



# MICROFINANCE USAGE AND LIVING STANDARDS IN KENYA

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## ABSTRACT

The establishment and operation of microfinance institutions have been aimed at reducing poverty. Even though the microfinance industry's strengths outnumber its disadvantages, the microfinance industry still faces major challenges in delivering its services. The general objective of the study is to investigate the effects that microfinance usage has on living standards in Kenya. The specific objective of focus included: To establish and determine the effect of micro-credit facilities and micro-saving facilities on living standards in Kenya. This study adopted the use of an explanatory research design. The population of this study comprised all microfinance institutions in Kenya, both unregulated and those regulated by the Central Bank of Kenya. The study used secondary data. Descriptive statistics were utilised to describe the patterns in the data, demographics analysis, and particularly, microfinance institutions (MFI) products and services usage. Linear regression analysis – ordinary least squares – is used to estimate the effects of access to MFI loans, amounts of MFI loans and savings in microfinance institutions by households on monthly household expenditures and household incomes. The effects of microfinance institutions on the household wealth index, which is ranked one to five, uses the multinomial logit model.

Based on the descriptive findings, 65.6% of households interviewed are in rural areas. Fifty-eight percent of the heads of the households are male with 55% of the respondents being married or living with their partner. The average age of respondents was 39 years and the average size of each household/number of dependents is approximately two people. The majority of the household heads had only attained primary education level. It was found that 0.61% of all households held microfinance credit facilities and 1.28% of households held savings accounts. The study noted that several households held multiple credit and savings facilities; however, microfinance institutions are not the most common source of loans or savings for households in Kenya with other sources ranking higher. The other sources for loans include shopkeepers, mobile money and family/friends/ neighbours while other modes of savings include mobile money, group savings and secret hiding places. The majority of the households held one (1) credit facility and one (1) saving facility and 1.14% of the households that held loan facilities obtained these from microfinance institutions. Interestingly, the top reasons indicated by households for obtaining loans and for saving with microfinance institutions included education, making it one of the highest household costs in Kenya. The proportion of households that give salaries and guarantees to obtain loans for

microfinance institutions is 7.5 and 31.3% respectively, which is unsurprising due to group lending. The average wealth of the households was 2.74 indicating that the majority of households are almost at middle income level. The study also clearly revealed that households that obtain loans from and save with microfinance institutions have a higher wealth index, at 3.5 and 3.8 respectively as compared to both households who obtain loans and save from other sources and those who do not borrow nor save. The latter had the lowest wealth index at 2.6 and 2.3, which indicates that they are somewhat poor. This confirms the overall outcome of this study and previous literature as it shows that when households borrow and save, their welfare improves.

Three variables were chosen to assess household welfare: monthly household expenditure, monthly household income and the wealth index. All the regression models included both independent (access to MFI loans, amounts of MFI loans and savings by households with microfinance institutions) and control variables (age, gender, household size, marriage status, education level, household location) to analyse the impact on household welfare. The estimated results showed an overall increase in household welfare due to the usage of and access to MFI products in Kenya. Microfinance institutions have a positive impact at different levels of significance on the welfare indicators, i.e., monthly household expenditures, household incomes and the wealth index. However, the study also noted that household savings in microfinance institutions do not affect household incomes. The results also showed that most of the household characteristics (such as gender of the household head, education of the household head, age of the household head, location of household, size of household) influence welfare indicators.

There are various recommendations proposed from the findings of this study. Firstly, the findings indicate that household characteristics play a very important role in access to and usage of microfinance products and services in Kenya and therefore should be a consideration for policymakers when designing and implementing policy interventions to improve financial access. Secondly, the study showed that microfinance institutions are not the most common source of loans or savings for households, with other sources ranking higher, which portends an issue for the continued viability of microfinance institutions and thus innovations in the industry will be critical to ensure continued relevance. Thirdly, usage of microfinance products and services is important to improve household welfare and therefore financial literacy of customers should be

part of education curriculum as well as part of the training provided by microfinance institutions and other financial institutions to ensure positive outcomes and ensure repeat uptake of microfinance products and services. Lastly, it is important to ensure that all microfinance institutions operate in an appropriate regulatory environment to ensure that customers are well protected and data protection and privacy issues are well managed.

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## LIST OF ACRONYMS

MFI	Microfinance Institution
ACSI	Amhara Credit and Savings Institution
CBK	Central Bank of Kenya
KES	Kenyan Shillings
MSEs	Micro and Small Enterprises
OSS	Operational Self Sufficiency
ROA	Return on Assets
ROE	Return on Equity
ROSCAs	Rotating Savings and Credit Associations

## CHAPTER 1: INTRODUCTION

### 1.1 Background of the Study

The low-income population face many challenges in their quest to escape poverty. Some of the main challenges are lack of opportunities for them to engage in any form of economic activities because they are disadvantaged in many ways including: inaccessibility of credit facilities from banks, lack of security and lack of technical know-how to manage their micro- and small business ventures (UN Office of the Special Coordinator for Africa and Least Developed Countries, 2000). Microfinance institutions were established to work with low-income persons for the purpose of uplifting their lives through provision of micro-credit facilities, micro-savings facilities, the training of their members, among others (Sheraton, 2004). Microfinance's design and advances make it a valuable tool for resolving financial exclusion concerns among low-income households and small businesses (Khanam et al., 2018). Individuals looking for loans from lenders would usually form small groups through group lending. This allows them to borrow and access financial services from conventional financial institutions, even without the conventional collateral which most lack. This helps to resolve the adverse selection and moral hazard concerns that prevent households from accessing financial services (Ammar & Ahmed, 2016). Since each group member is responsible for their own loan repayments, they become mutually liable for the loan repayments. The groups allow for intended selection of similar individuals, where only the least risky individuals align themselves to obtain a loan (Ammar & Ahmed, 2016). Furthermore, peer monitoring allows participants to take disciplinary measures against a partner who misuses his or her loan which in effect overcomes moral hazard.

Because of features such as short-term loans, frequent repayment schedules, easy application processes, short processing times, dynamic rewards, little or no collateral needed, and the use of tapered interest rates as an incentive of repaying on time, microfinance institutions (MFIs) are typically favoured by low-income households and Micro and Small Enterprises (MSEs) (Cobb et al., 2016). Microfinance is therefore seen as a valuable tool for promoting welfare among poor households. To examine the microfinance institutions' importance for the society, and their

structure, different metrics can be useful. Various tools to quantify and measure the performance of microfinance institutions could include: loan portfolio quality in terms of loan repayment; number of customers, including regions served; type of clients served in terms of poverty levels, productivity and efficiency. According to Banerjee and Jackson, microfinance institutions' performance can be assessed in different ways: for example, loan numbers given to clients, transactions costs incurred, number of opened branches, loans by gender type, number of loans given to each wealth segment, measurement of client satisfaction using surveys, type of financial and non-financial services offered (S. B. Banerjee & Jackson, 2017).

## **1.2 Problem statement**

The establishment and operation of microfinance institutions has been aimed at reducing poverty. Money lenders are the main source of financial resources for the majority of the poor. Formal financial institutions, on the other hand, are inefficient and inaccessible when it comes to providing credit to the poor. Despite the fact that the microfinance industry's strengths outnumber its disadvantages, the microfinance industry still faces major challenges in delivering its services (Muthama, 2019). As a result, there is a limitation in the type and form of services offered by microfinance institutions. In addition, there are several challenges facing microfinance institutions which gravely affect the sustainability and viability of these institutions. These challenges include: default on loans or delayed repayment of loans; low interest rates charged on loans lower than the cost of capital, which affects the profitability of microfinance institutions; poor corporate governance; financial illiteracy and lack of awareness on services offered by microfinance institutions; management that lacks forward thinking and innovativeness; and lack of adequate outreach to impoverished areas or to targeted population, for example, women.

Different scholars have tried to look at the effects of microfinance on the living standards; for instance (Abera & Asfaw, 2019), researched on how microfinance affects rural household poverty in Ethiopia. The study suggested that microfinance services play a key role in enhancing women empowerment, creating sustainable employment opportunities, increasing household income, and in totality improving the livelihood of poor communities. (Chirkos, 2014) investigated the impact

of microfinance in Ethiopia on living standards, empowerment and reduction of poverty using Amhara Credit and Savings Institution (ACSI) as a case study. The study findings showed that there was an improvement in the households' standards of living due to an increase in the respondents' incomes. (Dedunu & Weerasinghe, 2018) researched on how microfinance affects the living standards with reference to individuals that had obtained microfinance services in Kurunegala District, Sri Lanka. The study revealed that microfinance services, specifically financial advisory support, micro-credit, and micro-savings and the living standards of poor people significantly and positively related to each other. Olusanya and Oyebo conducted a study to find out how microfinance banks affect standards of living of hairdressers in the Oshodi-Isolo local government of Lagos State (Olusanya & Oyebo, 2012). It was revealed that the products, services and assistance provided by microfinance banks and standard of living of hairdressers in Oshodi-Isolo local government area of Lagos State significantly and positively relate to each other.

All these studies were, however, based on different countries, households with different demographic characteristics, subsets of households, and possibly with different study drivers and varied results. The studies have not looked at the usage and effects of microfinance products and services on living standards in Kenya particularly now with the financial innovations that exist in Kenya. This then provides the impetus and the need for this study. The current study therefore sought to answer the question: What is the effect of usage of microfinance products and services on living standards in Kenya?

### **1.3 Research objectives and hypothesis**

The general objective of the study is to investigate the effects that microfinance usage has on living standards in Kenya. The specific objectives of focus included:

- i. To examine the effect of micro-credit from MFIs on living standards in Kenya.
- ii. To examine the effects of micro-saving from MFIs on living standards in Kenya.

## **1.4 Justification of the study**

Microfinance institutions are important in the social and economic development of Kenya especially in promoting the participation of low-income citizens in wage generating business ventures. However, the sector is regulated under the Government Microfinance Act passed in the year 2006. Chirkos noted that many microfinance institutions lack appropriate infrastructure to support their business (Chirkos, 2014). These shortcomings range from inadequate staff, inappropriate information management systems and use of outdated technology. This study examined the effects that MFI have had on the living standards of low-income population in the country through micro-credit, micro-savings and other microfinance services. Through these interventions, the sector will be able to boost economic development of the country thereby reducing the level of unemployment.

This study will help management teams in the microfinance sector and policymakers in creating effective interventions to promote accessibility and usage of microfinance products and services to improve the living standards in Kenya. Studies and research on the effect of usage of microfinance products and services will guide policymakers in developing interventions and guidelines to enhance the living standards of the poor in Kenya. The study is also important to researchers across the world to provide comparisons for their research as well as provide information to policymakers around the world in emerging markets and developing economies. This research will also identify possible areas of research to enhance the analysis and information available on the usage of microfinance products and services and their impact on living standards.

## **1.5 Organisation of the dissertation**

The dissertation contains five chapters.

Chapter 1: An introduction to key concepts and contexts in a build-up to the research problem, objectives and study significance.

Chapter 2: A detailed review of both theoretical and empirical literature on microfinance institutions and how they impact living standards among the poor populations.

Chapter 3: The methodology that the researcher adopted to ensure that appropriate data is collected for responding to research objectives.

Chapter 4: Presents the detailed findings of the study.

Chapter 5: Presents the conclusions reached, recommendations made for future research and policy implications.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

Microfinance has evolved over many years, latterly becoming somewhat formal and has improved the finance industry. It primarily concentrates on reducing poverty in communities by providing the poor with financial services which would otherwise be inaccessible from fully fledged commercial banks. These institutions provide micro-credit to small, micro and medium enterprises and individuals to undertake different economic activities and repay at agreed-upon timelines. They mainly aim at uplifting the living standards of poorest members of society by lowering poverty levels (Rehman et al., 2015). Micro-credit takes care of the underprivileged in the society and caters for those who have a low chance of accessing financial services from the formalised financial sector such as in commercial banks. Microfinance's aim is to assist those with low income or low wages to become self-sustaining, self-sufficient and reliant by offering micro-saving, micro-credit, and insurance coverage.

The review of previous literature in this chapter focuses on the effect of microfinance services on living standards among poor populations. The specific areas of focus are micro-credit facilities, micro-saving facilities and other microfinance services on living standards. This chapter starts off by defining some of the key terms in the study. It then delves into the effects of micro-credit facilities, member training services and micro-saving facilities on living standards. It also presents the theoretical frameworks providing the nexus between microfinance products and services and living standards. It then highlights empirical literature in line with study objectives from a global to local perspective. In the end, the chapter gives a summary of key findings.

### **2.2 Definition of Terms and Concepts**

#### **2.2.1 Microfinance**

Microfinance entails the provision of micro-credit, micro-savings, micro-insurance services, and training services to households with low income and to Micro and Small Enterprises (MSEs). They

do this to improve the level of access by members of poor households to household loans and deposits/savings, which individuals/households are not normally able to access the commercial banking system. Microfinance institutions adopt various models and frameworks with the intention of helping the poor and micro enterprises (MSMEs) in improving their livelihood but still making profits as they offer various financial services (Ul-Hameed et al., 2018). In so doing, microfinance institutions provide “social intermediation services”, such as promoting the creation of groups (whose members come together for the purposes of guaranteeing the credit advances to them and their group members); offering instruction to group members on business growth; and teaching members on matters related to financial management and management skills (Murad & Ideweke, 2017). Social intermediation allows pooling of lenders’ savings to provide money to borrowers who need the money. Customers to MFI institutions include self-employed individuals, small-scale traders, vendors and low-income households. Microfinance institutions help improve the welfare of poor individuals in society through formation of a robust finance system with capability to serve the needs of poor individuals effectively and efficiently in an economy. Through their activities, MFI institutions provide an opportunity to poor persons in society to access financial services and knowledge which can improve their future earning capability and increase their assets thereby cushioning them against external shocks. Additionally, they also provide saving opportunities where these customers can set aside their earnings by opening saving accounts.

