

**FINANCIAL INCLUSION AND SUSTAINABILITY OF WOMEN-OWNED
ENTERPRISES IN KIBERA INFORMAL SETTLEMENT: MODERATING ROLE OF
FINANCIAL LITERACY AND ENTREPRENEURSHIP SKILLS**

By

POLLY KARWITHA MWIRIGI

MASTER OF SCIENCE DEVELOPMENT FINANCE

KCA UNIVERSITY

2025

**FINANCIAL INCLUSION AND SUSTAINABILITY OF WOMEN-OWNED
ENTERPRISES IN KIBERA INFORMAL SETTLEMENT: MODERATING ROLE OF
FINANCIAL LITERACY AND ENTREPRENEURSHIP SKILLS**

By

POLLY KARWITHA MWIRIGI

**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE
IN DEVELOPMENT FINANCE IN THE SCHOOL OF BUSINESS AT KCA
UNIVERSITY**

OCTOBER 2025

DECLARATION

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

Student Name: Polly Karwitha Mwirigi

Reg. No: 23/07340

Sign:



Date: 10th October 2025

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

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

Sign:  Date: 13/01/2026

Prof. Christine N. Simiyu
Dissertation Supervisor

FINANCIAL INCLUSION AND SUSTAINABILITY OF WOMEN-OWNED ENTERPRISES IN KIBERA INFORMAL SETTLEMENT: MODERATING ROLE OF FINANCIAL LITERACY AND ENTREPRENEURSHIP SKILLS

ABSTRACT

This study examined the relationship between financial inclusion and the sustainability of women-owned enterprises in Kibera, Nairobi moderated by financial literacy and entrepreneurship skills. Findings indicate that entrepreneurship skills have the strongest positive impact on business sustainability while financial access, depth and quality also significantly support resilience, survival, growth and profitability. In contrast, financial usage, digital literacy and financial management skills alone showed no significant effect. Qualitative data revealed low adoption of budgeting, limited strategic planning and minimal innovation, which restrict business growth despite access to financial resources. In conclusion, sustainable women-owned enterprises in informal settlements depend not only on access to quality and comprehensive finance but on the effective application of entrepreneurial and financial competencies. Inclusive financial services enhance sustainability when combined with practical business skills and strategic practices. Financial inclusion and literacy without actionable application is insufficient for sustainability. The study recommends increasing awareness of budgeting, strategic planning, and innovation as essential business practices. Financial literacy initiatives should be integrated with entrepreneurial skill development to ensure knowledge translates into action. Policy interventions should emphasize not just access to financial services but also their quality and depth, tailored to the challenges of women entrepreneurs in marginalized urban contexts. These measures can strengthen the resilience, competitiveness and sustainability of women-led informal enterprises, supporting broader economic empowerment and inclusive development.

Keywords: *Financial Inclusion, Sustainability, Women-Owned Enterprises, Kibera informal settlement, Financial literacy, Entrepreneurial skills*

ACKNOWLEDGEMENT

My heartfelt appreciation goes to my supervisor, Prof. Christine Simiyu for your patience, encouragement and constructive feedback that greatly shaped this work. I also wish to express my sincere gratitude to Dr. Rotich for your invaluable guidance and for continually challenging me to think beyond the ordinary. I am equally grateful to my family, Jackie and Irene and friends for their support and understanding throughout this journey.

TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENT.....	v
DEDICATION.....	vii
LIST OF TABLES.....	viii
LIST OF FIGURES	x
ABBREVIATIONS AND ACRONYMS.....	xi
DEFINATION OF TERMS.....	xii
CHAPTER ONE:INTRODUCTION.....	1
1.1. Background of the Study	1
1.2. Problem Statement	11
1.3. Research objectives	14
1.4. Research Questions	15
1.5. Significance of the Study.....	16
1.6. Scope of the Study.....	17
CHAPTER TWO: REVIEW OF LITERATURE	Error! Bookmark not defined.9
2.1. Introduction	Error! Bookmark not defined.9
2.2. Theoretical Framework.....	19
2.3. Empirical Review.....	26
2.3. Conceptual Framework	37
CHAPTER THREE:RESEARCH METHODOLOGY	49
3.1. Introduction	49
3.2. Research Design.....	49
3.3. Target Population	51
3.4. Sampling Technique and Sample Size	52
3.5. Instrumentation.....	54
3.6. Pilot Study, Reliability and Validity	55
3.7. Data Analysis Plan	55
3.8. Ethical Considerations.....	58
CHAPTER 4: FINDINGS AND DISCUSSIONS.....	59
4.1. Introduction	59
4.2. Response Rate	59
4.3. Reliability Analysis	60
4.4. Demographic Information	60
4.5. Factor Analysis.....	66
4.6. Descriptive Statistics	86
4.7. Diagnostic Tests	92
4.8. Inferential Statistics	95
4.9. Discussions.....	101
CHAPTER 5:CONCLUSION AND RECCOMMENDATIONS.....	Error! Bookmark not defined.105
5.1. Introduction	105
5.2. Summary	105

5.3. Conclusion.....	108
5.4. Recommendations	110
5.5. Limitations of the Study	113
5.6. Suggestion for the Future Research.....	114
References.....	115
Appendix A: Questionnaire	151
Appendix B: Ethics Review Certificate.....	154
Appendix C: NACOSTI Licence	155
Appendix D: Raw Data	156

DEDICATION

I dedicate this work to my daughter, Ayana, for bearing with me through late nights and long days and for giving me the courage to dream again. To my friend Sachin, for the unwavering support and encouragement that lit the way, reminding me each day doubt can be a possibility. And to my younger self, for holding on, we are finally becoming.

LIST OF TABLES

Table 1: Operationalization of conceptual framework

Table 2: Estimated Population Size of Women-Owned Enterprises in Kibera

Table 3: Sample Size per Stratum

Table 4: Response rate

Table 5: Reliability Statistics

Table 6: Age of Respondents

Table 7: Level of Education of Respondents

Table 8: Years of Business Experience of Respondents

Table 9: Business Sector of Respondents

Table 10: Role of Respondents in the Business

Table 11: Legal Form of Respondents' Businesses

Table 12: Average Number of Employees in Respondents' Businesses

Table 13: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sampling Adequacy

Table 14: Communalities for Financial Access Items

Table 15: Total Variance Explained for Financial Access Items

Table 16: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Financial Usage Items

Table 17: Communalities for Financial Usage Items

Table 18: Total Variance Explained for Financial Usage Items

Table 19: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Financial Depth and Quality

Table 20: Communalities for Financial Depth and Quality Items

Table 21: Total Variance Explained for Financial Depth and Quality Items

Table 22: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Digital Literacy Items

Table 23: Communalities for Digital Literacy Items

Table 24: Total Variance Explained for Digital Literacy Items

Table 25: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Entrepreneurial Skills Items

Table 26: Communalities for Entrepreneurial Skills Items

Table 27: Total Variance Explained for Entrepreneurial Skills Items

Table 28: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Financial Management Skills Items

Table 29: Communalities for Financial Management Skills Items

Table 30: Total Variance Explained for Financial Management Skills Items
Table 31: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Business Sustainability Items
Table 32: Communalities for Business Sustainability Items
Table 33: Total Variance Explained for Business Sustainability Items
Table 34: Descriptive Statistics for Financial Access Items
Table 35: Descriptive Statistics for Financial Usage Items
Table 36: Descriptive Statistics for Financial Depth and Quality Items
Table 37: Descriptive Statistics for Digital Literacy Items
Table 38: Descriptive Statistics for Entrepreneurial Skills Items
Table 39: Descriptive Statistics for Financial Management Skills Items
Table 40: Descriptive Statistics for Business Sustainability
Table 41: Tests of Normality
Table 42: Collinearity Statistics
Table 43: Residuals Statistics
Table 44: Regression Model Summary
Table 45: ANOVA for Regression Model
Table 46: Regression Coefficients
Table 47: Regression Coefficients without Moderators
Table 48: Regression Coefficients with Financial Literacy (without Entrepreneurial Skills)
Table 49: Regression Coefficients with Entrepreneurial Skills (without Financial Literacy)

LIST OF FIGURES

Figure 1: Conceptual framework

ACRONYMS AND ABBREVIATIONS

ASCAs	Accumulating Savings and Credit Associations
EAC	East African Community
KNBS	Kenya National Bureau of Statistics
CBK	Central Bank of Kenya
CEFRI	Centre of Financial Regulation and Inclusion
FSD Kenya	Financial Sector Deepening Kenya
FMP	Financial Management Practices
GSMA	Global System for Mobile Communications Association
FSPs	Financial Services Providers
SDGs	Sustainable Development Goals
SACCOs	Savings and Credit Cooperative Organizations
NGOs	Non-Governmental Organizations
RCTs	Randomized Control Trials
RBV	Resource Based Vies
ROSCAs	Rotating Savings and Credit Associations
WEF	Women Enterprise Fund
We-Fi	Women Entrepreneurs Finance Initiative
VRIN	Valuable ,rare, inimitable and non-substitutuble

DEFINITIONS OF TERMS

Chamas. Informal rotating savings and investment groups initially structured as merry-go-round systems where members regularly contribute a fixed sum and the pooled funds are periodically given in full to one member in rotation (Adede, 2007); (FSD Kenya, 2015); (Johnson & Nino-Zarazua, 2021).

Feminization of responsibility. A condition wherein women are expected to shoulder the burden of household survival with limited structural support, resources or decision making power (Chant, 2006).

Financial inclusion. The process through which individuals and businesses gain access to and effectively utilize affordable, timely and appropriate financial products and services such as savings, credit, insurance and payment systems that are delivered in a responsible and sustainable manner (World Bank, 2025).

Inimitable resources. Firm resources that are not easily replicated by competitors due to unique historical conditions, causal ambiguity, or social complexity, thereby creating sustained competitive advantage. (Barney, 1991).

Non-substitutable resources. Resources for which no alternative of equal effectiveness exists; thus, they cannot be replaced by other strategically equivalent assets and remain a source of sustainable competitive advantage (Barney, 1991).

Rare resources. Resources not easily possessed or easily accessible to competing firms, meaning only a few competitors control it contributing to a firm's potential for sustained competitive advantage when combined with other valuable attributes (Barney, 1991).

Valuable resources. Assets that enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness therefore contributing to competitive advantage. (Barney, 1991)

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Women entrepreneurs in informal settlements face a range of structural barriers to sustainable enterprise growth, including limited access to finance, insecure tenure, market instability and sociocultural norms that restrict autonomy. These constraints often stem from entrenched gender roles, lack of collateral and exclusion from formal economic systems (Ogundana, 2020);(Mwaniki & Omagwa, 2028); (Namboya & Heyer, 2022). In contexts like Kibera, such challenges are compounded by a lack of formal infrastructure, weak legal protections and fluctuating market conditions (Mue, 2021).

Approximately 88% of women workers in Kenya operate outside the formal economy, limiting their access to institutional support, scalable credit and government-backed financial programs essential for business sustainability (Ajema, et al., 2021). Women-owned Micro, Small and Medium Enterprises (MSMEs) in informal economies often exhibit low uptake of formal credit and banking services, driven by shallow institutional linkages, limited financial readiness and restricted access to investors or lenders (Kagiri & Makau, 2023).

Financial inclusion offers a strategic avenue to counter these barriers. Empirical studies show that when financial tools are tailored to the realities of informal settlements, such as through group-based lending or mobile banking, they can enhance the sustainability and growth of women-owned businesses (Ochieng et al., 2023)

Financial inclusion through digital platforms such as M-PESA enhances the sustainability of women-owned microenterprises in informal settlements like Kibera (Thuita, 2020). Mobile money

services reduce dependence on cash, increasing safety and enabling savings among women traders (GSMA, 2022). By March 2023, M-PESA had 30 million monthly users in Kenya, facilitating credit and savings access even without collateral empowering low-income women entrepreneurs (Anoman, 2023).

Studies by Jack & Suri, (2016); GSMA, (2022) show that mobile money use led to modest but meaningful poverty reduction, with approximately 194,000 households escaping extreme poverty and female-headed households experiencing greater improvements in consumption and livelihood diversification. This access enables women to reinvest in stock or tools, expand trade and adapt more rapidly to demand shifts sustaining both daily survival and incremental growth (Warui, 2015).

Access alone does not guarantee sustainable impact however sustained usage, affordability, trust in technology and culturally appropriate design are equally critical (Balch, 2025). Financial literacy is a core enabling factor for women to translate access into business sustainability in informal settlements (Githaiga & Bula, 2024). A research in Kisii County shows that women traders who received budgeting, bookkeeping and credit-management training significantly improved sales, profits and loan handling, compared to those without training (Nyamagwa et al., 2022). A systematic review highlights that combining digital tools with community-based savings groups such as chamas enhances economic outcomes and encourages peer learning among women entrepreneurs (Sowmya & Pai, 2025).

Product design that aligns with women's fluctuating income and limited collateral such as group lending models, flexible repayment schedules and alternative credit scoring using mobile money data help unlock capital and increase real usage (Mukubi et al., 2025). Interventions that deploy trusted community intermediaries such as women agents, peer mentors and local communicators

enhance uptake and sustained use of digital financial services among women in Kibera (Balch, 2025).

1.1.1. Sustainability of women owned enterprises

Organizations such as the UNDP recognize SMEs as essential drivers of sustainable development because they generate employment, enhance productivity and are pivotal to realizing several Sustainable Development Goals (UNDP IRFF, 2024).

Sustainability has become a central focus in development studies and practice, emphasizing the long-term viability, adaptability, and resilience of enterprises operating under volatile socio-economic conditions. Economic sustainability, in this context, refers to the long-term viability of women-run enterprises through stable profitability, effective management, and resilience to financial and social pressures (Prokop & Wang, 2021). This highlights the need to provide women with key resources such as financing, training and access to networks to enhance the durability and impact of their enterprises.

For small and micro enterprises (SMEs), sustainability extends beyond mere survival to encompass the ability to maintain operations during external shocks, ensure steady income generation, adjust to market fluctuations and contribute meaningfully to inclusive and community-oriented growth. Empirical studies in Sub-Saharan Africa reveal that SME growth is frequently constrained by institutional weaknesses, corruption, and public health crises, all of which disrupt business continuity and income stability (Abdissa, 2022). Women are the sole or majority owners of less than 15% of businesses globally. The share of microenterprises with a maximum of 10 employees with women as sole proprietors ranges from 3% to 47% (Estrada, 2022). The authors note that only in Austria and the Philippines where women constitute more than 50% of sole proprietors in microenterprises.

