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**THE EFFECTS OF MICROFINANCE PRODUCTS ON FINANCIAL  
INCLUSION OF RESIDENTS OF KIBERA SLUMS IN NAIROBI  
COUNTY**

**Judy Mundia**



**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE IN  
DEVELOPMENT FINANCE AT STRATHMORE UNIVERSITY BUSINESS  
SCHOOL**

**STRATHMORE UNIVERSITY BUSINESS SCHOOL**

**MAY, 2024**

## DECLARATION AND APPROVAL

### Declaration

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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Name of Candidate: Judy Mundia

### Approval

This dissertation of Judy Mundia was reviewed and approved for examination by the following:

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Director, Office of Graduate Studies

## ABSTRACT

Motivated by the pressing need to address financial exclusion among marginalized populations, particularly in urban slums like Kibera, the research aimed to assess how microfinance interventions contribute to enhancing access to financial services and promoting economic empowerment within this community. Specifically, the study specific objectives were to establish the effect of micro-credit, micro-savings and micro-insurance on financial inclusion in the informal settlements, Nairobi County, Kenya. The study was underpinned by three theories namely asymmetric information theory, social capital theory, and modern economic theory. The study used descriptive research design and a structured questionnaire in data collection. The study sample comprised of 384 households from Kibera slum in September 2023. Descriptive statistics and regression analysis techniques were used in data analysis. The study established that the micro-credit, micro-savings and micro-insurance positively contributes to the financial inclusion in the informal settlements in Nairobi County, Kenya. Given the positive influence of micro-credit on financial inclusion, policymakers and financial institutions in Nairobi County should consider actively promoting and supporting micro-credit programs. This could involve creating awareness, providing financial literacy programs, and easing access to micro-credit for individuals in informal settlements. The study established micro-saving as a significant predictor of financial inclusion and demonstrating its substantial impact on the respondents. To further enhance financial inclusion, efforts should be made to facilitate and promote micro- saving initiatives. Recognizing the positive contribution of micro-insurance to financial inclusion there is a need to expand and improve the accessibility of micro-insurance services in informal settlements. Policymakers, insurance providers, and NGOs can collaborate to design and implement affordable and tailored micro-insurance products that cater to the specific needs of this demographic.

**Key Words:** Microfinance, financial products, financial intermediaries, small and micro enterprises, financial inclusion.

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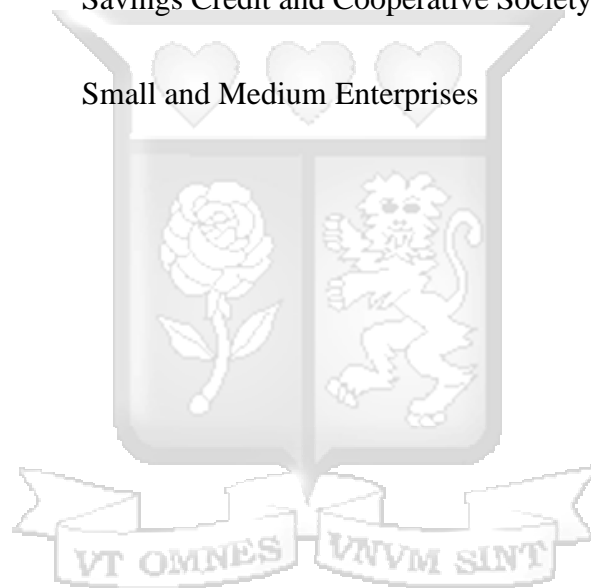


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## LIST OF ABBREVIATION

<b>CGAP</b>	Consultative Group to Assist the Poor
<b>FinAccess</b>	Financial Access
<b>OLS</b>	Ordinary Least Squares
<b>MFI</b>	Microfinance Institutions
<b>SACCO</b>	Savings Credit and Cooperative Society
<b>SME</b>	Small and Medium Enterprises



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## DEFINITION OF TERMS

**Microfinance banks** - institutions that provide banking services to groups that include low- income persons, unemployed individuals and startups and small and medium enterprises that cannot easily access funds (Bakhtiari, 2011)

**Financial inclusion** – the state of comprehensive access to financial services and a consequent enrichment of the majority of disadvantaged families, households, and firms who would ordinarily not be in a position to access the services (African Development Bank, 2015).

**Microcredit** - offering credit to unconventional borrowers, such as the underprivileged in rural or developing areas, typically in the form of modest loans which are collateral free (Fernández-Izquierdo et al, 2020).

**Micro-savings** - Small deposits by lower-income earners with the intention of storing funds to be used at a future date (Buensuceso, et al, 2011).

**Micro-insurance** - small premiums paid to the microfinance institutions to cushion the individual against unforeseen perils, such as illnesses and risks to property (Talbot & Barden, 2016).

**Informal settlement** - any type of habitation that is not subject to state protection, regulation, or control (UN-Habitat, 2015).

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

This section highlights the intrinsic link between financial inclusion and economic development, particularly emphasizing the significance of inclusive financial systems in low-income regions such as informal settlements. The role of microfinance products, including small loans, savings, insurance, and remittances, have been underscored in promoting financial inclusion globally, with a focus on their effectiveness in poverty reduction and economic empowerment (Sarma, 2008).

Klapper and Singer (2014) define financial inclusion as the access and use of appropriate, affordable and accessible financial services while Kimutai (2015) defines financial inclusion as the practice of facilitating access of financial services to poor people in society. This is in line with contemporary development theories studies on financial access and poverty unified models such as Levine (1996) who opined that financial intermediaries play a significant role in resource redistribution in the economy. Levine (1996) asserted that financial intermediaries had proven to be efficient in their role of provision of finance to the population, however, this was limited to the capacity of the financial intermediary, and the type of market they were trying to reach.

Financial intermediaries are categorized into formal financial institutions and alternative financial institutions, noting that while formal institutions like commercial banks may have rigorous risk management structures, they often fail to reach a wider population base, especially those in informal settlements (Padhi, 2003; Sarma, 2008). On the contrary, alternative financial institutions, including MFIs and Savings and Co-operative Societies (Saccos), play a critical role in reducing information asymmetry and transaction costs, thus promoting financial inclusion (Sarma, 2008). This distinction underscores the importance of recognizing and leveraging the role of alternative financial institutions, particularly in addressing the needs of underserved communities like those in informal settlements.

Financial exclusion is the inability to access necessary financial services in an appropriate form Sinclair (2001) and prevents certain individuals and social groups from gaining access to formal financial systems (Leyshon and Thrift, 1995). Financial exclusion may be involuntary, caused by lack of access to the financial sector, market conditions, prices, marketing, or may be voluntary self-exclusion in response to negative experiences or perceptions (Ozili, 2018; Sarma 2008).

Financial exclusion exists in developing countries especially among the populations that dwell in informal settlements (FinAccess, 2019). Majority of the dwellers in these areas do not have the opportunity to benefit from the financial services and products that are mainly offered by commercial banks and some microfinance institutions. The implications of financial exclusion are likely to be especially binding on the urban poor and the Small and Micro Enterprises (SMEs) that lack collateral, credit histories, and connections, thus limiting their opportunities, widening income inequality and sluggish growth of the informal settlements (FinAccess, 2019).

Financial exclusion in Kenya's informal settlements like Kibera is a significant challenge, driven by limited access to formal financial services, inadequate financial education, and persistent poverty (FinAccess, 2019). However, microfinance institutions (MFIs) emerge as pivotal actors in addressing these challenges, providing tailored financial solutions that cater to the needs of marginalized populations (Kyung-ha, 2019). By offering accessible financial products and services, MFIs bridge the gap created by formal financial institutions, thereby empowering individuals economically and contributing to their overall wellbeing.

### **1.1.1 Products Offered by Microfinance Institutions**

Micro-finance is a fairly recent concept in the discipline of banking and finance and first came into the limelight in 1976 when Muhammad Yunus formed the Grameen Bank, in Bangladesh (Kowalik, 2013). It has evolved as an innovative tool for poverty alleviation and an economic development method designed to provide assistance to the low-income population. This was further developed by the Consultative Group to Assist the Poor

(CGAP) in 2018 in their argument that microfinance is an avenue for providing financial services to individuals in the lower-income quartile, as well as the unemployed and self-employed, entrepreneurs and smallholder farmers.

Hadi and Kamaluddin (2015) opine that the microfinance model was established with the aim of providing financial facilities to the underprivileged people who traditionally could not afford the services and products offered by the conventional commercial banks. Some of the features that distinguish microfinance institutions from commercial banks include simplicity of operations, small amounts loans advanced and deposits taken and the lack of asset-based collateral (Hadi & Kamaluddin, 2015). Additionally, Bounouala and Rihane (2014) distinguish microfinance banks from conventional banks based on their targeted clients who are sidelined debtors, and the tendency to use group-lending methods.

Microfinance institutions offer a wide range of products. The main ones being micro-credit which are small loans advanced to the lowest income earners in the economy. The structure of these loans is quite different from the ones offered by conventional banks as they do not require collateral and their transaction costs are very low. Microcredit can be measured using the number of active borrowers, the interest rate charged, loan payment cycle and period of loan payments (Fernández-Izquierdo et al, 2020). Another notable product offered is the micro-savings, which are small deposits by lower-income earners with the intention of storing funds to be used at a future date. Micro-savings can be measured using the number of savers, or the total value of savings (Buensuceso, et al, 2011). Lastly, the other product is Micro-insurance, which are small premiums paid to the microfinance institutions to cushion the individual against unforeseen perils, such as illnesses and risks to property. Micro-insurance is measured by the total number of individuals insured or the total value of the premiums (Tabot & Barden, 2016).

### **1.1.2 Microfinance Products and Financial Inclusion Nexus**

Consultative Group to Assist the Poor (2010) asserts that the main objective of financial inclusion is ensuring that there is universal access to financial services to all individuals and entities irrespective of their financial capabilities or income. Financial inclusion is the

ultimate goal of achieving the prosperity of a nation as it equips the citizens with capital resources necessary to support growth of businesses and financial stability of the population (CGAP, 2010).

In 2005, the World Bank released a report called the Financial Development Report, which presented several banking measures aimed at determining the level of financial inclusion. They include the total number of banks and non-banks institutions in a country, the number of branches a bank has, the total number of active bank accounts, and the percentage of domestic credit to Gross Domestic Product as well as the ratio of domestic deposits to Gross Domestic Product. Sarma(2008) however, criticized the approach for measuring financial inclusion given by the World Bank, arguing that they are leaned towards one aspect of the banking outreach. In their stead, Sarma (2008) proposed an index for measuring financial inclusion, which provided a holistic view of the banking outreach, it was given by the summation of total assets and gross loan portfolio divided by the number of active borrowers, total savings, number of savers, and portfolio at risk. The latter measure of financial inclusion has been used widely in recent empirical literature (Inemesit, et al, 2015).

Both the empirical and theoretical literature in finance has shown that unlike conventional banks, the importance of microfinance institutions in financial inclusion cannot be overemphasized. Littlefield (2003) asserts that microfinance offers tailor-made products notably, micro-credit, micro-saving and micro-insurance for the low-income earners, poor families and small and micro-enterprises especially those in the countryside areas and informal urban settlements. This is very different from the traditional banks that have many scrutiny measures and can only extend their facilities to perceived creditworthy borrowers and customers. The scrutiny leaves out the majority who are poor. As a result of this, microfinance has eased access to financial products by informal settlement dwellers and entities (Hermes & Lensink, 2011)

Matovu (2016) notes that the majority of the population in the informal settlement are unbanked, and this factor involuntarily rules them out from accessing financial services.

Another factor that bars them from accessing finance is the high cost of servicing the credit, in this case they voluntarily exclude themselves. The study went ahead and looked at the services that were at the disposal of the inhabitants of informal settlement in Gulbarga and established that microfinance institutions were particularly successful in poverty eradication and financial inclusion. The study concluded that there existed a direct effect between the provisions of financial services and banking by microfinance institutions; the credit advanced to households were mainly channeled towards income-generating activities, and thus promoted growth.

### **1.1.3 Informal Settlements in Nairobi County, Kenya**

Informal settlements are widespread in African cities, and more than 60 percent of Kenya's urban population live in informal settlements (Ren et al., 2020). The informal settlements are as a result of rapid urbanization and failure to meet housing needs and are characterized by lack of infrastructure and social services (Ono and Kidokoro, 2020). In Nairobi, more than half of the city's population live in informal settlements which cover less than 5% of the total land area. The major informal settlements in Nairobi are Kibera, Mathare and Huruma, which are the most populous and fastest growing (Ren et al., 2020).

There is a large number of micro and small enterprises in the informal sector at various industrial centers across the country and especially in the informal settlements. They have necessary experience and expertise in their line of activity and some have even been operating for decades. However, about 55% lack the necessary financial resources to manufacture and market their products, simply because commercial banks are hesitant to grant them credit facilities in the fear that the owners of the units may fail to provide adequate collateral security for advanced credit (FinAccess, 2019).