Globally, microfinance services have been hailed as the most appropriate and innovative tool in alleviation of poverty as they enable individuals to generate additional income for covering their operating expenses. In his study, Afrane (2002) mentions that microfinance schemes devised by policymakers, international development agencies, non-governmental organisations have been used for poverty reduction in developing countries. A study in Zimbabwe indicated that microfinance institutions positively impacted the income levels of its poor residents simultaneously improving the level of savings. Individuals who can find avenues of getting out of poverty with dignity have been found to improve their living standards provided they are given the right framework to do so. This has particularly been in the case in countries that have succeeded in generating self-employment opportunities among poor populations. The majority of the economies have put more emphasis on women empowerment, especially those who live in

unimaginable poverty where many factors have hindered their growth. Women are central to a society and where women do not thrive the society falls apart. Such poor individuals have no assets that can be pledged as collateral hence cannot access large credit facilities from big banks because of the risk they carry along. Therefore, microfinance institutions contribute to the improvement in the living standards of poor populations through provision of little amounts of credit and savings and frequent repayment installments. In addition, microfinance institutions have improved women assertiveness and also facilitated their empowerment thus they are better able to confront gender inequities that exist, especially in rural areas (Taiwo & Ojo, 2016).

Generally, the living standards are said to be favourable in situations where the population has adequate consumption, experiences high educational levels, adequate and proper housing conditions, presence of adequate and nutritious food, accessibility to hygienic sanitary conditions, and have stable participation in the production system (Njeru, 2016). This is mainly manifested through a change in the living conditions of persons involved, growth experienced in the businesses, accessibility to basic necessities like shelter, food, education and clothing. The changes in these indicators show the impact that microfinance institutions will have had on a population after working together with them in provision of micro credit and savings facilities.

### **2.3 Overview of Microfinance Institutions in Kenya**

Microfinance in Kenya has been developing since the mid-1990s when its role in economic development of the nation was acknowledged. The microfinance industry in Kenya comprises both the informal and formal entities—in other words, regulated and unregulated. Most are membership based and have diverse legal forms: they could be registered as companies, community-based entities, self-help groups, or otherwise. They include Microfinance Banks (regulated), Rotating Savings and Credit Associations (ROSCAs) or non-governmental organisations. The regulated and unregulated microfinance industry in Kenya runs into billions of Kenya shillings (KES). It is however difficult to estimate the size due to lack of information on the unregulated entities. This study focuses on the entire microfinance industry in Kenya.

The Microfinance Act 2006 (operationalised in 2008) and the Microfinance (Deposit Taking Institutions) Regulations 2008 set out the legal and regulatory framework for the microfinance industry in Kenya. The number of microfinance institutions in the country increased to twelve by the year 2010 after this legislation, accounting for about \$1.5 billion credit extension to an estimated population of 1.5 million low-income borrowers. At this time, the largest Microfinance institution was Equity Bank Kenya which boasted over 100,000 clients with the largest share of microfinance loans as it controlled more than 72% market share. The second Microfinance institution at the time was Kenya Women Microfinance Bank which served a market share of about 12%. Statistics on the performance of the regulated Microfinance Institutions in Kenya over the past five years are highlighted in Table 1:

**Table 1: Microfinance Institutions Performance Statistics as at 31 December 2021**

<b>Period</b>	<b>Industry Customer advances (KES M)</b>	<b>Industry Deposits (KES M)</b>	<b>Industry Assets (KES M)</b>
2021	40,115	50,413	73,963
2020	44,179	49,356	74,879
2019	46,652	43,941	76,353
2018	44,179	40,961	70,754
2017	42,847	38,916	67,597

*Source: (Central Bank of Kenya, 2022)*

As of the year 2021, there were fourteen (14) licensed microfinance banks. Three microfinance banks are licensed as community microfinance banks, while the rest are licensed as nationwide microfinance banks. Their assets declined marginally in the year 2021 to KES 73.9 billion, when compared to KES 74.9 billion reported in the year 2020 (Central Bank of Kenya, 2022). The level of their advances also declined from KES 44.2 billion in 2020 to 40.1 billion in 2021 (representing a 9% decline) as a result of the COVID-19 pandemic (Central Bank of Kenya, 2022). The main activity of these microfinance institutions is to lend to their customers accounting for 54 % of the microfinance banks' total assets.

Deposits registered an increase from KES 49.4 billion in 2020 to KES 50.4 billion making up a change of 2% (Central Bank of Kenya, 2022). The growth in deposits in the last few years is attributed to increased adoption of agency banking and mobile phone applications which helped in mobilising deposits. The main sources of funding were customer deposits and borrowings which accounted for 68% and 12% of the microfinance banks' total funding sources (Central Bank of Kenya, 2022).

Kenya currently boasts fourteen (14) microfinance institutions (also known as Microfinance banks) licensed to do business in the country. Microfinance banks are mainly classified into peer groups. These include large, medium and small. Large Microfinance banks are those that hold a market share of 5% and above; medium are those that enjoy a market share of between 1% and 5% whereas small Microfinance banks have a market share of less than 1%. As at the end of the year 2021, three (3) large microfinance banks held a combined market share of 80.2%; five (5) medium microfinance banks held a combined market share of 18.9%, and six (6) small microfinance banks held a total market share of 0.9% (Central Bank of Kenya, 2022).

**Table 2: Market Share Analysis for Microfinance Banks as at 31 December 2021**

	MFB	Year established	Total Assets (KES M)	Total Loans (net) (KES M)	Total Deposits (KES M)
<b>Large</b>					
1	Faulu MFB	2009	27,780	15,378	21,524
2	Kenya Women MFB	2010	26,961	15,129	17,737
3	Rafiki MFB	2011	5,889	3,484	3,336
<b>Medium</b>					
4	SMEP MFB	2010	3,382	1,500	2,366
5	Caritas MFB	2015	2,951	1,952	2,504
6	Sumac MFB	2012	3,037	1,348	1,266
7	Maisha MFB	2016	1,480	152	478
8	Uwezo MFB	2010	433	-	20
9	U & I MFB	2013	1,006	872	401
<b>Small</b>					
10	Key MFB	2010	289	62	80
11	Muungano MFB	2019	189	118	93
12	Century MFB	2012	402	113	388
13	Daraja MFB	2015	120	1	103
14	Choice MFB	2015	45	7	115

*Source: (Central Bank of Kenya, 2022)*

## 2.4 Theoretical Framework

### 2.4.1 Micro-credit Facilities and Living Standards

The Grameen Bank Model was developed by Muhammed Yunus in 1983 with explanations on the effects of extending small credit facilities or loans to poor people within Bangladesh. The model was formulated around targeted beneficiaries forming small groupings where they provided mutual and morally binding group guarantees for credit issued to their members. This was mainly applied because it was assumed that group members had more information about their members and thus, they could help the MFI ensure that the loan beneficiaries pay up their loans. In cases where the

beneficiaries of group loans default, the remaining group members pay up the loan until it is fully settled (Njeru, 2016). Group-based lending has been established to be one of the novel approaches in extending small amounts of credit to many loan beneficiaries who may not have collateral to pledge for large loans independently. This model has helped circumvent the conventional banking models where collateral was a prerequisite for credit application. This model is largely based on mutual trust among group members, high accountability, creativity, and full participation in matters of the group.

According to this model, microfinance institutions target the poor population who are not able to save and who usually require credit to support their wage-earning business venture. This model was formulated on the assumption that poor people aspire to access opportunities and not charity. It was perceived that charity did not play a role in building sustainable wage-earning business ventures for the poor people (Abera & Asfaw, 2019). Therefore, by presenting opportunities, poorer people will be assisted to run profitable business ventures that can guarantee them sustainable wages and alleviate their poverty by improving their living standards. Microfinance institutions are therefore required to design appropriate micro-credit facilities suitable for the population they are serving, for effective outcomes (Mutua, 2017). This theory supports utilisation of micro-credit services in improving the living standards of poor populations.

#### **2.4.2 Micro-savings Facilities and Living Standards**

Microfinance Institutions help the poor in an economy by breaking down barriers to savings and accessibility to credit. Access to these institutions helps low-income households stabilise their wages/income flows and save something towards their future needs (Dupas & Robinson, 2013). MFI operations have often been structured around savings through groups after which they lend out accumulated savings among group members to improve their living standards by engaging in some income-generating activities (Stewart et al., 2012). However, this was not always the case as sustainability of MFIs and profit-making by charging interest was not the ultimate goal in the earlier days. Thus, micro-savings became an unintended benefit/ result. According to Kumari (2020) , the “financial system approach” emerged where MFIs can operate commercially when

providing their services to achieve and ensure sustainability and let the government and donor agencies focus on the responsibility of taking charge and protecting the poor. This would allow MFIs to encourage savings from the poor which are then pooled to facilitate provision of credit to the poor, while charging interest, and reduce the reliance on government and donor agencies.

Microfinance institutions have spurred economic development of nations by providing the poor population with an opportunity to save their small amounts. Micro-savings have been found to play a key role in member accessibility to credit which helps them engage in income-generating activities. Many microfinance institutions have promoted micro-savings through promotion of informal savings-led MFI often called Rotating Savings and Credit Associations (ROSCAs). Abera and Asfaw argued that the interventions introduced by microfinance institutions to micro, small and medium enterprises spur development of economies and aid in the reduction of poverty (Abera & Asfaw, 2019). These interventions include access to microfinance products and services, for example micro-insurance, micro-savings and micro-credit. Their research found a statistically significant positive effect on growth in micro, small and medium enterprises' revenue as well as assets purchased for business from micro-savings.

### **2.4.3 Other Services Offered by Microfinance Institutions**

The model developed by Fokam in 1992 in Baham gives a better explanation of the role that training services offered by MFI play in alleviating poverty and improving the living standards of poor people. It argues that victory over poverty and low standards of living can easily be overcome by a combination of Means (M) and Competences (C) of the Community (C). This model is built on the belief that economic and financial stability are the key foundation pillars of economic development among individuals and groups. It advocates for targeting of the poor people through offering support to micro and small business ventures with the aim of restoring their dignity so that they can be self-sufficient and self-sustain improved livelihoods.

This “financial integrated approach” allows for provision of additional services to customers to improve their social livelihoods and provide both development in their economic and social status (Kumari, 2020). However, the cost of providing these extra services may affect the sustainability

of MFIs and thus each MFI may need to access a combination that works best under their unique circumstances.

These models are built on the assumptions that knowledge is key to creating awareness among poor people on how to start and manage their small-scale ventures for their income wages. This model explains the reasoning behind microfinance institutions' arrangement for training sessions for their customers on various aspects ranging from record keeping to financial management. Many poor people have not been oriented on how to manage business records and accounting for all their efforts to sell a good or service. Through training, the individuals can identify lucrative ventures which they can start and run profitably for sustainable wage income.

Training is associated with empowerment of the targeted population by microfinance institutions. Empowered people can undertake business activities profitably for sustainable wage income earning. Training helps in the transfer of knowledge and understanding of how microfinance institutions operate.

## **2.5 Empirical Literature**

Excelce and Rao examined the impact that microfinance institutions have on empowerment, living standards and the alleviation of poverty among poor population living in Bangalore (Excelce & Rao, 2018). The study explored different ways that microfinance institutions had influenced the lives of poor populations in terms of health, clean water, education, safe disposal of human waste, legal rights, and other living standards parameters concerning the poor population. It is noted that microfinance institutions helped the most vulnerable population especially women who lived in households where they had no access to assets to pledge as collateral for credit. Microfinance institutions were found to accelerate creation of self-employment as women accessed necessary capital to finance their small businesses. Women were more empowered to start their own business ventures in groups so that they could learn business ethics from one another. They were appreciated by microfinance institutions which allowed them to create small savings accounts which built up into large pools of finances. From that pool, they could borrow and start or expand their businesses.

Perera used data from Sri Lanka to assess the impact that activities of MFI had on living standards of the poor population from among a few selected rural areas (Perera, 2018). The study acknowledges challenges experienced by poor populations in the effort to be admitted into the formal financial systems of their country. This has forced individuals in low-income areas to resort to microfinance institutions as a vehicle for their financial needs. However, it is noted that provision of credit facilities alone to poor populations is not enough. There needs to be an efficient and effective MFI system complemented by appropriate legal and policy framework, adequate physical infrastructure, good governance to enable poor populations' ventures into businesses for income generation. The study concluded that microfinance institutions need to provide financial assistance as well as professional (technical financial skills) and social help to poor households who obtain microfinance products and services to improve their living standards. The professional and physiological assistance could be offered in the form of periodic training on record keeping and financial management, and formation of groups where the members meet regularly to discuss their personal business experiences, challenges and how they resolved them. However, the findings in Sri Lanka indicated that MFI activities had no impact on improving the living standards of her people.

Mutua studied the effect that MFI services had on living standards of the poor population within Makueni County, Kenya (Mutua, 2017). The study explored different policies implemented by the Government of Kenya to widen financial access among poor population especially by promoting microfinance credit accessibility. This has seen an increase in Microfinance programmes as they are believed to positively affect the economic and social status of the poor population. The study's objective was to confirm the correlation that exists between microfinance services and poverty alleviation using a descriptive research design. The research was performed in Makueni County with a sample of 244 selected from six microfinance-deposit-taking institutions. The results of the study noted a positive and significant effect on poverty reduction in Makueni County from the offering of microfinance services. The services ranked in order of greatest impact include: micro-savings, micro-credit, micro-insurance and training of members.

Kiarie sought to find out whether microfinance institutions in Kenya were a mission drift or progression for the poor population (Kiarie, 2017). The study set out to ascertain whether for-profit microfinance institutions were more sustainable compared to those that were non-profit. Additionally, the study wanted to ascertain whether by commercialising MFI services meant progression or drift. The study noted the increase in participation of MFI services as exhibited by improvements in housing, health and accessibility to alternative housing opportunities among the poor populations. Economies characterised by vibrant MFI presence have posted great transformation. The variables in this study included: loan size, outreach and percentage of women which were used to measure drift. Progression variables included ratio analysis: Return on Assets (ROA), Return on Equity (ROE) and Operational Self Sufficiency (OSS). From the findings, mission drift signs were not immense. The study noted the need to investigate further on financial innovations and performance outcomes among microfinance institutions.