Women-owned small and medium enterprises (SMEs) also dispose of less capital than businesses owned by men. Only 28% micro, small and medium enterprise (MSMEs) are owned by women worldwide yet they account for 32% of the total MSME sector financing gap and attract only around 7% of all venture capital funding (Estrada, 2022).

Across Western markets, including the United States and parts of Europe, women entrepreneurs often face significant challenges in securing growth capital. Coleman et al., (2019) studied policies aiming to increase women entrepreneurs' access to financial capital in Canada, Germany, Ireland, Norway and the United States. The study found that despite policy efforts, women entrepreneurs continue to face significant barriers in accessing financial resources due to systemic biases and structural challenges within investment communities.

Women-led businesses are less likely to receive funding and when they do, they often secure smaller amounts compared to their male counterparts (Doris & Kacperczyk, 2019). This disparity persists despite evidence that women-led ventures perform on par with or even outperform male-led businesses in terms of revenue, return on investment, efficiency and profitability (Kapin, 2019).

A study by Prokop & Wang, (2021) on gender disparities in equity crowdfunding within the German market shows that female-led ventures performed comparably to male-led ones in initial crowdfunding campaigns but faced major challenges in subsequent rounds. They raised less capital and attracted fewer investors. The study suggests that gender bias plays a role in investor decision-making and the perceived credibility or scalability of female-led ventures over time.

A meta-analysis by Malmstrom et al., (2023) reviewed 31 studies over 20 years and concluded that women entrepreneurs are more likely to have their business loan applications rejected and to pay higher interest rates compared to men. The analysis highlights that these disparities are influenced by societal gender norms and biases within the banking sector. Morazzoni & Sy, (2022)

found that in the United States, female entrepreneurs constitute only 35% of the entrepreneurial pool and receive less business funding than their male counterparts. In 2018, women owned enterprises received just 2.2% of total US start-up funding suggestive of an imbalance along the extensive margin of entrepreneurship. The research indicates that this funding gap is not due to differences in business performance but is instead attributed to gender-based financial frictions.

In regions like India, women-led enterprises rarely access formal credit basically due to perceptions of higher risk associated with their businesses (Singh & Pareek, 2025). Financial institutions frequently view these enterprises as less creditworthy; a bias rooted in systemic issues such as limited collateral ownership among women and the predominance of micro-scale operations in the informal sector.

According to this report, this skepticism has led to fragmented efforts and the development of financial products that inadequately address the specific needs of women entrepreneurs. A study by Kaveeswarar & Korrec, (2019) states that approximately 58% of female entrepreneurs in India rely on self-financing methods such as personal savings or inherited assets due to the higher rejection rates of loan applications from women and the lack of collateral stemming from limited property rights.

Women's entrepreneurship in Africa is widely acknowledged as a catalyst for economic growth and poverty reduction but institutional weaknesses, infrastructural gaps and socio-cultural barriers continue to undermine its long-term sustainability (Ebewo et al., 2025). However, a study by Secka et al., (2015) empirically found no systemic credit discrimination against women in Senegal but recommended tailoring policy interventions to contextual drivers such as managerial education, sector and location to avoid a one-size-fits-all approach.

World Bank (2024) reports a 12% gender gap in account ownership between women and men in sub-Saharan Africa which is approximately twice the developing world average. The gender gap is among the largest in the world coming second only to Middle East & North Africa. Limited access to finance has tangible effects on women's ability to start, sustain, and grow businesses. According to the report, a consistent finding is that women entrepreneurs face greater difficulty securing capital, whether due systemic or self-imposed barriers, which in turn constrain business expansion and sustainability and results to a sizeable financing deficit for female entrepreneurs in Africa.

AFAWA, (2025) estimates a \$42 billion financing gap for African women across business value chains which represents missed profitable opportunities for investors and economies since viable women-led ventures are not being fully funded. Women's limited access to finance results to weaker business outcomes such as slower growth, smaller loan tickets and premature closure of women owned enterprises.

A study conducted in Nigeria by Ugwuja & Nweze, (2018) showed that when women access credit, the loan sizes are smaller than their male counterparts who received nearly twice the amount. Men loan averaged 93,000 nairas vs women 57,000 nairas locking women out of larger, long term and impactful projects and investments (Nwonye, 2024).

The informal economy is the primary source of employment for women in Sub-Saharan Africa. Approximately 84% of women in the region are engaged in informal employment compared to 63% of men (ILO, 2018). This pattern is evident in Kenya, where the informal sector provides livelihoods for about 15 million people and absorbs up to 88% of women workers (ICRW, 2022). Women often engage in entrepreneurship out of necessity by establishing micro-enterprises like food vending, tailoring, and small-scale retail in urban informal settlements such as Kibera. These

businesses are typically unregistered and operate without formal protections, rendering them vulnerable to economic shocks and limiting their growth potential (Koech & Namusonge, 2015). To underscore the vulnerability of women-owned enterprises in informal settlements to external shocks such as pandemics, Lunyiru, (2022) conducted a research on the impact of Covid-19 on Kenyan MSMEs and discovered that 63% of women-led micro and small enterprises in Kenya closed temporarily during the pandemic, with many remaining closed for over a year. He identified access to affordable credit, inadequate entrepreneurial skills, limited digital skills and liquidity constraints as among the challenges hindering sustainability of women owned enterprises. The study concluded that to enhance the sustainability of women-owned microenterprises in Kenya's urban informal settlements, it is crucial to address these multifaceted challenges.

In today's world, the poorest and most vulnerable populations which consists of majorly women, are being hit hardest by a combination of ongoing global crises. Challenges such as the lingering effects of COVID-19 to inflation, climate instability and regional conflicts worsens inequality and deepens poverty. The World Bank estimates that by 2030, around 7% of the world's population will still be living in extreme poverty. The World Economic Forum states that progress on closing the gender gap has slowed so much that it could now take more than 135 years up from 99 years to achieve equality.

According to UNCTAD (2024), African countries facing these challenges also struggle with growing debt with sizeable number of nations seeing their public debt to GDP ratios above 60%. In light of this, financial inclusion has become even more essential and without reliable access to savings, credit, or insurance, many people especially those running small businesses or living on low incomes will be unable to cope with economic shocks or invest in their futures (Sirtain, 2023).

Financial services help build resilience and without them, opportunities for growth, recovery and equality remain out of reach.

Within this framework, women-owned enterprises operating in informal urban settlements, face distinct sustainability challenges. Their ability to remain viable depends on resilience against financial shocks, adaptability to resource constraints and capacity to thrive despite weak institutional and social support systems. Recent global and African studies indicate that women entrepreneurs are vulnerable to external disruptions. Nearly half report having sufficient financial reserves to sustain operations for only three to six months following an economic shock, revealing a fragile financial foundation (CARE, 2025).

In informal economies, women entrepreneurs must further contend with institutional voids, regulatory ambiguities and gendered norms that limit business scalability and formalization (Ejaz et al., 2023). Evidence from Ghana and other African economies highlights how women navigate these constraints by adopting adaptive strategies to enhance business resilience (Appiah G. et al., 2025).

Women entrepreneurs often balance enterprise operations with extensive household and caregiving roles. Their business decisions on reinvestment, risk-taking and resource allocation are therefore closely intertwined with household welfare outcomes. Studies have shown that the performance and sustainability of women's enterprises directly influence household income, food security and educational opportunities for children (Muhammad et al., 2021). Strengthening the sustainability of women-owned enterprises has transformative implications for inclusive and equitable development by enhancing household resilience, reducing gender disparities and fostering community stability.

1.1.2. Financial inclusion and its constructs

Financial inclusion is defined as the process through which individuals and businesses gain access to and effectively utilize affordable, timely and appropriate financial products and services such as savings, credit, insurance and payment systems that are delivered in a responsible and sustainable manner (World Bank, 2025).

Financial inclusion has emerged as a key enabler of sustainable development by ensuring that individuals and businesses can access and effectively use a broad range of affordable and appropriate financial services. Financial inclusion is a catalyst for poverty alleviation, women's empowerment and inclusive economic growth by facilitating credit access, savings, insurance and payment systems (Demirgüç-Kunt et al., 2018; Allen et al., 2020). In Sub-Saharan Africa, where significant populations remain unbanked or underbanked, financial inclusion is crucial for small-scale entrepreneurs, who often face constrained access to formal financial institutions (Ozili, 2020).

KNBS et al., (2024) evaluates financial inclusion across the following four dimensions which provide insights into the financial behaviors and needs of the population that is access, usage, quality and impact. Access is the foundation of financial inclusion and refers to how physically and economically available financial services are such as proximity to ATMs and formal financial institutions (FSD Kenya, 2023). Usage denotes the extent and frequency of service utilization, depth reflects the degree of financial integration and product diversity and service quality captures the reliability, suitability, and responsiveness of financial institutions (Ozili, 2020; Park & Mercado, 2018).

While some frameworks include impact as an additional dimension, this study focuses on the four core constructs as direct drivers of enterprise sustainability.

Digital and mobile financial innovations have expanded the reach of financial services, reduced costs and increased convenience for underserved populations (World Bank, 2021). However, gender and income disparities persist, in Sub-Saharan Africa, where women in informal sectors remain disproportionately excluded from formal financial systems (Ozili, 2020).

1.1.3. Financial inclusion and sustainability of women owned enterprises

The Central Bank of Kenya notes that women entrepreneurs in this environment often operate outside formal financial systems such as basic tools and informal savings groups raising questions on the long-term sustainability of these business due to the limited engagement in credit or insurance products (FSD Kenya, 2022).

The relationship between financial inclusion and enterprise sustainability is increasingly recognized in empirical literature. Access to financial services enhances capital availability, supports business expansion, and mitigates vulnerability to income shocks which are key elements of enterprise longevity (Beck et al., 2019). Usage and depth of financial services enable entrepreneurs to diversify operations, manage risks and improve competitiveness. Service quality strengthens sustainability by fostering trust, efficient transactions and tailored financial products (Demirgüç-Kunt et al., 2018).

However, this relationship is influenced by contextual and individual factors such as financial literacy and entrepreneurial skills. Financial literacy improves women entrepreneurs' ability to evaluate credit options, manage cash flow and make informed financial decisions (Lusardi & Mitchell, 2014). Entrepreneurship skills enhance innovation, adaptability and strategic management, which are vital for long-term business sustainability (Neneh, 2019).

But despite these theoretical linkages, the connection between financial inclusion and the sustainability of women-owned enterprises remains underexplored in informal urban contexts,

where institutional voids, informal lending systems, and socio-cultural barriers constrain financial access (Kedir et al., 2022).

1.1.4. Kibera informal settlement

Kibera, located in Nairobi County, is one of Africa's largest informal settlements, spanning approximately 2.5 square kilometers and housing about 185,777 residents (KNBS, 2019). Despite limited infrastructure Kibera sustains a vibrant informal economy driven largely by micro and small enterprises. Over 60% of Nairobi's population resides in similar settlements occupying less than 6% of the city's land (KIPPRA, 2024).

The socio-economic landscape of Kibera is characterized by high poverty rates, weak regulatory systems and exclusion from mainstream financial institutions (Mutisya & Yarime, 2014; Gulyani et al., 2018). Women entrepreneurs face intersecting financial and social barriers that hinder access to formal credit and savings platforms despite their businesses being the backbone of household income and community resilience.

Kibera's unique combination of financial exclusion, entrepreneurial activity and social vulnerability made it an ideal setting to examine how financial inclusion through its key constructs affects the sustainability of women-owned enterprises. Insights from this study will inform policies and interventions aimed at strengthening inclusive finance and enterprise development in other marginalized urban settings across Sub-Saharan Africa.

1.2. Problem Statement

Micro, Small, and Medium Enterprises (MSMEs) are widely recognized as the backbone of Kenya's economy contributing approximately 33% to GDP and employing over 14.9 million people in the informal sector ([KNBS, 2019). Despite their economic significance, MSMEs exhibit high fragility with nearly 46% collapsing within their first year and only 10% surviving beyond

five years (KNBS, 2019). This instability undermines inclusive economic growth and hinders progress toward sustainable development goals including poverty reduction (SDG 1), gender equality (SDG 5) and decent work and economic growth (SDG 8).

The challenges are acute for women-owned enterprises especially in urban informal settlements such as Kibera. These businesses are predominantly micro in scale, undercapitalized and vulnerable to shocks operating amid insecure trading spaces, weak infrastructure and limited asset ownership. Women entrepreneurs simultaneously manage households and enterprises, which compounds time and resource constraints (Njagi et al., 2019). Gender disparities exacerbate these vulnerabilities because women often have lower education levels, weaker business networks and reduced managerial capacity due to caregiving responsibilities, all of which constrain enterprise growth and sustainability (Githaiga & Bula, 2023).

A key underlying factor is the incomplete nature of financial inclusion. While Kenya has achieved global recognition for mobile money innovations like M-Pesa, access alone does not guarantee enterprise growth. Many women in informal settlements remain excluded from essential services including affordable credit, micro-insurance, and financial training (Kagiri & Makau, 2023). Without these services, women struggle to manage operational risks, stabilize cash flows or reinvest for growth. Demirgüç-Kunt et al. (2018) emphasize that financial inclusion must encompass access, usage, quality and depth in order to produce meaningful economic empowerment.

Financial literacy and entrepreneurship skills are critical moderating factors that determine the effectiveness of financial inclusion. Low financial literacy impairs budgeting, financial planning and informed decision-making therefore limiting the uptake and effective use of formal financial

products (Githaiga & Bula, 2024). Evidence indicates that women borrowers lacking financial knowledge may misuse credit leading to over-indebtedness rather than growth (Xu et al., 2021).

A major barrier to the sustainability of women-owned enterprises in urban informal settlements is the limited entrepreneurial skills possessed by the owners (Alibhai et al., 2019). Studies show that women entrepreneurs often lack critical competencies such as strategic planning, risk-taking, opportunity recognition, marketing, networking and technical managerial skills. A survey of women-owned micro and small enterprises in Kisii County found that entrepreneurial leadership, risk taking, business planning and opportunity recognition each had significant positive relationships with enterprise performance (Farery & Nyang'au, 2024).