Lack of access to credit has resulted in the death of many businesses, despite their contribution to the economy. Majority resort to seeking credit from informal financiers, locally referred to as Shylocks, some who charge as high-interest rates as 20 percent per month, putting them at risk of being auctioned (Kenya Bankers Association, 2018). Microfinance has been identified from literature as a key tool to aid in financial inclusion

ininformal settlements, this study, therefore, sought to understand whether microfinance products play that role in Kenya's informal settlements.

This study sought to explore the effect of microfinance products on financial inclusion in informal settlements in Nairobi County with a particular reference to Kibera informal settlement which is the most populous and fastest growing and therefore provides a suitable context. In addition, financial inclusion in Kibera slum faces significant challenges that hinder the ability of individuals in the area to access and use formal financial services. The lack of physical infrastructure and financial institutions in the area makes it difficult for people to access banking services. Many financial institutions are reluctant to serve low-income areas, and this results in limited access to credit and other financial products. The area's high poverty rates make it difficult for individuals to save and invest in income-generating activities, which limits their ability to access formal financial services. Without these resources, they may be unable to access essential financial products such as insurance, savings, and remittances (Kyung-ha, 2019).

Kibera slum in Nairobi County stands as a compelling focal point for studying the effects of microfinance products on financial inclusion due to its unique socio-economic landscape. As one of the largest informal settlements in Africa, Kibera encapsulates the challenges faced by urban marginalized communities, including pervasive poverty, limited access to formal financial services, and a high density of residents. By focusing on Kibera, this study provides nuanced insights into how microfinance interventions impact financial inclusion in contexts characterized by extreme poverty and limited infrastructure. The densely populated and diverse nature of Kibera offers a rich tapestry of experiences and challenges, making it an ideal testing ground for innovative microfinance strategies. Furthermore, the findings from this study in Kibera can inform the development of tailored microfinance solutions that address the specific needs and constraints of slum residents, potentially serving as a blueprint for enhancing financial inclusion in similar marginalized communities worldwide.

## **1.2 Problem Definition**

Considerable theoretical literature has pointed out the importance of microfinance in financial inclusion through the provision of cheaper credit and low premium rates to low-income earners especially in the rural areas and urban poor (Levine, 1996; Padhi, 2003 and Sarma, 2008). The majority of the informal settlement residents are involuntarily excluded from accessing financial products due to their low income, lack of adequate collateral security or high prices of products offered by financial intermediaries. Moreover, most of the properties and businesses of the informal settlers are not well insured due to high premiums that most insurance agencies charge. Consequently, the savings that are made by the informal sector are suspected to be saved in ways that don't guarantee maximum return on interest. However, transfer of funds is consistent between the informal sectors but in unsupervised records that cannot be used to ascertain their credit score for further financial considerations (Yarime & Musyoka, 2018).

Several studies (Lilian and Maria, 2010; Ongechi and Olaniyi, 2017; Mader, 2016) have been conducted in the nexus between microfinance and financial inclusion. However, there are several pitfalls among the previous studies that warrant further investigation. For instance, some studies were inconclusive such as Lilian and Maria (2010) who observed that microfinance by itself cannot lead to financial inclusion, it must be accompanied by other factors such as literacy levels and stable macroeconomic environment. Similarly, Ongechi and Olaniyi (2017) established an insignificant short-run relationship between microfinance banks and financial inclusion but a positive relationship in the long-run. Mader (2016) established a positive effect between financial inclusion and microfinance banks. This research nonetheless concluded that, the way microfinance resulted to financial inclusion is the same way it resulted to financial indebtedness, and this made people worse off. This conclusion contradicts most other suggestions from other studies. On the other hand, some studies can be faulted for the operationalization of financial inclusion for instance, Kiberia (2016) used the number of bank accounts as a proxy for financial inclusion. It is worth noting that number of bank accounts does not necessarily imply that the owners are active in financial access and use as they may be possessing the accounts but still be dormant (Sarma, 2008). Malenya and Kariuki (2017) used structured questionnaires and descriptive approaches to measure the data, which lacks an empirical backing.

Empirical review reveals operationalization gaps in the research linking financial inclusion and microfinance products which warrants further investigation. In addition, the complexities of informal settlements, such as Kibera, present unique challenges that may influence the outcomes of microfinance interventions. Factors such as limited financial literacy, unstable income sources, and inadequate infrastructure may hinder the uptake and impact of microfinance products among residents. Additionally, the presence of informal financial practices and competing priorities for limited resources may further complicate the picture. There is a need to investigate the effect of microfinance products provision on financial inclusion in these settlements. If the situation is left unchecked, many of these households will continue facing limits in their ability to grow their businesses, invest in education, and cope with financial emergencies.

It is against this backdrop therefore, that this study sought to investigate the effectiveness of microfinance products in promoting financial inclusion among residents of informal settlements in Nairobi County, Kenya. Identifying these factors is crucial in designing effective microfinance products that meet the needs of this underserved population.

### **1.3 Research Objective**

The study sought to evaluate the effectiveness of microfinance products in promoting financial inclusion among residents of informal settlements in Nairobi County, Kenya.

#### **1.3.1 Specific Objectives**

The study specifically sought to:

- i. Investigate the effect of micro-credit on financial inclusion in the informal settlements in Nairobi County, Kenya.
- ii. Determine the effect of micro-saving on financial inclusion in the informal settlements in Nairobi County, Kenya.
- iii. Examine the effect of micro-insurance on financial inclusion in the informal settlements in Nairobi County, Kenya.

#### **1.4 Study Questions**

- i. What is the effect of micro-credit on financial inclusion in the informal settlements in Nairobi County, Kenya?
- ii. What is the effect of micro-saving on financial inclusion in the informal settlements in Nairobi County, Kenya?
- iii. What is the effect of micro-insurance on financial inclusion in the informal settlements in Nairobi County, Kenya?

#### **1.5 Scope of the Study**

The study attempted to investigate the nexus between microfinance products and financial inclusion in the informal settlements in Nairobi County, Kenya. The study targeted the people who resided in Kibera in September 2023, which is the largest informal settlement in Kenya. Just like other several informal settlements in Nairobi, Kibera slum faces numerous problems in achieving financial inclusion. Some of the challenges are limited access to formal financial services such as banks and microfinance institutions. This is due to the lack of physical infrastructure, including banks, in the area. Many financial institutions shy away from low-income areas due to perceived high risk and low micro-insurance (Kyung-ha, 2020). Furthermore, poverty is a significant challenge in Kibera slum, and many people struggle to meet their basic needs. This makes it difficult for them to save and invest in income-generating activities. As a result, they may be unable to access formal financial services (Diwakar & Shepherd, 2018).

#### **1.6 Significance of the Study**

The level of financial inclusion in the informal settlements in Nairobi County, Kenya, is low, and there is a need to investigate the effect of microfinance product provision on financial inclusion in these settlements. The study sought to determine the effectiveness of microfinance products in promoting financial inclusion and identifying the factors that influence the uptake of microfinance products among residents of informal settlements in Nairobi County, Kenya. The findings of this study would be useful to the following stakeholders:

### **1.6.1 Scholars**

The study will be useful to scholars in financial inclusion, microfinance institutions and development finance for urban poor. For one, there are a number of theories in relation to the effect of banking institutions and microfinance on financial inclusion. This study and its findings form part of the material that either supports or disapproves the existing theories. In particular, the study will contribute to the understanding of the effects of microfinance products on financial inclusion. The outcomes of this study will provide an empirical basis for future research conducted both locally and regionally by academicians and researchers. The empirical approaches used can be replicated in future studies with similar dynamics. The study will also act as an orientation for future studies on the same subject.

### **1.6.2 Policy Makers**

Policy makers such as the government legislators, industry regulators, and the executive can use the results of this research as a guide in making their decisions. In particular, the government can draw various lessons from this study as they seek to provide empowerment to the populace in the informal settlements in Nairobi County. This information can be used by policymakers to improve on the number of funds they allocate in advertising, youth funds allocation, target-oriented saving initiative and consequently protect their citizens businesses and assets by providing more affordable insurance schemes.

### **1.6.3 Microfinance Practitioner**

Through the findings from this study, microfinance institutions are able to solicit funds from the government and donors with confidence, knowing where to provide their support in regard to the informal settlements. This will enhance the credibility of residents in paying back loans and foster positive business growth. Additionally, the outcomes of this study will encourage microfinance institutions and banks to develop innovative financial products and mechanisms for microenterprises and residents of informal settlements.

#### **1.6.4 Informal Sector Residents**

From this study, the residents of informal sector in Nairobi County who are unbanked or underbanked can learn of the various opportunities available in their areas of residence. Moreover, the study can lead to a rise in the standards of living when the implementation of the findings and recommendations come to pass. In conclusion, the confidence, transparency and credibility of financial institutions will improve and consequently positively impact on the residents of Nairobi County in Kenya.



## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter provides a detailed review of theoretic and empirical literature around the area of microfinance products and financial inclusion. The theoretical literature looks at the theories that underpin the study while the empirical literature focuses on global and local studies around the subject of Microfinance and Financial inclusion.

### **2.2 Theoretical Literature**

This section highlights the theories that this study stemmed from, provides a critical review and its applicability to the study.

#### **2.2.1 Asymmetric Information Theory**

The asymmetric Information Theory posits that in transactions, one party will have more or better information than the other, leading to imbalances in decision-making and potential market failures. A proposition by Akerlof (1970), the theory opines that consumers make decisions based on previous experience and prevailing trends in the market. They make some analysis of sorts on a category of products and services, an exercise that enables them to make informed purchasing decisions. The theory goes ahead to postulate that since consumers' analysis is based on category of products or services, they are only in a position to decode the average price or quality of the entire market as opposed to a specific product or service. In the same breath, the sellers who have frequent interactions with the products and the consumers, have an extensive knowledge about the fine details of these products and services. In this regard, the seller has more information than the buyer. Akerlof (1970) avers that this information asymmetry may cause the seller to sell the products at a higher price or lower quality in order to gain more in the transaction.

There are many proponents of the theory in terms of academia and practically. The theory was first applied in the motor-vehicle industry and has been successively developed by micro-credits and academia in other sectors. With regards to the banking sector application Arricia (1998) noted that bankers have a challenge of uncertainty especially when it comes to repayment of loans by their customers. This situation is predominantly contributed by their insufficiency to fully obtain the personal characteristics and attributes of their clients. This makes it harder for them to precisely determine the creditworthiness of their customers.

It is for this reason that banks use adverse selection on determining who they are going to advance their credit to. Similarly, Castro (2013) asserts that the inadequacy of the lender to differentiate between creditworthy and non-credit worthy borrowers leads the lender to impose a common interest rate on the loans. The high-interest rates will involuntarily exclude a section of the population from accessing the financial products especially the low-income earners, small businesses and poor households (Castro, 2013).

The theory can be used to explain the factors that contribute to financial inclusion or exclusion in informal settlements as formal financial institutions stay away due to insufficient credit information, collateral, or formal documentation. From the theory, it can be pointed out that the high interest rates charged by financial institutions because they are not in a position to differentiate between creditworthy and non-credit worthy borrowers are what contribute to financial exclusion (Castro, 2013).

Microfinance institutions fill the gap and penetrate this market using innovative strategies to offer products such as micro-credit, micro-savings and micro-insurance. This penetration enables the microfinance institutions to reduce information asymmetry and transaction costs. This study sought to determine if the provision of these financial services to the underserved population contributes to financial inclusion.

### **2.2.2 Social Capital Theory**

The Social Capital Theory emphasizes the value of social networks and relationships in achieving individual and collective goals and suggests that networks built on trust, reciprocity, and mutual support can facilitate access to resources and opportunities. Developed in 1986 by Pierre Bourdieu, the social capital theory states that capital is not only an economic resource but it is also a social exchange that does not necessarily mean that they only serve the self-interest of the owners of it, and therefore, it is essential to comprehend capital and profit in all their shape. The theory is grounded on the premise of social stratification and it postulates that every society is characterized by a difference in status and power, and as a result this creates a structural constraint and disparity in access to key resources. Bourdieu describes that stratification in the societies is brought about by

culture that may exclude some members of the society from accessing institutional capital based on several aspects, inter alia; race, class, caste or gender (Bourdieu, 1986).

The theory was popularized by Coleman (1988), who agreed that indeed the society is organized in different strata but this does not mean that every individual will be excluded from accessing key resources. Coleman's approach incorporated the importance of collectivity and regrouping in ensuring that every society member benefits from the available capital. Coleman's approach says that when individuals who are slightly disadvantaged come together and pull resources for a common good, they can enjoy the privileges that the advantaged enjoy. For this reason, social capital was defined as the norms, trusts and networks that facilitate harmonization and synchronization for the purposes of gaining mutual benefits. These networks go beyond family ties but can also encompass an entire community (Coleman, 1988).