The agriculture sector accounted for 22.4 % of the overall 2021 GDP in Kenya and therefore remains the dominant economic sector (Kenya National Bureau Statistics, 2022). This is not unique to Kenya alone. Agriculture is important and the most dominant sector in Africa with 23% contribution of sub-Saharan Gross Domestic Product (GDP). A Zambian case study sought to find out the impact of microfinance institutions on small farming households where agriculture contributes 13% to its GDP (A. Stewart, 2020). Several studies conducted in Zambia found that households that took loans improved their agricultural output and increased household income when compared to those who did not take any loans. The results improved with continuous uptake of loans once the first loan was repaid. In addition, the leftover cash from the loans was used to augment household income thus increasing the funds available for household expenses – food, education, health. The study posits that some researchers have found limited impact of microfinance institutions on livelihood in part due to the rigidity of the loan contracts on repayments which do not seem to consider the unique characteristics of poor borrowers; for example, seasonal harvests leading to irregular income. The study concluded that flexibility, individual borrower assessment, and tailored microfinance products and services is therefore important to ensure favourable repayment outcomes and repeat borrowings by households thus improving the effectiveness by microfinance institutions in improving livelihoods.

Chirkos performed a study in Ethiopia to determine the impact of microfinance on the living standards of poor people (Chirkos, 2014). The study acknowledges that poverty is a global phenomenon as it is present in the wealthiest nations in the world. Many countries have challenges in alleviation of poverty because of its effects on illiteracy, diseases, unemployment, and stress, among others, on the lives of poor populations. This has resulted in the formulation of diverse strategies in different nations with the aim of alleviating the level of suffering among their poor populations. The study was centred on two branches of the Amhara Credit and Saving Institution. Through a questionnaire, the study collected primary data which guided the analysis and report development. With a sample of 150, the study established that important factors in poverty alleviation included: skills upgrade through training; provision of clean and safe water for human use; clean and hygienic environments and provision of adequate nutritional foods; accommodation and savings. Microfinance institutions were intentionally used to fill the gaps created by limitations in conventional banks. Microfinance institutions enabled poor populations to access financial services initially availed exclusively to populations in the upper income bracket.

Weerasinghe and Dedunu conducted a study to find out how microfinance affects living standards with reference to microfinance holders in Sri Lanka (Dedunu & Weerasinghe, 2018). The study was aimed at investigating the effects of microfinance on the living standards of the poor in Kurunegala District, Sri Lanka. The target population included all the micro loan holders in the district. Data collection was performed using questionnaires. The study findings revealed that micro credit, advisory support, savings and living standards of poor people were all significantly related to each other. The study suggested that microfinance institutions should engage in providing additional options of advisory support regarding loan management, starting of businesses, preparing business plans, and identifying customer requirements through continuous training programmes so that the living standards and entrepreneurial skills of the poor can be enhanced. Microfinance is an essential tool in filling the existing gap of conventional banks' limitations when it comes to reaching the poor and those who are vulnerable to the services offered by most banks. Rural people need assistance from various sources especially in relation to finance to improve their livelihood. Without this targeted help, people living in rural areas experience high interest rates for loans obtained and harsh contract conditions such as repayment terms or penalty

interest rates on default. Most have limited or no options as they require loans to fund their businesses to support the daily working capital requirements, long-term investments and other requirements.

Badullahewage reviewed how microfinance programmes influences poverty alleviation among microenterprises in Sri Lanka (Badullahewage, 2020). The study's main objective was to examine how microfinance programmes affect poverty alleviation among microenterprises in Sri Lanka. The study suggested that microfinance institutions and programmes have been important and played a key role in helping with financial access and development for the poor and those socially excluded. It has also helped in motivating the lives of rural people by enabling them to save through group formations and social developments. Microfinance entails the distribution of financial products to low-income individuals and credit, investment, and insurance plans are usually included in these financial services. "Individuals' living standards are said to be favorable in a community when there is sufficient consumption, a high educational level, proper housing conditions, ample food supply, sanitary conditions that are pleasant, and secure or unlimited participation in the production system" (Badullahewage, 2020). This can be enhanced by adopting effective and efficient microfinance services that are aimed at alleviating or reducing the burden.

Njeru conducted a study to find out how micro credit affects the improvement of the living standards of the poor people in the County of Tharaka Nithi, Kenya (Njeru, 2016). The study's results showed that offering loan facilities and teaching people how to handle funds to produce extra revenue and profits is one way of boosting the living standards in the county. "Microcredit access should be used as an intervention in minimizing poverty levels, such as lack of access to education, poor sanitation, insufficient feeding programs, lack of access to knowledge and social achievement, inadequate clothing, poor shelter, and poor living conditions" (Njeru, 2016). Microfinance services – that is, credit, insurance and savings – are targeted at the poor as well as those with low wages and low-income households. The services are offered to the average earners who wish to have access to money so that they can improve income-generating activities. The needy or those who rely on their small-scale companies are basically provided with these financial services.

A study by Khan on how microfinance affects the household income and consumption levels in Danyore, Gilgit-Baltistan, Pakistan noted that microfinance positively and significantly affected the living standards, education levels and health improvement of the individuals in the target population (Khan, 2014). The study utilised a quantitative research methodology using regression analysis to describe the findings. According to the study, microfinance credit facilities improved household incomes and enhanced consumption levels in the selected communities, which in turn improved living standards. This led to their conclusion that microfinance aided in the fight against poverty as well as the upliftment of livelihoods in Pakistan. To achieve greater strength, sustainability and business, modern micro credits are flourishing, but they have turned into money-making entities, which was not the fundamental concept behind micro credits. Savings and credit facilities are therefore important drivers for supporting the underprivileged members in society.

Selvaraj et al. researched on the effect of micro-credit and macroeconomic conditions on lower-income groups (Selvaraj et al., 2018). The focus of the study was on how the lower-income groups headcount was affected by micro credit access and the macroeconomic environment. The study used cross-sectional time series data over five years from 2011 to 2015 sourced from 16 states and federal territories in Malaysia. A significant and positive relationship was identified between the number of loans offered by each micro-credit office and the headcount of the lower income group. In addition, the lower income group are significantly affected and influenced by the macroeconomic environment as they are at the mercy of, and particularly vulnerable to, unstable economic conditions and shocks. The study recommended that there should be an effective government fiscal policy as well as regulatory quality to help in promoting both use of and access to micro-credit that can be provided to reduce the lower-income group headcount and develop families' economic well-being, besides narrowing the income inequality gap.

Taiwo and Ojo investigated the microfinance institutions' contribution to the alleviation of poverty in Southwest Nigeria. They used both primary and secondary data sourced from microfinance institutions and randomly selected customers (Taiwo & Ojo, 2016). The study noted that the ability to borrow and pay small amounts in a continuous fashion enables the poor to pay for education, invest in a business and meet any other needs that may arise. In addition, saving small

amounts allows the poor to accumulate funds to buy assets, or even pay for emergency healthcare. In a way, this cushions the poor from emergency situations such as death, illness, extreme weather events, economic slumps or changes, such as steep increases in food prices, and other events that could destroy family livelihoods. Microfinance institutions encourage the poor to save as this a requirement to qualify for a loan and in so doing, good habitual saving is established. The study showed an increase of 88% in average weekly income over a period of three years for customers who obtained loans and therefore confirmed that Microfinance institutions can help alleviate poverty.

Banerjee et al. investigated the impact of microfinance institutions on living standards by analysing the propensity to establish businesses by the Spandana clients in India using quantitative methodologies in data collection and analysis (S. B. Banerjee & Jackson, 2017). The study adopted the use of a descriptive research design to analyse the data. It showed that 30% of the clients established businesses; 22% used the loans for consumption; 30% repaid an existing loan; 15% used the loans for durable consumption and 15% utilised the loans for non-durable household consumption. The findings implied that the majority of the individuals accessing the microfinance products and services utilised it for consumption. Therefore, the impact of microfinance institutions on revenue generation and income generation was not significant. Nevertheless, this study assumed that business loans were the only need demanded by businesses and that microfinance institutions provided microloan products only. To the contrary, education, entrepreneurship training, skills acquisition and savings products offered by microfinance institutions could also have an effect on living standards. This therefore creates gaps in the research methodology.

Subramaniam et al. examined the role of microfinance on poverty on 34 developing countries from 2009 to 2016 (Subramaniam et al., 2021). The first and tenth Sustainable Development Goals (SDGs) relate to no poverty and reduced inequality. A significant proportion of the world's population (including in Africa) lives in poverty. The study posits that microfinance could fight poverty through access to microfinance. However because it only serves the poor, it may not be very effective for the poorest in society. Some of the issues noted from the poor who borrow

include financial illiteracy, inability to repay loans, lack of business acumen, bankrupt business and high indebtedness, all of which aggravate the poverty situation of the borrowers rather than improving it. The study deduced that the current forms of microfinance institutions may not work effectively to reduce poverty in developing countries especially when there is improper access to microfinance for the poor. However it was found that microfinance tends to lower income inequality (Subramaniam et al., 2021). To resolve this, the study posits that microfinance institutions can provide business, financial and skills training to customers, simplify the loan-processing requirements, and improve the loan products by lowering interest rates, reducing instalments and lengthening loan tenors to ease the financial impact of the loans to the poor.

Duvendack et al. investigated the impact of microfinance on well-being (living standards) of poor people through a methodical analysis of existing literature on microfinance and its effect on living standards. They studied four microfinance aggregator institutions, eight non-governmental organisations' reports, aid organisation websites and over 58 reviewed books, journal articles and academic papers, which were thoroughly scrutinised for internal and external validity and reliability (Duvendack et al., 2011). The study concluded that most existing empirical literature had weak methodologies and could thus not be generalised. Further, the study noted that studies with strong methodologies identified no positive impact on living standards because of access to microfinance institutions products and services.

**Table 3: Empirical literature summary on microfinance usage and living standards**

<b>Source</b>	<b>Empirical study</b>	<b>MFI variables used</b>	<b>Summary of findings</b>
Excelce and Rao (Excelce & Rao, 2018)	Examined the impact that microfinance institutions have on empowerment, living standards and alleviation of poverty among the poor population living within Bangalore	micro-credit scheme, micro-savings	Microfinance institutions accelerated creation of self-employment as women accessed necessary capital to finance their small businesses
Perera (Perera, 2018)	Assessed the impact of MFI activities on living standards of the poor population in Sri Lanka	member training, micro-credits	MFI activities had no influence on improving living standard of people in Sri Lanka
Mutua (Mutua, 2017)	Effect of MFI services on living standards of the poor population within Makueni County, Kenya	micro-credit, savings, training by microfinance institutions, micro-insurance	Microfinance services have a positive and significant effect on poverty reduction
Kiarie (Kiarie, 2017)	Microfinance Institutions in Kenya: A mission drift or progression?	operational self-sufficiency (OSS), return on assets (ROA), return on equity (ROE), efficiency, outreach	Financial performance of a microfinance institution does not indicate a mission drift
Chirkos (Chirkos, 2014)	Impact of microfinance on the living standards of poor people in Ethiopia.	training and savings	MFI resulted in an increase in incomes which improved their standard of living

## 2.6 Conclusion

The studies reviewed in the empirical literature section together with the summary in Table 1 post varied results for the effect of microfinance usage on living standards as measured by different parameters. According to Excelce and Rao, microfinance institutions have had diverse influence on the living standards of low-income populations in Bangalore (Excelce & Rao, 2018). They were able to accelerate creation of self-employment as women accessed necessary capital to finance their small businesses. Women were more empowered to start their own business ventures in groups so that they could learn business ethics from one another. Therefore, member training played a key role in uplifting the living standards of the low-income members.

Perera acknowledged the challenges experienced by poor populations in the effort to be admitted into the formal financial systems of their country (Perera, 2018). It was concluded that microfinance institutions need to provide financial assistance as well as professional (technical financial skills) and social help to poor households who obtain microfinance products and services to improve their living standards. In a local study, Mutua explored different policies implemented by the Government of Kenya to widen financial access among poor population especially by promoting microfinance credit accessibility (Mutua, 2017). Findings indicated that access to Microfinance services had a positive and significant effect on alleviation of poverty in Makueni County. Savings bore the greatest results closely trailed by micro-credit, micro-insurance and member training.

Kiarie noted the increase in participation of MFI services as exhibited by improvements in housing, health and accessibility to alternative housing opportunities among the poor populations (Kiarie, 2017). The findings indicated that the mission drift signs were not immense. Chirkos acknowledged that poverty is a global phenomenon as it is present in the wealthiest nations in the world (Chirkos, 2014). The findings indicated that important factors in poverty alleviation included: skills upgrade through training; provision of clean and safe water for human use; clean and hygienic environments, and provision of adequate nutritional foods, accommodation and savings.

Badullahewage suggested that microfinance institutions and programmes have played a key role in helping the poor and the marginalised to access financial development (Badullahewage, 2020). Individuals' living standards are said to be favourable in a community when there is sufficient consumption of goods and services, a high educational level, proper housing conditions, ample food supply, sanitary conditions that are pleasant, and secure or unlimited participation in the production system.

The next chapter, Chapter 3, delves into methods that were applied in collection and analysis of data. The chapter identified the empirical model that was adopted to measure the effect that MFI usage has had on the living standards of the low-income population in Kenya.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 Introduction**

Research methodology highlights the different methodologies that the researcher adopted to ensure that appropriate data is collected and analysed appropriately to provide responses to research objectives. It specifically discusses the design to be adopted, population of interest, instruments of data collection, types of data to be collected, and measures put in place to ensure reliable and valid data is collected and the way data is analysed.

