access to loans beyond existing credit limit | • Ordinal measurement scale (5-point Likert scale questions) |
| Loan refinancing | • Loan replacement options<br>• Effect on credit score<br>• Favourable new loans terms | • Ordinal measurement scale (5-point Likert scale questions) |
| Flexible repayment terms | • Adjustments to monthly instalments<br>• Grace period<br>• Adjustments based on borrower request | • Ordinal measurement scale (5-point Likert scale questions) |
| Poverty reduction | • Change in capacity to cater for household needs<br>• Income<br>• Household expenditure | • Ordinal measurement scale (5-point Likert scale questions) |

***Source: Author (2021)***

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter provides details of the research methodology that was used in the study to assess the influence of flexible loans on poverty reduction among smallholder farmers in Machakos County, Kenya. The chapter comprises of the research design, the study population, the sample size and the sampling technique. Besides, the chapter provides the instruments that were applied in data collection, the techniques applied for data collection, the assessment of validity and reliability of the research instrument and the process of analysis.

## 3.2 Research Design

The study used a descriptive research design. This research design is ideal because it enables a study to describe a phenomenon in terms of characteristics, values, and attitude, and report accurately without interference from the researcher (Saunders et al., 2019). According to Sharp et al. (2017), descriptive research collects data from records, or people though observations, questionnaires or interviews and gives an accurate account of the findings about the phenomenon under study. This research method was ideal for this study as it assisted in understanding the extent of flexibility of loans and thereby related this to poverty reduction among smallholder farmers in Machakos County. The design had been successfully applied by Sett (2020), Odhiambo and Upadhyaya (2020), Kaseva (2014) and Weber and Musshoff (2013) on studies relating to effect of microfinance.

### 3.3 Target Population

Population refers to all items or people (unit of analysis) with the features that the study is interested in. The unit of analysis may be a person, group, organization, country, object, or any other entity that one wishes to draw scientific inferences about (Chandra & Sharma, 2019). The population for this study was the 3,234 households of Muthetheni ward, Mwala Subcounty, Machakos County, Kenya (Kenya National Bureau of Statistics, 2019). This included those smallholder households that had been able to access microfinance loans in the preceding two years of the study. The unit of analysis was the household, while the unit of observation was the household head. The targeted population was expected to provide in-depth information of the extent that the loans they had accessed had been flexible, and also provide insights into how those loans had influenced their levels of poverty.

### 3.4 Sample Size and Sampling Procedure

The sample for the study was calculated using the sampling formula provided by Yamane (1967). The formula is;

$$n = \frac{N}{1 + Ne^2}$$

In the formula, 'n' is the size of the selected sample, 'N' is the size of the population and e is the significance level applied. Due to the need to make the sample selected manageable for the study, a significance level of 10% was used. The calculation for the sample is indicated by;

$$97 = \frac{3234}{1 + 3234(0.1)^2}$$

The study hence selected a sample of 97 households who participated in the study from the population of households that were eligible. This figure was accessed from microfinance and other development finance institutions in the study location.

Sampling in research is the process of selecting the units that participated in a study. This process should be representative of the whole population. The sampling frame lists all population units that the sample was selected from (Collis & Hussey, 2018). The study adopted cluster sampling to select the 97 households that participated in the study. The study divided the ward into 27 clusters according to the villages in the ward. The number of the households in the villages ranged from 106 – 127 (Kenya National Bureau of Statistics, 2019). Then, random sampling was applied to select the cluster that participated in the study. All members in the cluster who had received loans from microfinance and development finance institutions were recruited into the study until the sample of 97 was attained.

### 3.5 Research Instrument

A questionnaire was used to collect primary data from the household heads. The questionnaire contained open ended and closed questions that were aimed at obtaining answers to matters relating to the study objectives. The questions were aimed at ensuring optimal data collection of the required quantitative and qualitative data. The questionnaire comprised of two parts, the background data part as well as main question's part. Furthermore, the main question's part was divided into five sections according to the research variables. A questionnaire was selected as the data collection instrument in this study due to its ability to collect data from a large sample at low cost, capacity to collect quantitative data and tits ability to have standardized responses that can be applied for further quantitative analysis (Linton, 2017).

### 3.6 Pilot Study

The questionnaire, which was used to collect data was pre-tested before conducting the main study. This was done to establish the validity and reliability of the instrument for the study purpose. This study pretested the questionnaire on ten (10) respondents selected from the neighboring Masii Ward which had comparable socio-economic and climatic conditions. This was 10% of the selected sample as stipulated by Chandra and Sharma (2019). The data collection procedure for the main study was followed whereby, introductions were made to the household heads to get informed consent. The responses from the 10 questionnaires was input into Statistical Package for Social sciences (SPSS) version 24 which assisted in analysis.

#### 3.6.1 Reliability of the Instrument

Reliability is the extent that a measuring instrument produces the same results on repeated trials. This is indicated as the consistency or stability of results from the instrument after repeated administration (Saunders et al., 2019). To test for reliability, Cronbach's alpha was used and a threshold of 0.7 was applied as the minimum according to Creswell and Creswell (2017). According to Taherdoost (2018), Cronbach's alpha is a measure of internal consistency, and it assesses how closely associated set of questionnaire items are as a group. It is therefore considered as a dependable measure of scale reliability. All the questions had a Cronbach's alpha above 0.7 and hence considered reliable.

#### 3.6.2 Validity of the Instrument

Validity according to Bolarinwa (2015) is the capacity of the research instrument to measure what it is designed to measure. It is also denoted as the extent of systematic error in the

measuring instrument (Colomb et al., 2016). The questionnaire in this study was assessed for content, face and construct validity. Content and face validity were assessed through expert reviews in development finance from the KCA University (Bolarinwa, 2015b). The recommendations of the experts were incorporated in refining the research questionnaire. Construct validity was assessed using confirmatory factor analysis (CFA). All items had loadings of above 0.5 towards the variable and were hence considered to satisfy construct validity.

### 3.7 Data Collection Procedure

The procedure of data collection started after drafting of the final data collection instruments and receipt of permission from all the relevant authorities. The first activity was to seek approval from KCA University. Using this approval, the next step was to seek research permission from Mwala Sub County administration. Further, the researcher informed the Sub County Chief and assistant chiefs in the study location. After getting all the approvals and authorization, the next step was to randomly sample one of the 27 clusters according to the villages in the ward.

Thereafter, the researcher accessed a list of loan beneficiaries from microfinance and development finance institutions and recruited 97 households from the selected village to participate into the study. Before recruitment into the study, the study purpose was explained to each potential household head and if consent was given, the household head was recruited into the study. Those who had not accessed a microfinance loan in the past two years were excluded from the study. This recruitment continued until the sample of 97 was attained. Then, from each selected household, the household head was administered with the questionnaire. The questionnaire was self-administered for those household's heads who could read and write.

However, for those who could not read and write, the questionnaire was researcher administered. Those who were not conversant in English or Swahili had a Kamba interpreter. The filled questionnaires were stored safely awaiting analysis.

### 3.8 Data Processing and Analysis

The data for the study was analyzed using quantitative approaches. The quantitative data collected using the questionnaire was input into SPSS and analyzed, to provide results that could be interpreted using statistics such as means, percentages, frequencies and regression coefficients. This indicated the extent of flexibility of loans provided to the smallholder farmers in Machakos County. Besides, the descriptive statistics provided a portrayal of the demographic characteristics and poverty levels of the surveyed households.