The theory is applicable in this study because the dwellers in informal settlement are considered disadvantaged due to their low-income levels, lack of collateral security and majority of them are unbanked. These aspects put them at a position where they cannot access financial products and services. Microfinance organizations, however, penetrate these markets by encouraging them to regroup themselves in small welfare associations and business groups, this not only grants them access to credit facilities but also empowers them, as they receive training (Mader & Sabrow, 2015). This study sought to determine if the microfinance products available in informal settlements by leveraging social capital lead to financial inclusion.

### **2.2.3 Modern Economic Theory**

The modern economic theory encompasses various models and frameworks used to understand and analyze economic phenomena. It often emphasizes market efficiency, rational decision-making, and the role of institutions in shaping economic outcomes. This proposition was advanced by Hoff and Stiglitz in 2001. The theory postulates that there exist market frictions in the market that are brought about by institutions due to incomplete insurance that emanates from the problems of moral hazard in the market. Hoff and Stiglitz

(2001) observed that this situation was more rampant in developing countries than developed countries as they are more prone to moral hazard problems that originate from the high cases of information asymmetry. The theory further states that, there are other institutions that come up to cure the disequilibrium in the market by filling the gaps created by the prevailing institutions. These new institutions restore the balance by offering lower prices than the prevailing market prices.

This theory has been augmented into the construct of financial inclusion and microfinance by the works of Karnaton (1996) and Newman (1998). They assert that in an ideal market that is driven by demand and supply of products there will always be imperfection especially in the insurance market. However, this mechanism can be reversed when there is segregation of markets and prices are differentiated based on the price elasticity of respective markets. The argument is that markets with relatively lower incomes have a higher price elasticity and therefore, an increase in price would reduce their demand of the product by a large margin, similarly, a slight decrease in prices will result in a higher increase in demand. They conclude that it is for this reason that the informal institutions thrive in these areas as they offer affordable products leading to higher demand and thus restoring equilibrium.

The theory is applicable in this study as it shows how different markets have a different price elasticity of demand. The same can be said in the Kenyan context where the informal settlement is characterized by low-income levels and therefore, charging them higher prices would mean that they will demand less of that product. Microfinance institutions have penetrated these markets and offered their products at low prices, therefore, contributing to financial inclusion (World Bank, 2016).

By leveraging the modern economic theory principles, microfinance products in informal settlements seek to promote financial inclusion by employing market-based approaches, to offer products such as microcredit, micro-savings and microinsurance. This study sought to determine the effect of these microfinance products on financial inclusion in informal settlements.

## **2.3 Empirical Literature Review**

This section explores related studies done in the area of financial inclusion and microfinance institutions. The study considers three strands of literature, one that relates to micro-credit and financial inclusion nexus, another on micro-savings and financial inclusion and micro-insurance and financial inclusion. The purpose of this empirical review is to establish findings of related studies and establish the research gap to be filled by this study.

### **2.3.1 Microcredit and Financial Inclusion**

Research has shown that microcredit contributes to financial inclusion. In a study on inhabitants of an informal settlement in Gulbarga, Matovu (2016) posits that microfinance institutions were successful in poverty eradication and financial inclusion as the participants voluntarily excluded themselves from formal banking due to associated high cost of debt. Matovu (2016) concluded that there existed a direct effect between the provisions of financial services and banking by microfinance institutions as households utilized the credit advanced towards income-generating activities, and thus promoted growth.

Kaberia (2016) agreed with these findings in his study on the influence of microfinance banking in Kenya, which investigated how group lending, individual lending and saving mobilization contribute to financial inclusion in Kenya. This relationship was examined through the use of questionnaires. Descriptive analysis approaches were used alongside Ordinary Least Squares (OLS) regression method, and found that group lending, individual lending and saving mobilization positively contributes to financial inclusion. However, Kaberia (2016) used the number of bank accounts as a proxy for financial inclusion, which can be faulted as it does not have any scientific backing. Sarma (2008) contends that the number of bank accounts does not necessarily mean that the owners are active in financial access and use as they may be possessing the accounts and still be dormant.

Similarly, in a study to assess the influence of microfinance credit on the financial inclusion of microfinance bank customers in Rwanda, Harelimana (2016) used Randomized Control Trials on a treatment and control group of the microfinance clients, and on two different periods. The study used the paired sample T-test, and established a statistically significant

increase in assets and type of business owned by microfinance clients, and concluded that microfinance institutions have a positive impact on financial inclusion in Rwanda. This study, however, with the exception of microfinance credit looked at the general membership of clients in Microfinance banks as opposed to the effect of the specific products that they offer. But different clients have different needs and therefore they respond differently to different products offered by the same institution or market, (Kotler & Armstrong, 2004).

A study by Diaka and Asenge (2019) considered the influence of MFBs on the performance of nominated women-owned enterprises in Benue State, Nigeria. The researchers particularly looked at impact of microfinance saving, loan and training services on the performance of enterprises owned by women in Benue State. Survey research design and census sampling technique were adopted and questionnaire research instrument utilized to collect data from 68 entrepreneurial proprietors of the enterprises in Makurdi metropolis, Benue State. The researchers established that microfinance loan, saving and training services have noteworthy influence on the performance of enterprises owned by women. Despite the findings, the study only focused on the performance of enterprises owned by women, but not the financial inclusion in the informal settlements, Kenya as it is in this study.

In a separate research project, Idris and Agbim (2021) looked at the effectiveness of micro-credit in helping to reduce poverty among businesswomen in Nasarawa State, Nigeria. In particular, the research looked at how different forms of financial aid—including microcredit, which may be used to start a business interacted with the possibility of self-employment and increased financial independence. The study relied on a survey research design and a systematic sampling approach to choose participants to complete the questionnaires. Micro-credit has a substantial impact on learning, employment, economic independence, and self-sufficiency, as shown by the study's findings. It was suggested that more people be made aware of the benefits of micro-credit in terms of access to higher learning, independent income generation, economic independence, and micro-credit development.

A study by Nyakambi (2021) sought to determine the effect of micro credit on poverty alleviation at household level in Nakuru County using the descriptive research method. The study applied a multivariate regression model to determine the relative importance of each of the six variables with respect to poverty alleviation. The study positive relationship between access to micro credit and poverty alleviation. It determined that micro credit provided financial access for low-income earners, the less educated and those in the informal sector. This helped to expand businesses, acquisition of better residential places, and acquisition of education, health and improved welfare.

Similarly, Toromo, (2020) examined the relationship between access to micro-credit and financial performance of Micro, Small and Medium Enterprises (MSMEs) in Baringo County, Kenya using descriptive research design and stratified random sampling. Data was analyzed by descriptive method and presented in form of means, standard deviations, and percentages. The findings revealed a positive relationship between micro credit terms, micro credit cost, collateral requirement, financial management skills and financial performance of the MSMEs and established a positive effect between micro credit terms and financial performance of MSMEs.

### **2.3.2 Micro-savings and Financial Inclusion**

Liliana and Maria (2010) did a study to examine the determinants of financial inclusion in Latin America. By use of panel data, random effects approach in the analysis, the study established that among other factors, microfinance savings and credit positively affected financial inclusion. The study drew a conclusion that for microfinance to work, however, there is need for the general improvement in the literacy levels of the population and favorable macroeconomic conditions, as microfinance institutions alone cannot lead to financial inclusion. This study, therefore, established an inconclusive effect of microfinance products as a tools for financial inclusion. Additionally, it focused on the holistic aspect of microfinance as opposed to the specific products.

Ogechi and Olaniyi (2017) examined the impact that microfinance has on financial inclusion in Nigeria. They used Fully Modified Ordinary Least Squares and Dynamic Ordinary Least

Square in an attempt to establish a cointegration affiliation between them. The findings of the study show that there is a positive long-run significant relationship between microfinance and financial inclusion, however, the relationship is not significant in the short-run. The variation of results can be attributed to the empirical methods used in this analysis, as they do not take into account structural breaks which are important aspects in time series analysis leading to biased and inconsistent results (Baum, 2004).

The study by Cherutich, Kibati and Kiprop, (2020) sought to examine the effect of savings products and lending services provided by microfinance institutions on financial inclusion in Baringo County based on the Financial Intermediation theory. Using the descriptive research method, the study targeted 14 microfinance institutions operating in the area from an accessible population of 476 individuals comprising 56 MFI managers and credit officers and 420 clients of the MFIs. The findings of the study revealed that financial inclusion was significantly affected by savings products and lending services, with lending services having a more significant effect than savings products.

Chikalipah (2018) conducted a study to see whether micro savings motivate MFIs' financial success in SSA. This research used empirical methods to examine whether or not MFIs in SSA may benefit from increasing their micro-savings rates. The research used an empirical approach, using a data collection from Microfinance Information eXchange (MIX) that included information from 350 MFIs operating in 36 Sub-Saharan countries between 1998 and 2012. The research indicated a negative correlation between microsavings and the financial results of MFIs in SSA. The increased operational expenditures associated with mobilization and management costs eat away at business micro-insurance, which was the reason given.

Abiola (2021) studied mobilization for micro savings innovations and decrease in poverty level in Nigeria, targeting the underprivileged and self-employed individuals. The study employed primary data collected using structured questionnaire, and hypothesis tested using ordinary least squares. The generated results indicated that the savings rate by the low-income people grew by 160% and has already contributed to alleviation of extreme

poverty, as a result of the emergence of enterprises.

Bateman and Chang (2017) did a critical examination of the evidence of savings on MFIs in Croatia and established that the greatest importance of savings was to increase the micro-insurance of external shareholders and managers. Also, the researchers established that there are several ways through which poverty can be reduced by having various interventions on policies such as the ones that were implemented in Malaysia, China, Taiwan, South Korea, and India. The researcher suggested research to be carried out to determine the role that is performed by savings in the building of assets among SMEs.

### **2.3.3 Micro-insurance and Financial Inclusion**

Mader (2016) conducted a study on microfinance and financial inclusion in India by considering macroeconomic variables such as income inequality and gender variable, namely the inclusion of women in access to microfinance services such as microcredit. The study employed the content analysis technique and established that microfinance had a positive effect on financial inclusion however, there was no sustainability of this relationship. The author concluded that microfinance contributed to financial access, nevertheless, it resulted in the members' high indebtedness in India. The over-indebtedness makes most of the borrowers to be considered non-credit worthy in the end because they have been granted more loans and credit than they can afford to repay. This study contradicts other studies conducted on the same subject.

On a similar note, Malenya and Kariuki (2017) analyzed the features of microfinance banking services namely macro, insurance and microcredit in the determination of financial inclusion in Kenya. They used a semi-structured questionnaire and descriptive analysis to measure the effectiveness of the services offered by microfinance banks on financial inclusion. The study established that it is the convenience of the branches of microfinance institutions that makes the services accessible to the wider population. The study, however, use of a semi-structured questionnaire and descriptive statistics approach would not give results that can be inferred as they are not appropriate in testing hypotheses (Woodridge, 2012).

Nzembela and Mazambani (2021) investigated the role of micro insurance in protecting the poor. In this regard, the researchers reviewed the factors influencing uptake of micro insurance amongst low-income people in South Africa. The study targeted the population of South African Advertising Research Foundation (SAARF) members. Results of the study indicate that the essential factors are; remoteness of the market, lack of insurance information and the presence of substitute risk-coping approaches.