### **3.2 Research Approach**

A research approach can either be qualitative or quantitative or a combination of both and that depends on the type of research and the specific research question(s) (Amaratunga et al., 2002). If the research does not involve numerical data, it is qualitative whereas if it includes numerical data, it is quantitative. The qualitative approach is normally in narrative, case study format that is mainly grounded in theory. Amaratunga et al. (2002) posit that qualitative research is mainly conducted through vigorous lengthy contact in real-life situations or settings to understand social and human activities. The quantitative approach, on the other hand, involves methodical empirical investigations that make use of statistics and mathematical computations. A combination of both qualitative and quantitative makes use of both numerical and non-numeric theoretical research.

The research approach used for this study is quantitative as the study used statistics and economic models to show cause-effect relationships and ultimately measure and conclude on the impact of usage of MFI products and services on living standards in Kenya. The study analysed secondary data and applied statistical tests to draw conclusions on the research objectives.

### **3.3 Research Design**

Research design refers to a plan developed by a scholar for the purposes of selecting study elements of subjects together with procedures to be followed in data collection to come up with credible

responses to research questions. It details the actions which are to be performed to ensure that reliable data is collected.

This study utilises an explanatory research design to assist in describing and evaluating the effects that microfinance usage has on living standards in Kenya. This method is essential when responding to the ‘who, what, when and where’ questions or describing the impact and how of a phenomenon. This design is ideal for use in social science data to find answers to research questions or test the hypothesis of the study. An explanatory design is concerned with collecting, gathering and analysing data to give an accurate account, description and picture of an event, problem or phenomenon. In this study, an explanatory research design was utilised to describe patterns and relationships in the level of use of microfinance products and services and the living standards of users.

Quantitative data analysis was also performed by using statistical techniques to extract relevant data from the full dataset, analyse the extracted data, perform correlation and regression analysis, interpret the results and conclude on the results.

### **3.4 Population, Sample and Sampling Technique**

Population refers to the whole selection of elements that a researcher would like to generalise the findings on. (Dahabreh & Hernán, 2019) It bears common observable features that are of interest to the researcher. The population of this study comprised a sample of households in Kenya as the unit of analysis using secondary data. The data for this study utilised the dataset collected and used for the 2021 FinAccess Household Survey (Central Bank of Kenya et al., 2021) which is publicly available on the Central Bank of Kenya website (Central Bank of Kenya, n.d.).

#### **3.4.1 Data source and sample size**

This study employed secondary data from the cross-sectional survey household level data from the 2021 FinAccess Household Survey. The survey sample was collected nationally from across the forty-seven (47) counties in Kenya which would include estimates on rural and urban areas. Each of the survey domains had a minimum sample size computed for the integrated surveys. The

computed total sample size was 1,700 Enumeration Areas and 30,600 households (Central Bank of Kenya et al., 2021).

The sample for the survey was selected from the Kenya Household Master Sample Frame (K-HMSF) which was developed from the 2019 Kenya Population and Housing Census (KPHC). A total of 128,239 Enumeration Areas were created during the 2019 Population and Housing Census from which 10,000 clusters of the K-HMSF were selected using Probability Proportional to Size (PPS). The first level of stratification was performed for the 47 counties in Kenya. Ninety-two (92) sampling strata, including both urban and rural, were stratified from the Master sample frame. The counties of Nairobi and Mombasa were identified as purely urban.

Four sub-samples: C1, C2, C3 and C4 were identified from the frame. Each sample frame, which is expected to be independent, is composed of 2,500 clusters. Whenever a survey sample size requirement for a stratum is beyond the stratum sample size in a subsample of the frame then two or more sub-samples can be combined (Central Bank of Kenya et al., 2021).

The sampling units were selected using a multi-stage stratified cluster sampling procedure. The Enumeration Areas, the households and an eligible individual within the households were sampled as the three sets of units. The primary sampling units were the Enumeration Areas. These were randomly selected independently from each of 92 strata in the K-HMSF. Given that the master sample from which the sample was selected had been drawn with probability proportional to size, then the Enumeration Areas were methodically selected with equal probability (Central Bank of Kenya et al., 2021).

A systematic sampling procedure was used to select 18 households from each Enumeration Area from the register of households computed during the 2019 KPHC. The target for the survey for each selected household was one eligible individual. Kish Grid was used to randomly pick one person of 16 years and above after all the usual members of the sampled household were listed. A questionnaire was then administered to the selected person. A representative dataset was created at the national and county level after the weighting and adjusting the collected data for non-responses (Central Bank of Kenya et al., 2021).

In total, 30,600 households at the national country level were selected for the survey. At the point of data collection, 25,724 households were found to be eligible for interviews. The total household response rate was 85.6% which translated into 22,024 eligible households being interviewed. The total household response rate was split into a response rate of 88.6% for rural households and 80.5% for the urban households. Some areas selected for the survey, specifically 24 Enumeration Areas, could not be covered due to various issues: difficulties in finding some selected households due to entire migration of households as a result of the COVID-19 pandemic issues or because they are pastoralists. Other challenges comprised outdated census lists, and insecurity due to bandits in certain areas (Central Bank of Kenya et al., 2021).

**Table 4 : Response Rates**

<b>Results</b>	<b>Residence</b>		<b>Totals</b>
	<b>Rural</b>	<b>Urban</b>	
<b>Households selected</b>	18,774	11,826	<b>30,600</b>
<b>Households eligible</b>	16,316	9,408	<b>25,724</b>
<b>Households interviewed</b>	14,455	7,569	<b>22,024</b>
<b>Response rates (%)</b>	88.6	80.5	<b>85.6</b>

(Source: 2021 FinAccess Household Survey)

### 3.5 Regression Model

The study utilised regression analysis to analyse the impact of microfinance products and services on household living standards. The empirical model of Rehman et al. (2015) and Khan (2014) utilised a similar model in the study on the impact of microfinance programme on households. The model is as shown below:

$$LS_i = \beta_0 + \beta_1 MFI_i + \beta_2 Age_i + \beta_3 Gender_i + \beta_4 Mstat_i + \beta_5 Siset_i + \beta_6 Educlevp_i + \varepsilon$$

Where LS denotes Living Standards measured as monthly expenditure, income and the wealth index of various subsets of the households;  $MFI_i$  refers to microfinance usage proxied by Micro Credit Facilities and Micro Saving Facilities.

Various household characteristics such as age of household head, gender of household head, education level of household head, marriage status of household head, size of household, monthly household income, household location – rural versus urban – are included as control variables. Other control variables included were interest perception of microfinance loans, total loans obtained by households from all sources and total savings by households in all sources. The empirical models were estimated using Stata 14.

#### 3.5.1 Variable Description and Measurement of Variables

##### 3.5.1.1 Dependent Variable: Living Standards

Living Standards is the dependent variable in this study. It is important to note that living standards differ in rural and urban households. Perera used household income, housing conditions, ability to feed their families and assets owned to assess the impact that activities of MFI had on the living standards of the poor population from among a few selected rural areas (Perera, 2018). Excelce and Rao identified their usefulness in assessing the standard of living as poverty indicators as per recommendations by the World Bank and the United Nations Development Programme (Excelce & Rao, 2018). Abera and Asfaw also posit that income, expenditure, consumption and assets can

be used as indicators of welfare impact (Abera & Asfaw, 2019). As illustrated in the empirical literature, the welfare of the households was measured through looking at the effects on the household including quality of house dwellings and assets owned by the respondents. “It is important to note that quality of life is difficult to measure as the variables are value laden and sometimes perceptual and measurement error and reporting biases complicate even the seemingly straightforward exercise of identifying how loan proceeds are spent” (A. Banerjee et al., 2015). Income, expenditure, consumption and assets can be used as indicators of welfare impact (Abera & Asfaw, 2019)

The indicators to be used in this study for determination of living standards include:

- Monthly income and expenditure, i.e., monthly income and expenditure per adult equivalent on food, rent, utility bills, savings, education and health. Tarozzi et al. posit that when households have micro-credit access and when total consumption remains constant, then households tend to spend more on durable goods and decrease spend on non-durable goods especially legal recreational goods such as tobacco, and alcoholic beverages. However, they did not confirm this argument in their research due to data limitations (Tarozzi et al., 2015). The expectation is that increase in income and expenditure has a high correlation with living standards.
- Wealth index – The 2021 FinAccess Survey collected indicators that were used to develop a wealth index to determine and evaluate the level of wealth or poverty of the respondents. This helped in understanding the distribution of wealth across the population considering both rural and urban settings. The indicators collected include: type of household dwelling; for example, permanent building, semi-permanent, temporary or traditional; number of habitable rooms and dwelling units; tenure status of main dwelling unit (constructed/purchased/rented); main type of material roof, floor and wall; main source of cooking fuel, for example, gas, paraffin, electricity, charcoal; main source of lighting; main source of water for domestic use; main type of human waste and solid waste disposal; assets owned, for example, television, radio, computer, car, bicycle, tractor; animals reared; items owned/consumed, for example, bread, meat/fish, towels for bathing; ownership of land/house/apartment, document ownership and means of acquisition; expenditure per month on key expenses on airtime, rent, food, transport.

There are several indicators used by researchers to measure the welfare of households. These include the money metric (consumer expenditure) and non-money metric measures such as the wealth or the asset index. This study opted for the non-money metric measure computed based on the asset ownership among households. The selection of the assets used in the construction of the index is informed by the weight attached on the assets in the 2019 Population and Household Census in explaining their economic status. In the FinAccess Household Survey, respondents were asked whether they own any of the following assets: toilets, bathrooms, refrigerators, towels, amongst other items.

There are two parametric analyses commonly used for indexing: The Principal Component Analysis (PCA) and Common Factor Analysis (CFA). PCA is preferred over CFA as an indexing strategy because it is not necessary to make assumptions on the raw data, such as selecting the underlying number of common factors (Steiger, 1979). The PCA approach was applied after the construction of the composite variables for the various assets owned by the households. Using the population weights drawn from the census, the population was divided into five distinct wealth quintiles (poorest, second poorest, middle, second wealthiest, wealthiest) which classify the population in terms of their economic status with the lowest quintile being occupied by the poorest wealth group. The significance of this is to understand the behavior of each population group including their uptake of microfinance products and services.

The expectation is that permanent dwelling housing, more assets, and type of assets owned has a high correlation with living standards.

### **3.5.1.2 Independent Variables**

Heale and Twycross identified two schools of thought in measuring the impact of MFI in an economy (Heale & Twycross, 2015). The first being assessment of different respondents ranging from households, individuals, community, enterprise who are in many cases the beneficiaries of MFI services. The second school of thought focuses on an MFI itself in terms of outreach and sustainability. This study applied the first approach by focusing on individuals, households and the community.

The regression model uses MFI usage as the independent variable. Perera noted that MFI usage enables individuals and businesses of low-income populations to access micro-savings, micro credit services and business management training (Perera, 2018). Mutua also notes that usage of MFI services among the low-income population is key in improvement of their living standards (Mutua, 2017). Chirkos noted that low-income individuals access micro credit and micro saving opportunities which help them associate with microfinance institutions for welfare improvement (Chirkos, 2014). The microfinance institutions also offer training services to their members on business management so that the beneficiaries can learn how to effectively manage their businesses. The parameters of MFI usage are discussed below:

#### **a) Micro Saving Facilities**

This study investigated the effect of savings products' consumption on living standards. Usage of savings products was measured by identifying whether savings are made in microfinance institutions; the reasons for saving and especially whether this is to access credit, use of savings; the frequency of savings by the respondents and the total savings as at the time of data collection. Abera and Asfaw argued that MFI micro-savings build up a huge reserve that can be used to create a large pool of funds that can be used to create credit and spur growth among micro-enterprises (Abera & Asfaw, 2019). Therefore, this study examined the total savings made by micro savers as a percentage of their assets.

#### **b) Micro Credit Services**

The Grameen Bank Model developed by Muhammed Yunus in 1983 targeted beneficiaries forming small groupings where they provided mutual and morally binding group guarantees for credit issued to their members. Microfinance institutions target poor populations who are not able to save besides requiring credit to support their wage-earning business venture. By presenting opportunities, they will be assisted to run profitable business ventures that can guarantee them sustainable wages hence alleviate their poverty by improving their living standards.

Banerjee et al. performed a study and used six randomised evaluations (six countries on four continents) of micro-credit to identify causal effects of expanded access to micro-credit on borrowers and/or communities (A. Banerjee et al., 2015).

The two proxies used to reflect micro-credit are:

- a) Households with access to credit from microfinance institutions against households without access to credit from microfinance institutions; and
- b) The loan amount received by households with access to credit from microfinance institutions.

### **3.5.1.3 Control Variables**

The study used the following demographic characteristics to establish the amount of credit advanced and savings made:

- a) Gender – usage of microfinance products and services by males or females as well as male or female heads of households. Tarozzi et al. thought that lending should especially target women in Ethiopia; however, the guidelines were loose at the time and so the majority of loans were initiated by men (Tarozzi et al., 2015). Access to and usage of microfinance institutions products and services is important for the empowerment of women.
- b) Age – age of individuals with access to and usage of microfinance institutions' products and services given holders of the national identity card which is 18 years.
- c) Education level – whether access to and usage of microfinance products and services is impacted when the household head is educated and at what level.
- d) Marital status – whether usage of microfinance products and services is impacted when the household head is married or unmarried (divorced, widowed or single).
- e) Size of household – whether the size of the household impacts the access to and usage of microfinance products and services.
- f) Location of household – whether the location of a household, that is, whether it is in a rural or urban area in Kenya, impacts the access to and usage of microfinance products and services.

- g) Monthly household income – whether the level of household income impacts the access to and usage of microfinance products and services.
- h) Total loans – whether the level of loans obtained by households irrespective of source of the loan impacts the access to and usage of microfinance products and services.
- i) Total savings – whether the level of savings obtained by households irrespective of where savings are made impacts the access to and usage of microfinance products and services.
- j) Interest perception of microfinance loans – whether the interest charged on microfinance institutions’ loans are an important consideration in accessing and using loans from microfinance institutions.