To answer the research questions, the study used multiple linear regression. According to Angrist and Pischke (2014), multiple linear regression is applied to predict behavior of predictor and response variables. The multiple regression model was of the form;

$$Y= \beta o+ \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

In the formula;

Y= Poverty level,

$\beta_0$ = Constant,

$X_1$ = Loan rescheduling,

$X_2$ = Flexible credit limits,

$X_3$= Loan refinancing,

$X_4$ = Flexible repayments,

$\beta_i$ = Regression coefficients, and

$\varepsilon$ = Error term.

The results from the descriptive and regression analysis were presented in tables and figures.

### 3.9 Diagnostic Tests

Before conducting the multiple linear regression, several model specification tests were conducted to determine the suitability and fitness of the model. The diagnostic tests conducted included multicollinearity test, linearity test, heteroscedasticity test and test of normality of regression residuals.

#### 3.9.1 Test of Linearity

Linearity test was the first test conducted. This was conducted to determine whether there is a linear association between the response and predictor variables (Suresh & Sharma, 2013). The analysis of variance was used to conduct this test. The test's null hypothesis is that the independent and dependent variables are linearly related. Therefore, if the p value is below 0.05, the null hypothesis is accepted and rejected when the p value is above 0.05.

#### 3.9.2 Multicollinearity Test

Multicollinearity test was the second diagnostic test conducted. This determines whether there are any two predictor variables that have a high linear relationship (Lincoln & Guba, 2018). The study used the variance inflation factor (VIF) to assess multicollinearity. The critical value in the test is 5. VIF values of below 5 denotes that there is no multicollinearity while VIF values of above 5 indicates multicollinearity.

#### 3.9.3 Heteroscedasticity Test

After fitting the model, the study conducted the heteroscedasticity test on the residuals. The test of heteroscedasticity assesses the homogeneity of variance of the regression residuals. This test was conducted by use of the Breusch Pagan test. According to Suresh and Sharma (2013), heteroscedasticity is present when the p value of the test is below 0.05. Homoscedasticity, on the other hand, is depicted when the p value of the test is above 0.05.

### 3.9.4 Test of Normality of Residuals

The last test to be conducted was the test of the normality of residuals. According to Colomb et al. (2016), when regression residuals are distributed normally, there is a risk of inaccuracy of the statistical tests conducted. Besides, the regression coefficients may provide inefficient estimates. This study used Shapiro-Wilk to evaluate the normality of the regression residuals. The null hypothesis in the test is that the residuals are normally distributed while the alternate hypothesis is that the residuals are not normally distributed. Therefore, the null hypothesis is accepted when the p value is more than 0.05 and rejected if the p value is less than 0.05.

# CHAPTER FOUR

# DATA ANALYSIS, FINDINGS AND DISCUSSION

## 4.1 Introduction

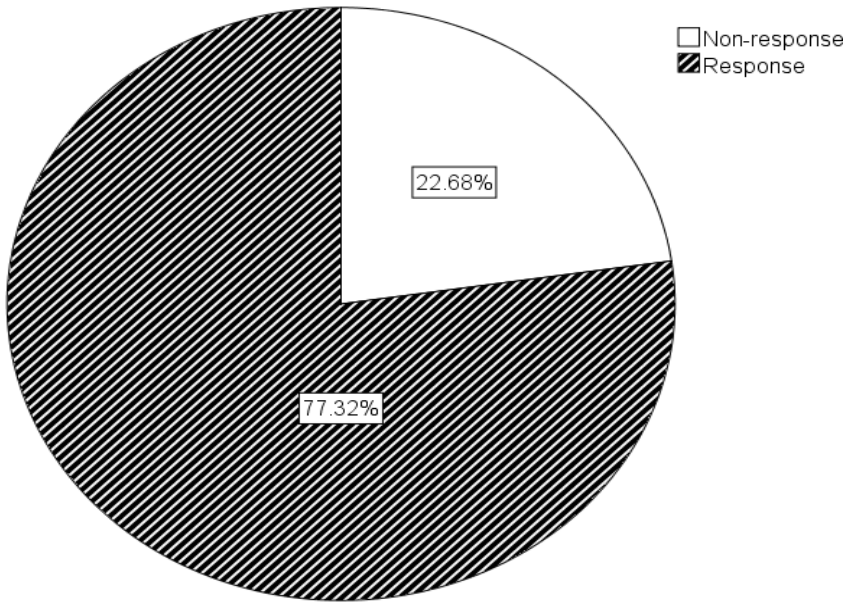
This chapter presents the analysis of the collected data, provides the findings and the interpretation and also the discussion of the findings. The procedures followed in analyzing the data is provided as well as the presentation of the findings in tables and figures. Further, the findings are discussed in relation to the study's theoretical and empirical literature.

## 4.2 Response Rate

The study administered questionnaires to 97 household heads in Muthetheni Ward of Machakos County and was able to collect 75 questionnaires. This was 77.32% (Figure 2) response rate which was considered adequate for the study. The findings provided herein hence relate to the data collected from these respondents.

**FIGURE 2**

**Response Rate**




***Source: Author (2021)***

### 4.3 Pilot Test Results

The questionnaire pre-tested before conducting the main study to assess its reliability and validity. The pilot test was conducted on 10 respondents selected from the neighboring Masii Ward which had comparable socio-economic and climatic conditions. The responses from the pilot test were analyzed for validity and reliability.

#### 4.3.1 Reliability of the Questionnaire

The reliability of the questionnaire was assessed by computing the Cronbach alpha coefficients of the study constructs towards explaining each study variable. The findings from the reliability test are provided in Table 2.

**TABLE 2**

**Reliability of Research Instrument**

| Variable | No. of items | Cronbach alpha |
|---|---|---|
| Loan rescheduling | 6 | 0.817 |
| Flexible credit limits | 6 | 0.823 |
| Loan refinancing | 6 | 0.911 |
| Flexible repayment terms | 6 | 0.855 |
| Poverty reduction | 5 | 0.786 |

***Source: Author (2021)***

The finding provided in Table 2 show that the questionnaire was reliable since all the variables had Cronbach alpha coefficients of above 0.7. This indicates that the questionnaire was reliable and able to collect dependable information on the study subject.

#### 4.3.2 Validity of the Questionnaire

Construct validity of the questionnaire was assessed using confirmatory factor analysis (CFA). All items had loadings of above 0.5 towards the variable and were hence considered to

satisfy construct validity. Besides, the Average Variance Explained (AVE) was computed which indicates how much of variance in the variable is explained by the constructs. The findings are provided in Table 3.

**TABLE 3**

**Validity of Research Instrument**

| Variable | No. of items | AVE |
|---|---|---|
| Loan rescheduling | 6 | 0.511 |
| Flexible credit limits | 6 | 0.562 |
| Loan refinancing | 6 | 0.507 |
| Flexible repayment terms | 6 | 0.548 |
| Poverty reduction | 5 | 0.571 |

***Source: Author (2021)***

The findings provided in Table 3 show that all the constructs had an AVE of 0.5 and above. This implies that these constructs explained the variance in their respective variables effectively. This hence showed that the questionnaire had construct validity.

### 4.4 Demographic Information

The study collected demographic information of the respondents relating to gender, age, highest education level attained, whether the respondents had an existing loan and the value of the existing loan or the last loan borrowed. This information was analyzed using descriptive statistics and presented in this section. Regarding gender of the respondents, the findings are as provided in Table 4.