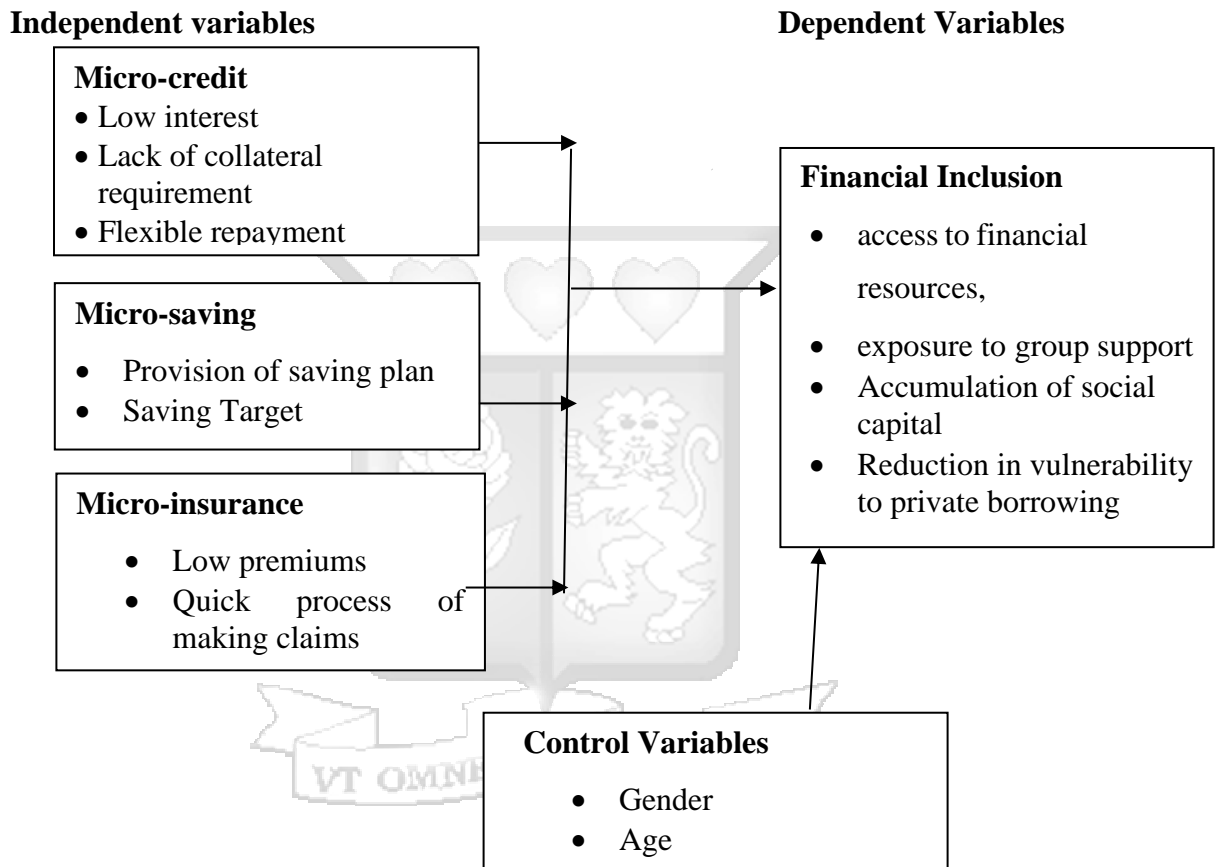
Lee and Solana (2022) examined good practices in promoting micro insurance. The authors noted that micro insurance providers still face difficulty in inspiring and sustaining demand for their products because of; customers' reluctance to buy insurance stems from a number of factors, such as their mistrust of insurance companies, their lack of financial and insurance literacy, their uncertainty about the worth of future benefits, and the high cost of premiums. Micro-insurance providers and distribution partners were advised to follow a step-by-step model for promotional planning, which included providing context, outlining the current offer, setting specific, measurable, attainable, relevant, and timely (SMART) objectives, and determining the intended recipient base.

#### **2.4 Conceptual Framework**

A conceptual framework is a tool that conceptualizes the way in which the variables affect each other. This study conceptualizes that financial inclusion is caused by the products that are offered by microfinance institutions namely, micro-credit, micro-savings as well as micro-insurance, and gender. These factors form the independent variables while financial inclusion is the dependent variable.

Micro-credit is measured using a number of indicators that stemmed from its features, these are low-interest rate, smaller loans, no guarantee or security requirement, wide range of loans provided, and flexible repayment periods. Micro-saving is measured by the perceived characteristic of micro-saving such as target to the amount of saving, issuance of a saving plan among others. Micro-insurance is measured by its features such as low premiums, quick process of making claims, and smaller benefits. The control variables will be gender,

education and household head. On the other hand, financial inclusion is indexed using the approach provided by Gopalaswamy, Babu and Dash (2013). It is given by access to resources, acquaintance to self-help groups, amassing of social wealth and a decline in susceptibility to private borrowing. The diagrammatic connection is shown in Figure 2.1



**Figure 2.1: Conceptual Framework**

**Source: Author's Construction, 2024**

## **2.5 Operationalization of Variables**

Literature has pointed out a number of aspects that could lead to financial inclusion. They are highlighted in detail in this section. The determinants are made up of the financial products offered by microfinance institutions, namely, micro-credit, micro-saving, and micro-insurance. Additionally, the study will include gender which will act as a control variable as the theories have shown it to be an important factor in influencing financial inclusion. These variables are summarized in Table 2.1 and detailed explanations are provided in the subsequent sections.

### **2.5.1 Micro-Credit**

Micro-credit can be defined as an enormously small loan offered to low-income earners to aid them in becoming self-employed and financially secure. Micro-credit differs significantly from conventional loans advanced by banks and other financial institutions, both in its structure and terms of agreement (CGAP, 2019). The loan is given to borrowers irrespective of their financial strength and does not require any form of security. In most cases, the issuer of loans requires that borrowers form business groups or welfare associations which could guarantee a member whenever they would apply for a loan. Additionally, the interest rate charged on the loans is small reducing the incidences of defaulting and to a greater extent Non-performing Loans. The borrowers are in most instances given incentive to repay their loans, they become eligible to higher loan limit if they promptly pay their existing loans (CGAP, 2019).

Several research findings have found a positive relationship between micro-credit and financial inclusion. A research by Rahman and Khan (2013) found out that the micro-credit offered by microfinance institutions had a positive impact on financial inclusion and poverty alleviation among dwellers of informal areas in Bangladesh. Similarly, Harelimana (2016) established that microcredit advanced by microfinance institutions in Rwanda contributed to financial stability and business prosperity of the beneficiaries. Mader (2016) observed that the low-interest rate charged on microcredit positively impacted financial inclusion in India. This study expected a positive correlation between micro-credit and financial inclusion.

**Table 2.1: Measurement and Description of Variables**

<b>Variable</b>	<b>Description and Measurement</b>	<b>Scale</b>	<b>Supporting Literature</b>
Financial Inclusion	Financial Inclusion was measured by a score of four items on a 5- point Likert scale. These items are informed by the measure proposed by Gopaldaswamy, Babu, and Dash (2013). They include access to resources, exposure to group support, accumulation of social capital and reduction in vulnerability to private borrowing.	Ordinal	Gopaldaswamy, Babu, and Dash (2013).
Microcredit	Micro-credit was measured by a score of six items on a 5-point Likertscale informed by the characteristic of micro-credit. These are low- interest rate, smaller loans, no guarantee or security requirement, wide range of loans provided, and flexible repayment periods.	Ordinal	Rahman and Khan (2013); Harelimana (2016); Mader (2016)
Micro-saving	Micro-saving was measured by a score of five items in a 5-pointLikert scale which is based on the features of micro-saving. They include target to the amount of saving and issuance of a saving plan.	Ordinal	Hadi and Klamudin (2013); Ongechi and Olaniyi (2017); Liliana and Maria (2010)

Micro insurance	Micro-insurance was measured by a score of four items in a 5-point Likert scale which is informed by the features of micro-insurance. These features include low premiums, quick process of making claims, and smaller benefits.	Ordinal	Mader (2010); Malenya and Kariuki (2017)
Gender	Gender of the respondents was measured as a binary variable where; 1=male, 0=female	Nominal	World Bank (2016); Mader (2016)
Age	Age was measured using a nominal scale	Nominal	

### 2.5.2 Micro-Savings

Micro-savings is small and periodic contribution by an account holder for the purposes of realizing a greater saving goal in the future (CGAP, 2019). Microfinance institutions offer micro-saving services to encourage their members to store their money and withdraw them at a future date when they have become sufficient for transaction, setting up a business or expanding the business. The client in most cases is provided with the option of setting a saving target and the microfinance institution gives them an elaborate daily, weekly or monthly saving plan based on the individual's capability. Microfinance institutions also give the clients an incentive to save as they peg the loan limit to the amount of savings the individual has (CGAP, 2019).

Hadi and Klamudin (2013) assert that the provision of micro-savings stems primarily from the intention of changing the pattern of the population from consumerism to saving culture. It is this desire by the microfinance institutions that drives up savings that is later on channeled to investment and thus financial inclusion. Liliana and Maria (2010) also agree that micro-savings accounts serve to eliminate the barriers to financial inclusion that are created by the conventional deposit and saving accounts. Similarly, Ongechi and Olaniyi (2017) are in agreement that the small amounts required in micro-saving is accommodating to the low-income earners and encourages them to be account owners. This study expects a positive correlation between micro-saving and financial inclusion.

### **2.5.3 Micro-Insurance**

Micro-insurance products are specifically designed for low-income earners, poor households and small enterprises to cushion them against unforeseen perils such as accidents, sickness, theft or uncertainty in business. Many low-income earners, particularly in informal settlements, are curtailed from accessing the forms of insurance covers provided by conventional insurance companies owing to their relatively higher premiums requirement. Microfinance insurance bridges this gap by providing an alternative that requires small premium contributions by the members resulting in all-inclusive insurance access (CGAP, 2019). Mader (2016) observed that microfinance in India led many women and children to have access to health insurance cover and thus better healthcare services. This study expected a positive coefficient of micro-insurance.

### **2.5.4 Gender**

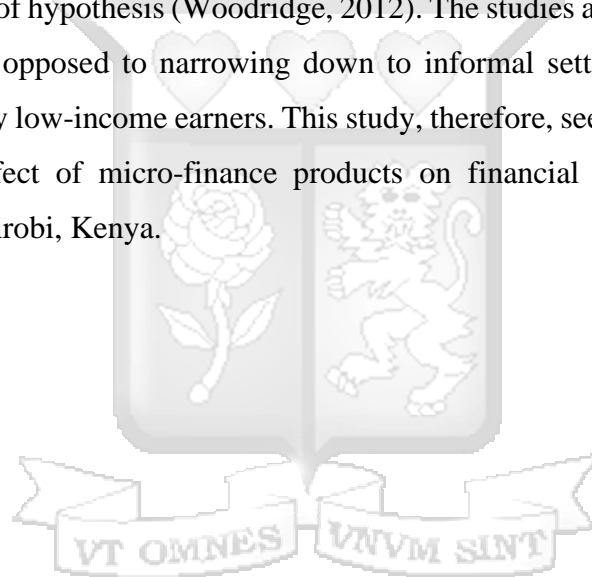
Gender has been shown to be a greater determinant of financial inclusion. Over the years especially in Sub-Saharan African countries, there has been gender disparity with regards to financial inclusion. Women have been left out in financial inclusion and have taken fewer parts in access to credit and ownership of bank accounts (World Bank, 2016). In his study on microfinance and financial inclusion in India by considering macroeconomic variables such as income inequality and gender variable, namely the inclusion of women in access to microfinance services, Mader (2016) observed that the involvement of women in microfinance contributes to financial inclusion.

## **2.6 Summary of Literature Review and Research Gap**

This chapter has extensively reviewed the literature related to financial inclusion and microfinance products. The first section looked at a number of theories that explain how microfinance products may influence financial inclusion, the theories reviewed are Information asymmetry theory, social capital theory, and modern development theory. The second section looked at the determinants of financial inclusion, and the factors that were deemed important in influencing the level of financial inclusion were highlighted, these were, micro-credit, micro-saving, and micro-insurance. The researcher also looked at an additional variable to act as a control variable, namely gender. The third section highlights

the empirical studies conducted, globally, regionally and locally that are relevant to this study. While the fourth section presents the conceptual framework for the study.

From the empirical research, it can be established that global studies have produced varied results. A study by Lilian and Maria (2010) and that by Mader (2016) did not provide a conclusive link between microfinance and financial inclusion. Additionally, none of the studies reviewed on the subject attempted to study microfinance products, but they all focused on the blanket aspect of Micro-finance. On the other hand, studies conducted in Kenya, notably by Kaberia (2016) and Malenya and Kariuki (2017) used descriptive statistics, an approach that is not suitable for drawing valid inferences as they do not support the measurement of hypothesis (Woodridge, 2012). The studies also focused on the general micro-finance as opposed to narrowing down to informal settlements despite the areas being inhabited by low-income earners. This study, therefore, seeks to bridge these gaps by analyzing the effect of micro-finance products on financial inclusion in the informal settlements in Nairobi, Kenya.



**Table 2.2: Summary of Literature Review and Research Gap**

Variable	Author, Year	Title of the study	Findings	Knowledge gap
Micro-Credit	Kaberia (2016)	Influence of microfinance banking in Kenya	Group lending, individual lending and saving mobilization positively contributes to financial inclusion	The study did not outline specifically micro-credit affects financial inclusion in the informal settlements in Nairobi County, Kenya
	Harelimana (2016)	The influence of microfinance credit on the financial inclusion of microfinance bank customers in Rwanda	microfinance institutions have a positive impact on financial inclusion in Rwanda	This study, however, with the exception of microfinance credit looked at the general membership of clients in Microfinance banks as opposed to the effect of the specific products that they offer
Micro-Savings	Liliana and Maria (2010)	The determinants of financial inclusion in Latin America	The study established that among other factors, microfinance savings and credit positively affected financial inclusion	The study focused on the holistic aspect of microfinance as opposed to the specific products
	Ogechi and Olaniyi (2017)	Impact that microfinance has on financial inclusion in Nigeria	The findings of the study show that there is a positive long-run significant relationship between	However, the study was based in Nigeria which have a different operating environment

Variable	Author, Year	Title of the study	Findings	Knowledge gap
			microfinance and financial inclusion, however, the relationship is not significant in the short-run	with Kenya
Micro-Insurance	Malenya and Kariuki (2017)	the features of microfinance banking services namely macro, insurance and microcredit in the determination of financial inclusion in Kenya	The study established that it is the convenience of the branches of microfinance institutions that makes the services accessible to the wider population	The study did not focus on how Micro-insurance influenced financial inclusion
	Mader (2016)	Microfinance and financial inclusion in India	The author concluded that microfinance contributed to financial access, nevertheless, it resulted in the members' high indebtedness in India	However, the study was based in India which have a different operating environment with Kenya

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## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter gives comprehensive details about the methodology adopted in the study in a bid to address the study objectives and answer the study questions. The chapter is outlined as follows, the beginning point is the research design, followed by the population and sample size. The chapter goes ahead to highlight the data collection procedures and the analysis method. It ends with the ethical consideration.