Another study of women entrepreneurs at Kenyatta Market in Nairobi revealed that entrepreneurial skills together with financial management, technical, networking and marketing skills must be taken into account for women-owned businesses to achieve growth (Nkirote, 2019). Without these skills, access to financial products or networks does not automatically translate into sustainable enterprise outcomes.

Entrepreneurial skills enable women to identify market opportunities, adapt to shifting consumer demands, innovate products or services and marshal business resources effectively, factors that underpin long-term survival and growth of enterprises in informal contexts. Understanding how these skills interact with financial inclusion is therefore essential for explaining enterprise outcomes in settings like Kibera.

Policy and empirical gaps further exacerbate the problem. National FinAccess surveys have primarily focused on access and usage neglecting service quality, depth and user empowerment which are crucial for sustainable enterprise development (Cenfri, 2017). Most studies rely on rural or national-level samples, providing limited insights into the experiences of women entrepreneurs

in urban informal settlements (Barajas et al., 2020). The unique conditions of Kibera, characterized by economic informality, high competition and limited social protection remain underexplored, despite the disproportionate risks faced by women-led businesses.

Theoretical gaps also persist. Many studies conceptualize financial inclusion as a standalone variable without considering human capital, institutional constraints or socio-cultural realities (Barajas et al., 2020). As a result, there is limited understanding of the multidimensional mechanisms through which financial inclusion, moderated by financial literacy and entrepreneurship skills influences the sustainability of women-owned enterprises in urban informal settlements.

This study aims to address the limited understanding of how multidimensional financial inclusion interacts with women's financial literacy and entrepreneurship skills to affect the sustainability of women-owned enterprises in informal urban settlements like Kibera. By generating context-specific evidence, the study aims to inform inclusive finance policies and interventions that not only broaden access but also enhance the resilience and long-term viability of women-led microenterprises.

1.3. Research objectives

1.3.1. General objectives

The primary objective of this study is to analyze the influence of financial inclusion on the sustainability of women-owned enterprises moderated by financial literacy and entrepreneurial skills in informal settlements of Nairobi County with a focus on Kibera.

1.3.2. Specific objectives

1. To examine the effect of accessibility of financial services on the sustainability of women-owned enterprises in Kibera.

2. To assess the influence of usage patterns of financial services on the sustainability of women-owned enterprises in Kibera.
3. To determine the effect of financial services depth on the sustainability of women-owned enterprises in Kibera.
4. To evaluate the effect of quality of financial services on the sustainability of women-owned enterprises in Kibera.
5. To determine the moderating effects of financial literacy and entrepreneurial skills in the relationship between financial inclusion and sustainability of women-owned enterprises in Kibera, Kenya.

1.4. Research Questions

1. To what extent are women-owned enterprises in Kibera financially included across the dimensions of access, usage, depth, quality and welfare?
2. To what extent are women-owned enterprises in Kibera sustainable as indicated by their survival rate, profitability, growth, expansion, employment generation and resilience to economic shocks?
3. How do contextual and conditional factors mediate the relationship between financial inclusion and the sustainability of women-owned enterprises in Kibera?
4. What is the relationship between financial inclusion and the sustainability of women-owned enterprises in Kibera and which dimension of financial inclusion most strongly influences the viability and growth of these enterprises?
5. How do women entrepreneurs in the informal settlement of Kibera perceive the barriers to and enablers of accessing and using financial services?

1.5. Significance of the Study

This study will carry important academic, policy and practical implications for women entrepreneurs, policymakers and financial service providers at international, regional and local levels. By focusing on Kibera, one of the largest informal settlements in Africa, it provides a unique setting to examine how financial inclusion influences the sustainability of women-owned enterprises in marginalized urban contexts. The findings will aim to extend global discourse on inclusive finance and women's entrepreneurship, offering insights that refine theoretical frameworks on enterprise resilience in informal economies.

The study will also contribute directly to the achievement of key Sustainable Development Goals (SDGs), particularly SDG 1 (No Poverty), SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities). In doing so, it will emphasize the role of inclusive financial systems in advancing women's economic empowerment and equitable development outcomes.

The research will aim to offer evidence-based insights to guide Kenya's financial inclusion agenda and support the East African Community Financial Sector Development Strategy. If access to credit, savings, and insurance is shown to enhance business longevity, policymakers can design interventions that incentivize financial institutions to tailor products for women entrepreneurs in the informal sector. Such adjustments would improve both accessibility and usability of financial services.

The study will aim to provide practical benefits for women entrepreneurs in Kibera by highlighting the financial and non-financial factors that drive enterprise sustainability. Integrating moderating variables such as financial literacy and entrepreneurship skills is crucial because prior studies show that even when women access financial services, limited financial knowledge and

business management capacity constrain their ability to translate access into sustainable growth (Lusardi & Mitchell, 2014; Bongomin et al., 2017). By identifying how these moderating factors influence outcomes, the study can inform the design of training and mentorship programs that strengthen record-keeping, planning and reinvestment practices.

Finally, the research will aim to contribute to advocacy efforts by generating empirical evidence on the specific barriers women face in urban informal settlements. This evidence can empower civil society, NGOs and development agencies to push for policies and programs that expand affordable financial services while building women's financial capabilities and entrepreneurial skills. Through this dual focus on access and capacity, the study aims to strengthen the case for a multidimensional approach to financial inclusion that enhances the resilience and sustainability of women-owned enterprises.

1.6. Scope of the Study

This study will focus on examining the relationship between financial inclusion and the sustainability of women-owned enterprises within the Kibera informal settlement in Nairobi, Kenya. It specifically targets women entrepreneurs operating small and micro-enterprises across different sectors such as retail, services, tailoring and food vending. It excludes male entrepreneurs within Kibera. It will assess financial inclusion by analyzing dimensions such as access to financial services, usage patterns, depth of services, service quality and the overall impact on well-being. Sustainability of enterprises is measured through indicators such as business longevity, profitability, revenue growth and resilience to financial setbacks.

The study will investigate the mediating role of financial management practices in the relationship between financial inclusion and business sustainability. The study will not address other influences such as social capital or market dynamics. This focused scope will allow for a

manageable study design and a deeper understanding of the financial inclusion-sustainability link within the selected population.

Geographically, the study will be deliberately delimited to Kibera and will not extend to other informal settlements or rural areas to maintain focus on a unique and high-need population. Data collection will involve women entrepreneurs aged 18 years and above who have been operating their businesses for at least one year to ensure the sustainability measures are meaningful. The study period covers primary data collected between September 2025 and October 2025 and references secondary sources published within the last ten years (2015–2025). The findings are intended to provide insights specific to the Kibera context and may inform policy and practice regarding financial inclusion initiatives for women entrepreneurs in informal urban settlements.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on the relationship between financial inclusion and the sustainability of women-owned enterprises in informal settlements, moderated by entrepreneurial skills. It covers four sections: theoretical review, empirical review, conceptual framework, and operationalization. The theoretical review outlines key theories explaining how financial systems and entrepreneurial capabilities influence enterprise outcomes. The empirical review examines prior studies on financial inclusion and sustainability gaps. The conceptual framework presents the hypothesized relationships among variables, while the operationalization section defines measurable indicators. Together, these sections establish the analytical foundation for understanding how financial inclusion and entrepreneurial skills shape sustainable women-led enterprises.

2.2 Theoretical Review

Theoretical frameworks provide explanatory lenses that help anchor empirical research within established scholarly traditions. For this study, theory is essential to linking micro-level experiences with macro-level structures. The selection of theories is guided by three criteria; relevance to the specific research objectives, explanatory power in relation to financial inclusion, sustained engagement and entrepreneurial outcomes; and empirical grounding in similar contexts, especially within sub-Saharan Africa. Accordingly, four theories were identified, each mapped to a specific research objective. Financial Intermediary theory for objective 1, institutional theory for

objective 2, social capital theory for objective 3, and the resource-based view (RBV) for objective 4.

2.2.1 Financial intermediation theory (FIT)

The roots of Financial Intermediation Theory lie in early work by Gurley and Shaw (1960), who argued that financial intermediaries such as banks, microfinance institutions and savings groups arise because direct markets cannot efficiently match savers and borrowers. As research progressed, the theory came to emphasize how intermediaries reduce transaction costs, mitigate information asymmetries and manage risk (Turner & Nam, 2019). In recent years, FIT has been extended to incorporate how intermediation supports inclusive growth, particularly through microfinance and digital finance platforms. Recent work shows that efficient intermediation enhances fund allocation and supports economic growth through improved information gathering, governance and risk management by intermediaries (Adebayo, 2023). FIT has therefore transitioned from a purely macroeconomic banking-theory framework to one that includes financial inclusion, digital intermediaries and underserved populations.

According to FIT, intermediaries act as the conduit through which formally excluded groups gain access to savings, loans, payments and insurance facilitating financial inclusion (Ozili, 2025). In the context of women-owned enterprises in informal settlements like those in Kibera, FIT suggests that access to finance alone is insufficient; instead, the quality of intermediation, that is, product design, outreach and risk assessment matters. Empirical evidence from Sub-Saharan Africa shows that women entrepreneurs face structural obstacles which include but not limited to collateral requirements and discriminatory lending and which intermediaries must overcome to support inclusion (Irene et al., 2025). When intermediaries provide services that improve access,

depth and quality of financial inclusion, they help translate capital-flow into enterprise resilience, growth and profitability.

Financial Intermediary Theory also implies that the effectiveness of financial inclusion is conditioned by the recipients' capabilities, that is, financial literacy and entrepreneurial skills. Even if intermediaries channel funds successfully, women entrepreneurs lacking financial literacy may mis-manage resources and those without entrepreneurial skills may fail to innovate or plan strategically. Studies in Kenya show that financial literacy enhances business sustainability among women-owned microenterprises (Gichuru, 2025) and business training enhances loan repayment (Oluoch & Onono-Okello, 2025). Therefore, financial literacy and entrepreneurial skills function as moderators.

This theory provides the theoretical anchor for how financial inclusion supports women-owned enterprises. Financial intermediaries facilitate inclusion. But for those enterprises to be sustainable they must also utilize the services effectively and exploit business opportunities. Therefore, the theory helps to explain the moderating role of financial literacy and entrepreneurial skills as the missing link between financial inclusion and enterprise sustainability.

2.2.2 Institutional theory

Institutional Theory provides a powerful lens for understanding the adoption and use of financial services in contexts where formal and informal rules intersect to shape economic behavior. North (1990) defines institutions as the rules of the game, encompassing both formal structures such as legal systems, policies and financial regulations and informal norms such as traditions, gender roles and cultural expectations. Institutions create stability and reduce uncertainty but they can also constrain behavior when they are weak, exclusionary or biased.

Scott (2001) further refines this perspective by outlining three institutional pillars, that is, regulative, normative and cognitive that influence organizational and individual decision-making. Together, these insights highlight that adoption of financial services is not solely an individual choice but is deeply embedded in institutional contexts.

Institutional theory has been widely applied in studies of financial markets and development. DiMaggio and Powell, (1983) emphasized how organizations conform to institutional pressures through isomorphism, which helps explain why financial institutions often replicate existing exclusionary practices even when inclusive alternatives exist. Helmke and Levitsky, (2004) distinguished between formal and informal institutions noting that in developing countries, informal rules often substitute for or undermine formal regulations.

In the financial inclusion literature, these perspectives explain why institutional voids such as weak legal enforcement or inadequate consumer protection, discourage marginalized populations from adopting formal services (Khanna & Palepu, 2010). Empirical studies in sub-Saharan Africa where property rights are insecure, contract enforcement weak and restrictive gender norms reinforce that women are less likely to adopt formal credit or digital financial tools (Beck, Senbet, & Simbanegavi, 2015).

In Kenya's informal settlements, the interplay of institutions is especially evident. Formal institutions such as the Central Bank of Kenya's regulations on mobile money and financial consumer protection frameworks shape the availability and trustworthiness of services. Yet informal institutions, gendered household decision-making patterns, cultural skepticism toward digital transactions and community norms around debt often mediate whether women adopt these services in practice (Hoff & Stiglitz, 2016; Gikonyo & Mutinda, 2020).

For example, while M-Pesa and agency banking are physically accessible in Kibera and other settlements, studies have found that women may hesitate to adopt such services if they lack spousal approval, fear social sanctions or perceive legal protections as inadequate (Mbiti & Weil, 2016; Johnson, 2017). These findings demonstrate that adoption decisions are as much about legitimacy and normative acceptance as about cost or usability.

Institutional Theory therefore aligns directly with objective 2 of this study which seeks to explain the adoption and use of financial services by women in Nairobi's informal settlements. However, one limitation of the theory is that it tends to emphasize macro-level structures, sometimes underplaying individual agency and micro-level trust dynamics. This study therefore uses Institutional Theory in combination with other lenses to ensure a more holistic understanding of both structural and relational determinants of financial service adoption.

2.2.3 Social capital theory

Social Capital Theory emphasizes the value of resources embedded within networks of social relations, trust and norms of reciprocity that enable cooperation and collective action (Bourdieu, 1986; Coleman, 1988; Putnam, 1993). Unlike economic theories that treat decision-making as purely individualistic, Social Capital Theory highlights how social structures influence economic behavior. Building on Woolcock's (1998) framework, social capital is often divided into three dimensions, that is, bonding, bridging and linking.

Bonding capital reflects strong ties within homogenous groups, fostering solidarity and mutual enforcement of norms. Bridging capital refers to horizontal connections across diverse groups which expand access to new information and opportunities and linking capital captures vertical ties to institutions or actors with greater power and resources. Together, these dimensions provide

a framework for analyzing how women in informal settlements sustain long-term engagement with financial services.

Within the financial inclusion literature, social capital has been shown to play a critical role in sustaining participation in both formal and informal systems. In South Asia, microfinance programs such as the Grameen Bank have leveraged bonding social capital through group lending mechanisms that substitute social pressure for collateral, thereby ensuring repayment (Armendáriz & Morduch, 2010).

In West Africa, rotating savings and credit associations thrive on trust and reciprocity with reputational accountability ensuring compliance even in the absence of formal enforcement (Bouman, 1995). These findings underscore that sustained engagement in financial services often depends less on contractual arrangements and more on social obligations and trust.