**TABLE 4**

**Gender of Respondents**

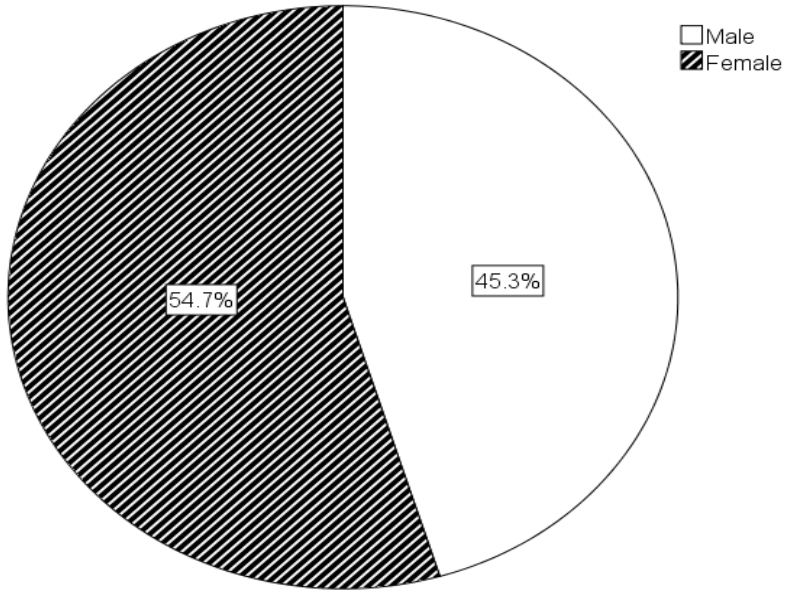
| Gender | Frequency | Percent |
|---|---|---|
| Male | 34 | 45.3 |
| Female | 41 | 54.7 |
| **Total** | **75** | **100.0** |

***Source: Author (2021)***

Results provided in Table 4 depict that most of the respondents were female (54.7%) while males were the minority (45.3%). This suggest that most of the microfinance clients in Muthetheni Ward were female though there was not a significant variance between the genders. These findings are also presented in Figure 3.

**FIGURE 3**

**Gender of Respondents**




***Source: Author (2021)***

Regarding age of the respondents, the findings are provided in Table 5.

**TABLE 5**

**Age of the Respondents in Years**

| **Age in years** | **Frequency** | **Percent** |
|---|---|---|
| 30 and below | 15 | 20 |
| 31 – 40 | 47 | 63 |
| 41 and above | 13 | 17 |
| **Total** | **75** | **100** |

***Source: Author (2021)***

Findings provided in Table 5 show that most of the respondents were between the ages of 31 and 40 years (63%). These findings demonstrate that most of the microfinance clients in

Muthetheni ward were young and middle aged. Regarding the highest level of education, the findings are summarized in Table 6.

**TABLE 6**

**Highest Level of Education**

| Education level | Frequency | Percent |
|---|---|---|
| Primary | 24 | 32.0 |
| Secondary | 33 | 44.0 |
| College | 11 | 14.7 |
| University | 7 | 9.3 |
| **Total** | **75** | **100.0** |

***Source: Author (2021)***

The findings summarized in Table 6 show that 44% of the respondents had attained secondary level of education while only 9.3% had attained university level of education. This shows that the majority of microfinance clients in Muthetheni ward had attained only basic level of education. The study enquired whether these respondents had an existing loan with their financial institutions. Findings are displayed in Table 7.

**TABLE 7**

**Whether Respondent Had a Current Loan**

| Response | Frequency | Percent |
|---|---|---|
| Yes | 52 | 69.3 |
| No | 23 | 30.7 |
| **Total** | **75** | **100.0** |

***Source: Author (2021)***

The findings displayed in Table 7 indicate that 69.3% of the respondents had existing loans that they were servicing while 30.7 had no existing loans. Further, the study investigated the size of the respondents' existing loans or last loan borrowed. The findings are summarized in Table 8.

**TABLE 8**

**Value of Existing or Last Loan Borrowed**

| Size of Loan | Frequency | Percent |
|---|---|---|
| 2000 and below | 28 | 37.3 |
| 2001 – 5000 | 30 | 40.0 |
| 50001 – 10,000 | 8 | 10.7 |
| Above 10,000 | 9 | 12.0 |
| **Total** | **75** | **100.0** |

***Source: Author (2021)***

Results summarized in Table 8 indicate that 40% of the loans advanced to the study respondents were between KES 2,000 and 5000. Only 12% of the loans were above KES 10,000. This indicates that most of the loans advanced to small holder farmers in Muthetheni are micro loans of below KES 5000.

### 4.5 Study Variables

This section provides the descriptive results of the study variables. This was conducted to provide a view of the extent that loans provided by microfinance and development finance institutions in Muthetheni ward were flexible. Besides, the analysis gives a glimpse of poverty reduction amongst the surveyed respondents.

#### 4.5.1 Loan Rescheduling

The study assessed the extent that loans provided by microfinance and development finance institutions in Muthetheni Ward were flexible in regard to enabling loan rescheduling. This was attained by providing respondents with statements which they were requested to rate using a five-point Likert scale (strongly agree – strongly disagree). Means and standard deviations were used to analyze the results which are summarized in Table 9.

**TABLE 9**

**Descriptive Statistics on Loan Rescheduling**

| Loan rescheduling statements | Mean | Std. Deviation |
|---|---|---|
| My financial institution provides the option of loan extension at the time the loan is provided | 4.23 | .967 |
| Adjusting the repayment plan of a disbursed loan is easy with my financial institution | 3.92 | 1.100 |
| There is no penalty when a borrower seeks to reschedule a loan with my financial institution | 3.96 | 1.168 |
| My financial institution is always ready to extend the repayment period for a loan when a borrower faces repayment challenges | 3.83 | .860 |
| Extending payment period for loans helps borrowers to meet the regular payments | 3.88 | .770 |
| Loan rescheduling enables borrowers to use the retained cash to invest in farming | 3.81 | 1.036 |

***Source: Author (2021)***

The findings summarized in Table 9 show that the respondents agreed that their financial institution provides the option of loan extension at the time the loan is provided (mean = 4.23, std deviation = 0.967) and also agreed that there is no penalty when a borrower seeks to reschedule a loan with the respondents' financial institution (mean = 3.96, std deviation = 1.168). Further, respondents agreed that adjusting the repayment plan of a disbursed loan is easy with the financial institution (mean = 3.92, std deviation = 1.100) and likewise agreed that extending payment period for loans helps borrowers to meet the regular payments (mean = 3.88, std deviation = 0.770). Moreover, respondents agreed that the financial institutions are always ready to extend the repayment period for a loan when a borrower faces repayment challenges (mean = 3.83, std deviation = 0.860) and also agreed that loan rescheduling enables borrowers to use the retained cash to invest in farming (mean = 3.81, std deviation = 1.036). These findings indicate that the microfinance institutions and development finance institutions that provided microloans

to small holder farmers in Muthetheni War were able to provide adequate flexibility relating to loan rescheduling.

### 4.5.2 Flexible Credit Limits

The study assessed the extent that loans provided by microfinance and development finance institutions in Muthetheni Ward were flexible concerning providing flexible credit limits. This was attained by providing respondents with statements which they were supposed to rate using a five-point Likert scale (strongly agree – strongly disagree). Means and standard deviations were used to analyze the results which are summarized in Table 10.