The dataset is quite rich and includes other control variables such as form of and employment level, disability status, existence of chronic disease, networks, which may be considered for analysis in future research.

**Table 5: Variables and measurement**

Variable	Definition	Measurement
<b>Dependent variables</b>		
<b>Living Standards/Welfare</b>	Monthly household expenditure	Average monthly expenditure per household on food, rent, education, health and other necessities.
	Monthly household income	Average monthly income earned per household from employment, business or other sources.
	Wealth index	Distribution of wealth among various subsets of the population. Evaluating financial goals and financial behaviour by considering main life goals, financial decisions made, access to adequate food and/or school fees for children, plan for retirement, ability to access emergency funds, existence of savings. This is ranked from 1 to 5 with 1 being poorest and 5 richest.
<b>Independent variables</b>		
<b>Usage of MFI</b>	Micro Saving Facilities	Households that hold savings in a microfinance institution; defined as 1 for households that save with MFIs and zero otherwise.
	Micro Credit Services	Households that access and use loans in a microfinance institution; defined as 1 for households that have accessed credits/loans from MFIs and zero otherwise.

Variable	Definition	Measurement
	Loan amounts obtained from microfinance institutions	The loan amounts (in KSH) accessed by households that access and use loans in a microfinance institution.
<b>Control variables</b>		
<b>Household (demographic) characteristics</b>	Gender	Male or female household head
	Age	Age of household head – brackets upwards of 18 years as this allows access to and usage of microfinance institutions products and services given holder of national identity card.
	Education level	Education level attained by the household head – no education, primary education, secondary education, tertiary and others (master’s degree or Doctor of Philosophy)
	Marital status	Marital status of household head – Married or unmarried (single, widowed or divorced)
	Size of household	The average size of each household including number of dependents.
	Monthly household income	Average monthly income earned per household from employment, business or other sources.
	Location of household	Location of the household whether in a rural or in an urban area.
<b>Other characteristics</b>	Total household loans	Households that access and use loans from various sources or institutions considering households that obtain loans and those that do not.
	Total household savings	Households that hold savings in various places or institutions considering households that save and those that do not.
	Interest perception of microfinance institution loans	Households that consider interest charged on microfinance institutions’ loans as an important consideration in accessing and using loans from microfinance institutions and those that do not.

### 3.6 Estimation Approach

To estimate the impact of microfinance institutions on household expenditure and income, the study used the linear regression model as follows:

$$\log Y_i = \alpha_0 + \alpha_1 MFI_i + \alpha_{i-1} X_i + \varepsilon_i$$

Where:

$Y_i$  is household expenditure or income in Kenya Shillings and  $i$  is each household in the study.

$MFI_i$  is access to credit or savings or the amounts borrowed by households through microfinance institutions.

$X_i$  is the household characteristics – age of household head, gender of household head, education level of household head, marriage status of household head, size of household, monthly household income, household location – rural versus urban, are included as control variables. Other control variables included were interest perception of microfinance loans, total loans obtained by households from all sources and total savings by households in all sources.  $\varepsilon_i$  is the error term.

To estimate the impact of microfinance institutions on the wealth index, the study used multinomial logit regression model. The study used the logit model to complement ordinary least squares because the wealth index is ranked where 1 is poorest, 2 is poor, 3 is normal, 4 is somewhat rich and 5 is rich. The logistic regression model has a linear form of logit of this probability.

$$\text{logit}[\pi(x)] = \log \left\langle \frac{\pi(x)}{1-\pi(x)} \right\rangle = \alpha + \beta x, \text{ where the odd} = \frac{\pi(x)}{1-\pi(x)}$$

The odds =  $\exp(\alpha + \beta x)$  and the logarithm of the odds called the logit, is:

$$\text{logit}[\pi(x)] = \log \left\langle \frac{\pi(x)}{1-\pi(x)} \right\rangle = \log(\alpha + \beta x) = \alpha + \beta x$$

For the multinomial logit, the model for the log odd is:

$$\text{logit}[P(Y) = 1] = \alpha + \beta_1 x + \beta_2 x + \dots + \beta_k x$$

The parameter  $\beta_i$  refer to the effects of  $x_i$  on the log odd that  $Y=1$ . In this case, this is the wealth indicator score of the poorest households, controlling other household characteristics  $x_j$ .

Let  $\pi_j$  be the multinomial probability of an observation falling on the  $j$ th category, to find the relationship between the probability and the  $k$  explanatory variables  $x_1, x_2, \dots, x_k$ . The multinomial logit regression can be expressed as:

$$\log \left[ \frac{\pi_j(x_i)}{\pi_k(x_i)} \right] = \alpha_{0i} + \beta_{1j} MFI_{1i} + \beta_{2j} x_{2i} + \dots + \beta_{kj} x_{ki}$$

The odds in the multinomial logit model considers the access of credit from MFIs, savings from MFIs and amounts borrowed by the households from MFIs ( $MFi_{1i}$ ) for each wealth index score and the control variables.

### **3.7 Reliability and validity**

The data for this study utilised the dataset collected and used for the 2021 FinAccess Household Survey (Central Bank of Kenya et al., 2021). The survey was conducted by a partnership between Central Bank of Kenya, Kenya National Bureau of Statistics and FSD Kenya. The 2021 survey is the seventh survey that has been conducted, with the first being performed in the year 2006. The quality and richness of the survey and the data collected has improved over time and is a useful source of information for researchers in Kenya. It is also referenced on the World Bank website. The data was collected across all the counties in Kenya with a representative sample obtained and referenced to the 2019 census data.

### **3.8 Conclusion**

In summary, the research approach to be used for this study is quantitative as the study used statistics and economic models to show cause-effect relationships and ultimately measure and conclude on the impact of usage of MFI products and services on living standards in Kenya. The study analysed secondary data from the cross-sectional survey household level data from the 2021 FinAccess Household Survey and applied statistical tests to draw conclusions on the research objectives.

This study utilises an explanatory research design to assist in describing and evaluating the effects that microfinance usage has on living standards in Kenya. The population of this study comprised a sample of households in Kenya as the unit of analysis using secondary data. The study utilised regression analysis to analyse the impact of microfinance products and services on household living standards. The liner regression models in this study use various household characteristics as control variables, living standards as the dependent variable and MFI usage as the independent variable. The next chapter, Chapter 4, presents the analysis of data and findings thereon.

## CHAPTER 4: RESEARCH FINDINGS AND DISCUSSION

### 4.1 Introduction

This chapter presents the analysis of data and findings thereon. Firstly, the chapter presents the results of the descriptive statistics, demographic analysis and correlation matrices. Secondly, the regression analysis results are presented, and lastly, the conclusion will discuss and conclude on the usage of microfinance products and services on living standards in Kenya.

### 4.2 Descriptive statistics

Table 6 highlights the response rate of the households interviewed (85.6%) also showing the split between rural and urban households with 65.6% of households being in rural areas. The impact of the usage of microfinance products and services on living standards in the rural and urban households in Kenya could present an interesting future research area.

**Table 6: Response rate – Rural/urban split**

Results	Residence		Totals
	Rural	Urban	
Households eligible	16,316	9,408	25,724
Households interviewed	14,455	7,569	22,024
Response rates (%)	88.6	80.5	85.6

*Source: Candidate's estimates from research data*

Tables 7 and 15 summarise the household demographics. Fifty-eight percent of the heads of the households are male. The youngest respondent was 16 while the oldest respondent was 116 with the average age of respondents being 39. This could explain the results of the marital status with 55% of the respondents being married or living with their partner. The average size of each household/ number of dependents is approximately two people with the least size being one member with up to eight members in a household. The majority of the household heads had only attained primary school education level with some household heads having attended some classes

in secondary school. Some household heads had no education while others had attained a university degree.

Then, 0.61% of all households held microfinance credit facilities and 1.28% of households held savings accounts. It is important to note that several households held multiple credit and savings facilities which is highlighted in Table 9.

Interest does not seem to be an important consideration in obtaining loans from microfinance institutions as only 2% of households who obtain loans from microfinance institutions consider interest as an important factor in making the decision to obtain a loan.

**Table 7: Summary of demographics**

Variables	Frequency	Percentage
<b>Gender</b>		
Female (0)	9,339	42.4
Male (1)	12,685	57.6
<b>Married status</b>		
Single (0)	10,020	45.5
Married (1)	12,004	54.5
<b>Location</b>		
Urban (1)	7,569	34.37
Rural (0)	14,455	65.63
<b>Education</b>		
None (1)	3,987	18.1
Primary (2)	8,846	40.17
Secondary (3)	6,631	30.11
Tertiary (4)	2,535	11.51
Others (5)	25	0.11
<b>Savings in Microfinance Institutions</b>		
Yes (1)	283	1.28
No (0)	21,741	98.71
<b>Loans in Microfinance Institutions</b>		
Yes (1)	134	0.61
No (0)	21,890	99.39
<b>Consider high interest for MFI loans</b>		

Yes (1)	447	2.03
No (0)	21,577	97.97

*Source: Candidate's estimates from research data*

The objective of this study is to establish the effect of usage of microfinance credit and savings and training facilities on living standard in Kenya and therefore it is important to establish their usage and frequency.

### **Usage of microfinance credit and savings**

Table 8 highlights the usage of microfinance credit and savings by households compared to other sources. It was found that 0.61% of all households held microfinance credit facilities and 1.28% of households held savings accounts. It is important to note that several households held multiple credit and savings facilities, which is highlighted in Table 9. Other sources relate to credit from and savings in banks, Saccos, mobile money, family, informal micro-groups and friends (Figure 12 shows the various sources of loans). A large percentage of households had no access to either credit or savings facilities: 47% and 34% respectively. Thirty percent of households kept their savings in the form of investments in assets such as land, livestock and would liquidate the assets in case a need arose.

Table 15 shows the average MFI loan amount obtained by households was KES 72,058 compared to the average loan from other sources, which was KES 45,026. The least loan amount obtained from microfinance institutions was KES 3,000 and the highest amount obtained was KES 780,000. In addition, 71.2% of the households that obtained loans from microfinance institutions repaid their loans monthly compared to 87.8% of the households that obtained loans from other sources. This is not surprising as most microfinance institutions allow repayments for shorter periods such as daily, weekly or biweekly.

**Table 8: Household usage of microfinance credit and savings compared to other sources**

Source	Credit		Source	Savings	
	Total	Percentage		Total	Percentage
<b>MFI</b>	134	0.61	<b>MFI</b>	283	1.28
<b>Other</b>	11,710	53.17	<b>Other</b>	14,502	65.85
<b>No Credit</b>	10,287	46.71	<b>Non-Financial</b>	6,631	30.11
			<b>No Saving</b>	7,477	33.95

Source: Candidate's estimates from research data.

\*The %age above is calculated as the total usage per category as a %age of the total households.

Table 9 highlights the frequency and usage of credits and savings facilities by households. Fifty-three percent of households accessed between one to nine credit facilities with the majority having one (1) credit facility while 66% households held between one to six savings facilities with the majority having one (1) saving facility. It was found that 1.14 % of the households that held loan facilities obtained these from microfinance institutions.

**Table 9: Number of credit and savings facilities used by households**

Number of credit facilities held	Number of households	Percentage	Number of savings facilities	Number of households	Percentage
0	6,160	27.97	0	7,477	33.95
1	10,287	46.71	1	8,169	37.09
2	3,448	15.66	2	4,471	20.3
3	1,446	6.57	3	1,548	7.03
4	484	2.2	4	325	1.48
5	149	0.68	5	30	0.14
6	37	0.17	6	4	0.02
7	8	0.04	N/A		
8	4	0.02			
9	1	0.00			
<b>Total</b>	<b>22,024</b>	<b>100</b>	<b>Total</b>	<b>22,024</b>	<b>100</b>

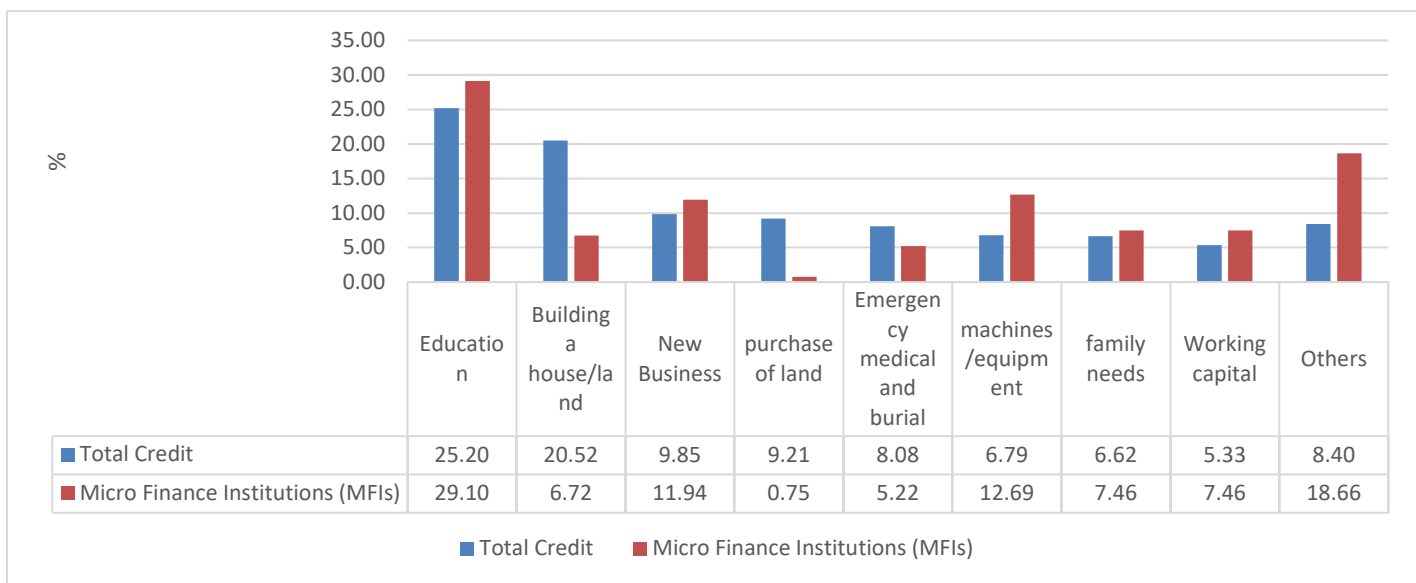
Source: Candidate's estimates from research data

Figure 10 highlights households' reasons for obtaining a loan(s) from all sources also separating the reasons for all sources and microfinance institutions. Interestingly, the top three reasons

indicated by households for obtaining loans from microfinance institutions were for education, other needs and to purchase machines/equipment for their business. The top three reasons from all sources were: for education, to build a house or purchase land, and to start a new business. This therefore highlights education as one of the most important and/or highest household expenditures.