In Kenya's informal settlements, social capital is central to the persistence of savings and credit practices. Women frequently participate in *chamas* and rotating savings and credit associations, where bonding ties reinforce contributions through social sanctions and shared identity (Johnson, 2017). Bridging capital enables women to exchange knowledge about financial products and digital tools enhancing confidence in adoption and continued use.

Linking capital such as relationships with microfinance institutions, mobile money agents and NGOs, expands access to services beyond the community (FSD Kenya, 2022). Evidence shows that women embedded in strong networks are more likely to maintain savings accounts and continue borrowing, even when formal financial products are available but underutilized (Mbiti & Weil, 2016). These dynamics suggest that trust and collective enforcement rather than individual utility alone, underpin sustained financial engagement.

Social Capital Theory is not without limitations. Scholars caution that bonding capital, while supportive, can also reinforce exclusion and dependency when group norms privilege male decision-makers or stigmatize women who seek autonomy (Cleaver, 2005). Reliance on informal networks may limit scaling, as access to larger, more transformative forms of finance often requires bridging and linking capital to formal institutions (Portes, 1998).

Despite these caveats, Social Capital Theory remains appropriate for objective 3 of this study because it explains how women's continued use of financial services in Nairobi's informal settlements is sustained through networks of trust, reciprocity and institutional linkages. It complements economic perspectives by shifting attention from individual satisfaction to the relational and community-based dynamics that determine whether financial engagement endures over time.

2.2.4 Resource based view (RBV) theory

The Resource-Based View (RBV), introduced by Wernerfelt (1984) and refined by Barney (1991), is a foundational theory in strategic management and entrepreneurship. It argues that firms achieve and sustain competitive advantage through internal resources and capabilities that are valuable, rare, inimitable, and non-substitutable (VRIN). By shifting attention from external market forces to firm-specific assets, RBV emphasizes how strategically configured resources drive long-term performance.

Over time, RBV has evolved from a static model to a dynamic framework recognizing the development, integration, and renewal of resources (Peteraf, 1993). This perspective is relevant to MSMEs where intangible resources such as knowledge, finance and networks underpin business sustainability and growth (Grant, 2001). Boudreaux et al., (2021) found that social capital in small informal Zambian businesses enhanced productivity by facilitating financing and customer

relationships, mechanisms that women entrepreneurs in informal settlements similarly rely on. Access to financial services, that is, credit, savings, insurance, mobile money and financial literacy constitutes a strategic bundle of resources that often meet VRIN criteria in low-income environments (Adam et al., 2022).

When deployed effectively, these resources strengthen resilience, profitability and growth. Affordable credit and digital banking, for example, enable enterprises to invest in inventory, diversify income streams and adapt to volatility (Fatoki, 2011; Choi et al., 2020). Evidence from Sub-Saharan Africa shows that financial inclusion allows micro-entrepreneurs, especially women, to stabilize earnings, reinvest and plan for long-term growth (Demirgüç-Kunt et al., 2022). RBV also underscores resilience as an outcome of adaptive resource deployment. Women-owned businesses in informal settlements that can draw on savings, restructure debt or access emergency credit during downturns are more likely to withstand shocks and recover quickly (Njeru & Njiru, 2020).

Variations in outcomes reflect resource heterogeneity Entrepreneurs with deeper, higher-quality financial engagement achieve stronger growth and sustainability than those with limited use of available services (Arbelo et al., 2024). Financial literacy enhances this effect by enabling women to deploy credit strategically, turning inclusion into a competitive advantage (Adam et al., 2022).

2.3 Empirical Review

2.3.1 Access to financial services

Access to financial services, defined as the ease of obtaining financial products, is widely recognized as a driver of small enterprise sustainability among women in low-income informal settlements (Demirgüç-Kunt et al., 2022). By 2021, 79% of Kenyan adults had an account with a financial institution or mobile money provider, reflecting significant progress in financial inclusion

(World Bank, 2022). However, gender disparities remain with 25% women less likely than men to own an account (Demirgüç-Kunt et al., 2022). The poorest women are the most excluded with only 12.7% of adults in the lowest wealth quintile financially included compared to 76.4% in the highest (FSD Kenya, 2021). Exclusion has tangible effects. Women-led businesses without access to finance often struggle to grow or remain viable (World Bank, 2024).

Evidence from Kibera underscores this link. Kang’ethe and Njeru, (2024) surveyed 362 small-business owners and found that financial accessibility, credit availability, usage and quality accounted for approximately 65% of the variance in enterprise growth. Expanding access to affordable credit and quality financial products was shown to boost enterprise performance and resilience.

Despite this progress, barriers persist. Thurania and Ondieki-Mwaura, (2019) reported that informational gaps, socio-cultural norms and household responsibilities hinder women’s access to Kenya’s Women Enterprise Fund (WEF). Factors such as education, income and marital status influenced loan uptake. Klapper and Lusardi, (2020) emphasize that limited financial knowledge and gender roles reduce women’s ability to access and effectively use credit. Addressing informational and cultural barriers remains critical to ensuring that financial access translates into business performance (CGAP, 2021).

Empirical evidence across Sub-Saharan Africa shows that access to credit enhances women-owned enterprise growth though constraints persist. Dzisi and Obeng, (2021) found that microfinance positively influenced business expansion and well-being in Ghana while Beck et al. (2018) highlighted the role of mobile money in improving entrepreneurial outcomes. In Kenya, IDinsight, (2023) reported that 65% of WEF beneficiaries experienced business growth after receiving loans with complementary entrepreneurship training leading to stronger outcomes than

credit alone. These findings highlight that financial literacy and business skills moderate the effectiveness of financial services in driving enterprise sustainability.

Studies of Kenyan microfinance institutions (MFIs) also emphasize the dual importance of credit and capacity building. Amran and Mwasiagi, (2019) found that while savings and credit services improved business outcomes. Women who regularly saved, often through group-based models, tended to reinvest and expand their enterprises (Karlan et al., 2017; Ksoll et al., 2016). In Busia County, Lusweti and Mwasiagi, (2020) showed that financial literacy training significantly improved enterprise performance, confirming that knowledge and entrepreneurial skills strengthen the benefits of financial access.

Affordability of loan products also matters. Musah, (2025) demonstrated that while larger loan sizes enhance growth, high interest rates offset these gains. Ochieng et al., (2023) found that flexible repayment terms increased financial service uptake among low-income women, emphasizing that financial inclusion is not just about service availability but also product design tailored to women's needs.

Digital financial services have expanded opportunities for women entrepreneurs in informal settlements. Suri and Jack, (2016) linked Kenya's M-Pesa revolution to poverty reduction and women's economic empowerment while Suri and Walker, (2022) showed that mobile money access shifted 185,000 women into entrepreneurship. Koomson et al. (2022), found that mobile money users in East Africa were 24.4% points more likely to engage in entrepreneurial activity, with women benefitting most. Innovations such as M-KOPA provide pay-as-you-go digital credit bypassing traditional collateral requirements and enabling women to expand businesses through smartphone-based services (Holmes, 2024).

Not all evidence is uniformly positive. Kim, (2022) notes, many women still access financial services only in small amounts, limiting transformative outcomes. Banerjee et al., (2015) and Meager, (2019) found modest or negligible impacts of microcredit on household consumption and empowerment. Structural barriers, including domestic responsibilities and mobility constraints often blunt the effects of credit (Pereznieto et al., 2016). When loan terms are unfavorable, debt burdens can harm enterprises (Amran & Mwasiagi, 2019). Some women therefore prefer informal savings groups which, while flexible, cannot finance larger expansions (Panetta, 2018).

The reviewed evidence supports the operationalization of financial access through indicators such as availability of credit, affordability of loan products, collateral requirements, documentation processes and information access. Studies highlighting the role of loan affordability (Musah, 2025; Ochieng et al., 2023), socio-cultural and informational barriers (Thuranira & Ondieki-Mwaura, 2019) and digital innovations (Suri & Jack, 2016; Koomson et al., 2022) directly justify the inclusion of these measures. Therefore, the literature confirms that women's enterprise sustainability in informal settlements is significantly shaped by both the structural availability and the affordability of financial products.

2.3.2 Usage of financial services

Usage of financial services extends beyond account ownership to include the frequency and consistency of deposits, withdrawals, credit uptake and digital payments, which signal meaningful participation in the financial system (Demirgüç-Kunt et al., 2018). Sustained use of financial services is critical for developmental benefits for small and informal enterprises (World Bank, 2022). Meaningful usage enhances enterprise resilience, financial health and long-term sustainability (Yap et al., 2022), reflected in revenue growth, profitability, business longevity, and

resilience to shocks (Rahdari & Rostamy, 2015). In low-income contexts, use of credit, savings, insurance and digital tools directly influences growth, profitability and resilience (IMF, 2024).

Empirical studies highlight both the benefits and limitations of microcredit. In Kenya, microcredit improved women's business expansion and living standards, though excessive borrowing heightened vulnerability to debt stress (Wafula & Omolo, 2019). Luswetii and Mwasiiji, (2020) found that microfinance services positively affected profitability and expansion. Holloway et al., (2017) observed that women commonly used loans to bulk-purchase raw materials and diversify offerings. However, Banerjee et al. (2015) and Demirgüç-Kunt et al. (2017) cautioned that while microcredit facilitates modest investment and survival during shocks, its transformative effects on profit and welfare are limited. Credit effectiveness is shaped by financial literacy and entrepreneurial skills, which determine whether funds are productively invested or diverted to household needs (Klapper & Lusardi, 2020; Sangwan, 2025). Flexible repayment structures also enhance sustainability by aligning with business cash flows (Okello et al., 2025).

Savings remain central to enterprise sustainability, providing both growth capital and buffers against downturns. Women using savings whether formal or informal, are more likely to sustain businesses aftershocks (CARE, 2025). Formal savings accounts have been linked to higher business investments and household expenditures (Dupas & Robinson, 2013; Kim, 2022), but barriers such as documentation, fees and distance exclude many women in informal settlements. Informal mechanisms like *chamas* and rotating savings and credit associations remain prevalent, fostering pooled capital and flexible borrowing, which are well-suited to communal norms and small-scale enterprises (Muia et al., 2018; Appiah et al., 2025). Savings discipline underpins reinvestment and resilience (Karlan et al., 2017; CARE, 2025).

Mobile money has transformed financial inclusion by providing accessible saving and transaction platforms. M-Pesa enables women to accumulate small deposits conveniently, build buffer funds and access micro-credit (Thuita, 2020; Mbiti & Weil, 2023). Mobile savings improve resilience by facilitating remittances and reducing reliance on cash (Suri & Jack, 2016). However, evidence on profit impacts is mixed. While mobile wallets improve liquidity, efficiency and innovation (Abbasi & Weigand, 2017; Johri et al., 2024; Tiwasing et al., 2024), long-term financial performance gains remain inconsistent, where access to traditional finance is lacking (Konte & Tetteh, 2022). Barriers such as digital literacy, smartphone access and network reliability continue to limit women's usage (GSMA, 2025; Yin et al., 2020). Financial literacy is critical to enabling women to leverage digital tools for meaningful business outcomes (Totolo et al., 2025).

Insurance uptake among women micro-entrepreneurs is extremely low despite its potential to mitigate shocks (Micro Insurance Network, 2025). Less than 2% of women-owned enterprises report having business insurance (CARE, 2025), relying instead on informal coping mechanisms such as family or savings (Kiptoo et al., 2024). Evidence shows insurance stabilizes enterprises. Cai et al., (2015) demonstrated that micro-insurance encouraged productive investments while Janzen and Carter, (2019) found insured households avoided costly coping strategies. Barriers include affordability, mistrust and complex claim processes (Kajwang, 2021; Women's World Banking, 2024). Micro-insurance tailored to low-income women when bundled with mobile finance, has shown promise in improving uptake (Braniff & Hanouch, 2018; Nyame-Asiamah et al., 2022).

The effectiveness of financial services on enterprise sustainability is shaped by women's financial literacy and entrepreneurial skills. Financial literacy enhances decision-making in

borrowing, saving and risk management, reducing the likelihood of over-indebtedness and enabling strategic reinvestment (Lusardi & Mitchell, 2014; Klapper & Lusardi, 2020).

Entrepreneurial skills influence how financial tools are deployed whether for innovation, diversification or operational efficiency (Neneh, 2019; Fatoki, 2020). Studies show that women with higher literacy and stronger entrepreneurial skills are more likely to translate financial inclusion into tangible business growth and resilience (OECD, 2020; Amankwah-Amoah et al., 2021). Without these moderating factors, the benefits of credit, savings and digital tools often remain unrealized.

Overall, empirical evidence indicates that holistic financial inclusion, combining credit, savings, digital tools and insurance offers the strongest pathway to sustainable women-owned enterprises. But gaps remain. Research in urban informal settlements like Kibera is limited, long-term impacts are underexplored and usage depth is often poorly measured. Integrating financial literacy and entrepreneurial capacity-building alongside access to financial services is therefore essential for maximizing women entrepreneurs' sustainability outcomes.

The literature validates the use of frequency of deposits and withdrawals, credit uptake, savings behavior, mobile money transactions and insurance usage as indicators of financial service utilization. Evidence on loan repayment patterns (Wafula & Omolo, 2019; Luswetii & Mwasiagi, 2020), savings discipline (Dupas & Robinson, 2013; CARE, 2025) and mobile money transactions (Mbiti & Weil, 2023; Thuita, 2020) demonstrates their centrality in measuring meaningful engagement. Studies on insurance uptake (Janzen & Carter, 2019; Kiptoo et al., 2024) further confirm the importance of risk-mitigation products as part of usage. Usage indicators are not limited to account ownership but encompass the consistency, frequency and diversity of transactions undertaken by women entrepreneurs.

2.3.3 *Depth of financial services*

Early approaches to financial inclusion focused on access primarily account ownership among the unbanked. Over time, multi-dimensional frameworks have emphasized depth, measured by the range and frequency of services used (AFI, 2019). Cenfri, (2017) distinguished between breadth (access) and depth (usage), introducing an index capturing the number of product types used. Entrepreneurs with deeper financial engagement show stronger risk management, savings and cash flow stability (Morawczynski & Pickens, 2016). Therefore, depth provides a more accurate measure of inclusion quality in contexts dominated by informal economies (Demirgüç-Kunt et al., 2022).