### **3.2 Research Philosophy**

A research philosophy is a roadmap that directs the course of research in terms of ideas about reality and nature of knowledge (Collis & Hussey, 2014). There are two chief research philosophies these are positivism and interpretivism. In Positivism philosophy, the realities are autonomous to us and researchers can only observe reality in an objective manner. On the other hand, in interpretivism, realities are observed in a subjective manner as they are shaped by human perceptions this study was underpinned by positivism research philosophy. The rationale behind is that the study used quantitative data which was tested through hypothesis to objectively find out the relationship between the variables under study.

### **3.3 Research Design**

Research design is a blueprint used to investigate the association among the variables of interest with the sole purpose of answering the study questions (Cooper & Schindler, 2001). The study used cross-sectional descriptive research design. This was because the study sought to collect data from informal settlement sector in a particular point in time. In addition, this framework is versatile and it can accommodate various methods, technique and presentation (Mugenda & Mugenda, 2003). The study used both descriptive statistics and empirical methods to analyze the data, this makes descriptive research design applicable (Kothari & Garg, 2014).

### **3.4 Population**

Population is described as a set of individuals, subjects or objects that display similar features to which research seeks to generate the results of the study (Kothari, 2014). The target population of this research were dwellers of informal settlements in Nairobi County, Kenya. The choice of informal habitats in Nairobi was informed by the fact that they are the most marginalized group due to their level of literacy and income.

The study identified Kibera slum in Nairobi County, the capital city of Kenya. The rationale behind this was that Kibera is said to be the largest informal settlement or slum in Africa. Mugenda, (2008), posits that a group must have certain observable traits in order to generalize the study's findings beyond the study's specific population. The heterogeneity of the population is assumed by this definition. The study population was household heads in the Kibera slum. The Kenya national census in 2019 estimated that there are about 185,777 people living in Kibera, with around 61,690 households in the slum (Kenya National Bureau of Statistics, 2019).

### 3.5 Sample

A sample is a section of the population that has been selected by use of scientific procedures (Kothari, 2004). The sample frame for this research was drawn from the 61,690 households in Kibera slum, who were deemed suitable for the study. The research used Kombo and Tromp (2009) approach to select the sample size was used.

The required sample size was calculated using the Fisher et al (1998) formula as shown below;  $n = z^2 pq / d^2$

n= desired sample size

z=the standard normal deviation at the required confidence interval  $q=1-p$

d= degree of accuracy

p= proportion of the target population estimated to have characteristics to be measured

$$= 1.96^2 (0.5) (0.5) / 0.05^2$$

$$= 384$$

Using this approach, the sample size of the study was determined to be 384 households.

Further, the study utilized convenience random sampling to access the respondents.

### **3.6 Data Collection**

The research focused on primary data obtained from residents who lived in the informal settlement. The research adopted a structured questionnaire to collect the data in September 2023. The tool was arranged on four thematic areas namely, micro-credit, micro-saving, micro-insurance, and financial inclusion. Additionally, the questionnaire contained the demographic information part that aims to access the factors such as gender and account ownership. The questionnaire was administered by the principal investigator and several research assistants by the use of an interview to ensure that all information was captured.

### **3.7 Validity and Reliability Test**

#### **3.7.1 Validity**

The validity of a research instrument refers to the degree to which it measures what it is intended to measure. It is essential to ensure that the research instrument is valid to ensure that the results obtained from the study are accurate and reliable (Cooper & Schindler, 2001). There are several types of validity that researchers can use to evaluate the validity of their research instruments, including content validity and construct validity.

Content Validity refers to the extent to which the research instrument adequately covers all the relevant aspects of the phenomenon being studied. To establish content validity, the research instrument was evaluated by experts in the field to ensure that all the essential elements were included. Construct Validity on the other hand, refers to the degree to which the research instrument measures the construct or concept being studied. This was established by comparing the results obtained using the research instrument with other established measures of the same construct (Kothari & Garg, 2014). This study employed these aspects in ascertaining the validity of the research tool.

#### **3.7.2 Reliability**

Since the questions contained in the research instruments are expressed in terms of Likert scale, there is a need to carry out a reliability test to ensure that there is internal consistency

among the questions for each variable. Reliability measures the internal consistency of the questions and ensures that the research instrument is reproducible and thus can be used over and over and still produce the same results. The study used Cronbach's procedure to establish the reliability of the research instrument. The acceptable score of Cronbach is 0.7, all values above this denote the instrument as reliable and less values depict an unreliable tool.

### **3.8 Data Analysis**

Descriptive statistics formed part of the initial analysis, data was presented in terms of mean, and standard deviation. This analysis was critical in providing information about the distribution of the data. Factor analysis for variable reduction was performed using Principal Component analysis (PCA) to create a composite index for the each of the variables.

#### **3.8.1 Diagnostic Tests**

The study tested for post estimation diagnostic for the sake of robustness. Among the tests were Durbin-Watson test for autocorrelation. Autocorrelation refers to the association between two successive error terms. The study also conducted a test for multicollinearity, this stands for the correlation between two independent variables. Stata software was used in data analysis.

#### **3.8.2 Ordinary Least Squares**

The ordinary least squares was used to understand the relationship between microfinance products and the financial inclusion of residents of Kibera slums in Nairobi County. The researcher used this equation to understand the magnitude and the direction of the relationship between all the variables independent and dependent variables. A positive relation means that as one variable increases so does the other while an inverse relationship means that for a unit increase in one variable, there must be a decrease in another.

The equation usually takes the form:

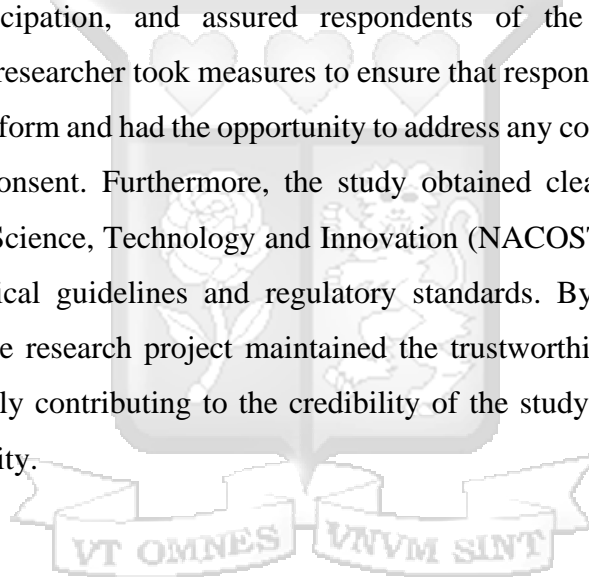
$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where: Y represents financial inclusion;  $\beta_0$  is the intercept; X is the set of three

independent variables;  $\beta_i$  ( $i = 1, 2, 3$ ) are the partial regression coefficients associated with the independent variables; and  $\mathcal{E}$  is the error term.

### **3.9 Ethical Considerations**

The research project adhered to rigorous ethical standards to ensure the integrity and authenticity of the study's results. Prior to commencing data collection, the researcher obtained approval from the University's ethics committee, demonstrating a commitment to ethical research practices. Throughout the data collection process, the researcher prioritized transparency and respect for respondents' autonomy by providing them with informed consent forms. These forms outlined the purpose of the study, the potential risks and benefits of participation, and assured respondents of the confidentiality of their information. The researcher took measures to ensure that respondents fully understood the informed consent form and had the opportunity to address any concerns or questions before providing their consent. Furthermore, the study obtained clearance from the National Commission for Science, Technology and Innovation (NACOSTI), further reinforcing its adherence to ethical guidelines and regulatory standards. By upholding these ethical considerations, the research project maintained the trustworthiness and reliability of its findings, ultimately contributing to the credibility of the study within the academic and research community.



## CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

### 4.1 Introduction

This chapter presents the research findings based on the analysis that was conducted on the data collected. This chapter is outlined into sections containing the background, descriptive findings, correlation test, diagnostic results and the regression findings. The chapter ends with a summary of the research findings.

### 4.2 Response Rate

A total of 384 questionnaires were administered to the sampled respondents, out of which approximately 239 questionnaires were properly filled and returned, which represented an overall success response rate of 62.2%. According to Mugenda and Mugenda, (2003) a response rate of 50% or more is adequate. Babbie, (2020) also asserted that return rates of 50% are acceptable to analyze and publish, which a 60% response rate is good and 70% is very good.

**Table 4.1: Response Rate**

	Frequency	Percent
Returned	239	62.2
Unreturned	145	37.8
<b>Total</b>	<b>384</b>	<b>100</b>

Source: Author computation (2024)

### 4.3 Demographic Characteristics

This section consists of information that describes the basic characteristics of the respondents. These include the gender, age, microfinance institution in which respondents operate their account, type of account and the number of years respondents have been an account holder of the account as shown by the results in Table 4.2.

**Table 4.2: Gender of the respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Female	147	61.5
Male	92	38.5
<b>Total</b>	<b>239</b>	<b>100</b>
<b>Age</b>	<b>Frequency</b>	<b>Percent</b>
18-30	123	51.5
31-40	69	28.9
41-50	32	13.4
Above 50	15	6.3
<b>Total</b>	<b>239</b>	<b>100</b>
<b>Microfinance Institution</b>	<b>Frequency</b>	<b>Percent</b>
Branch	8	3.3
Branch, Mshwari / Fuliza	13	5.4
Branch, Mshwari / Fuliza, Hustler Fund	1	0.4
Caritas, Rafiki, Faulu	1	0.4
Choice	2	0.8
Equity bank	6	2.6
Faulu	19	7.9
Faulu, Branch, Mshwari / Fuliza	4	1.7
Faulu, Kenya Women Microfinance	1	0.4
Faulu, Mshwari / Fuliza	1	0.4
Faulu, U&I	1	0.4
Faulu, Uwezo, Branch, Mshwari / Fuliza	1	0.4
Fuliza	2	0.8
KCB BANK	4	1.7
Kenya Women Microfinance	47	19.7
Kenya Women Microfinance, Mshwari / Fuliza	8	3.3
Mofaa sacco	1	0.4
Mshwari / Fuliza	96	40.2

NCBA	1	0.4
Remu	1	0.4
safcom	1	0.4
Shofco	1	0.4
U&I	5	2.1
U&I, Branch, Mshwari / Fuliza	2	0.8
U&I, Mshwari / Fuliza	1	0.4
Uwezo	2	0.8
Uwezo, Branch, Mshwari / Fuliza	4	1.7
Uwezo, Mshwari / Fuliza	5	2.1
<b>Total</b>	<b>239</b>	<b>100</b>
<b>Type of Account Opened</b>	<b>Frequency</b>	<b>Percent</b>
Current account	71	29.7
Fixed Deposit account	7	2.9
Savings account	44	18.8
Savings account, Current account	102	42.7
Savings account, Current account, Fixed Deposit account	5	2.1
Savings account, Fixed Deposit account	9	3.8
<b>Total</b>	<b>239</b>	<b>100</b>
<b>Number of Years in Operating the Account</b>	<b>Frequency</b>	<b>Percent</b>
2-5 years	139	58.2
Less than 1 year	53	22.2
More than 5 years	47	19.7
<b>Total</b>	<b>239</b>	<b>100</b>

**Source: Author computation (2024)**

According to the analysis of the findings, a majority of the respondents were female accounting for 61.5% while the male respondents accounted for 38.5%. The findings implied that majority of the respondents were female validating the use of gender as a control variable. The results indicated that the majority of the respondents were aged between 18-30 years accounting for 51.5%, followed by ages between 31-40 years

accounting for 28.9%, ages between 41-50 years were 13.4% and respondents over 50 years of age accounted for 6.3%. This revealed that the respondents were majorly youth, validating the use of age as a control variable.