**TABLE 10**

**Descriptive Statistics on Flexible Credit Limits**

| Statements on flexible credit limits | Mean | Std. Deviation |
|---|---|---|
| My financial institution allows borrowers to get loans beyond their credit limit when the new loan meets some conditions | 1.73 | .794 |
| In my financial institutions, the credit limit is regularly updated based on the borrower's payment history | 4.04 | .687 |
| When a borrower pays their installments on time, my financial institution increases their credit limit | 3.95 | 1.012 |
| Loans provided beyond the credit limit assists borrowers to meet pressing and emergency needs | 4.27 | .905 |
| Allowing borrowers to borrow beyond their credit limit enables borrowers to take advantage of profitable investment opportunities | 4.05 | .985 |
| Loans provided beyond the credit limit by my financial institution does not attract higher interest rates | 3.57 | 1.068 |

***Source: Author (2021)***

Findings displayed in Table 10 show that respondents agreed that loans provided beyond the credit limit assists borrowers to meet pressing and emergency needs (mean = 4.27, std deviation = 0.905) and further agreed that allowing borrowers to borrow beyond their credit limit enables borrowers to take advantage of profitable investment opportunities (mean = 4.05, std deviation = 0.985). Additionally, the respondents agreed that in their financial institutions, the

credit limit is regularly updated based on the borrower's payment history (mean = 4.04, std deviation = 0.687) and also agreed that when a borrower pays their installments on time, the financial institution increases their credit limit (mean = 3.95, std deviation = 1.012). Further, respondents agreed that loans provided beyond the credit limit by the financial institutions do not attract higher interest rates (mean = 3.57, std deviation = 1.068). However, respondents disagreed to the statement that the financial institutions allow borrowers to get loans beyond their credit limit when the new loan meets some conditions (mean = 1.73, std deviation = 0.794). These findings indicate that credit limits were adjusted based on the loan repayment history of the borrowers, but rarely did microfinance and development finance institutions flex their credit limits for borrowers with repayment challenges.

### 4.5.3 Loan Refinancing

The study assessed the extent that loans provided by microfinance and development finance institutions in Muthetheni Ward were flexible regarding loan refinancing opportunities for borrowers. The study attained this by providing respondents with statements which they were supposed to rate using a five-point Likert scale (strongly agree – strongly disagree). Means and standard deviations were used to analyze the results which are summarized in Table 11.

The findings summarized in Table 11 indicate that the financial institutions provide options to replace existing loans with new loans with better terms (mean = 4.24, std deviation = 0.956) and also agreed that conditions to replace an existing loan with a new one from the financial institutions are not very punitive (mean = 4.17, std deviation = 0.933).

**TABLE 11**

**Descriptive Statistics on Loan Refinancing**

| Statements on loan refinancing | Mean | Std. Deviation |
|---|---|---|
| My financial institution provides options to replace existing loans with new loans with better terms | 4.24 | .956 |
| The financial institution provides different options for borrowers who seek to replace their existing loans with new loans | 4.12 | .838 |
| My financial institution provides advice to borrowers when they are seeking to replace their existing loans with new ones | 3.76 | .836 |
| Borrowers do not suffer any adverse effects on their credit score if they replace existing loans with new ones | 2.77 | 1.269 |
| Conditions to replace an existing loan with a new one from my financial institution are not very punitive | 4.17 | .933 |
| My financial institution does not have high loan replacement fees | 3.85 | .857 |

***Source: Author (2021)***

Besides, more findings indicated that respondents agreed that the financial institutions provide different options for borrowers who seek to replace their existing loans with new loans (mean = 4.12, std deviation = 0.838) and further agreed that their financial institutions do not have high loan replacement fees (mean = 3.85, std deviation = 0.857). Moreover, respondents agreed that their financial institutions provide advice to borrowers when they are seeking to replace their existing loans with new ones (mean = 3.76, std deviation = 0.836). However, respondents were neutral to the statement that borrowers do not suffer any adverse effects on their credit score if they replace existing loans with new ones (mean = 2.77, std deviation = 1.269). This indicates that though some borrowers did not suffer adverse effects after loan refinancing, there were borrowers who faced adverse consequences after refinancing their loans.

### 4.5.4 Flexible Repayment Terms

The study assessed the level that loans provided by microfinance and development finance institutions in Muthetheni Ward were flexible regarding provision of flexible repayment

options to borrowers. The study attained this by providing respondents with statements which they were supposed to rate using a five-point Likert scale (strongly agree – strongly disagree). Means and standard deviations were used to analyze the results which are summarized in Table 12.

**TABLE 12**

**Descriptive Statistics on Flexible Repayment Terms**

| Statements on flexible repayment terms | Mean | Std. Deviation |
|---|---|---|
| My financial institution allows borrowers to make unequal monthly instalments depending on borrower ability | 3.93 | .905 |
| The loan I lastly received from my financial institution had a grace period | 3.75 | .902 |
| Any time that borrowers request for adjustments to loan installments, my financial institution listens | 3.94 | .729 |
| My financial institutions allow borrowers to adjust their installments provided they do not go beyond the loan term | 3.81 | .849 |
| My financial institutions allow borrowers to occasionally skip some loan installments | 4.29 | .818 |
| Allowing flexible repayments enables borrowers to reduce their loan repayment stress | 3.88 | 1.078 |

***Source: Author (2021)***

The study findings (Table 12) indicate that respondents agreed to all the statements provided. Specifically, respondents agreed that their financial institutions allowed borrowers to occasionally skip some loan installments (mean = 4.29, std deviation = 0.818) and further agreed that any time that borrowers request for adjustments to loan installments, the financial institutions listen (mean = 3.94, std deviation = 0.729). Besides, respondents agreed that their financial institutions allow borrowers to make unequal monthly instalments depending on borrower ability (mean = 3.93, std deviation = 0.905) and also agreed that allowing flexible repayments enables borrowers to reduce their loan repayment stress (mean = 3.88, std deviation = 1.078). Additionally, respondents agreed that the financial institutions allow borrowers to

adjust their installments provided they do not go beyond the loan term (mean = 3.81, std deviation = 0.849) and also agreed that the loan they lastly received from their financial institutions had a grace period (mean = 3.75, std deviation = 0.902). these results indicated that the microfinance and development finance institutions in Muthetheni Ward provided smallholders farmers with flexible loans with numerous flexibility aspects such as grace period, repaying flexible amounts and skipping some installments.

### 4.5.5 Poverty Reduction among Smallholder Farmers

The dependent variable in the study was poverty reduction. This study assessed the level of poverty reduction that could be associated with flexibility of loans provided by microfinance and development finance institutions in Muthetheni Ward. were flexible regarding provision of flexible repayment options to borrowers. The study measured poverty reduction by providing respondents with statements which they were supposed to rate using a five-point Likert scale (strongly agree – strongly disagree). Means and standard deviations were used to analyze the results which are summarized in Table 13.