Global measurement initiatives reflect this shift. The World Bank's Global Findex (2017, 2021) expanded indicators to include digital payments, savings and loans, while the Bank for International Settlements (2019) emphasized measuring quality of use, not just access. FinMark Trust (2023) and Insight2Impact (2017) captured transaction frequency and product portfolios. More recently, CGAP's *Financial Inclusion 2.0* framework links inclusion to outcomes such as financial health and resilience (CGAP, 2025).

In Sub-Saharan Africa, mobile money has driven rapid inclusion. In Kenya, account ownership rose from 27% in 2006 to 83% by 2021 (Data2X, 2022), with Uganda and Tanzania recording similar gains (World Bank, 2018). However, usage depth remains shallow with only 60.5% of Kenyans report formal savings and 29.1% formal borrowing (Data2X, 2022). Mobile money transactions are often short cash loops with funds withdrawn immediately, limiting deeper engagement (Mbiti & Weil, 2023). To address this, East African governments now track both breadth and depth through household and financial inclusion surveys.

Different financial tools shape enterprise outcomes in distinct ways. Mobile-enabled savings accounts have increased business investment and reduced reliance on informal borrowing (Batista & Vicente, 2020). Credit access shows heterogeneous effects while fintech-based microloans improve growth for experienced entrepreneurs, overall impacts are modest (Agarwal et al., 2021). Insurance, though underutilized, enhances resilience and access to micro-insurance has encouraged risk-taking and stabilized income (Johnson et al., 2020).

Persistent gender gaps constrain women entrepreneurs. Women are less likely than men to hold savings or credit accounts (Fambeu & Yomi, 2022; World Bank, 2022). In Kenya, the account ownership gap has narrowed to 4 percentage points, mainly due to mobile money (Data2X, 2022), but women-owned enterprises in informal settlements remain heavily reliant on non-formal services (Koomson et al., 2022). Expanding women's access to multiple financial products improves income, asset ownership, and empowerment (Berfond et al., 2024). Enhancing financial literacy and entrepreneurship skills alongside expanding service portfolios is critical for ensuring that financial inclusion translates into long-term business resilience and growth.

Empirical studies confirm that breadth of engagement, frequency of transactions and portfolio diversification across credit, savings, mobile money and insurance are appropriate indicators of financial depth. Evidence from Cenfri (2017); CGAP (2025) and Batista & Vicente (2020) illustrates that entrepreneurs using multiple financial products achieve greater resilience and stability. However, findings on shallow loops in mobile money transactions (Mbiti & Weil, 2023) highlight the need to assess not only ownership but also depth and intensity of usage. The operationalization of depth is therefore justified through the range and combinations of financial tools adopted by women entrepreneurs in informal settlements.

2.3.4 Quality of financial services

The World Bank defines financial inclusion as access to financial services that are affordable, transparent, user-friendly, and aligned with users' needs (World Bank Group, 2023). The G20's financial inclusion indicators emphasize both access and effective use of quality services (GPFI, 2016). The Alliance for Financial Inclusion (AFI, 2016) stresses that inclusion must go beyond access to ensure affordability, convenience and transparency. Despite progress, 1.7 billion adults globally remain unbanked (Demirgüç-Kunt et al., 2018). In Sub-Saharan Africa, only 37% of women hold a bank account compared to 48% of men, with barriers such as high collateral requirements, interest rates and limited financial literacy discouraging loan uptake (Morsy, 2020). To bridge this gap, gender-intentional services that feature flexible repayment, low documentation, and confidentiality are necessary.

In informal settlements such as Kibera, formal banking services are often inaccessible, making alternative financial services critical to women's enterprise survival and personal resilience (Kedir & Koumane, 2022). Women strategically combine formal and informal tools, guided by reliability, flexibility and privacy (El-Zoghbi, 2019). Microfinance institutions and savings and credit cooperatives provide collateral-free loans, savings and training (Abebe & Kegne, 2023). However, while microfinance institutions expand access, outcomes remain mixed due to inflexible loan sizes and limited support. Community-based finance models, such as SACCOs and table-banking groups enhance resilience and working capital but are constrained by low capital and limited business training (Bannor et al., 2020; Logodi, 2025).

Digital financial services have significantly improved women's financial inclusion. Areas with higher M-Pesa penetration experienced an 18% increase in female-headed household consumption due to improved savings and payments options (Suri & Walker, 2022). Platforms like M-Shwari

offer convenience and accessibility but are limited by small loan sizes (Kiiti & Hennink, 2016). Women often lack product knowledge, underscoring the importance of financial education and trust-building (Center for Financial Inclusion, 2022). Studies further show that user-friendly platforms, system reliability and responsive customer support strongly influence continued usage (Demirgüç-Kunt et al., 2018; GSMA, 2022).

Trust in institutions is essential for sustained financial engagement. Hidden fees, fraud and weak consumer protection undermine confidence, prompting regulators in Africa, including Kenya, to tighten consumer protection frameworks (CGAP, 2017).

Despite rapid advances through mobile money and community finance, women in informal settlements remain marginalized. Only 7% of Kenyan women-owned MSMEs have formal access to credit (Holmes, 2024). Microenterprises often rely on subsistence-level operations constrained by limited capital and collateral (Chowdhury et al., 2019). Evidence shows that mobile money reduces exclusion by offering safe storage and cash flow management (Kim, 2022). Microfinance institutions also improve enterprise survival by providing liquidity buffers and flexible repayment, as seen during the COVID-19 crisis (Women's World Banking, 2020).

Financial inclusion enhances profitability by enabling investment and better management. Microfinance loans coupled with training, raise incomes and profits (Abebe & Kegne, 2023; Kato, 2023). Digital tools such as mobile payments expand sales and reduce transaction costs (Holmes, 2024). Community-based finance allows bulk purchasing and strengthens operational capacity (Njeru & Irungu, 2024). Digital platforms facilitate access to wider markets, with IFC's M-KOPA initiative in Nairobi helping entrepreneurs expand nationally and report income growth (Holmes, 2024).

Inclusion also supports business growth through staff hiring, product diversification and branch expansion. Microfinance institutions and women-focused initiatives foster scaling, while mobile platforms enable cross-border access to markets (Bruhn et al., 2017; UNCTAD, 2019; Women's World Banking, 2023). International experiences confirm the transformative potential of gender-sensitive financial inclusion programs, as seen in Nigeria's microfinance and India's PMJDY, which improved women's resource control and reduced poverty (Sherwan et al., 2023).

The reviewed studies justify the inclusion of affordability, transparency, convenience, reliability and trust in providers as indicators of service quality. Evidence from World Bank Group (2023), AFI (2016), and Demirgüç-Kunt et al. (2018) emphasizes that affordability and user-friendliness shape sustained usage. Research on hidden costs, fraud, and weak consumer protection (CGAP, 2017) supports the importance of trust, while evidence on digital platforms (GSMA, 2022; Suri & Walker, 2022) validates reliability and convenience as key quality dimensions. Therefore, the operationalization of quality reflects both the perceived fairness of service delivery and the functional usability of financial products for women in informal settlements.

2.4 Conceptual Framework

2.4.1 Research gaps

Although national surveys such as FSD Kenya , (2021) indicate high levels of access to financial services, few studies explore the multidimensional aspects of financial inclusion, namely access, usage, quality and depth and their influence on enterprise outcomes. Research has tended to prioritize access metrics such as account ownership or digital wallet usage (Demirgüç-Kunt et al., 2022), while neglecting their effects on business sustainability. This narrow empirical focus is particularly evident in studies that exclude critical services like micro-insurance, financial literacy training and flexible credit options (Cenfri, 2017); (Barajas et al., 2020); (Sahay et al., 2020).

Githaiga & Bula, (2024) argues that low financial literacy among women in informal settlements contributes to poor financial decision-making, limiting uptake of relevant financial tools. Without deeper inquiry into these dimensions, the transformative role of financial inclusion on women-led microenterprises remains unclear.

Much of the existing literature is based on rural populations or aggregate national data, which obscures the unique challenges faced by women entrepreneurs in urban informal settlements like Kibera. These women operate within highly precarious environments marked by insecure trading spaces, time poverty due to low paid domestic labor and institutional voids such as lack of access to legal protections or public infrastructure (Kedir et al., 2022); (Njagi et al., 2019). As a result, findings from rural-focused studies may not apply to urban informal contexts, where informal financial behavior is shaped by high population density, hyper-competition and weak safety nets (Kagiri & Makau 2023); (FSD Kenya , 2021). The World Bank, (2022) emphasizes that the financial realities of women in low-income urban areas are not adequately represented in national financial inclusion strategies, creating a blind spot in policy targeting and program design.

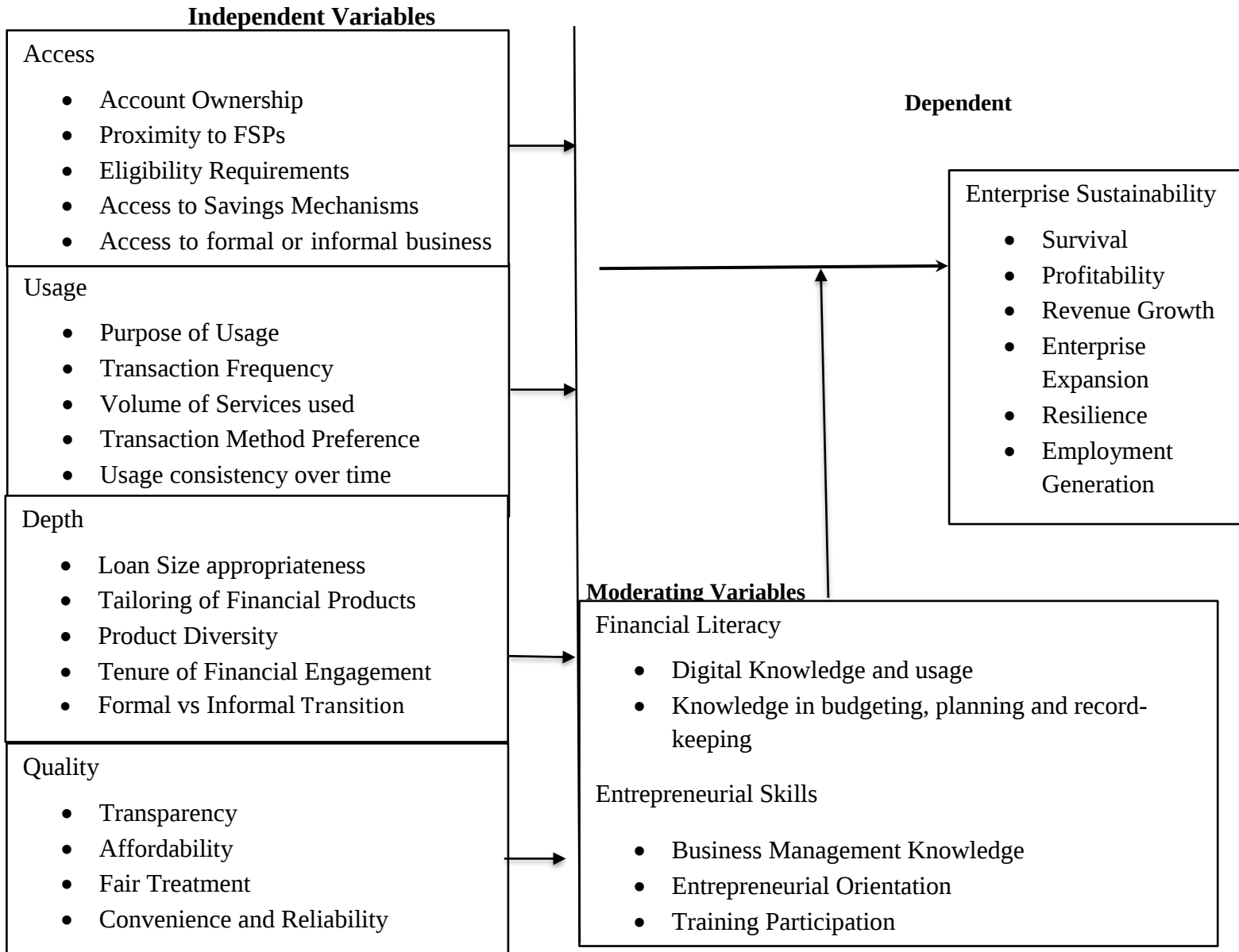
Most studies rely heavily on quantitative, cross-sectional data, limiting the capacity to explore causal relationships or track business performance over time (Barajas et al., 2020). Many studies focus on isolated financial products such as mobile credit without considering how bundles of services interact to influence business outcomes (Buviniv et al., 2020); (Ghosh & Vinod, 2017). This fragmented approach overlooks the interconnected nature of financial decision-making among women entrepreneurs. (Venkatesh et al., 2016) argue for mixed-method research designs to understand both outcomes and user experiences relevant to digital finance and informal business contexts, while (Burlando & Canidio, 2020) shows why longitudinal designs are critical to understanding sustained outcomes of financial services. Triangulated approaches that integrate

qualitative insights are critical in slum contexts, where informal norms, trust networks and household dynamics significantly influence financial behavior.

Kenya's financial inclusion policies have prioritized increasing access and expanding digital infrastructure, as seen in the success of mobile money systems. Inclusion remains shallow, especially for women in informal settlements who face systemic barriers such as lack of financial identity, limited trust in financial institutions, and gendered gaps in financial literacy (FSD Kenya , 2021); (World Bank Group , 2023); (GSMA, 2022). National strategies rarely consider the gender responsiveness of financial products or the relevance of services to women's actual needs (CGAP , 2021). The absence of mechanisms to measure the quality and impact of financial services reinforces inequitable outcomes (AFI, 2016). Kagiri & Maina, (2023) highlight that many women remain excluded from credit scoring mechanisms or financial trainings, even after gaining access to accounts. As a result, the current policy environment fails to translate access into empowerment or economic transformation.

The current body of knowledge reveals a substantial need for gender-disaggregated and contextually grounded research that examines how multidimensional financial inclusion affects the sustainability of women-owned enterprises in urban informal settlements. Addressing these four interrelated gaps, empirical, contextual, methodological, and policy, will support the development of more inclusive, equitable, and effective financial systems in Kenya and comparable contexts.