The survey conducted on microfinance institution preferences among respondents revealed a diverse distribution of account usage. Notably, Mshwari/Fuliza emerged as the most popular choice, with 40.2% of respondents indicating usage. Kenya Women Microfinance followed closely, with 19.7% of respondents opting for this institution. Other notable mentions include Faulu, with 7.9% of respondents, and Branch, with 3.3%. Some respondents indicated multiple institutions for their accounts, with combinations like Branch and Mshwari/Fuliza (5.4%), Kenya Women Microfinance and Mshwari/Fuliza (3.3%), and Faulu alongside various other institutions. The findings underscore the significant role of mobile-based microfinance services like Mshwari/Fuliza in the financial landscape, alongside traditional microfinance institutions.

The results indicated that the majority of the respondents that is 42.7% have opened savings account and current account, 29.7% indicated current account, 18.8% indicated savings account, 3.8% indicated savings account and fixed deposit account, 2.9% indicated fixed deposit account, while 2.7% indicated savings account, current account and fixed deposit account. The results indicated that the majority of the respondents that is 51.5% indicated that their account have been in operation for 2-5 years, followed by 22.2% for less than 1 year and finally, 19.7% indicated for more than 5 years. The findings showed that the respondents were active in accessing financial services and therefore their inclusion in the study was valid.

#### **4.4 Descriptive Statistics**

This section presents the descriptive results of the effectiveness of microfinance products in promoting financial inclusion and identifying the factors that influence the uptake of microfinance products among residents of informal settlements in Nairobi County, Kenya through the measurement of predetermined variables i.e. (micro-credit, micro-savings and micro-insurance).

#### 4.4.1 The effect of micro-credit on financial inclusion in the informal settlements in Nairobi County, Kenya

The study sought to determine the effect of micro-credit on financial inclusion in the informal settlements in Nairobi County, Kenya. The responses were rated on a Likert scale and the results are presented in Table 4.3.

**Table 4.3: The effect of micro-credit on financial inclusion in the informal settlements in Nairobi County, Kenya**

	N	Mean	Std. Deviation	Median
The credit offered by microfinance institutions has low interest rate	239	3.707	1.151	4.000
Microfinance institutions issue relatively smaller loans compared to other banks	239	3.720	1.029	4.000
I do not need to provide security or guarantee when taking loans from microfinance institutions	239	3.064	1.399	4.000
I get wide range of loans such as business loans, training loans, daily expense and bills among other loans	239	3.753	1.009	4.000
Repayment schedule of microfinance loans is flexible	239	3.761	1.017	4.000
The loan application fee is low	239	3.707	1.140	4.000

**Source: Author computation (2024)**

The results showed to a moderate extent that the respondents agreed that repayment schedule of microfinance loans is flexible (mean=3.761), they had a wide range of loans such as business loans, training loans, daily expense and bills among other loans (mean=3.753), microfinance institutions issue relatively smaller loans compared to other

banks (mean=3.720) and that the credit offered by microfinance institutions has low interest rate (mean=3.707), the loan application fee is low (mean=3.707). Further, respondents agreed to the moderate extent they do not need to provide security or guarantee when taking loans from microfinance institutions (mean=3.064). This is an indication that in informal settlements in Nairobi County repayment schedule of microfinance loans is flexible, residents get wide range of loans such as business loans, training loans, daily expense and bills among other loans, microfinance institutions issue relatively smaller loans compared to other banks and that the credit offered by microfinance institutions has low interest rate. The findings demonstrate that micro credit is accessible to residents of informal settlements at favorable terms which contributes to financial inclusion in the informal settlement.

#### 4.4.2 The effect of micro-savings on financial inclusion in the informal settlements in Nairobi County, Kenya

The study sought to determine the effect of micro-savings on financial inclusion in the informal settlements in Nairobi County, Kenya. The responses were rated on a Likert scale and the results are presented in Table 4.4.

**Table 4.4: The effect of micro-savings on financial inclusion in the informal settlements in Nairobi County, Kenya**

	N	Mean	Std. Deviation	Median
I am provided with a saving target by the microfinance institution	239	3.636	0.920	4.000
I am given a saving plan based on my financial capabilities	239	3.623	1.081	4.000
I am encouraged to save more as my loan will be determined by my savings	239	3.703	1.177	4.000
I am mobilized to save money through forming	239	3.588	1.014	4.000

groups and this makes me save more

The amount of saving required to open and sustain the account is low	239	3.762	1.015	4.000
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**Source: Author computation (2024)**

Based on the study findings, majority of the respondents agreed to a moderate extent that the amount of saving required to open and sustain the account is low (mean=3.762), they are encouraged to save more as my loan will be determined by my savings (mean=3.703), they are provided with a saving target by the microfinance institution (mean=3.636) and that they are given a saving plan based on my financial capabilities (mean=3.623). Further, respondents agreed to the moderate extent that they are mobilized to save money through forming groups and this makes them save more (mean=3.588). This implies that in informal settlements in Nairobi County the amount of saving required to open and sustain the account is low, residents are encouraged to save more as my loan will be determined by my savings, they are provided with a saving target by the microfinance institution and that they are given a saving plan based on my financial capabilities. The findings demonstrate that residents of informal settlements operate savings accounts at terms which encourage saving accumulation which builds credit history and collateral for access to credit.

**4.4.3 The effect of micro-insurance on financial inclusion in the informal settlements in Nairobi County, Kenya**

The study sought to determine the effect of micro-insurance on financial inclusion in the informal settlements in Nairobi County, Kenya. The responses were rated on a Likert scale and the results are presented in Table 4.5.

**Table 4.5: The effect of micro-insurance on financial inclusion in the informal settlements in Nairobi County, Kenya**

	N	Mean	Std. Deviation	Median
Insurance premium by microfinance institution is affordable	239	3.176	1.142	3.000
Insurance offered coverage is not excessive (it can cover few assets)	239	3.180	1.044	3.000
The process of making claims is not ambiguous	239	3.201	1.042	3.000
There are smaller benefits associated with micro insurance offered by microfinance institutions	239	3.197	1.096	3.000

**Source: Author computation (2024)**

As per the study findings, majority of the respondents agreed to a moderate extent that the process of making claims is not ambiguous (mean=3.201), there are smaller benefits associated with microinsurance offered by microfinance institutions (mean=3.197) and that insurance offered coverage is not excessive (it can cover few assets) (mean=3.180). In addition, respondents agreed to a moderate extent that insurance premium by microfinance institutions is affordable (mean=3.176). This implies that in informal settlements in Nairobi County the process of making claims is not ambiguous, there are smaller benefits associated with micro insurance offered by microfinance institutions and that insurance offered coverage is not excessive (it can cover few assets). This demonstrates that residents of informal settlements have access to micro insurance indicating financial inclusion.

#### **4.4.4 Financial inclusion in the informal settlements in Nairobi County, Kenya**

The study sought to determine the financial inclusion in the informal settlements in Nairobi County, Kenya. The responses were rated on a Likert scale and the results are presented in Table 4.6.

**Table 4.6: Financial Inclusion in the informal settlements in Nairobi County, Kenya**

	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Median</b>
I have access to resources such as credit, training, loans and capital	239	3.674	1.014	4.000
I have ownership to bank account	239	3.540	1.080	4.000
I am exposed to group support in the community	239	3.352	1.116	4.000
I have accumulation of social capital; my voice can now be heard in the society	239	3.326	1.112	4.000
My vulnerability to expensive borrowing has reduced	239	3.649	1.054	4.000

**Source: Author computation (2024)**

Based on the study findings, majority of the respondents agreed to a moderate extent that they have access to resources such as credit, training, loans and capital (mean=3.674), their vulnerability to expensive borrowing has reduced (mean=3.649), they have ownership to bank account (mean=3.540) and that they are exposed to group support in the community (mean=3.352). In addition, respondents agreed to a moderate extent that have accumulation of social capital; my voice can now be heard in the society (mean=3.326). Generally, the respondents agreed to a moderate extent the financial inclusion was positive as recorded by mean values falling between the range 3.326-3.674. This implies that residents of informal settlements in Nairobi County, Kenya have access to resources such as credit, training, loans and capital, their vulnerability to expensive borrowing has reduced, they have ownership to bank account and that they are exposed to group support in the community to a moderate extent.

#### **4.5 Measurement Model Assessment**

The research model was assessed using a two-step process which involved the structural model assessment and the measurement model assessment. The main aim of model validation was to determine whether both the measurement and the structural models met the quality criteria for empirical research. The following subsections discuss the guidelines

used in this study to assess both the structural and the measurement.

#### 4.5.1 Assessment of the measurement model

The convergent validity for all the constructs is verified by the outer loading for all the items which was higher than the minimum threshold value of 0.5, and the AVE values which were more than the minimum threshold value of 0.5, as outlined in Table 4.7.

**Table 4.7: Outer loading statistics**

Item	Outer Loadings
Micro-credit	0.8540
Micro-saving	0.7923
Micro-insurance	0.7840
Financial inclusion	0.8256

**Source: Author computation (2024)**

#### 4.5.2 Multicollinearity Test

Table 4.8 presents the VIF values for each of the indicators. It is noted that the VIF values are below the recommended threshold, therefore indicating that measurement variables were free from collinearity or common method bias.

**Table 4.8: VIF statistics**

Construct	VIF
Micro-credit	2.578
Micro-saving	2.643
Micro-insurance	1.786
Financial inclusion	1.956

**Source: Author computation (2024)**

#### 4.5.3 Reliability Analysis

Table 4.9 presents the results for Cronbach Alpha. The Cronbach alpha ranged from 0.908

to 0.789. The indicator of reliability has reliability statistics over the required threshold of 0.70. Therefore, construct reliability was established. Additionally, by using PLS-SEM, construct validity is established when there is convergent validity.

**Table 4.9: Construct Reliability Statistics**

	<b>Cronbach's Alpha</b>	<b>Average Variance Extracted (AVE)</b>
Micro-credit	0.900	0.769
Micro-saving	0.908	0.731
Micro-insurance	0.789	0.553
Financial inclusion	0.1180	0.767

**Source: Author computation (2024)**

Convergent validity was determined based on the results of AVE statistics which show that all the constructs except micro-insurance have slightly lower AVE. However, the Cronbach alpha values for all the constructs were greater than 0.70. Table 4.9 shows the AVE value for each of the constructs.

Discriminant validity was established using Kaiser-Meyer-Olkin measures and Bartlett's Test of Sphericity are the major ones that are used. In Kaiser-Meyer-Olkin, if the value is between 0 to 1 with an index more than 0.5, the factor is termed as significant. If an index is more than 0.05, it cannot be accepted when Bartlett's test is done. The measure of KMO was 0.861 and this is more than 0.5 but less than 1. Therefore, the index is acceptable. While p-value of Bartlett's test of sphericity was  $0.000 < 0.05$  showing significance. Therefore, the study concludes the instrument is valid.

**Table 4.10: KMO and Bartlett's Test**

KMO and Bartlett's Test		
KMO Measure of Sampling Adequacy		0.861
Bartlett's Test of Sphericity	Approx. Chi-Square	347.989
	df	10
	Sig.	0.000

**Source: Author computation (2024)**

#### 4.6 Correlation analysis

Correlation analysis establishes whether there exists an association between two variables lying between (-) strong negative correlation and (+) perfect positive correlation. Pearson correlation was employed to analyze the level of association between microfinance products and financial inclusion. The analysis was done both for the null lag and one period lag data. The study employed a confidence interval of 95%, as it is the most utilized in social sciences. A two tailed test was utilized

**Table 4.11: Correlation Matrix**

		financial inclusion	Micro-credit	Micro-savings	Micro-insurance
financial inclusion	Pearson Correlation	1	0.733	0.66	0.618
	Sig. (2-tailed)		0.000	0.025	0.048
Micro-credit	Pearson Correlation	0.773	1	0.316	0.163
	Sig. (2-tailed)	0.000		0.036	0.043
Micro-savings	Pearson Correlation	0.66	0.316	1	0.216
	Sig. (2-tailed)	0.025	0.036		0.034
Micro-insurance	Pearson Correlation	0.618	0.163	0.216	1

Correlation				
Sig. (2-tailed)	0.048	0.043	0.034	

Study findings presented in Table 4.11 established that, there is a significant positive relationship between financial inclusion in the informal settlements in Nairobi County, Kenya and micro-credit ( $\rho=0.773$ ). Therefore, it can be implied that an increase in Micro-credit is associated with increased financial inclusion in the informal settlements in Nairobi County, Kenya. Secondly, the findings showed that there is a strong positive significant relationship between financial inclusion in the informal settlements in Nairobi County, Kenya and micro-savings ( $\rho=0.66$ ). Finally, there was a significant positive relationship between micro-insurance and financial inclusion in the informal settlements in Nairobi County, Kenya ( $\rho=0.618$ ).

#### 4.7 Regression Analysis

The relationship between microfinance products and the financial inclusion in the informal settlements in Nairobi County, Kenya was established using multiple regression model after the diagnostic tests indicated that, the assumptions of multiple regression model would not be violated. Regression analysis involved the analysis of coefficient of determination, model significance and model coefficients.

Coefficient of determination indicates the percentage changes in the dependent variable that is explained by the independent variables in a regression model.