**TABLE 13**

**Descriptive Statistics on Poverty Reduction**

| Statements on Poverty Reduction | Mean | Std. Deviation |
|---|---|---|
| The last loan received from the financial institution improved the capacity of the household to cater for household needs | 4.25 | .871 |
| The loan provided to the household by the financial institutions was invested in projects that improved the family's income | 3.89 | .994 |
| Loan received enabled the household to increase its expenditure on basic needs | 4.29 | .818 |
| Loan received was used to cater for health and education needs for household members | 3.93 | .949 |
| Loan received from the financial institution enabled the household to improve its farm yields | 4.03 | 1.052 |

***Source: Author (2021)***

The findings on poverty reduction (Table 13) show that respondents agreed that loan received enabled the household to increase its expenditure on basic needs (mean = 4.29, std deviation = 0.818) and also agreed that the last loan received from the financial institution improved the capacity of the household to cater for household needs (mean = 4.25, std deviation = 0.871). Moreover, respondents agreed that loan received from the financial institution enabled the household to improve its farm yields (mean = 4.03, std deviation = 1.052) and further agreed that loan received was used to cater for health and education needs for household members (mean = 3.93, std deviation = 0.949). Furthermore, respondents agreed that the loans provided to the household by the financial institutions were invested in projects that improved the family's income (mean = 3.89, std deviation = 0.994). These findings indicate that the surveyed households in Muthetheni Ward had the perception that loans provided by the development and microfinance institutions enhanced their capacity to meets health, basic and educational needs.

## 4.6 Diagnostic Tests

The study used multiple regression analysis to answer the research questions. Before conducting the linear regression analysis, the study evaluated whether the assumptions of linear regression were violated. The assumptions tested included assumption of linearity, assumption of no multicollinearity, assumption of homoscedasticity and assumption of normality of regression residuals. The results of these tests are presented in this section.

### 4.6.1 Test of Linearity

The first test to be conducted was the linearity test. This was conducted to determine whether there is a linear association between the response and predictor variables. The analysis

of variance's deviation from linearity test was used to conduct this test. The results are presented Table 14.

**TABLE 14**

**Test of Deviation from Linearity**

| Variables | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Poverty reduction * Flexible Repayment | 2.647 | 2 | 1.324 | 1.599 | .217 |
| Poverty reduction * Loan Rescheduling | 3.002 | 2 | 1.501 | 2.002 | .164 |
| Poverty Reduction * Flexible Credit Limit | 1.645 | 2 | 0.823 | .898 | .412 |
| Poverty reduction * Loan Refinancing | 2.811 | 2 | 1.405 | 1.594 | .210 |

***Source: Author (2021)***

The test's null hypothesis is that the independent and dependent variables are linearly related. Therefore, if the p value is below 0.05, the null hypothesis is rejected and accepted when the p value is above 0.05 (Suresh & Sharma, 2013). The findings in Table 14 indicate that there was linearity between all the independent and dependent variables as the p values were above 0.05.

### 4.6.2 Multicollinearity Test

The second tested that was conducted was the multicollinearity test. This determines whether there are any two predictor variables that have a high linear relationship. The study used the variance inflation factor (VIF) to assess multicollinearity. Findings are presented in Table 15.

**TABLE 15**

**Test of Multicollinearity between Independent Variables**

| | Collinearity Statistics | |
|---|---|---|
| Independent Variables | Tolerance | VIF |
| Flexible Repayment | .381 | 2.621 |
| Loan Rescheduling | .395 | 2.530 |
| Flexible Credit Limit | .921 | 1.086 |
| Loan Refinancing | .983 | 1.017 |

***Source: Author (2021)***

The critical value in the test is 5. VIF values of below 5 denotes that there is no multicollinearity while VIF values of above 5 indicates multicollinearity (Lincoln & Guba, 2018). The findings in Table 15 show that all the VIFs were below 5. This indicates that there was no multicollinearity between any two independent variables.

### 4.6.3 Heteroscedasticity Test

After fitting the model, the study conducted the heteroscedasticity test on the residuals. The test of heteroscedasticity assesses the homogeneity of variance of the regression residuals. This test was conducted by use of the Breusch Pagan test. Findings are summarized in Table 16.

**TABLE 16**

**Test of Heteroscedasticity**

| Test statistic | Chi square | Prob > Chi square |
|---|---|---|
| Breusch Pagan | 1.764 | .146 |

***Source: Author (2021)***

Heteroscedasticity is present when the p value of the Breusch pagan test is below 0.05. Homoscedasticity, on the other hand, is depicted when the p value of the test is above 0.05 (Suresh & Sharma (2013). The findings presented in Table 16 indicate that there was homoscedasticity of the variances of the regression errors since the p value was above 0.05 (Chi square = 1.764, p = 0.146).

### 4.6.4 Test of Normality of Residuals

The last test to be conducted was the test of the normality of residuals. This study used Shapiro-Wilk to evaluate the normality of the regression residuals. After the regression model was fitted, the unstandardized errors were saved and their normality tested. The study findings are summarized in Table 17.

**TABLE 17**

**Tests of Normality of Regression Residuals**

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Unstandardized Residuals | .047 | 75 | .200 | .993 | 75 | .211 |

***Source: Author (2021)***

The findings (Table 17) indicate that the regression residuals were normally distributed (Shapiro wilk statistic = 0.993, p = 0.211). The null hypothesis in the test is that the residuals are normally distributed while the alternate hypothesis is that the residuals are not normally distributed. Therefore, the null hypothesis is accepted when the p value is more than 0.05 and rejected if the p value is less than 0.05 (Colomb et al., 2016). The null hypothesis of normality of regression residuals was accepted.

### 4.7 Correlation Analysis

The study conducted a bivariate correlation analysis to establish the linear association between the study variables. The study findings are summarized in Table 18. The study findings (Table 18) indicate that loan rescheduling ($r = 0.852$, $p < 0.05$) and flexible repayment ($r = 0.758$, $p < 0.05$) had strong significant positive relationship with poverty reduction. However, flexible credit limits ($r = -0.005$, $p = 0.964$) and loan refinancing ($r = 0.137$, $p = 0.240$) did not have significant linear relationship with poverty reduction.

**TABLE 18**

**Correlation of the Study Variables**

| Variables | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. Loan Rescheduling | Pearson Correlation | 1 | | | | |
| | Sig. (2-tailed) | | | | | |
| | N | 75 | | | | |
| 2. Flexible Credit Limit | Pearson Correlation | .038 | 1 | | | |
| | Sig. (2-tailed) | .746 | | | | |
| | N | 75 | 75 | | | |
| 3. Loan Refinancing | Pearson Correlation | .015 | .125 | 1 | | |
| | Sig. (2-tailed) | .899 | .284 | | | |
| | N | 75 | 75 | 75 | | |
| 4. Flexible Repayment | Pearson Correlation | .770** | .188 | .009 | 1 | |
| | Sig. (2-tailed) | .000 | .106 | .936 | | |
| | N | 75 | 75 | 75 | 75 | |
| 5. Poverty Reduction | Pearson Correlation | .852** | -.005 | .137 | .758** | 1 |
| | Sig. (2-tailed) | .000 | .964 | .240 | .000 | |
| | N | 75 | 75 | 75 | 75 | 75 |

**. Correlation is significant at the 0.01 level (2-tailed).

***Source: Author (2021)***

### 4.8 Multiple Regression Model Fitting

The regression model was fitted after satisfying all the necessary linear regression assumptions. This section provides the output of the regression analysis which includes the model summary, ANOVA and test of the significance of the regression model coefficients. Table 19 provides the summary of the regression model which provides the correlation coefficient, coefficient of determination, adjusted r squared and standard error of the estimate.