FIGURE 1
Conceptual Framework



The conceptual framework models the hypothesized pathways through which financial inclusion influences the sustainability of women-owned enterprises in informal settlements. It addresses a critical research gap by moving beyond a unidimensional focus on access to examine the four core dimensions of financial inclusion; access, usage, depth and quality of financial services.

Access is conceptualized as the ability of women entrepreneurs to enter the financial system and is measured through indicators such as ownership of bank, mobile money, or microfinance accounts; participation in savings mechanisms such as SACCOs or chamas; access to formal or informal credit for business purposes; proximity to financial service providers; and access to digital financial platforms. These indicators recognize that access is not merely about availability but also about affordability and reach, particularly in informal settlements where distance and infrastructure may pose significant barriers.

Usage captures the extent to which financial services are actively applied in business contexts. This construct is operationalized through measures such as transaction frequency, the volume and variety of financial services used, the purposes for which financial services are applied, that is enterprise versus household, the consistency of usage over time and women's preferences for transaction methods such as mobile money, agent banking or formal branches. These indicators highlight the behavioral dimension of financial inclusion by distinguishing between nominal access and meaningful application of services.

Depth reflects the breadth and intensity of engagement with financial services beyond initial uptake. It is measured through the appropriateness of loan size relative to business needs, the tailoring of financial products to women's enterprises, the tenure or duration of client relationships with providers and the diversity of financial products utilized. These indicators are critical for understanding whether women entrepreneurs are engaging with a portfolio of financial products that contribute substantively to business growth, rather than relying on a single, limited service.

Quality relates to women's perceptions and experiences with financial services. It encompasses indicators such as affordability of fees and charges, convenience and reliability of service delivery, transparency of loan terms and financial information and fair treatment in interactions with

providers. Quality reflects the relational and experiential aspects of financial inclusion that determine whether women find services trustworthy, equitable, and supportive of long-term engagement.

The framework incorporates two mediating variables digital literacy and entrepreneurial and financial management skills as essential enablers that translate access and usage into effective business outcomes. Financial management is measured through women's knowledge and comfort with digital financial tools, knowledge in budgeting, planning and record-keeping. Entrepreneurial skills are operationalized through indicators such as business management knowledge, entrepreneurial orientation and training participation

The dependent construct, enterprise sustainability, is conceptualized as a multidimensional outcome that extends beyond short-term profitability to encompass long-term viability. It is captured through six interrelated dimensions. Survival measured by business longevity, continuity during economic shocks, formal registration, reinvestment practices and customer retention. Profitability assessed through net income, profit margins, cash flow adequacy, return on investment and income stability. Revenue growth measured by changes in turnover, sales volume, customer base expansion and revenue diversification. Expansion captured through product line diversification, opening of new outlets, market reach, reinvestment for growth and asset accumulation. Resilience assessed through recovery after shocks, continuity of operations, presence of financial buffers, adaptive capacity and stress tolerance. Employment generation measured by the number of employees hired, improvements in job quality, inclusion of vulnerable groups and employee retention rates.

This framework is grounded in the recognition that deeper and more meaningful engagement with financial services, when reinforced by financial and entrepreneurial capabilities, enhances the

long-term viability of women-led enterprises in high-risk, low-resource environments such as Kibera. It also reflects the study's commitment to generating actionable, gender-sensitive insights that can inform both financial inclusion policies and enterprise development programs.

TABLE 1

Operationalization of the Conceptual Framework

Variable	Definition	Indicators	Measurement	Supporting Authors
Access	The availability of financial services such as account ownership, credit, savings and insurance to women entrepreneurs.	Ownership of bank or mobile money account Access to saving to savings mechanisms Access to formal or informal business credit Proximity to financial service providers Access to digital financial services	% of women with bank/MFI/mobile accounts % of saving with SACCOs, banks, or groups % of women who applied for and received business credit Distance in kilometers or walking time Frequency of digital financial services for business	(Demirgüç-Kunt A. K., 2022); (Women World Banking, 2023); (FinMark Trust, 2023); (Suri J. &, 2016); (Kang'ethe, 2024); (Odek, 2024)
Usage	Extent to which women use financial services for business purposes.	Frequency of transactions Volume of services used Purpose of usage Usage consistency over time	Average number of transactions (withdrawals, deposits, transfers) per month Count of distinct products used (e.g., savings, credit, insurance, payments) Proportion of services used for enterprise purposes vs. personal/household	(Kang'ethe, 2024); (Demirgüç-Kunt A. K., 2018); (International Monetary Fund, 2024); (Luswet, 2020); (Wafula, 2019); (CARE , 2025); (GSMA , 2025)

		Transaction method preference	Length of consistent usage (account active for over 12 months) % of women preferring mobile money or agent banking vs. formal branches	
Quality	Perceived reliability, convenience, and relevance of financial services.	Affordability Convenience and reliability Transparency Fair treatment	% of monthly income spent on interest, transaction charges, mobile money fees, and loan processing fees Average queue or waiting time, service availability, number of failed transactions or service errors, and user-reported satisfaction % of women who understand loan terms; number of reported complaints regarding hidden charges; transparency ratings from user survey % of women who report discrimination or bias in service delivery based on literacy levels; complaints received by financial providers	(World Bank Group , 2023); (AFI, 2016); (Morsy, 2020); (Demirgüç-Kunt A. K., 2018); (Abebe, 2023)
Depth	Breadth of financial products accessed and	Loan size appropriateness	Ratio of average loan size to business turnover or	(AFI, 2019); (Cenfri, 2017); (Demirgüç-Kunt A. K.,

	their impact on business.	Tailoring of financial products	investment requirement % of women reporting satisfaction with loan terms, repayment schedule, and product design	2022); (Kagiri R. &, 2023); (Mbiti, 2023)
		Tenure of financial engagement	Average duration (in months/years) of client relationship with provider	
		Product Diversity	Count of formal financial services/products used beyond a single loan	
Digital Literacy	Women's ability to use digital tools for financial and business management.	Digital knowledge and usage	Digital literacy test scores using Likert scale	(GSMA , 2025); (World Bank, 2022);
		Frequency of digital interactions	Weekly count of mobile transactions; self-reported comfort with digital financial services	
Entrepreneurial & Financial Management Skills	Knowledge in budgeting, planning, record-keeping, pricing.	Business management knowledge	% of respondents maintaining financial records and inventory	(Gichuki, 2018); (Women World Banking, 2023)
		Financial planning capacity	% of income reinvested, saved and budgeted	
		Entrepreneurial orientation	Likert-scale questionnaire on innovativeness, pro-activeness and risk taking	
		Training participation	Attendance in skills development programs(training completion certificates and self-reported skill	

Survival	Ability of business to operate beyond 2 years.	Longevity to 2 shocks	Continuity during shocks	% of businesses older than 1 year % of businesses that stayed open during COVID-19 or similar shocks % of businesses formally registered with national authorities	(Demirgüç-Kunt A. K., 2022); (Kato, 2023); (Holmes, 2024) (Women's World Banking, 2023)
		Formal registration		Customer retention rate or return customer %	
		Retention of customer base			
		Business reinvestment			
		Owner intention to persist		% of net income reinvested annually Survey-based Likert scale on intention to operate beyond 3 years	
Profitability	Enterprise's ability to generate net income.	Net income		Self-reported monthly profits	Kato (2023); (Demirgüç-Kunt A. K., 2022);
		Profit margin		Net profit/total revenue) *100%	(FinMark
		Cash adequacy	flow	Ratio of operating cash inflow to outflows or debt coverage	Trust, 2023); (Gichuki, 2018)
		Revenue after expenses		Total Revenue-Total expenses	
		Return on investment (ROI)		Gross revenue – operating costs – taxes	
		Stability of income			
		Fluctuation in net income		(Net profit/capital invested) *100%	
				Variance in monthly/quarterly net income	
Revenue Growth	Increase in sales	Change in total revenue over a 12-month period		% increase in revenue from previous year	(Holmes, 2024) (FinMark

	turnover over time.	Monthly turnover growth	turnover	(self-reported records)	or Trust, 2023); (Kato, 2023); (Women World Banking, 2023)
		Sales growth	volume	% change in monthly turnover over 6–12 months	
		Customer expansion	base	Number of units sold per month before and after financial service uptake	
		Revenue diversification		No. of new/repeat customers acquired per quarter	
				% of revenue from new products/services introduced in last 12 months	
Expansion	Business growth through new locations, product lines, or markets.	Product diversification	line	Number of new products/services introduced in the past 12 months	(Kato, 2023); (Holmes, 2024); (Gichuki, 2018)
		Outlet expansion		Number of new branches/stalls opened	(FinMark Trust, 2023)
		Market expansion	reach		
		Reinvestment for growth	for	% increase in customer base or digital reach (e.g., online sales growth)	
		Asset growth		% of profits reinvested in capital, inventory, or staff	
				Value of business assets over 1 year	
Resilience	Enterprise's ability to withstand shocks and remain operational.	Recovery from economic shock	from	% of businesses that resumed full operation within 3–6 months post-COVID	(Morawczynski, 2016); (FSD Kenya, 2021); (Kato, 2023)
		Continuity in operations	in	19 shock	
		Financial capacity	buffer	Days of business closure during a crisis	

Employment Generation	Ability to create new jobs through the enterprise.	Adaptive capability	Presence of emergency savings or cash reserves (binary: yes/no or % of monthly ops)	(Kato, 2023); (FinMark Trust, 2023); (Holmes, 2024)
		Stress tolerance	Number or type of business adaptations made during/after crisis	
			Resilience scores from Likert-scale	
		Number of employees hired	Number of employees (pre/post funding)	
		Job quality improvement	% of workers moved to permanent or better-compensated positions	
		Employment growth rate	% increase in employee count year-over-year	
		Inclusion of vulnerable groups	% of total workforce from targeted vulnerable groups	
		Retention rates	Employee turnover rate or average job duration	

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodological framework that was adopted to examine the influence of financial inclusion on the sustainability of women-owned enterprises in Kibera informal settlements. It describes the research design, target population, sampling technique, data collection tools and the analytical procedures that was employed. The study is grounded in empirically tested approaches that allow for comprehensive analysis of the interrelationships among financial inclusion dimension, mediating variables and business sustainability outcomes.

3.2 Research Design

A research design refers to the overarching strategy that systematically integrates the various components of a study to ensure coherent and logical inquiry, thereby effectively addressing the research problem (Creswell & Creswell, 2018). This study adopts a descriptive-correlational design, which is appropriate for identifying and analyzing relationships between multiple variables as they occur naturally without manipulating the research environment. This design is suited to contexts where the aim is both to describe existing conditions and to test for statistical associations among constructs such as financial inclusion and enterprise sustainability.

Empirical precedents reinforce its suitability. For example, Nyauma et al., (2024) successfully employed a descriptive-correlational design to examine the relationship between digital banking services and financial performance demonstrating the design's effectiveness in exploring associations between financial constructs and outcome variables. While their focus was on formal

banking, the methodological approach provides a strong precedent for this study, which extends the design to financial inclusion dimensions and enterprise sustainability among women in informal settlements. Sambo, (2016) also applied a descriptive survey design in Kibera to study entrepreneurship among youth, reinforcing the appropriateness of this design in informal urban contexts.

In this study, data was analyzed using both descriptive and inferential statistical techniques. Descriptive statistics summarized demographic characteristics and the distribution of key study variables thereby laying the foundation for deeper interpretation (Creswell & Creswell, 2018). Inferential analysis included multiple regression and mediation techniques. Correlation analysis was employed to assess the strength and direction of associations between dimensions of financial inclusion and sustainability outcomes, useful in exploratory contexts where such relationships are not firmly established (Sekaran & Bougie, 2016).

Multiple regression enabled examination of the predictive power of independent variables while isolating their unique contributions to enterprise sustainability (Field, 2018). Moderation analysis was conducted to explore whether skills-based factors moderate the relationship between financial inclusion and sustainability outcomes. This helped to establish whether the effect of financial inclusion on women's enterprise sustainability depends on the level of these moderating capabilities, thereby providing nuanced insights into the conditional dynamics at play (Hayes, 2018).

The descriptive-correlational design is methodologically robust, contextually relevant and well aligned with the study's objectives. It enabled both descriptive profiling of women's financial inclusion in informal settlements and rigorous testing of hypothesized pathways linking financial engagement to enterprise sustainability.

3.3 Target Population

A population is defined as the entire group of individuals, objects or events that share observable characteristics and from which a sample is drawn for a study (Mugenda & Mugenda, 2003). The target population for this research comprised all women-owned micro and small enterprises (MSEs) operating within the Kibera informal settlements of Nairobi County. Kibera hosts a dense concentration of informal businesses, with women disproportionately represented due to systemic socioeconomic barriers and limited access to formal financial services (Kedir et al., 2022; Demirgüç-Kunt et al., 2022).

Due to the informal and unregistered nature of many MSEs in Kenya's urban slums, especially those operated by women, official national databases often lack precise population data. Therefore, localized estimates from community-level assessments and prior studies are essential for sampling. Sambo, (2016), conducted entrepreneurship research in Kibera using registered youth groups from the Ministry of Youth Affairs as a structured sampling frame. Njagi et al., (2019) and Kedir et al., (2022) highlight that leveraging ground-level, context-specific data is critical in informal settlements where formal registries are incomplete.

Preliminary scoping with local women entrepreneurs' associations, microfinance institutions, and community leaders suggested that Kibera's women-owned MSEs are predominantly concentrated in four categories: clothing and household goods, food and beverages, general consumer goods and service-based microenterprises such as salons and mobile money agents. These categories will serve as the basis for stratification, ensuring proportional representation of the different business types within the sample.

TABLE 2**Estimated Population Size of Women-Owned Enterprises in Kibera**

Business Type	Estimated Women-Owned MSEs
Clothing & household goods (mitumba stalls, shoes, slippers, bags, charcoal, gas refills, malimali, electronics, airtime/sim card vending)	400
Food & beverages (food stalls/vibandas, water vending, cooking oil, milk vendors)	300
General consumer goods (kiosks/dukas, greengrocers, butcheries, hawkers, cooking oil, milk vendors)	500
Services (money agents, tailoring, salons, nail parlors, barbershops, phone repair, charging)	300
Total	1,500

(Sources: Nairobi County Business Register, informal sector estimates)

3.4 Sampling Technique and Sample Size

The study adopted a stratified random sampling technique to ensure fair representation across different categories of women-owned enterprises in Kibera. Stratification was based on business type as these sectors capture the diversity of women's entrepreneurial activities in informal settlements. This approach is relevant to the study because financial behaviors, access needs and sustainability challenges vary significantly across business types (Njagi et al., 2019; Kedir et al., 2022). Once the strata were defined, random sampling was conducted within each business category to select respondents.