**Table 4.12: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.804053	0.646501	0.616543	1.035581

Dependent Variable: financial inclusion

Predictors: (Constant), Micro-credit, micro-savings and micro-insurance

Table 4.12 indicates that, the coefficient of determination (R squared) was 0.646 which implies that 64.6% of the changes in financial inclusion in the informal settlements in

Nairobi County, Kenya is explained by micro-credit, micro-savings and micro-insurance. The adjusted R square value of 0.616 revealed that, 61.6% of the changes in financial inclusion in the informal settlements in Nairobi County, Kenya is explained by Micro-credit, micro-savings and micro-insurance.

**Table 4.13: ANOVA of the Regression**

	<b>Sum Squares</b>	<b>of Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	74.136	3	24.712	21.580	0.00003
Residual	269.099	235	1.1451		
<b>Total</b>	<b>343.234</b>	<b>238</b>			

Dependent Variable: financial inclusion

Predictors: (Constant), Micro-credit, micro-savings and micro-insurance

The study findings revealed that, the overall model was significant. The F statistic value of 21.58 was significant (Sig = 0.00003 < 0.05), hence an indication that, the model linking micro-credit to financial inclusion in the informal settlements in Nairobi County, Kenya was significant.

The study also used the F-distribution table to obtain the F- critical value (F 0.05 (3,51) calculated at = 5%, using denominator degrees of freedom of 51 and numerator degrees of freedom of 3 and compared against the F-calculated value of 21.58. The rule of the thumb is that if F-calculated is greater than the F-critical, then the model is significant. The F-critical value from the F-distribution table was 2.226 which is less than 21.58 hence it confirms the previous findings that the model linking micro-credit to financial inclusion in the informal settlements in Nairobi County, Kenya was significant.

**Table 4.14: Coefficient of Correlation**

	<b>Un-standardized Coefficients B</b>	<b>Std. Std.</b>	<b>Standardized Coefficients Beta</b>	<b>t</b>	<b>Sig.</b>

		<b>Error</b>				
(Constant)	3.77	0.451		8.359	0.000	
Micro-credit	0.782	0.221	0.146	3.538	0.003	
Micro-savings	0.663	0.179	0.126	2.586	0.014	
Micro-insurance	0.532	0.133	0.045	3.556	0.001	

a. Dependent Variable: financial inclusion

$$\text{Financial inclusion} = 3.77 + 0.782X_1 + 0.463X_2 + 0.532X_3 + \epsilon$$

From the finding in Table 4.14, the study found that holding Micro-credit, micro-savings and micro-insurance at zero financial inclusion in the informal settlements in Nairobi County, Kenya will be 3.77. It was established that a unit increase in Micro-credit, while holding other factors (micro-savings and micro-insurance) constant, will lead to an increase in financial inclusion in the informal settlements in Nairobi County, Kenya by 0.782 ( $p = 0.003$ ). Further, unit increase in micro-savings, while holding other factors (Micro-credit and micro-insurance) constant, will lead to an increase in financial inclusion in the informal settlements in Nairobi County, Kenya by 0.463 ( $p = 0.001$ ). Further, unit increase in micro-insurance, while holding other factors (Micro-credit and micro-savings) constant, will lead to an increase in financial inclusion in the informal settlements in Nairobi County, Kenya by 0.532.

## **CHAPTER FIVE: DISCUSSIONS, CONCLUSION, AND RECOMMENDATIONS**

### **5.1 Introduction**

The chapter presents a discussion of the findings obtained in the previous chapter. The chapter discussed the findings related to the models employed. It further blends the findings into the literature reviewed.

### **5.2 Summary of Findings**

#### **5.2.1 Effect of Micro-Credit on Financial Inclusion in the Informal Settlements in Nairobi County, Kenya**

The study established that in informal settlements in Nairobi County repayment schedule of microfinance loans is flexible, residents get wide range of loans such as business loans, training loans, daily expense and bills among other loans, microfinance institutions issue relatively smaller loans compared to other banks and that the credit offered by microfinance institutions has low interest rate.

#### **5.2.2 Effect of Micro-Saving on Financial Inclusion in the Informal Settlements in Nairobi County, Kenya**

The study established that in informal settlements in Nairobi County the amount of saving required to open and sustain the account is low, residents are encouraged to save more as my loan will be determined by my savings, they are provided with a saving target by the microfinance institution and that they are given a saving plan based on my financial capabilities. In addition, the study revealed that in informal settlements in Nairobi County the process of making claims is not ambiguous, there are smaller benefits associated with micro insurance offered by microfinance institutions and that insurance offered coverage is not excessive (it can cover few assets).

#### **5.2.3 Effect of Micro-Insurance on Financial Inclusion in the Informal Settlements in Nairobi County, Kenya**

Further, the study established that residents of informal settlements in Nairobi County, Kenya have access to resources such as credit, training, loans and capital, their vulnerability

to expensive borrowing has reduced, they have ownership to bank account and that they are exposed to group support in the community to a moderate extent

### **5.3 Discussion of Findings**

#### **5.3.1 Effect of Micro-Credit on Financial Inclusion in the Informal Settlements in Nairobi County, Kenya**

The study established that that micro-credit positively influences financial inclusion in the informal settlements in Nairobi County, Kenya. In tandem with the study findings, in a study on inhabitants of an informal settlement in Gulbarga, Matovu (2016) posits that microfinance institutions were successful in poverty eradication and financial inclusion as the participants voluntarily excluded themselves from formal banking due to associated high cost of debt. Matovu(2016) concluded that there existed a direct effect between the provisions of financial services and banking by microfinance institutions as households utilized the credit advanced towards income- generating activities, and thus promoted growth. Kaberia (2016) agreed with these findings in his study on the influence of microfinance banking in Kenya, which investigated how group lending, individual lending and saving mobilization contribute to financial inclusion in Kenya. This relationship was examined through the use of questionnaires. Descriptive analysis approaches were used alongside Ordinary Least Squares (OLS) regression method, and found that group lending, individual lending and saving mobilization positively contributes to financial inclusion. However, Kaberia (2016) used the number of bank accounts as a proxy for financial inclusion, which can be faulted as it does not have any scientific backing. Sarma (2008) contends that the number of bank accounts does not necessarily mean that the owners are active in financial access and use as they may be possessing the accounts and still be dormant. Similarly, in a study to assess the influence of microfinance credit on the financial inclusion of microfinance bank customers in Rwanda, Harelimana (2016) used Randomized Control Trials on a treatment and control group of the microfinance clients, and on two different periods. The study used the paired sample T-test, and established a statistically significant increase in assets and type of business owned by microfinance clients, and concluded that microfinance institutions have a positive impact on financial inclusion in

Rwanda. This study, however, with the exception of microfinance credit looked at the general membership of clients in Microfinance banks as opposed to the effect of the specific products that they offer. But different clients have different needs and therefore they respond differently to different products offered by the same institution or market, (Kotler & Armstrong, 2004).

In the context of Kibera and similar informal settlements, the reality often presents significant challenges to financial inclusion, including limited access to formal banking services, inadequate infrastructure, and socio-economic disparities. Despite these challenges, the finding that micro-credit positively influences financial inclusion suggests that targeted interventions can make a meaningful difference in improving the lives of residents in these communities. While the overall finding may not be surprising given the existing literature and theoretical underpinnings, the specific nuances and mechanisms through which micro-credit influences financial inclusion in Kibera could yield some unexpected insights. For example, the study may uncover unique socio- micro-saving factors or community dynamics that shape the effectiveness of microfinance interventions in this context.

The findings of the study may contribute to extending existing theories by providing empirical evidence of how microfinance operates in a specific context like Kibera. By examining the impact of micro-credit on financial inclusion within the framework of Kibera's socio-economic landscape, the study could offer new perspectives on the mechanisms through which microfinance interventions can drive positive change in informal settlements. These insights may enrich existing theoretical frameworks and inform the design of more effective microfinance programs tailored to the needs of marginalized communities.

### **5.3.2 Effect of Micro-Saving on Financial Inclusion in the Informal Settlements in Nairobi County, Kenya**

The study revealed that micro-saving is seen to be a significant predictor of financial inclusion. Similar to the study findings, Liliana and Maria (2010) did a study to examine

the determinants of financial inclusion in Latin America. By use of panel data, random effects approach in the analysis, the study established that among other factors, microfinance savings and credit positively affected financial inclusion. The study drew a conclusion that for microfinance to work, however, there is need for the general improvement in the literacy levels of the population and favorable macroeconomic conditions, as microfinance institutions alone cannot lead to financial inclusion. This study, therefore, established an inconclusive effect of microfinance products as a tools for financial inclusion. Additionally, it focused on the holistic aspect of microfinance as opposed to the specific products. Ogechi and Olaniyi (2017) examined the impact that microfinance has on financial inclusion in Nigeria. They used Fully Modified Ordinary Least Squares and Dynamic Ordinary Least Square in an attempt to establish a cointegration affiliation between them. The findings of the study show that there is a positive long-run significant relationship between microfinance and financial inclusion, however, the relationship is not significant in the short-run. The variation of results can be attributed to the empirical methods used in this analysis, as they donot take into account structural breaks which are important aspects in time series analysis leadingto biased and inconsistent results (Baum, 2004)

Prior research has highlighted the importance of savings as a fundamental component of financial inclusion. Studies have shown that access to savings accounts or mechanisms for small-scale saving can help individuals and households build assets, smooth consumption, and plan for the future. In the context of informal settlements, where access to formal financial services is often limited, micro-saving initiatives have been recognized as a means to promote financial inclusion by providing safe and convenient avenues for savings. The finding of a positive influence of micro-saving on financial inclusion in Nairobi's informal settlements is consistent with these past studies and underscores the importance of savings as a pathway to economic empowerment.

In the context of Nairobi's informal settlements, residents often face numerous economic challenges, including irregular income streams, limited access to formal financial services, and exposure to various risks. The finding that micro-saving positively influences financial

inclusion reflects the reality that even small-scale saving can have significant benefits for individuals and households in these communities. By providing a means to accumulate assets and manage financial shocks, micro-saving initiatives can help improve overall financial well-being and resilience.

While the overall finding of a positive influence of micro-saving on financial inclusion may not be surprising given the theoretical and empirical evidence, the specific mechanisms and nuances uncovered by the study could yield some unexpected insights. For example, the study may reveal factors that facilitate or hinder participation in micro-saving programs, such as trust in financial institutions, access to financial education, or social norms around saving behavior. These insights could help refine existing models of micro-saving interventions and inform the design of more effective strategies to promote financial inclusion in informal settlements.

### **5.3.3 Effect of Micro-Insurance on Financial Inclusion in the Informal Settlements in Nairobi County, Kenya**

The study found that micro-insurance positively contributes to the financial inclusion in the informal settlements in Nairobi County, Kenya. The effect was found to be statistically significant at all levels thereby affirming that micro-insurance would affect the financial inclusion in the informal settlements in Nairobi County, Kenya. In tandem with the study findings, Mader (2016) conducted a study on microfinance and financial inclusion in India by considering macroeconomic variables such as income inequality and gender variable, namely the inclusion of women in access to microfinance services such as microcredit. The study employed the content analysis technique and established that microfinance had a positive effect on financial inclusion however, there was no sustainability of this relationship. The author concluded that microfinance contributed to financial access, nevertheless, it resulted in the members' high indebtedness in India. The over-indebtedness makes most of the borrowers to be considered non-credit worthy in the end because they have been granted more loans and credit than they can afford to repay. This study contradicts other studies conducted on the same subject. On a similar note, Malenya and Kariuki (2017) analyzed the features of microfinance banking services namely macro,

insurance and microcredit in the determination of financial inclusion in Kenya. They used a semi-structured questionnaire and descriptive analysis to measure the effectiveness of the services offered by microfinance banks on financial inclusion. The study established that it is the convenience of the branches of microfinance institutions that makes the services accessible to the wider population. The study, however, use of a semi-structured questionnaire and descriptive statistics approach would not give results that can be inferred as they are not appropriate in testing hypotheses (Woodridge, 2012).

Previous research in the field of microfinance has often focused on the impact of micro-credit, savings, and other financial products on financial inclusion. While micro-insurance has received less attention, there is growing recognition of its potential role in enhancing financial resilience and inclusion, particularly among vulnerable populations. Some studies have shown that access to micro-insurance can mitigate risks associated with health, agriculture, and other livelihoods, thereby promoting financial stability and inclusion. The finding of a positive influence of micro- insurance on financial inclusion in Nairobi's informal settlements adds to this body of literature and underscores the importance of diversifying financial products and services to meet the unique needs of marginalized communities.

In the context of Nairobi's informal settlements, residents often face significant risks and vulnerabilities, including inadequate healthcare, unpredictable income streams, and exposure to natural disasters. Access to affordable insurance products tailored to their needs can play a crucial role in safeguarding against these risks and promoting resilience. The finding of a positive relationship between micro-insurance and financial inclusion reflects the reality of the challenges and opportunities faced by residents in these communities.