**TABLE 19**

**Regression Model Summary**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .877[a] | .770 | .757 | .46833 |

a. Predictors: (Constant), Flexible Repayment, Loan Refinancing, Flexible Credit Limit, Loan Rescheduling

***Source: Author (2021)***

The study findings summarized in Table 19 show that the model had a high explanatory power (r squared = 0.770). The findings indicate that model was a good fit for the data. This implies that 77% of the variation in poverty reduction was explained by the four components of loan flexibility that were included in the regression model. The implication of these findings is that 23% of the variation in poverty reduction was explained by the error term or other factors that were not included in the model.

The study also conducted an ANOVA to establish the statistical significance of the regression model. The findings are presented in Table 20.

**TABLE 20**

**Analysis of Variance of the Regression Model**

| Source of variance | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 51.313 | 4 | 12.828 | 58.488 | .000[b] |
| Residual | 15.353 | 70 | .219 | | |
| Total | 66.667 | 74 | | | |

a. Dependent Variable: Poverty Reduction

b. Predictors: (Constant), Flexible Repayment, Loan Refinancing, Flexible Credit Limit, Loan Rescheduling

***Source: Author (2021)***

The study results (Table 20) show that the model was statistically significant ($F = 58.488$, $p < 0.05$). These findings indicate that the model can provide some predictive significance. Besides, the findings indicate that at least one of the independent variables included in the model had a statistically significant effect on the dependent variable (poverty reduction).

To determine the statistical significance of the independent variables in the study, the study assessed the significance of the coefficients. The findings are summarized in Table 21.

**TABLE 21**

**Significance Test of the Regression Coefficients**

| | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | **B** | **Std. Error** | **Beta** | **t** | **Sig.** |
| (Constant) | .138 | .358 | | .385 | .702 |
| Loan Rescheduling | .611 | .087 | .640 | 7.019 | .000 |
| Flexible Credit Limit | .059 | .063 | .056 | .938 | .352 |
| Loan Refinancing | .141 | .069 | .118 | 2.045 | .045 |
| Flexible Repayment | .242 | .082 | .275 | 2.959 | .004 |

a. Dependent Variable: Poverty Reduction

***Source: Author (2021)***

The findings provided in Table 21 led to the following fitted regression model;

$Y = 0.138 + 0.611X_1 + 0.141X_3 + 0.242X_4$

In the formula, Y= Poverty reduction, $X_1$ = Loan rescheduling, $X_3$= Loan refinancing, and $X_4$ = Flexible repayments. The equation indicates that loan rescheduling, had the greatest magnitude on poverty reduction followed by flexible repayments and loan refinancing. Flexible credit limits did not have an effect and hence was excluded from the equation.

The findings in Table 21 indicate that loan rescheduling had a statistically significant coefficient ($\beta = 0.611$, $p < 0.05$). The null hypothesis that loan rescheduling has no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya, was rejected. These findings imply that loan rescheduling had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya. Besides, the findings indicate that a change of 1 unit in flexibility regarding loan rescheduling option will result to a direct change of 0.611 units in poverty reduction.

The findings (Table 21) further indicated that flexible credit limits had a statistically insignificant coefficient ($\beta = 0.059$, $p = 0.352$). the null hypothesis that flexible credit limits have no significant effect on poverty reduction among smallholder farmers in Machakos County, Kenya, was accepted. These findings imply that flexible credit limits had no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya. Besides, the findings indicate that a change of in flexibility of loans in regard to offering borrowers flexible credit limits will result to no significant change in poverty reduction.

Findings summarized in Table 21 indicate that loan refinancing had a statistically significant coefficient ($\beta = 0.141$, $p = 0.045$). The null hypothesis that loan refinancing has no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya, was rejected. These findings imply that loan refinancing had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya. Besides, the findings imply that a change of 1 unit in loan flexibility regarding loan refinancing option will result to a direct change of 0.141 units in poverty reduction.

The study findings summarized in Table 21 show that having flexible repayments option had a statistically significant coefficient ($\beta = 0.242$, $p = 0.004$). The null hypothesis that flexible repayments option has no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya, was rejected. These findings imply that having flexible repayment option in loans had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya. Besides, the findings indicate that a change of 1 unit in flexible repayment option will result to a direct change of 0.242 units in poverty reduction.

### 4.9 Discussion of Findings

The findings indicate that loan rescheduling had a statistically significant coefficient ($\beta = 0.611$, $p < 0.05$). These findings imply that loan rescheduling had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya. These findings support the structural poverty theory by Rank et al. (2003) which explains that poverty is caused by structural failings in the economic, social and political aspects of a nation that causes some people to be discriminated and marginalized. The study findings indicate that providing flexible loans that can be rescheduled lead to finance inclusion of the smallholder farmers and thus enabling them to reduce their poverty levels.

The study results of the positive effect of loan rescheduling on poverty reduction concurs with findings by Field et al. (2020) that borrowers with flexible loan contracts are able to smoothen their cash flows and thereby enabling their business to withstand shocks compared to those with standard contracts. Other studies with similar findings to this study include Warby (2014), Dzansi and Atiase (2014) Kaseva (2014), Ebimobowei et al. (2012) and Ochieng (2012). These studies determined that loan rescheduling had a significant effect on poverty reduction.

The study findings indicated that flexible credit limits had a statistically insignificant coefficient ($\beta = 0.059$, $p = 0.352$). These findings imply that flexible credit limits had no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya. These results, however, contradict the asset scarcity theory by Barbier (1989), but which originated from the works of Harvey (1974) which indicates that enhancing credit to the poor can enhance their access to poverty reducing assets.

The study results that flexible credit limits had no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya disagrees with the findings by

Sett (2020) that having flexible credit limit loan contract enhanced access to microloans which enhanced the incomes and of the borrowers thus improving their standard of living. The study also contradicts the findings by Marr (2017) that those with flexible credit contracts reported higher increase in incomes compared to those with standard contracts. Other studies with contradicting findings to this study include Weber and Musshoff (2013), Okibo and Makanga (2014) and Mecha (2017). However, this study's findings agree with the findings by Taiwo et al. (2014) that loan flexibility in terms of credit limits did not have any significant effect on poverty reduction (measured through increased incomes).

Findings indicate that loan refinancing had a statistically significant coefficient ($\beta$ = 0.141, p = 0.045). These findings imply that loan refinancing had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya. These findings support the asset scarcity theory by Barbier (1989), but which originated from the works of Harvey (1974) which posit that asset scarcity explains poverty and social exclusion. The findings from this study indicated that farmers with access to flexible loans, may have improved access to farm inputs and be able to cater for basic needs such as food, clothing and education, and therefore are more expected to remain in poverty and pass that poverty to future generations.

The study findings show that having flexible repayment option had a statistically significant coefficient ($\beta$ = 0.242, p = 0.004). These findings imply that having flexible repayment option in loans had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya. These findings concur with the expected utility theory by Neumann and Morgenstern (1953) which posits that individuals makes choices between various preferences based on the expected value from the preferences. Having flexible repayment loan contract enables smallholder farmers to postpone loan repayment and use the

little money they have to cater for their social needs or take advantage of investment opportunities that can bring higher revenues in future, and thus promoting poverty reduction.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter presents the summary of the study, the conclusions made and the recommendations for policy, and practice. Moreover, the suggestions for further study are provided in this chapter.

## 5.2 Summary of Findings

This section provides the study's summary relating to the study's objectives. The summary is provided for both the descriptive statistics and the regression results.