The actual number of women-owned enterprises operating in the urban informal settlement of Kibera cannot be determined precisely due to the highly informal nature of business operations, weak registration systems and limited official records (ILO, 2022). Studies on informal sector

dynamics in Kenya emphasize that most micro-enterprises are unregistered and therefore absent from national business registries (KNBS, 2020; World Bank, 2019).

In recognition of this, the study adopted an estimated operational population of approximately 1,500 women-owned micro-enterprises in Kibera, derived from triangulated sources, that is, community business associations, micro-finance groups and pilot mapping. This estimate provides a practical basis for constructing the sampling frame, applying the finite-population correction for sample-size calculation and aligning with methodological guidance that supports using best available estimates when full enumeration is unfeasible (Muia et al., 2018).

From the estimated operational population of 1,500 women-owned enterprises in Kibera, the study targeted 200 respondents adopting a 13.3% sampling proportion and yielded 161 respondents. Mugenda and Mugenda (2003) suggest that a sample size of 10% to 30% of the accessible population is adequate for social science research while Creswell and Creswell (2018) emphasize that correlational studies typically require a minimum of 100 respondents to achieve sufficient statistical power and representativeness. Therefore, a sample of 200 respondents was deemed both methodologically sound and practically manageable for this study.

To ensure proportional representation, the 200 respondents will be distributed across the four strata based on their estimated population sizes (see Table 2). Accordingly, 100 respondents will be drawn from general consumer goods, 40 from clothing and household goods, 30 from food and beverages and 30 from service-based enterprises. This proportional allocation strengthens the representativeness of the sample and ensures sector-specific insights into how financial inclusion influences enterprise sustainability.

TABLE 3
Sample Size per Stratum

Business Type	Estimated Population Sample Size (11.4%)	
General consumer goods	500	100
Clothing & household goods	400	40
Food & beverages	300	30
Service-based enterprises	300	30
Total	1,500	200

3.5 Instrumentation

3.5.1. Questionnaire

A structured questionnaire was used to collect quantitative data for this study. The instrument was organized into six sections. Section A captured the demographic profile of respondents, including age, education level, business age, and sector of operation. Section B focused on financial access, incorporating items that assess physical, procedural and digital access to financial services using a 2-point Likert scale. Section C explored financial usage by measuring the frequency and type of financial services utilized, such as savings, credit and insurance. Section D examined financial depth and quality, assessing product variety, loan size, repayment terms, user satisfaction, service convenience, and transparency. Section E1 addressed digital literacy. Sections E2 and E3 entrepreneurial and financial management skills respectively. Section F measured business sustainability, focusing on sustainability indicators. Questionnaire items were adapted from previously validated studies (Creswell, 2018); (Demirgüç-Kunt et al., 2022); (AFI, 2019); (Yap et al., 2022); & (UNCTAD, 2017) to ensure content relevance and methodological rigor.

3.5.2. Data collection procedure

The data collection process involved administering the structured questionnaire in person by trained research assistants who are familiar with the Kibera context and local languages. Face-to-face data collection ensured clarity, inclusivity and high response rates in informal settlements. Respondents were briefed about the purpose of the study and assured of anonymity and confidentiality. Participation was voluntary and respondents had the right to withdraw at any point during the process.

3.6. Pilot Study, Reliability and Validity

A pilot test was conducted with 10% of the sample drawn from a comparable informal settlement to refine the instrument and address ambiguity and ensure the instrument is both valid and reliable, enhancing the credibility and robustness of the study findings. Reliability was assessed using Cronbach's Alpha with a threshold of ≥ 0.7 indicating internal consistency for each construct (Bolarinwa, 2016)

Validity was assessed through multiple approaches to ensure the credibility of the instrument. Content validity was established through expert review by specialists in entrepreneurship and financial inclusion, who evaluated the questionnaire for relevance, clarity and comprehensive coverage of the constructs. Construct validity was tested using factor analysis to determine whether the items group appropriately under their intended theoretical dimensions. Face validity was examined during the pilot phase by observing how well respondents understood each item, ensuring that the questions are clear, meaningful and appropriate for the target population.

3.7. Data Analysis Plan

The data collected was analyzed using the following procedure:

Step 1: Factor Analysis was employed to reduce dimensionality by identifying underlying factors from multiple indicators measuring financial inclusion, sustainability, financial literacy and entrepreneurial skills. This step ensured that highly correlated items are grouped into components, enhancing the validity of constructs used in regression analysis. Principal Component Analysis (PCA) with Varimax rotation was used to extract factors, guided by Eigenvalues > 1 and factor loadings ≥ 0.4 . The resulting factor scores were then used in the regression models.

Step 2: Regression analysis was applied to support analyze the relationship between sustainability and financial inclusion. The model specifications will be of the form:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon \quad \dots (1)$$

Where:

Y: Enterprise sustainability

X1 to X4: Constructs of financial inclusion

β_0 : Intercept

β_1 to β_4 : Coefficients representing the effect of each financial inclusion variable

ε : Error term

Step 3: Carry out the moderating effect of financial literacy & entrepreneurial skills. The model specifications will be of the form:

$$y = \beta_0 + c_1 * X_1 + c_2 * X_2 + c_3 * X_3 + c_4 * X_4 + b_1 M_1 + b_2 M_2 + \varepsilon Y \dots (2)$$

Where:

- Where:

Y = Enterprise sustainability (dependent variable).

β_0 = Intercept (expected Y when all independent variables = 0).

X1, X2, X3, X4 = Financial inclusion constructs (independent variables), e.g.

- X_1 = Access
- X_2 = Usage
- X_3 = Service Quality
- X_4 = Depth

c_1, c_2, c_3, c_4 = Direct-effect coefficients of each financial inclusion construct on Y

M_1, M_2 = Mediators

- M_1 = Financial Literacy
- M_2 = Entrepreneurial Skills
- b_1, b_2 = Effects of each mediator on Y controlling for the FI constructs.
- ε = Error term for the outcome equation (unexplained variation in Y).

Step 4: Regression Diagnostics

To validate the assumptions of regression analysis the following diagnostic tests were conducted.

The Shapiro–Wilk test was used to assess whether the distribution of residuals approximates normality. Normality is important because non-normal residuals can bias hypothesis testing and produce inaccurate confidence intervals.

Tolerance and Variance Inflation Factor were employed to test for multicollinearity among independent variables. Multicollinearity inflates standard errors, making it difficult to determine the unique effect of each predictor on the dependent variable.

Cronbachs tested internal validity while KMO, Bartlett's test and Principal Component Analysis were used to determine validity of the model. Heteroscedasticity was tested through robust standard errors to ensure the model would produce efficient estimates and unbiased standard errors that would otherwise undermine statistical inferences.

To check if the overall regression model was statistically significant, the study employed ANOVA through regression ss and F statistic.

3.8. Ethical Considerations

Ethical approval for this study was sought from KCA University Scientific and Ethics Review Board. All participants were informed about the objectives, expected duration and voluntary nature of the study. Informed consent was obtained prior to participation. Respondents' identities were kept confidential and no identifying information were linked to their responses. All data is securely stored and used solely for academic purposes in accordance with ethical guidelines. Authorizations from the County Commissioner and Ministry of Education Regional offices were issued.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter analyzes and interprets data on financial inclusion and the sustainability of women-owned businesses with the moderating effects of financial management and entrepreneurship skills. To summarize the data, descriptive and inferential statistics were employed. Descriptive statistics show respondent demographics and trends while regression analysis tests hypotheses and discover variable correlations. The results are given in tables to make them easy to understand and then analyzed in detail with references to relevant theories and earlier literature.

4.2 Response Rate

TABLE 4
Response rate

Business Type	Sample Size (10%)	Response
General consumer goods	50	48
Clothing & household goods	50	36
Food & beverages	50	44
Service-based enterprises	50	33
Total	200	161

The study included 161 women-owned enterprises from diverse industries. High response of 80.5% suggests that the findings are representative of women-owned enterprises in Kibera, enhancing the reliability of inferences on financial inclusion and business sustainability. Statisticians consider this response sufficient because it exceeds the 70% criterion in survey-based

research. General consumer goods and clothing and household goods had the highest response rate, whereas service-based businesses had lower response rates. Response rate was acquired, reduced non-response bias and improved study findings.

4.3 Reliability Analysis

TABLE 5
Reliability Statistics

Cronbach's Alpha	N of Items
.976	7

(The reliability coefficient was computed using Cronbach's alpha.)

Table 5 shows the reliability test of measurement items applied in the measurement of financial inclusion and sustainability of women-owned businesses in the informal settlement of Kibera. The table shows 0.976 Cronbach's alpha for seven scale components. Items are more internally consistent with higher Cronbach alpha values (0–1). The excellent coefficient of 0.976 demonstrates that the items measure the same concept. This suggests survey responses are consistent and measurement error is low. The study's strong dependability ensures that financial inclusion, sustainability, financial literacy and entrepreneurship abilities are measured consistently improving subsequent analyses like regression and moderation tests. These measures therefore yield reliable results.

4.4 Demographic Information

This section provides the demographic information of the 161 female entrepreneurs who participated in the study. The analysis encompasses age, educational attainment, years of professional experience, industrial sector, job position, legal structure of the business and average staff count. These factors provide essential context regarding the financial practices and business

activities of the respondents. Demographic data offers a context for understanding the outcomes related to financial access, financial literacy and entrepreneurial abilities linking individual and corporate attributes to enterprise sustainability.

4.4.1 Age

TABLE 6
Age of Respondents

Age Category	Frequency	Percent
Below 25	5	3.1
25–34	29	18.0
35–44	55	34.2
45–54	47	29.2
Above 55	25	15.5
Total	161	100.0

N = 161.

Table 6 presents the age factorization of the 161 respondents in the research. Most respondents (34.2%) were 35-44 years old, followed by 29.2 years, indicating that most business owners are mid-career. The 25–34 age group made 18.0%, while the under-25 and over-55 age groups made 3.1% and 15.5%, respectively. This dispersion suggests that older persons are more likely to engage in business. Understanding age profile is important since it can affect financial literacy, financial services consumption and business sustainability. Demographic data will contextualize financial inclusion and enterprise sustainability trends.

4.4.2 *Level of education*

TABLE 7
Level of Education of Respondents

Education Level	Frequency	Percent
No formal education	12	7.5
Postgraduate	2	1.2
Primary	38	23.6
Secondary	80	49.7
Tertiary	29	18.0
Total	161	100.0

N = 161.

Table 7 shows the educational level of the 161 respondents that participated in the research. The majority of respondents (49.7%) had secondary education, followed by 23.6% and 18.0 with primary and tertiary education. Only 7.5% were uneducated and 1.2% were post-graduates. The majority of women entrepreneurs have basic to intermediate education which may limit their financial services use. Higher education is linked to stronger financial and business management understanding which can help businesses survive. These findings suggest that educational interventions and training may improve respondents' financial and entrepreneurial skills and sustain informal settlement business operations.

4.4.3 *Years of business*

TABLE 8
Years of Business Experience of Respondents

Years in Business	Frequency	Percent
Less than 1 year	16	9.9
1–3 years	46	28.6
4–6 years	54	33.5
More than 6 years	45	28.0
Total	161	100.0

N = 161.

Table 8 shows the business experience distribution of the 161 women-owned enterprise respondents. Most had 4-6 years of business experience (33.5%), followed by 1-3 years (28.6%) and over six years (28.0%). A smaller 9.9% has been in business less than a year. The majority of responders had ordinary business management experience meaning they understand financial systems and basic business operations. Long-term entrepreneurs (over six years) may have sustainable enterprises. However, new entrepreneurs may need financial literacy and business skills training. Knowing the level of expertise helps put financial inclusion, financial literacy and entrepreneurship abilities in context because it can improve financial management and business sustainability.

4.4.4 Business sector

TABLE 9
Business Sector of Respondents

Business Sector	Frequency	Percent
Clothing & household goods (mitumba stalls, shoes, slippers, bags, charcoal, gas refills, malimali, electronics, airtime/sim card vending)	44	27.3

Business Sector	Frequency	Percent
Food & beverages (food stalls/vibandas, water vending, cooking oil, milk vendors)	31	19.3
General consumer goods (kiosks/dukas, greengrocers, butcheries, hawkers, cooking oil, milk vendors)	57	35.4
Services (money agents, tailoring, salons, nail parlors, barbershops, phone repair, charging)	29	18.0
Total	161	100.0

N = 161.

Table 9 presents the business sector distribution of the 161 participants. Most responders (35.4%) worked in kiosks, greengrocers, butchers and hawking. 27.3 % sold apparel and home items, 19.3% food and beverages and 18.0% service-oriented firms. This distribution illustrates that the informal settlement mainly engages in retail and trading which are in great demand and have low entry barriers. The sectoral composition is important when determining how financial inclusion, financial literacy and entrepreneurship skills affect enterprise sustainability because different sectors may react differently to financial interventions and support mechanisms.

4.4.5 Role of business

TABLE 10
Role of Respondents in the Business

Role	Frequency	Percent
Owner	144	89.4
Co-owner	17	10.6
Total	161	100.0

N = 161.

Table 10 shows the role of the respondents in their own enterprises. Most respondents (89.4%) were single owners, 10.6% co-owners. This implies most women entrepreneurs have full control over business decisions, finances and operations. Business sustainability can improve with sole proprietorship's accountability and personal financial awareness and entrepreneurship. However, co-ownership might lead to shared decision-making which can affect financial approach responsiveness. Knowledge of ownership responsibilities is important in explaining the impact of financial inclusion and training interventions because control and autonomy may affect access, use and employment of financial resources to sustain the informal settlement industry.

4.4.6 *Legal form of business*

TABLE 11

Legal Form of Respondents' Businesses

Legal Form	Frequency	Percent
Sole proprietorship	115	71.4
Informal	33	20.5
Partnership	13	8.1
Total	161	100.0

N = 161.