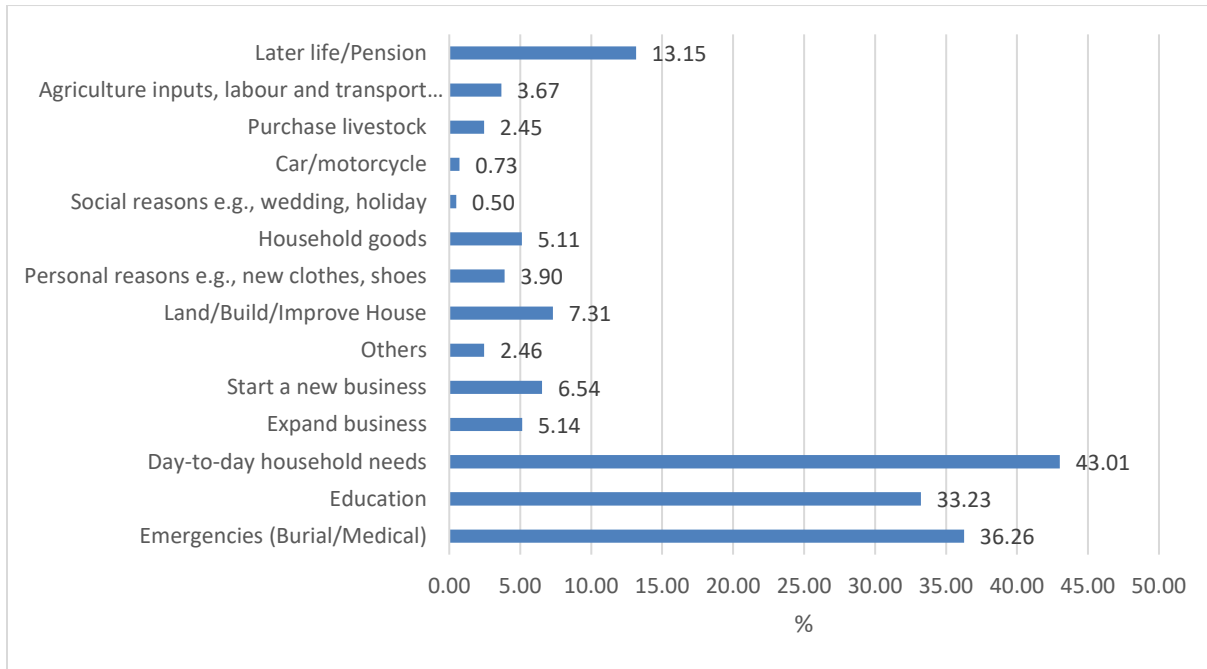
On the other hand, Figure 11 indicates the top three reasons for saving as day-to-day household needs, emergencies (burials/medical) and education. This relates to the observation above that households prefer to borrow for education needs.

**Figure 10: Purpose of Credit**



Source: Candidate's estimates from research data

**Figure 11: Purpose of Savings**



*Source: Candidate's estimates from research data*

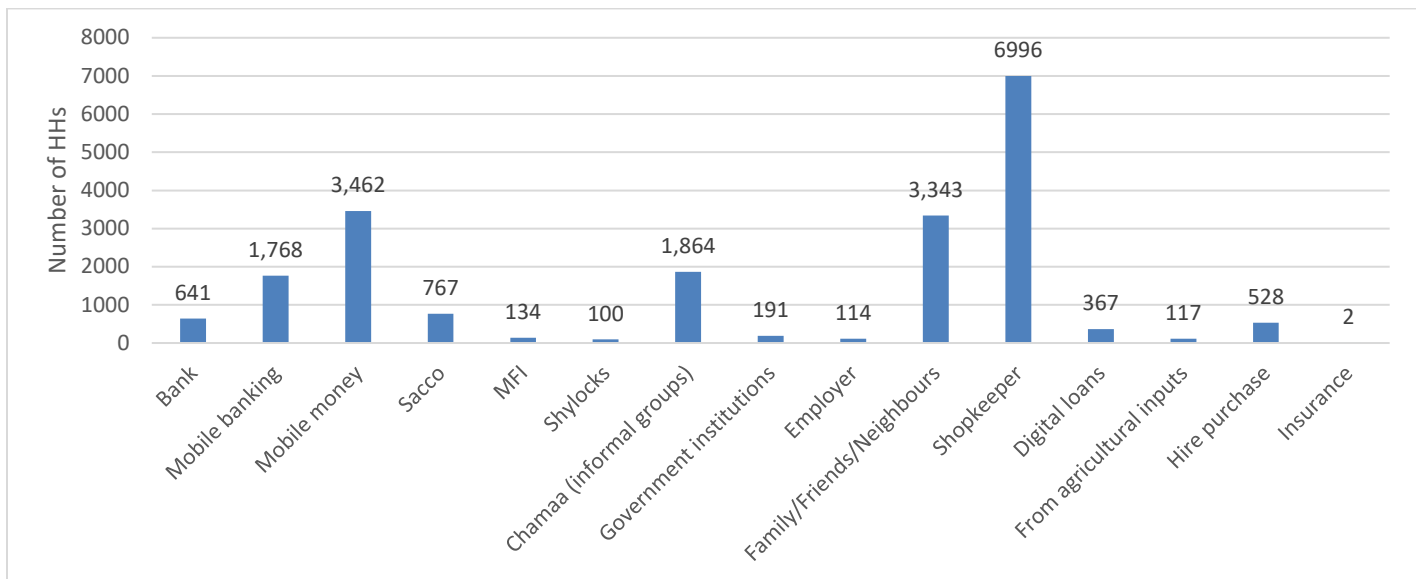
Figure 12 shows the sources that household seek loans from. The top three sources include shopkeepers, mobile money and family friends/neighbours. Households obtain household items like groceries from local/nearby housekeepers and would pay their 'loan' at agreed intervals thus a 'loan in kind'. Loans from various mobile channels – digital credit providers – have become an important source of loans in the last four to five years; for example, Safaricom's Fuliza. This is not surprising as the 2021 FinAccess Survey, from which this dataset was sourced, showed that formal financial inclusion rose to 83.7% in 2021 from 82.9% in 2019. Financial inclusion in the baseline survey that was conducted in 2006 was at 26.7% (Central Bank of Kenya et al., 2021). The impact of mobile money on living standards, particularly in Kenya, would form interesting future research.

Microfinance institutions are number ten on the list which suggests that microfinance institutions are not the most common source of loans for households.

Figure 13 highlights the type of collateral given by households to obtain loans. The top three types of collateral given by households for MFI loans are guarantees by other people, moveable assets (for example, livestock or cars.) and household assets. As highlighted in Chapter 1, this is not unusual as individuals without collateral form groups with the aim of obtaining loans from lenders through group lending and as such they can borrow without the usual collateral which many households with low income and low wages lack. The guarantees by other people ensure that each group member is responsible for their own loan repayments; they become mutually liable for the loan repayments.

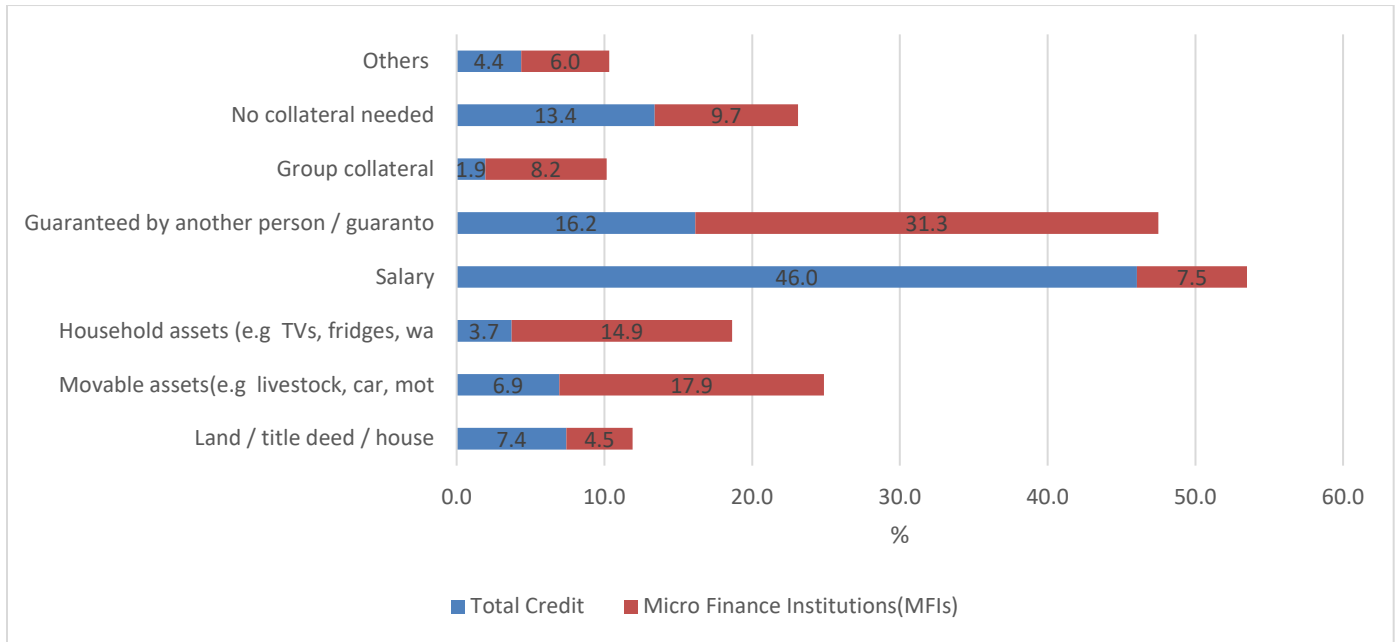
The top three kinds of collateral given by households for all loans are salaries, guarantees by other people and in some cases no collateral is needed. This is an interesting observation because the top source of loans was from shopkeepers. The proportion of households who give salaries to obtain loans for all sources versus microfinance institutions is much higher, at 46% and 7.5% respectively. This is not the case, however, for guarantees by other persons to microfinance institutions whose proportion is 31.3% compared to 16.2% for all sources.

**Figure 12: Source of household loans**



Source: Candidate's estimates from research data

**Figure 13: Type of collateral used to obtain credit**

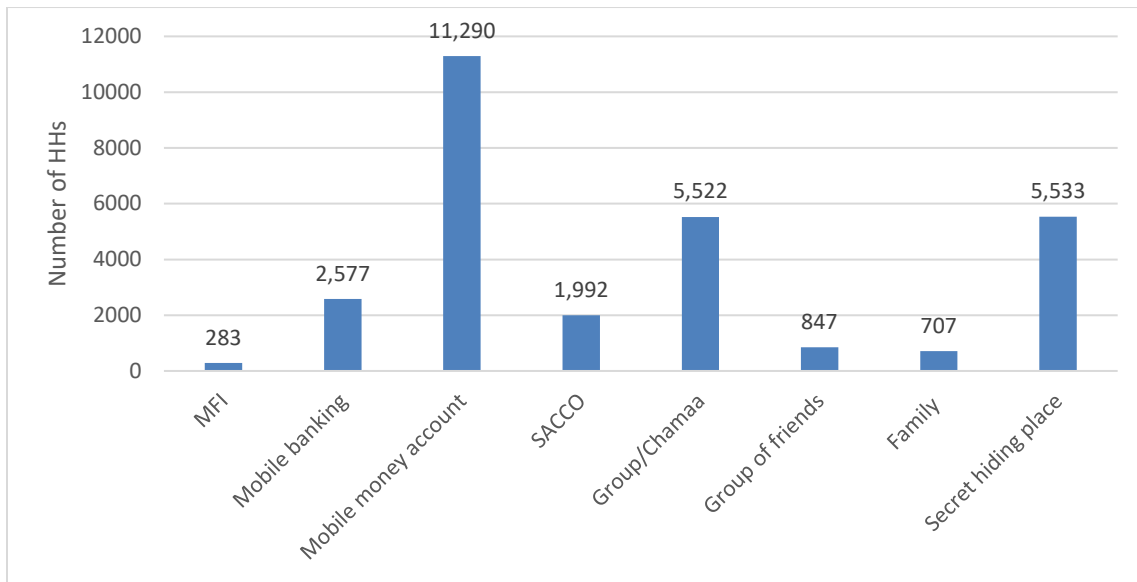


*Source: Candidate's estimates from research data*

Figure 14 highlights the mode of savings by households. The top three saving modes are mobile money accounts, secret hiding places and groups/chamaa (informal micro-groups and friends). This is unsurprising due to the level of financial inclusion mentioned above and the evolution of M-Pesa, which is a mobile-phone-based money transfer service, payments and micro-financing service, launched in 2007 by Vodafone and Safaricom, the largest mobile network operator in Kenya.

Most households do not seem to use microfinance institutions as a mode of savings; possibly they may only be used as such by those who have borrowings or intend to borrow from microfinance institutions.