### 5.2.1 Loan Rescheduling and Poverty Reduction

The study findings indicate that loan rescheduling had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya ($\beta = 0.611$, $p < 0.05$). Further findings showed that the respondents agreed that their financial institution provides the option of loan extension at the time the loan is provided (mean = 4.23, std deviation = 0.967) and also agreed that there is no penalty when a borrower seeks to reschedule a loan with the respondents' financial institution (mean = 3.96, std deviation = 1.168). Further, respondents agreed that adjusting the repayment plan of a disbursed loan is easy with the financial institution (mean = 3.92, std deviation = 1.100) and likewise agreed that extending payment period for loans helps borrowers to meet the regular payments (mean = 3.88, std deviation = 0.770). Moreover, respondents agreed that the financial institutions are always ready to extend the repayment period for a loan when a borrower faces repayment challenges (mean = 3.83, std

deviation = 0.860) and also agreed that loan rescheduling enables borrowers to use the retained cash to invest in farming (mean = 3.81, std deviation = 1.036). These findings indicate that the microfinance institutions and development finance institutions that provided microloans to small holder farmers in Muthetheni War were able to provide adequate flexibility relating to loan rescheduling.

### 5.2.2 Flexible Credit Limits and Poverty Reduction

The findings indicated that flexible credit limits had no significant influence on poverty reduction among smallholder farmers in Machakos County, Kenya ($\beta = 0.059$, $p = 0.352$). Besides, the findings indicate that respondents agreed that loans provided beyond the credit limit assists borrowers to meet pressing and emergency needs (mean = 4.27, std deviation = 0.905) and further agreed that allowing borrowers to borrow beyond their credit limit enables borrowers to take advantage of profitable investment opportunities (mean = 4.05, std deviation = 0.985). Additionally, the respondents agreed that in their financial institutions, the credit limit is regularly updated based on the borrower's payment history (mean = 4.04, std deviation = 0.687) and also agreed that when a borrower pays their installments on time, the financial institution increases their credit limit (mean = 3.95, std deviation = 1.012). Further, respondents agreed that loans provided beyond the credit limit by the financial institutions do not attract higher interest rates (mean = 3.57, std deviation = 1.068). However, respondents disagreed to the statement that the financial institutions allow borrowers to get loans beyond their credit limit when the new loan meets some conditions (mean = 1.73, std deviation = 0.794). These findings indicate that credit limits were adjusted based on the loan repayment history of the borrowers, but rarely did

microfinance and development finance institutions flex their credit limits for borrowers with repayment challenges.

### 5.2.3 Loan Refinancing and Poverty Reduction

Findings indicates that loan refinancing had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya ($\beta = 0.141$, $p = 0.045$). Further findings indicate that the respondents agreed that their financial institutions provided options to replace existing loans with new loans with better terms (mean = 4.24, std deviation = 0.956) and also agreed that conditions to replace an existing loan with a new one from the financial institutions are not very punitive (mean = 4.17, std deviation = 0.933). Besides, more findings indicated that respondents agreed that the financial institutions provide different options for borrowers who seek to replace their existing loans with new loans (mean = 4.12, std deviation = 0.838) and further agreed that their financial institutions do not have high loan replacement fees (mean = 3.85, std deviation = 0.857). Moreover, respondents agreed that their financial institutions provide advice to borrowers when they are seeking to replace their existing loans with new ones (mean = 3.76, std deviation = 0.836). However, respondents were neutral to the statement that borrowers do not suffer any adverse effects on their credit score if they replace existing loans with new ones (mean = 2.77, std deviation = 1.269). This indicates that though some borrowers did not suffer adverse effects after loan refinancing, there were borrowers who faced adverse consequences after refinancing their loans.

### 5.2.4 Flexible Repayment Terms and Poverty Reduction

The study findings show that having flexible repayments option had a significant positive influence on poverty reduction among smallholder farmers in Machakos County, Kenya ($\beta$ = 0.242, p = 0.004). Besides, the findings indicate respondents agreed that their financial institutions allowed borrowers to occasionally skip some loan installments (mean = 4.29, std deviation = 0.818) and further agreed that any time that borrowers request for adjustments to loan installments, the financial institutions listen (mean = 3.94, std deviation = 0.729). Besides, respondents agreed that their financial institutions allow borrowers to make unequal monthly instalments depending on borrower ability (mean = 3.93, std deviation = 0.905) and also agreed that allowing flexible repayments enables borrowers to reduce their loan repayment stress (mean = 3.88, std deviation = 1.078). Additionally, respondents agreed that the financial institutions allow borrowers to adjust their installments provided they do not go beyond the loan term (mean = 3.81, std deviation = 0.849) and also agreed that the loan they lastly received from their financial institutions had a grace period (mean = 3.75, std deviation = 0.902). these results indicated that the microfinance and development finance institutions in Muthetheni Ward provided smallholders farmers with flexible loans with numerous flexibility aspects such as grace period, repaying flexible amounts and skipping some installments.

## 5.3 Conclusions

The study findings lead to the following conclusions. First, loan rescheduling is vital for poverty reduction among smallholder farmers in Machakos County, Kenya. This is actualized by microlenders through providing the option of loan extension at the time the loan is provided, having no penalty when a borrower seeks to reschedule a loan with the microlender and having easy and convenient procedures for adjusting the repayment plan of a disbursed loan.

The study also concludes that having flexible credit limits was not instrumental towards poverty reduction among smallholder farmers in Machakos County, Kenya. This was despite the fact that lending beyond the credit limit of borrowers enabled borrowers to take advantage of profitable investment opportunities. This could be due to the inherent risk and burden of allowing borrowers to borrow beyond their capacity of repayment, and thus burdening them in the long run.

The study further concludes that loan refinancing was instrumental towards poverty reduction among smallholder farmers in Machakos County, Kenya. This could have been due to the financial institutions providing options to replace existing loans with new loans with better terms, financial institutions providing different options for borrowers who seek to replace their existing loans with new loans, and financial institutions providing advice to borrowers when they are seeking to replace their existing loans with new ones.

The study lastly concludes that flexible repayments option was essential towards poverty reduction among smallholder farmers in Machakos County, Kenya. This can be credited to the financial institutions who allowed borrowers to occasionally skip some loan installments, and the financial institutions that allowed borrowers to make unequal monthly instalments depending on borrower ability. Moreover, the importance of flexible repayments towards poverty reduction could be credited to the grace period provided by many of the micro lenders.

## 5.4 Recommendations

Based on the study conclusions, the following recommendations are made. First microfinance and development finance institutions should offer a variety of flexible loan products to small holder farmers that suit the farmer's needs and characteristics. To determine

what smallholder farmers require, these microlenders should tailor their loan products based on evidence which can be availed through research or listening to their customers. It is critical to listen to customer input and tailor the service strategy when lending to agricultural smallholders.

Regarding loan rescheduling, microlenders should seek to balance between assisting the farmers to repay the loan and the risk inherent in any rescheduled loan. The financial institutions operating in rural underserved areas should be innovative and discover ways to circumventing the risk of lending to smallholder farmers.

Relating to flexible credit limits, Micro lender should consider assessing the creditworthiness of smallholders, by considering the cash flow of the household production unit and then provide a higher credit limit if it supported by cashflows. However, microlenders should be vigilant not to burden smallholders with loans that are beyond their capacity to repay which will defeat the sole purpose of loan provision.