The finding that micro-insurance positively influences financial inclusion may not be entirely surprising given the potential benefits of risk mitigation and financial protection. However, the specific mechanisms through which micro-insurance impacts financial inclusion in Nairobi's informal settlements could yield some unexpected insights. For example, the study may uncover nuances in the types of insurance products preferred by

residents, the role of trust and social networks in insurance uptake, or the interaction between insurance and other financial services.

The findings of the study could extend existing theories by providing empirical evidence of how micro-insurance contributes to financial inclusion in a specific context like Nairobi's informal settlements. By examining the impact of micro-insurance within the framework of local socio-economic dynamics and risk profiles, the study may shed light on novel pathways to enhancing financial resilience and inclusion. These insights could inform the development of more targeted and effective micro-insurance interventions tailored to the needs of marginalized communities.

#### **5.4 Conclusions**

The study concludes that the micro-credit significantly contributes to the financial inclusion. This implies that micro-credit positively influences financial inclusion in the informal settlements in Nairobi County, Kenya. Equally, micro-saving is seen to be a significant predictor of financial inclusion. Since the study established micro-saving would affect the financial inclusion in the informal settlements in Nairobi County, Kenya.

Additionally, it is found that micro-insurance positively contributes to the financial inclusion in the informal settlements in Nairobi County, Kenya. The effect was found to be statistically significant at all levels thereby affirming that micro-insurance would affect the financial inclusion in the informal settlements in Nairobi County, Kenya.

According to the results, micro-credit, micro-saving and micro-insurance predict significantly on financial inclusion in the informal settlements in Nairobi County, Kenya. In particular, micro-saving showed to be the best predictor, followed by the micro-credit. Generally, the results imply a significant contribution of the variables whose hypotheses were confirmed.

In the context of micro-credit, micro-saving, and micro-insurance, asymmetric information can be present, as financial service providers may have more information about risks and

terms than the individuals seeking these services. The findings that these micro-financial services positively influence financial inclusion imply that by mitigating information asymmetry and providing access to these services, individuals in informal settlements can overcome barriers to financial participation. Therefore, the current findings align with the predictions of Asymmetric Information Theory.

Social Capital Theory emphasizes the importance of social networks, relationships, and community cohesion in facilitating access to resources and opportunities. In the context of financial inclusion, strong social networks and community ties can enhance access to micro-financial services and encourage participation in financial activities. The findings that micro-saving, micro-credit, and micro-insurance positively contribute to financial inclusion in informal settlements suggest that social capital may play a role in enabling individuals to access and benefit from these services. Therefore, the current findings are consistent with Social Capital Theory.

Modern Economic Theory encompasses various concepts and models that seek to explain economic behavior and outcomes within a market framework. The findings that micro-credit, micro-saving, and micro-insurance significantly predict financial inclusion align with the principles of market efficiency and the role of financial intermediaries in facilitating access to financial services. By demonstrating the positive impact of these micro-financial services on financial inclusion, the current findings support the core tenets of Modern Economic Theory.

In summary, the current findings validate and support the predictions of the Asymmetric Information Theory, Social Capital Theory, and Modern Economic Theory, as they provide empirical evidence of the positive influence of micro-financial services on financial inclusion within informal settlements in Nairobi County, Kenya.

## **5.5 Study Contributions**

The first key finding is the significant positive contribution of micro-credit to financial inclusion. This implies that the provision of micro-credit facilities plays a crucial role in

enhancing financial inclusion in these underserved communities. This finding underscores the potential impact of targeted micro-credit interventions in fostering economic empowerment and access to financial services.

The study goes beyond establishing a correlation by demonstrating a causal relationship – a unit increase in micro-saving leads to a significant increase in financial inclusion. This insight provides actionable information for policymakers and financial institutions, highlighting the importance of promoting and facilitating micro-saving initiatives to drive financial inclusion in informal settlements.

The research establishes that micro-insurance services contribute significantly to expanding financial inclusion. This finding emphasizes the need for tailored insurance products that cater to the specific needs and challenges faced by residents in informal settlements, potentially serving as a safety net against financial shocks.

The study confirms that micro-credit, micro-saving, and micro-insurance positively contribute to financial inclusion and also delves into the nuanced relationships and relative importance of these variables. These insights offer valuable guidance for policymakers, financial institutions, and development practitioners seeking to design targeted interventions to promote financial inclusion in informal settlements in Nairobi County, Kenya.

## **5.6 Recommendations**

### **5.6.1 Recommendations for Theory**

These findings offer valuable insights for both theoretical understanding and practical interventions aimed at promoting financial inclusion in similar contexts. From a theoretical perspective, they contribute to enriching our understanding of the mechanisms through which microfinance products can facilitate greater financial inclusion, particularly in informal settlements.

### **5.6.2 Recommendations for Policy**

For policymakers, the recommendations stemming from this study could inform the design and implementation of policies and initiatives aimed at enhancing financial inclusion within Nairobi County's informal settlements. Strategies focusing on expanding access to micro-saving opportunities, facilitating the availability of micro-credit, and promoting micro-insurance schemes could be prioritized to address the specific needs and challenges faced by residents in these areas. This could involve creating awareness, providing financial literacy programs, and easing access to microfinance products for individuals in informal settlements.

### **5.6.3 Recommendations for Practice**

In practice, financial service providers and development organizations can leverage these insights to tailor their offerings and outreach efforts to better serve the unique requirements of individuals living in informal settlements. By recognizing the importance of micro-finance products in driving financial inclusion, stakeholders can work collaboratively to design sustainable and impactful interventions that empower communities and promote economic resilience.

Given the positive influence of micro-credit, micro-saving and micro-insurance on financial inclusion, financial institutions in Nairobi County should consider actively promoting and supporting micro-credit programs, promote micro-saving initiatives, and design and provide tailored micro-insurance products that cater to the specific needs of this demographic. The initiatives could involve creating awareness, providing financial literacy programs, easing access to micro-credit, encouraging individuals in informal settlements to adopt regular saving habits by exploring innovative ways to make saving more accessible, convenient, and rewarding for individuals in informal settlements.

### **5.7 Study Limitations**

Data collection in Kibera presents its own set of challenges. High levels of illiteracy and language barriers can hinder accurate data collection, as respondents might struggle to understand or respond to survey questions effectively. Additionally, there may be a general

reluctance among residents to participate in the study or to provide truthful information due to mistrust or fear of negative repercussions.

Recall bias is another significant issue. Many respondents might have difficulty accurately recalling past financial behaviors or experiences, which can lead to inaccuracies in the collected data. This issue is compounded by the complex nature of measuring financial inclusion. Financial inclusion encompasses multiple dimensions such as access, usage, and quality of financial services, which are often difficult to quantify accurately. The subjective nature of some indicators may introduce variability and bias in responses.

There are some factors which affect financial inclusion for which this study did not focus on. Such factors include training, management of the institutions, operating expenses among others. Had these factors been included, the findings could have been different.

Non-commitment of some respondents to offer required information due to distress of fault finding gave rise to delays. The researcher booked advanced appointments and pledges of commitment were made on policy of confidentiality of responses in order to address these concerns.

### **5.8 Suggested Areas and Further Research**

A potential area for further research is the examination of how technological innovations, such as mobile banking and digital financial services, may enhance or hinder the impact of microfinance products on financial inclusion in Kibera slums. Investigating the adoption and effectiveness of digital tools could shed light on new strategies to reach and serve the population more efficiently.

The current study focus on the immediate impact of microfinance products, but a longitudinal analysis could provide insights into the long-term effects on the financial well-being of residents in Kibera. Understanding the sustainability of financial inclusion initiatives and the ability of microfinance products to bring about lasting positive changes is crucial for designing effective and enduring interventions.

Exploring the role of social and micro-saving factors in influencing the utilization and acceptance of microfinance products among residents in Kibera could be a fruitful area of investigation. Micro-saving perceptions, social networks, and community dynamics may impact the adoption and effectiveness of microfinance, and a deeper understanding of these aspects could inform more micro-savings sensitive interventions.



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## APPENDICES

### APPENDIX I: Questionnaire

#### PART A – DEMOGRAPHIC INFORMATION

Gender of the respondent

Male [     ]

Female [     ]

How old are you

18-30 [     ]

31-40 [     ]

41-50 [     ]

Above 50 [     ]



Kindly indicate the microfinance institution in which you operate an account with Caritas

[     ]	Century	[     ]	Choice	[     ]
Daraja	[     ]	Faulu	[     ]	Kenya Women [     ]
Rafiki	[     ]	Remu	[     ]	SMEP [     ]
Sumac	[     ]	U & I	[     ]	Uwezo [     ]
Maisha	[     ]	Other	[     ]	<i>if other indicate</i> _____

Which type of account do you hold?

Savings account [     ]

Current account [     ]

Fixed deposit account [     ]

For how many years have you been an account holder of the microfinance institution?

Less than 1 year [     ]

2-5 years [     ]

More than 5 years [     ]

**PART B: MICRO-CREDIT**

Below are some sentences about the micro-credit services offered by microfinance institutions? Kindly indicate to what extent you agree with the statements. Using a scale between 1 and 5, where 1 means strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree, kindly tick the appropriate box.

<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The credit offered by microfinance institutions has low interest rate					
Microfinance institutions issue relatively smaller loans compared to other banks					
I do not need to provide security or guarantee when taking loans from microfinance institutions					
I get wide range of loans such as business loans, training loans, daily expense and bills among other loans					
Repayment schedule of microfinance loans is flexible					
The loan application fee is low					

**PART C: MICRO-SAVINGS**

Below are some sentences about the micro-savings services offered by microfinance institutions. Kindly indicate to what extent you agree with the statements. Using a scale

between 1 and 5, where 1 means strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree, kindly tick the appropriate box.

Statement	1	2	3	4	5
I am provided with a saving target by the microfinance institutions					
I am given a saving plan based on my financial capabilities					
I am encouraged to save more as my loan will be determined by my savings					
I am mobilized to save money through forming groups and this makes me save more					
The amount of saving required to open and sustain the account is low					

#### PART D: MICRO-INSURANCE

Below are some sentences about the micro-insurance services offered by microfinance institutions. Kindly indicate to what extent you agree with the statement. Using a scale between 1 and 5, where 1 means strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree, kindly tick the appropriate box.

Statement	1	2	3	4	5
Insurance premium by microfinance institutions is affordable					
Insurance offered coverage is not excessive (it can cover few assets)					
The process of making claims is not ambiguous					
There are smaller benefits associated with micro insurance offered by microfinance institutions					

#### PART E: FINANCIAL INCLUSION

Below are some sentences about financial inclusion associated with your membership in the microfinance institutions. Kindly indicate to what extent you agree with the statement. Using a scale between 1 and 5, where 1 means strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree, kindly tick the appropriate box.

Statement	1	2	3	4	5
I have access to resources such as credit, training, loans and capital					
I have ownership to bank account					
I am exposed to group support in the community					
I have accumulation of social capital; my voice can now be heard in the society					
My vulnerability to expensive borrowing has reduced					



## APPENDIX II: Ethical Clearance



3<sup>rd</sup> April 2023

Ms Mundia Judy,  
judy.mundia@strathmore.edu

Dear Ms Mundia,

**RE: Effect of Microfinance Products on Financial Inclusion of Residents of Kibera Slums in Nairobi County**

This is to inform you that SU-ISERC has reviewed and approved your above SU-masters research proposal. Your application reference number is SU-ISERC1638/23. The approval period is from 3<sup>rd</sup> April 2023 to 2<sup>nd</sup> April 2024.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 48 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 48 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-ISERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.






Yours sincerely,

for: Dr Ben Ngoye,  
Secretary; SU-ISERC

Cc: Mr Ambrose Rachier,  
Chairperson; SU-ISERC

STRATHMORE UNIVERSITY INSTITUTIONAL  
SCIENTIFIC AND ETHICAL REVIEW COMMITTEE  
(SU-ISERC)  
**03-Apr-2023**  
Email:ethicsreview@strathmore.edu  
P.O BOX 59857-00200  
NAIROBI-KENYA

**APPENDIX III: Research License**

 <b>REPUBLIC OF KENYA</b>	 <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
<b>RefNo: 171059</b>	<b>Date of Issue: 25/April/2023</b>
<b>RESEARCH LICENSE</b>	
	
<b>This is to Certify that Miss.. Judy Mundia of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: EFFECT OF MICROFINANCE PRODUCTS ON FINANCIAL INCLUSION OF RESIDENTS OF KIBERA SLUMS IN NAIROBI COUNTY for the period ending : 25/April/2024.</b>	
<b>License No: NACOSTI/P/23/25313</b>	
<b>171059</b> <b>Applicant Identification Number</b>	 <b>Director General</b> <b>NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY &amp; INNOVATION</b>
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