**Figure 14: Mode of savings by households**



*Source: Candidate's estimates from research data*

### **Welfare**

Table 15 summarises the welfare variables of household income and expenditure and the wealth index. The average household monthly expenditure is KES 9,417 with the highest monthly expenditure being KES 197,000 and the lowest at KES 0. The average household monthly income is KES 7,407 with the highest monthly income being KES 400,000 and the lowest at KES 98. The average monthly expenditure is higher than the average monthly income by KES 2,011 indicating that household needs are much higher than income earned for the majority of the households thus explaining the need for access to credit and expanding sources of income.

The wealth index indicates the level of wealth or poverty of the households. The average wealth of the households was 2.74 indicating that majority of households are almost at middle-income level with some poor households and rich households based on the indicators that were used to determine wealth status.

**Table 15: Summary statistics**

Summary statistics	Observations	Mean	Standard deviation	Minimum	Maximum
<b>Welfare</b>					
Monthly household expenditure* (KES)	21,954	9,417	8,838	0	197,000
Monthly household income (KES)	22,024	7,406	12,178	98	400,000
Wealth index	22,024	2.74	1.4	1	5
<b>MFI loans</b>					
Loan amounts from microfinance institutions (KES)	22,024	72,058	114,238	3,000	780,000
<b>Age of household head</b>					
Age in years	22,024	38.9	17.2	16	116
<b>Size of the household</b>					
Household size	22,024	2	1.5	1	8

Source: Candidate's estimates from research data.

\*Only 21,954 of the 22,024 respondents responded to the interview question of the monthly expenditure with some indicating that they did not know their expenditure levels thus the zero minimum.

Table 16 depicts:

- The average monthly expenditure of households that obtain loans from and save with microfinance institutions, other sources and those that do not borrow nor save; and
- The general wealth status of households that obtain loans from and save with microfinance institutions, other sources and those that do not borrow nor save.

Interestingly households that obtain loans from microfinance institutions and save with microfinance institutions have a higher wealth index at 3.5 and 3.8 respectively as compared to both households who obtain loans and save from other sources and those who do not borrow nor save. This indicates that the majority of households who borrow from and save with microfinance institutions are tending towards the somewhat rich level of the wealth index. Households that do

not borrow nor save have the lowest wealth index at 2.6 and 2.3, which indicates that they are somewhat poor.

**Table 16: Wealth index of households against source of credit/savings**

Source of credit/savings held	Credit		Saving	
	Mean Household Expenditure (KES)	Wealth Index	Mean Household Expenditure (KES)	Wealth Index
MFI	15,599	3.5	13,577	3.8
Others	9,728	2.8	9,744	3
<b>Sub-Total</b>	<b>9,747</b>	<b>2.8</b>	<b>9,752</b>	<b>3</b>
No Credit/Savings	9,042	2.6	8,768	2.3
<b>Total</b>	<b>9,417</b>	<b>2.7</b>	<b>9,417</b>	<b>2.7</b>

*Source: Candidate's estimates from research data*

### 4.3 Correlation Analysis

Table 17 shows the correlation matrix indicating that the majority of the variable coefficients are low. This means that all the variables can be used in the regression models as we do not have cases of high correlation. We note that the wealth index is negatively correlated with age of the household head and rural/urban households. This indicates the younger the age of the household head the higher the wealth index, and rural households have a lower wealth index. However, we note that household loans obtained from microfinance institutions are very highly correlated with loan amounts obtained from microfinance institutions. In other words, as household borrowings increase from microfinance institutions there is a corresponding increase in loan amounts. Further regression analysis is therefore required to analyse the impact on the living standards.

**Table 17: Correlation matrix**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<b>1. Monthly household expenditure</b>	1														
<b>2. Wealth index</b>	0.33	1													
<b>3. Household head gender</b>	0.09	0.03	1												
<b>4. Education level of household head</b>	0.27	0.47	0.10	1											
<b>5. Age of household head</b>	-0.16	-0.08	-0.06	-0.33	1										
<b>6. Household head marriage status</b>	0.13	0.03	0.34	-0.05	0.08	1									
<b>7. Size of household</b>	0.06	-0.05	-0.03	0.11	-0.36	-0.25	1								
<b>8. Monthly household income</b>	0.28	0.26	0.08	0.17	-0.01	0.15	-0.17	1							
<b>9. Rural versus urban</b>	-0.28	-0.35	0.01	-0.26	0.17	0.05	0.02	-0.19	1						
<b>10. Interest perception of MFI loans</b>	0.03	0.03	-0.01	0.03	0.03	0.02	-0.03	0.04	0.01	1					
<b>11. Loan amounts from microfinance institutions</b>	0.05	0.04	0.00	0.03	0.02	0.02	-0.02	0.04	0.00	0.10	1				
<b>12. Total household loans</b>	0.11	0.12	0.03	0.15	-0.02	0.15	-0.14	0.15	-0.05	0.08	0.13	1			
<b>13. Total savings by households</b>	0.14	0.27	0.05	0.24	0.01	0.11	-0.13	0.21	-0.07	0.08	0.09	0.36	1		
<b>14. Household savings with microfinance institutions</b>	0.06	0.09	-0.01	0.06	0.02	0.03	-0.03	0.06	-0.04	0.08	0.45	0.09	0.18	1	
<b>15. Household loans from microfinance institutions</b>	0.05	0.05	0.00	0.03	0.02	0.02	-0.02	0.04	0.00	0.10	0.98	0.13	0.09	0.46	1

*Source: Candidate's estimates from research data*

#### 4.4 Regression Results

The study estimated the effects of access to MFI loans, amounts of MFI loans and savings in microfinance institutions by households on monthly household expenditures, household incomes and their wealth index. The study used linear regressions – ordinary least squares (OLS) – to estimate the effects of microfinance institutions (loans and savings) on household welfare; the results are shown in Table 18. The effects of microfinance institutions on the household wealth index (Model C) which was ranked one to five used multinomial logit model in Table 18. Three variables were chosen to assess household welfare: monthly household expenditure, monthly household income and the wealth index. It is also important to highlight that the results presented for the wealth index are based on the average wealth status of the households which was 2.74 indicating that the majority of households are almost at middle-income level. All the results in Table 18 included both independent (access to MFI loans, amounts of MFI loans and savings by households with microfinance institutions) and control variables (age, gender, household size, marriage status, education level, household location). These are included to assess impact on household welfare.

The results in Table 18 show that the data fit the regression model relatively well as the R-squared ranged from 12-20%. The estimated results show that 20% (column A), 12% (column B) and 16% (column C) respectively of the variation in monthly household expenditure, the wealth index and the monthly household income (the dependent variables) is explained by access to MFI loans and amounts of MFI loans (the independent variables). On the other hand, 19% (column A), 12% (column C) and 13% (column B) respectively of the variation in monthly household expenditure, the wealth index and the monthly household income (the dependent variables) is explained by savings by households with microfinance institutions (the independent variables). This means that the estimate results show an overall increase in household welfare due to the usage of and access to MFI products. Two similar studies showed that MFI credit access and usage resulted in increased household income (Abera & Asfaw, 2019) and (Taiwo & Ojo, 2016). In addition, the models in Columns A and B are statistically significant at 1% as measured by the F-test and likelihood ratio Chi Square (LR Chi<sup>2</sup>) in models in Column C.

The results in Table 18 show positive coefficient for households with MFI loans at different levels of significance on the welfare indicators, i.e., monthly household expenditures, household incomes and the wealth index. This indicates that households with loans and micro-credit from MFIs are well off compared with households without loans and micro-credit from MFIs. Specifically, an increase in MFI loans by households by 1%, results in 35% increase in the household expenditures and 28% increase in household income compared to the households without MFI loans as shown in A and B columns respectively. In addition, Model 2 shows that a 1% increase of households' loan amounts from microfinance institutions results in a 4% increase in households' expenditures and a 3% increase in household income as compared to households without MFI loans (A and B columns respectively). Model 3 also shows that an increase in household savings by 1% results in a 15% increase in household expenditures when compared to households with no savings in MFIs as shown in column A. This posits that households' access to MFI loans and saving in microfinance institutions improves the expenditure of households when compared to households without loans and savings in MFIs. However as highlighted above, Model 3 shows that household savings in microfinance institutions do not affect household incomes. The multinomial logit results in column C show consistent results. The results support the findings that MFI loan amount accessed increased household assets due to investments made in businesses to buy machinery and other assets (Santoso et al., 2020).

**The results table shows that most of the household characteristics influence welfare indicators as explained below.**

*A. Gender of household head*

Table 18 (Monthly household expenditure model) shows that the gender of the household head results in a significant impact of 2% (10% significance) increase in household expenditure for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. Table 18 (Monthly household income model) shows a better statistically significant impact of 7% (1% significance) increase in household income for access to MFI loans and amounts of MFI loans and 6% for households with savings in microfinance institutions. Said differently, households have higher income but about the same level of

expenditure, when the head of the household is male—in this case 58%. This could be the case due to unemployed women (for example, stay-at-home mothers), gender inequality in the labour market, gender wage discrimination, general level of women empowerment, and the related access to MFI loans and savings the household head can access/make.

### *B. Education level of household head*

Table 18 (Monthly household expenditure model) shows that the education level of the household head results in a statistically significant impact of 14% increase in household expenditure for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. Table 18 (Monthly household income model) shows a statistically significant impact of 24% increase in household income for access to MFI loans and amounts of MFI loans and 20% for households with savings in microfinance institutions. Said differently, the better educated the household head is, the higher the incomes and expenditures of such households. High levels of education results in better jobs (higher salary), improved business acumen, sound business practices for those with business, better financial decision-making, resulting in increased borrowing and savings with microfinance institutions and use of funds obtained. This is supported by a study which indicated that higher educated borrowers saved their income and utilised the loans obtained to invest in income-generating activities thus improving their welfare (Santoso et al., 2020). The majority of the household heads – 40% – had received primary education, which is similar to the results of a study which found that 50% of the respondents had received at least basic primary education.

Table 18 (Wealth index model) also shows that the education level of the household head results in a positive impact on the wealth index for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions.

### *C. Age of the household head*

Table 18 (Monthly household expenditure and monthly household income models) shows that the age of the household head is statistically significant but negatively correlated with household expenditure and income for all the independent variables (access to MFI loans, amounts of MFI

loans and households with savings in microfinance institutions). Said differently, households experience lower household expenditure and income the older the household head is. Savings made and loans obtained reduces as age increases. The average age of the household heads in this case was 39 years. This is expected due to the inability of households to access loans from microfinance institutions as they get older. Most financial institutions, including microfinance institutions are unwilling to provide loans as people approach retirement age and become retirees/unemployed. In addition, sources of income reduce as the household head becomes older and therefore affects the ability of households to save. A similar study showed that 65.4% of the respondents were in the age group of 30 – 40 years (Chirkos, 2014). Another study also showed a negative relationship between age of respondents and level of savings (Taiwo & Ojo, 2016).

Table 18 (Wealth index model) also shows that the age of the household head has a negative relationship with the level of savings and ability of the household to save with microfinance institutions. This would impact the wealth index negatively as the age of the household head increases.

#### *D. Marriage status of the household head*

Table 18 (Monthly household expenditure model) shows that the marriage status of the household head results in a statistically significant impact of 21% increase in household expenditure for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. Table 18 (Monthly household income model) also shows a statistically significant impact of 25% increase in household income for access to MFI loans and amounts of MFI loans and 24% for households with savings in microfinance institutions. Said differently, households will have higher incomes and expenditures when the household head is married. In this case, 55% of the household heads were married. Therefore there are combined incomes and expenditures from the household head and spouse as they can both access MFI loans and make savings, which may explain the higher income.

Table 18 (Wealth index model) also shows that the marriage status of the household head has no impact on the wealth index for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions.

#### *E. Size of household*

Table 18 (Monthly household expenditure and monthly household income models) show that the size of the household results in a statistically significant impact of 6% increase in household expenditure while size of the household is negatively correlated with household income respectively for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. Said differently, households have higher expenditures but lower incomes, when the household size increases.

In this case, the average size of the households was two – 58 % of the population – which could mean that most respondents were married with no children. The results were very similar to a study which found that 56% of the respondents had two to five family members (Chirkos, 2014). The higher the number of people in a household, the higher the household expenditures due to increased spend on food, education or health, thus lower disposable income. This is one of the factors used by microfinance institutions to assess ability to repay loans and this could therefore affect ability of households to access MFI loans. In addition, lower disposable income affects the ability of households to save. The decrease in household income because of an increase in number of people in a household is harder to explain. A plausible explanation could be that an increase in number of children may require one of the parents to forgo employment to take care of young kids thus reducing household income as the stay-at-home parent would not be working/in business.

Table 18 (Wealth index model) also shows that the size of the household has a negative relationship with the wealth index as is shown by the results for all the variables; that is, access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. The number of loans obtained and level of savings and ability of the household to save or obtain a loan with microfinance institutions seems to be affected negatively as the size of the household increases. This means that the wealth index is impacted negatively as the size of the household increases.

#### *F. Monthly household income*

Table 18 (Monthly household expenditure) shows that an increase in monthly household income results in a statistically significant impact of 10% increase in household expenditure for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. Specifically, households access more loans and save more as their income increases. This in turn results in households increasing their expenditures. Households tend to save more as their income increases due to higher disposable income. In addition, it is expected that as households increase their income, they spend more, and their household expenditure increases.

Table 18 (Wealth index model) also shows that an increase in monthly household income results in a positive impact on the wealth index for all the independent variables; that is, access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions.