Regarding provision of flexible repayment modes, the study recommends to government and county and other non-governmental organizations to form funds that will be able to offer flexible repayment options that meet the needs of farmers who have intermittent and seasonal cashflows. Additionally, remote operations provide infrastructure and logistical difficulties; Margins are smaller than they are when servicing urban customers, and financial institutions will be required to expand their physical or human infrastructure in order to serve distant rural regions. At the moment, large distances between bank branches act as a significant impediment to rural financial inclusion. Considering this, the government and other development finance institutions should be on the frontline in providing flexible banking services to this clientele which remains largely unattractive to for profit microlenders.

## 5.5 Limitations of the Study

This study provides valuable empirical evidence on the influence of flexible loans on poverty reduction amongst smallholder farmers in Muthetheni Ward of Machakos County. The study however, has several limitations which should be critically considered by users of the study findings. First, this study focused only on Muthetheni Ward of Machakos County and since the ward is contextually different from other wards of Machakos County and also other counties and wards of Kenya, the findings may not be generalizable to these other locations. Besides, the study only focused on the agriculture sector and left out other critical sectors such as mining, and other extractive industries. Moreover, the study only focused on smallholder farming and left out those farmers or small and micro enterprises that also access flexible loans. Lastly, the study is limited in scope as it only included four flexibility factors (loan refinancing, loan rescheduling, flexible credit limits and flexible repayment) and left out other loan flexibility factors.

## 5.6 Recommendations for Future Research

This study was conducted in Muthetheni Ward of Machakos County with the aim of assessing the influence of flexible loans on poverty reduction amongst smallholder farmers. Since poverty is prevalent in other wards of Machakos County and also in other countries of Kenya, another study is suggested to assess how flexible microfinance is contributing towards poverty reduction to inform interventions and innovative flexible loan products. Besides, the study suggests further research in other sectors apart from agriculture which include mining, and other extractive industries. Moreover, a study on small and micro enterprises and how flexible loans can influence their sustainability and profitability should be considered. Lastly, the study only included four flexibility factors (loan refinancing, loan rescheduling, flexible credit limits

and flexible repayment) and hence further research is required to assess other loan flexibility components and their contribution towards poverty reduction.

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## APPENDICES

### Appendix I: Questionnaire to Household Heads

The aim of this questionnaire is to seek information regarding flexibility of loans provided by institutions to farmers and how they have affected the farmer's poverty levels. You have been selected for the study and your participation is wholly voluntary. You can withdraw from the study at any point if you like. Please answer the questions by ticking or filling on the space provided.

### SECTION A: GENERAL INFORMATION

1. Kindly indicate your gender?

   Female [ ]

   Male [ ]

2. Kindly indicate your age in years? _____ years

3. Indicate the highest education level you have attained?

   No education [ ] Primary Level [ ] Secondary level [ ]

   College [ ] University [ ]

4. Do you have a loan that you are currently servicing?

   Yes [ ]

   No [ ]

   If your answers is 'Yes' go to question 5. If your answer is 'No', skip question 5 and go to question 6.

5. If your answer is 'Yes' above, how much was the loan provided? _____ KES

6. If your answer is 'No' in question 4, what was the value in Kenya shillings of the last loan provided? _____ KES

### SECTION B: LOAN RESCHEDULING

Considering the statements provided in the table below on loan rescheduling by your microfinance institution, rate them on a scale of 1-5, where 5 represents strongly agree, 4 represents agree, 3 represents neither agree nor disagree, 2 represents disagree while 1 represents strongly disagree.

| Statements | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| My financial institution provides the option of loan extension at the time the loan is provided | | | | | |
| Adjusting the repayment plan of a disbursed loan is easy with my financial institution | | | | | |
| There is no penalty when a borrower seeks to reschedule a loan with my financial institution | | | | | |
| My financial institution is always ready to extend the repayment period for a loan when a borrower faces repayment challenges | | | | | |
| Extending payment period for loans helps borrowers to meet the regular payments | | | | | |
| Loan rescheduling enables borrowers to use the retained cash to invest in farming | | | | | |

**SECTION C: FLEXIBLE CREDIT LIMITS**

Considering the statements provided in the table below on flexible credit limits by your microfinance institution, rate them on a scale of 1-5, where 5 represents strongly agree, 4 represents agree, 3 represents neither agree nor disagree, 2 represents disagree while 1 represents strongly disagree.

| Statements | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| My financial institution allows borrowers to get loans beyond their credit limit when the new loan meets some conditions | | | | | |
| In my financial institutions, the credit limit is regularly updated based on the borrower's payment history | | | | | |
| When a borrower pays their installments on time, my financial institution increases their credit limit | | | | | |
| Loans provided beyond the credit limit assists borrowers to meet pressing and emergency needs | | | | | |
| Allowing borrowers to borrow beyond their credit limit enables | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| borrowers to take advantage of profitable investment opportunities | | | | | |
| Loans provided beyond the credit limit by my financial institution does not attract higher interest rates | | | | | |

**SECTION D: LOAN REFINANCING**

Considering the statements provided in the table below on loan refinancing options provided by your microfinance institution, rate them on a scale of 1-5, where 5 represents strongly agree, 4 represents agree, 3 represents neither agree nor disagree, 2 represents disagree while 1 represents strongly disagree.

| **Statements** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| My financial institution provides options to replace existing loans with new loans with better terms | | | | | |
| The financial institution provides different options for borrowers who seek to replace their existing loans with new loans | | | | | |
| My financial institution provides advice to borrowers when they are seeking to replace their existing loans with new ones | | | | | |
| Borrowers do not suffer any adverse effects on their credit score if they replace existing loans with new ones | | | | | |
| Conditions to replace an existing loan with a new one from my financial institution are not very punitive | | | | | |
| My financial institution does not have high loan replacement fees | | | | | |

**SECTION E: FLEXIBLE REPAYMENT TERMS**

Considering the statements provided in the table below on flexible repayments by your microfinance institution, rate them on a scale of 1-5, where 5 represents strongly agree, 4 represents agree, 3 represents neither agree nor disagree, 2 represents disagree while 1 represents strongly disagree.

| **Statements** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| My financial institution allows borrowers to make unequal monthly instalments depending on borrower ability | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| The loan I lastly received from my financial institution had a grace period | | | | | |
| Any time that borrowers request for adjustments to loan installments, my financial institution listens | | | | | |
| My financial institutions allow borrowers to adjust their installments provided they do not go beyond the loan term | | | | | |
| My financial institutions allow borrowers to occasionally skip some loan installments | | | | | |
| Allowing flexible repayments enables borrowers to reduce their loan repayment stress | | | | | |

**SECTION F: POVERTY REDUCTION**

Considering the statements provided in the table below on the loan provided by your microfinance institution and how it has affected poverty levels in your household, rate them on a scale of 1-5, where 5 represents strongly agree, 4 represents agree, 3 represents neither agree nor disagree, 2 represents disagree while 1 represents strongly disagree.

| **Statement** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| The last loan received from the financial institution improved the capacity of the household to cater for household needs | | | | | |
| The loan provided to the household by the financial institutions was invested in projects that improved the family's income | | | | | |
| Loan received enabled the household to increase its expenditure on basic needs | | | | | |
| Loan received was used to cater for health and education needs for household members | | | | | |
| Loan received from the financial institution enabled the household to improve its farm yields | | | | | |

**Thank You for Your Time and Input**