#### *G. Location (rural versus urban) of household*

Table 18 (Monthly household expenditure and monthly household income models) shows that the location of the household is negatively correlated with the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. The results in Table 18 (Monthly household expenditure) show a statistically significant impact of 35% decrease in household expenditure for all the independent variables. Table 18 (Monthly household income) also shows a statistically significant impact of 49% decrease in household income for access to MFI loans and amounts of MFI loans and 48% for households with savings in microfinance institutions. In other words, borrowers of households in rural areas are less likely to witness an increase in household income when they borrow or save with microfinance institutions. In this case, 67% of the households are in rural areas thus less MFI access and propensity to save when compared to those in urban areas. A plausible explanation could be the low levels of income for households in rural areas; low levels of disposable income affecting the ability to borrow or save; high indebtedness; defaulting on loans due to irregular income as most households in rural areas do farming with seasonal harvests; all of which affect the ability of households to borrow or

save. A study confirmed this finding and noted that micro-credit could be more effective for urban/higher-income households (Santoso et al., 2020). Increasing levels of indebtedness as well as loss of assets due to repossession by microfinance institutions was found in a study in villages (S. B. Banerjee & Jackson, 2017).

Table 18 (Wealth index model) also shows that the location of the household (households in rural areas) has a negative relationship with the wealth index as is shown by the results for all the variables; that is, access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions. The number of loans obtained and level of savings and ability of the household to save or obtain a loan with microfinance institutions seems to reduce for households in rural areas. This means that the wealth index is impacted negatively for households in rural areas. As explained earlier those households that do not borrow nor save have a lower wealth index than those who borrow or save.

#### *H. Interest perception of MFI loans*

Table 18 (Monthly household expenditure and monthly household income models) show that the interest perception of loans results has a statistically significant impact of 7% (Monthly household expenditure) and 22% (Monthly household income) increase in household expenditure and income for access to MFI loans and MFI loan amounts. Both items in Table 18 (Monthly household expenditure and monthly household income models) also show a statistically significant impact of 8% (Monthly household expenditure) and 19% (Monthly household income) increase in household income for households with savings in microfinance institutions. Said differently, interest perception of MFI loans is not an important consideration for households in their decision on whether to take a loan or whether to borrow. Because of this, households may borrow and save irrespective of the interest amounts which increase household income and expenditure. The amounts to be paid for interest on the loan and interest earned on savings may therefore be an afterthought. This is possibly true for households as they often do not have any alternatives, or do not have sufficient knowledge financial knowledge on how credit works, particularly how interest is calculated, how it affects the repayment amount and what happens when there is delayed repayment or default. This often results in high levels of indebtedness, default and/or repossession

of assets. This study found that 53% of households held between one and nine credit facilities with the majority having one credit facility while 66% households held between one to six savings facilities with the majority having one saving facility.

Table 18 (Wealth index model) also shows that interest perception of loans has no impact on the wealth index for all the independent variables, i.e., access to MFI loans, amounts of MFI loans and households with savings in microfinance institutions.

#### *I. Total household loans*

Table 18 (Monthly household expenditure and monthly household income models) shows that the total household loans from all sources results in a statistically significant impact of 2% increase and 9% increase in household expenditure and household income respectively for access to MFI loans and amounts of MFI loans. In other words, when households on a whole borrow more, there is a corresponding uptake of microfinance institution loans which in turn improves household welfare through increased household income and expenditure. Households are then able to invest in income-generating activities which improves their household income and makes available more funds for household expenditure. This study found that 54% of households had borrowings from microfinance institutions and other sources.

Table 18 (Wealth index model) also shows that the total household loans from all sources results in a positive impact on the wealth index for access to MFI loans and amounts of MFI loans.

#### *J. Total household savings*

Table 18 (Monthly household expenditure and monthly household income models) show that the total household savings results in a statistically significant impact of 3% increase and 20% increase in household expenditure and household income for households with savings in microfinance institutions. In other words, when households on a whole save more, there is an increase in savings with MFI which in turn improves household welfare through increased household income and expenditure. This is expected because when households save more, they experience an increase in

household income, which the results confirm. This study found that 66% of households had savings with microfinance institutions and others.

Table 18 (Wealth index model) also shows the total household savings from all sources results in a positive impact on the wealth index for savings in microfinance institutions.

**Table 18: Estimated impact of MFI usage on household welfare**

	Monthly household expenditure (A)			Monthly household income (B)			Wealth index (C)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Household with loans from microfinance institutions	0.35***	-	-	0.28**	-	-	0.74**	-	-
Loan amounts from microfinance institutions	-	0.04***	-	-	0.03***	-	-	0.07*	-
Household savings with microfinance institutions	-	-	0.15***	-	-	0.1	-	-	0.62**
Household head gender	0.02*	0.02*	0.02*	0.07***	0.07***	0.06***	-0.09**	-0.09**	-0.10**
Education level of household head	0.14***	0.14***	0.14***	0.24***	0.24***	0.20***	1.08***	1.09***	1.04***
Age of household head	0.01***	0.01***	0.01***	0.05***	0.05***	0.05***	0.04***	0.04***	0.03***
Age squared of the household head	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	0	0	-0.00***
Household head marriage status	0.21***	0.21***	0.21***	0.25***	0.25***	0.24***	0.05	0.05	0.04
Size of household	0.06***	0.06***	0.06***	-0.11***	-0.11***	-0.11***	-0.06***	-0.06***	-0.05***
Monthly household income	0.10***	0.10***	0.10***	-	-	-	0.12***	0.12***	0.11***
Rural versus urban household	-0.35***	-0.35***	-0.35***	-0.49***	-0.49***	-0.48***	-1.24***	-1.24***	-1.25***
Interest perception of MFI loans	0.07**	0.07**	0.08***	0.22***	0.22***	0.19***	0.14	0.14	0.07
Total household loans	0.02***	0.02***	-	0.09***	0.09***	-	0.12***	0.12***	-
Total household savings	-	-	0.03***	-	-	0.20***	-	-	0.30***
Constant	7.53***	7.54***	7.54***	6.70***	6.70***	6.72***	-3.49***	-3.49***	-3.39***
F(11, 21940)/LR Chi2	486.24***	486.76***	484.11***	287.36***	287.47***	316.57***	8648.14***	8254.96***	8255.25***
R2/Pseudo R2	0.200	0.200	0.200	0.1600	0.1600	0.1300	0.1200	0.1200	0.1200
Adj R2	0.200	0.200	0.190	0.1600	0.1600	0.1300			
Total observations	21,952	21,952	21,952	22,024	22,024	22,024	22,024	22,024	22,024

*Note: The estimation of the monthly household expenditure and incomes is based on the ordinary least squares model while the wealth index is based on the multinomial logit model. The results reported for welfare index are based on the average wealth status of the households – middle income. \*\*\* 1 % significance level; \*\* 5 % significance level; \*10 % significance level*

## 4.5 Conclusion

In summary, the response rate of the households interviewed (85.6%) showed the split between rural and urban households with 65.6% of households being in rural areas. The household demographics showed that fifty-eight percent of the heads of the households are male. The average size of each household/ number of dependents is approximately two people. The majority of the household heads had only attained primary school education level.

0.61% of all households held microfinance credit facilities and 1.28% of households held savings accounts with several households holding multiple credit and savings facilities. Majority of households had one (1) credit facility while 66% households held between one to six savings facilities with the majority having one (1) saving facility. It was found that 1.14% of the households that held loan facilities obtained these from microfinance institutions. The majority of households are almost at middle-income level with the majority of households who borrow from and save with microfinance institutions tending towards the somewhat rich level of the wealth index.

The correlation matrix indicated that the majority of the variable coefficients were low. The wealth index is negatively correlated with age of the household head and rural/urban households and household loans obtained from microfinance institutions are very highly correlated with loan amounts obtained from microfinance institutions.

The study estimated the effects of access to MFI loans, amounts of MFI loans and savings in microfinance institutions by households on monthly household expenditures, household incomes and their wealth index and used linear regressions – ordinary least squares (OLS). The results showed that the data fit the regression model relatively well and the models were statistically significant. The estimate results above showed that most of the household characteristics influence welfare indicators and also showed an overall increase in household welfare due to the usage of and access to MFI products in Kenya.

The next chapter, Chapter 5, summarises the research findings, highlights the limitations of the study, and discusses potential areas for future research.

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The overall objective of this study was to investigate and establish the effects that microfinance usage has on living standards in Kenya. This chapter summarises the research findings, highlights the limitations of the study, and discusses potential areas for future research.

### **5.2 Summary and conclusions**

This study examined the effects of Microfinance usage on household welfare in Kenya using secondary data collected for a household survey which used a cross-sectional survey covering 22,024 Kenyan households interviewed of the 30,600 households selected for the survey in rural and urban areas across 47 counties. The analysis revealed that 65.6% of households interviewed are in rural areas. Fifty-eight percent of the heads of the households are male with 55% of the respondents being married or living with their partner. The average age of respondents was 39 years and the average size of each household/number of dependents is approximately two people. The majority of the household heads had only attained primary school education level. It was found that 0.61% of all households held microfinance credit facilities and 1.28% of households held savings accounts. The study noted that several households held multiple credit and savings facilities. Fifty-three percent of the households accessed between one and nine credit facilities with the majority having one (1) credit facility while 66% households held between one and six savings facilities with the majority having one (1) saving facility. It was also found that 1.14% of the households that held loan facilities obtained these from microfinance institutions. Interestingly, the top three reasons indicated by households for obtaining loans from microfinance institutions were for education, other needs and to purchase machines/equipment for their business. The top three reasons for saving were day-to-day household needs, emergencies (burials/medical) and education. It is evident that education is an important expenditure in Kenya.

The study, however, showed that microfinance institutions are not the most common source of loans or savings for households in Kenya with other sources ranking higher. The other sources for loans include shopkeepers, mobile money and family/ friends/ neighbours while other modes of

savings include mobile money, group savings and secret hiding places. The top three kinds of collateral given by households for MFI loans are guarantees by other people, moveable assets (for example, livestock or cars) and household assets. The proportion of households who give salaries and guarantees to obtain loans for microfinance institutions is 7.5 and 31.3% respectively which is unsurprising due to group lending.

The average wealth of the households was 2.74 indicating that the majority of households are almost at middle-income level. The average MFI loan amount obtained by households was KES 72,058 compared to the average loan from other sources, which was KES 45,026. The least loan amount obtained from microfinance institutions was KES 3,000 and the highest amount obtained was KES 780,000. The study also clearly revealed that households that obtain loans from microfinance institutions and save with microfinance institutions have a higher wealth index, at 3.5 and 3.8 respectively as compared to both households who obtain loans and save from other sources and those who do not borrow nor save. The latter had the lowest wealth index at 2.6 and 2.3, which indicates that they are somewhat poor. This confirms the overall outcome of this study and previous literature as it shows that when households borrow and save, their welfare improves.

Three variables were chosen to assess household welfare: monthly household expenditure, monthly household income and the wealth index. All the regression models included both independent (access to MFI loans, amounts of MFI loans and savings by households with microfinance institutions) and control variables (age, gender, household size, marriage status, education level, household location) to analyse the impact on household welfare. The data used for the regression analysis fit the regression model relatively well and all the models were statistically significant.

The estimate results showed an overall increase in household welfare due to the usage of and access to MFI products in Kenya. Microfinance institutions have a positive impact at different levels of significance on the welfare indicators, i.e., monthly household expenditures, household incomes and wealth index. However, the study also noted that household savings in microfinance institutions do not affect household incomes. The results also showed that most of the household

characteristics (such as gender of the household head, education of the household head, age of the household head, location of household, size of household) influence welfare indicators.

#### **5.4 Recommendations**

The findings of this study indicate that household characteristics play a very important role in access to and usage of microfinance products and services in Kenya. It is therefore an important consideration for policymakers when designing and implementing policy interventions to improve financial access to these services.

Secondly, the study showed that microfinance institutions are not the most common source of loans or savings for households, with other sources ranking higher. This portends an issue on the continued viability of microfinance institutions due to the expansion of financial products and services in Kenya; for example, mobile digital lenders, M-Pesa and its suite of services or digital credit providers. Innovation of financial products and services as well as consideration of digital innovations will continue to be very important for microfinance institutions to remain relevant and sustainable.

Thirdly, usage of microfinance products and services is important to improve household welfare; therefore, financial literacy of customers should be part of the education curriculum as well as part of the training provided by microfinance institutions and other financial institutions. This will improve household management of finances, promote investments in profitable income-generating activities, enhance a saving culture and promote better financial decision-making. In addition, there may be better outcomes in terms of repayment, repeat borrowers, better loan structures tailored to the household needs when the borrower is financially literate.

Lastly, it is important to ensure that all microfinance institutions, especially the informal ones, operate in an appropriate regulatory environment to ensure that customers are well protected and data protection and privacy issues are well managed.

## **5.5 Further research**

A significant amount of research has been done in the microfinance area thus far; however, it may be important to perform further research and analyse household behaviours over a period of time and over full cycles of loans or savings, for example acquisition of a loan to full repayment or saving to withdrawal. The results of this kind of study could better and more succinctly explain the short-/medium-/long-term impact of microfinance usage of products and services on living standards. This is also highlighted as a limitation of this study as the data set used was collected and analysed at a point in time.

The impact of digital lenders, mobile lenders and other institutions, for example, banks, on living standards – particularly in Kenya – would form interesting future research due to the levels of financial access in Kenya. This would highlight which group has the highest impact on household welfare and could be a source of information for policymakers.

It would be useful to establish the type of microfinance products and services that would be most useful in improving living standards; that is, ensuring that products and services are well designed and solve an existing or future problem in society especially for those living in poverty. In other words, what effective innovative products and services could microfinance institutions design to solve current or future issues?

Lastly, it could be useful to involve the microfinance industry itself in any future research as they hold lots of information that could be analysed to improve the industry and to influence product and services innovation as well as policy interventions by law makers/regulators.

## **5.6 Limitations**

The research may have estimation issues and especially endogeneity which may make the results biased and inconsistent, i.e., where an explanatory variable is associated with the error term. Therefore the analysis could be improved using regression with instrument variables such as two-stage squares and propensity score matching.

The study uses cross-sectional analysis which has its disadvantages. The data collected was a snapshot, i.e., done at a point in time and therefore issues arise on whether the data collected is representative of the behaviour of the population, which can only be determined over a period of time.

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