Table 11 displays a legal form of the 161 respondents. Most of them (71.4%) were sole proprietorships, 20.5% were unregistered informal enterprises, and 8.1% were partnerships. The majority of firms are legally established and owned by individuals. Most enterprises are informal, therefore they lack access to conventional financial services that might hinder growth and sustainability. Less common partnerships may benefit from resource pooling and risk distribution.

Knowing legal forms is crucial to assessing financial inclusivity and sustainability because registered businesses have a better chance of getting loans, credit and government support than informal ones which may be limited to using financial literacy and entrepreneurial skills to start businesses.

4.4.7 The average number of employees

TABLE 12

Average Number of Employees in Respondents' Businesses

Number of Employees	Frequency	Percent
Self	113	70.2
2–5 employees	38	23.6
6–10 employees	10	6.2
Total	161	100.0

(*N* = 161.)

Table 12 gives the breakdown of the number of employees in the 161 women owned businesses interviewed. Most respondents (70.2%) were sole owners with no employees, 23.6% had 2-5 employees, and 6.2% had 6-10 employees. Most businesses are small and run by their owners, which limits their ability to operate and grow. The owner makes most financial and managerial choices due to the limited number of employees, demonstrating the importance of financial literacy and entrepreneurship abilities in business procedures. With more personnel, a business may need more formal frameworks to run smoothly. This helps evaluate the study on how financial inclusion and skills building affect informal settlement enterprise viability.

4.5 Factor Analysis

Factor analysis was done to test validity and dimensionality of constructs on which the study was carried out. The method minimizes a mass of observed variables to fewer underlying factors, and the measurement items used to measure the intended concepts are consistently reliable. Sampling adequacy and suitability were determined using Kaiser-Meyer-Olkin (KMO) values and Bartlett Test of Sphericity. The Principal Component Analysis (PCA) was then conducted to develop

essential factors of entrepreneurial skills, financial management and business sustainability to offer a good foundation on the regression analysis.

4.5.1 Financial access

TABLE 13

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sampling Adequacy

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.854
Bartlett's Test of Sphericity	
Approx. Chi-Square	1377.397
df	21
Sig.	.000

(KMO values above 0.6 indicate sampling adequacy; Bartlett's Test significance < .05 indicated the correlation matrix is factorable.)

Table 13 presents the results of the KMO and Bartlett Test, which assess the appropriateness of the data for factor analysis in the investigation of financial inclusion and sustainability of women-owned enterprises in the informal settlement of Kibera. The KMO value is 0.854, exceeding the required threshold of 0.6, indicated that the sample size was appropriate and the correlations across variables were suitable for accurate factor extraction. Bartlett's test of sphericity is significant (Approx. Chi-Square = 1377.397, df = 21, p = 0.001), indicating that the correlation matrix is not an identity matrix. The findings suggest that financial inclusion, financial literacy and entrepreneurship abilities are interrelated and can be consolidated into fundamental elements. Factor analysis is a dependable technique for analyzing components that influence firm sustainability.

TABLE 14

Communalities for financial access items

Item	Initial Extraction
I can easily locate a financial service provider (bank, SACCO, mobile agent).	1.000 .907

Item	Initial Extraction
I have access to financial services within walking distance from my business or home.	1.000 .907
The procedures for opening and operating financial accounts are straightforward.	1.000 .874
I have access to digital financial services through my mobile phone or computer.	1.000 .903
The cost of accessing financial services (e.g., transport, fees) is affordable.	1.000 .729
I face few or no barriers related to identity or documentation when accessing services.	1.000 .733

(Extraction method: Principal Component Analysis (PCA). Values in the extraction column represent the proportion of variance explained by the factor.)

Principal Component Analysis (PCA) item similarity for Kibera informal settlement women-owned companies' financial access is shown in table 14. All item values start at 1.000, indicating entire variation before extraction. Extraction values represent the percentage of variance explained by each item's underlying factor. Finding a financial service provider (.907), doing it within walking distance (.907), digital financial services (.903), and doing it without problems (.874) have high communalities. Items related to cost and identity/documentation constraints have slightly lower but commendable communalities (.729 and .733). A high extraction value means these items are similar and can measure financial access. This suggests that the financial access scale is sound and can be examined in light of its impact on enterprise sustainability.

TABLE 15

Total Variance Explained for Financial Access Items

Component	Initial Eigenvalues	% Variance	of Cumulative %	Extraction		
				Sums Squared Loadings	of % Variance	of Cumulative %
1	5.054	84.232	84.232	5.054	84.232	84.232
2	0.558	9.292	93.524	—	—	—
3	0.200	3.330	96.854	—	—	—
4	0.146	2.435	99.289	—	—	—
5	0.043	0.711	100.000	—	—	—
6	-2.255E-16	-3.759E-15	100.000	—	—	—

Extraction method: Principal Component Analysis (PCA). Only Component 1 has an eigenvalue greater than 1, explaining 84.23% of the total variance.

Table 15 shows that Principal Component Analysis (PCA) and data explain the total variance of financial access among women-owned enterprises in Kibera informal settlement. The first factor has a value of 5.054, which is more than the required 1 and explains 84.23% of the total variance indicated that one factor was sufficient to explain most of the variable.

4.5.2 Financial usage

TABLE 16

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Financial Usage Items

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.854
Bartlett's Test of Sphericity	
Approx. Chi-Square	1377.397
df	21

Measure	Value
Sig.	.000

(KMO values above 0.6 indicate sampling adequacy; Bartlett's Test significance < .05 indicates the correlation matrix is factorable.)

Table 16 compares Kibera informal settlement women-owned companies' financial utilization items using KMO and Bartlett Tests. The KMO of 0.854 exceeds the minimum value of 0.6, indicating that the sample size and item correlation are sufficient for factor analysis. The substantial Test of Sphericity by Bartlett (Approx. Chi-Square = 1377.397, df = 21, $p < 0.001$) shows that the correlation matrix is not an identity matrix and can be utilized to extract variables. These results show that financial consumption elements are sufficiently connected to be reduced into meaningful components. The scale can be used in factor analysis to create meaningful and reliable studies of how financial utilization affects firm sustainability.

TABLE 17
Communalities for Financial Usage Items

Item	Initial Extraction
I can easily locate a financial service provider (bank, SACCO, mobile agent).	1.000 .863
I regularly save money using formal financial services (e.g., bank, mobile wallet).	1.000 .743
I have accessed credit from a financial institution in the past 12 months.	1.000 .862
I frequently use mobile money platforms for business transactions.	1.000 .835
I have an active insurance product (e.g., health, asset, business insurance).	1.000 .232
I use financial services at least once a week.	1.000 .802

Item	Initial Extraction
I have used more than one type of financial product (e.g., savings, loan, insurance)	1.000 .733

Extraction method: Principal Component Analysis (PCA). Values in the “Extraction” column represent the proportion of variance explained by the factor.

The communalities of financial consumption items of women-owned companies in Kibera informal settlement are shown in Table 17 using Principal Component Analysis. The extraction values reveal how much of each item's variance the factor explains. Finding a financial service provider (.863), acquiring credit (0.862), utilizing mobile money (0.835), using services frequently (0.802), saving frequently (0.743), and using several financial goods frequently (0.733) have high communalities. An item with live insurance has a lower communality 0.232, indicating modest primary factor contributions. Most items show strong communalities and considerable common variance, suggesting financial usage is a coherent entity. This supports the scale's validity and suitability for factor-based analysis to identify how money utilization affects enterprise sustainability.

TABLE 18
Total Variance Explained for Financial Usage Items

Component	Extraction					
	Initial	%	of Cumulative	Sums	of %	of Cumulative
	Eigenvalues	Variance	%	Squared	Variance	%
	Loadings					
1	5.069	72.411	72.411	5.069	72.411	72.411

Component	Extraction					
	Initial	%	of Cumulative	Sums	of %	of Cumulative
	Eigenvalues	Variance	%	Squared	Variance	%
				Loadings		
2	0.960	13.716	86.127	—	—	—
3	0.575	8.208	94.334	—	—	—
4	0.178	2.549	96.883	—	—	—
5	0.109	1.558	98.441	—	—	—
6	0.067	0.958	99.400	—	—	—
7	0.042	0.600	100.000	—	—	—

(Extraction method: Principal Component Analysis (PCA). Component 1 has an eigenvalue greater than 1, explaining 72.41% of the total variance.)

The Principal Component Analysis (PCA) total variance to describe financial usage items across women-owned firms in Kibera's informal settlement is shown in table 18. The eigenvalue of component 1 is 5.069, which is more than 1, and it explains 72.41 percent of the overall variance in financial usage items. Later components with eigenvalues below 1 add less variance and are removed. The first component's considerable contribution shows that financial usage items are interrelated and coherent. This validates the scale and allows regression analysis to understand how financial usage affects women-owned firms' sustainability.

4.5.3 Financial depth and quality

Table 19
Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Financial Depth and Quality

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.845
Bartlett's Test of Sphericity	
Approx. Chi-Square	1823.975
df	28
Sig.	.000

KMO values above 0.6 indicate sampling adequacy; Bartlett's Test significance < .05 indicates the correlation matrix is factorable.

KMO and Bartlett's Test results of financial depth and quality items of Kibera informal settlement women-owned companies are shown in Table 19. KMO=0.845 is over 0.6, which is recommended, indicating that the sample size and item correlation are sufficient for factor analysis. Significant Bartlett Test of Sphericity (Approx. Chi-Square = 1823.975, df = 28, $p < 0.001$) indicates that the correlation matrix is not an identity matrix and can be used to extract variables. These findings show that financial depth and quality indicators are related and may be distilled into fundamental traits. The scale is suitable for factor analysis, which justifies the additional analyses to determine how financial depth and quality affect women-owned business sustainability.

TABLE 20
Communalities for Financial Depth and Quality Items

Item	Initial Extraction	
I can easily locate a financial service provider (bank, SACCO, mobile agent).	1.000	.851
The financial products I use meet the specific needs of my business.	1.000	.850
I can access loan amounts that are adequate for my business operations.	1.000	.825
The terms and conditions of financial products I use are clear and reasonable.	1.000	.911
I am satisfied with the financial services I receive.	1.000	.837
Service providers are transparent in their fees, terms, and processes.	1.000	.811
I can choose from a variety of financial products tailored to businesses like mine.	1.000	.912
Financial service providers are responsive and convenient to work with.	1.000	.867

(Extraction method: Principal Component Analysis (PCA). Values in the “Extraction” column represent the proportion of variance explained by the factor.)

Table 20 reveals PCA communalities of financial depth and quality item. Extraction values represent the percentage of variance in each item covered by the underlying component. High communalities are found in finding a financial service provider (0.851), product suitability (0.850), satisfactory access to loans (0.825), clarity of terms and conditions (0.911), consumer satisfaction about services (0.837), fee transparency (0.811), product variety (0.912), and provider responsiveness (0.867) substantial communalities indicate that the items have substantial common variance and provide a consistent indicator of financial depth and quality. The scale is reliable and valid and it was used to analyze the regression analysis elements to establish how financial depth and quality affect women-owned firms' sustainability.

TABLE 21
Total Variance Explained for Financial Depth and Quality Items

Component	Initial Eigenvalues	% Variance	of Cumulative %	Extraction		
				Sums Squared Loadings	of % Variance	of Cumulative %
1	5.567	69.584	69.584	5.567	69.584	69.584
2	1.298	16.229	85.814	1.298	16.229	85.814
3	0.647	8.081	93.895	—	—	—
4	0.224	2.802	96.698	—	—	—
5	0.123	1.536	98.234	—	—	—
6	0.084	1.049	99.282	—	—	—
7	0.033	0.415	99.698	—	—	—
8	0.024	0.302	100.000	—	—	—

(Extraction method: Principal Component Analysis (PCA). Components 1 and 2 have eigenvalues greater than 1, explaining 85.81% of the total variance)

Table 21 shows the PCA total variance of financial depth and quality factors of Kibera informal settlement women-owned companies. Components 1 and 2 have eigenvalues greater than one, 5.567 and 1.298, accounting for 85.81% of variance. Most variation in the items may be explained by the two components, which demonstrate good correlations between financial depth and quality. Other components with eigenvalues below 1 do not contribute to variance and are removed. The scale's substantial cumulative variance reinforces its construct validity in measuring financial depth and quality. These findings suggest using factor-based studies to determine how financial depth and quality affect informal settlement women-owned companies' viability.

4.5.4 *Digital literacy*

Table 22: Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Digital Literacy Items

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.736
Bartlett's Test of Sphericity	
Approx. Chi-Square	610.425
df	6
Sig.	.000

(KMO values above 0.6 indicate sampling adequacy; Bartlett's Test significance < .05 indicates the correlation matrix is factorable)

Table 22 displays KMO and Bartlett Test scores for digital literacy among Kibera informal settlement women-owned businesses. The KMO of 0.736 is over the cutoff limit of 0.6, indicating that the sample size is not too small and that the item correlation is good enough for factor analysis. The substantial Bartlett Test of Sphericity (Approx. Chi-Square = 610.425, df = 6, $p < 0.001$) indicates that the correlation matrix is not an identity matrix and can be utilized to extract variables. This suggests that digital literacy items are associated and can be substantially reduced to underlying characteristics. The scale is proper and suitable for factor analysis, which is essential to study digital literacy's involvement in financial inclusion and female-owned business sustainability.

TABLE 23
Communalities for Digital Literacy Items

Item	Initial Extraction
I can easily locate a financial service provider (bank, SACCO, mobile agent).	1.000 .935
I am comfortable using mobile money platforms (e.g., M-Pesa, Airtel Money).	1.000 .237
I can download and use financial apps for my business operations.	1.000 .820
I am familiar with different digital platforms that offer financial services.	1.000 .918

(Extraction method: Principal Component Analysis (PCA). Values in the “Extraction” column represent the proportion of variance explained by the factor.)

Table 23 illustrates PCA digital literacy communalities among Kibera informal settlement women-owned companies. Extractions show the percentage of variance explained by the underlying factor for each item. Finding a financial service provider (0.935), using financial apps (0.820), and being familiar with digital platforms (0.918) are important predictors of digital literacy. Comfort utilizing mobile money systems has a communality of 0.237, meaning it does not affect the key factor. The elevated communalities of most items indicate that digital literacy is a consistent construct, which supports the scale's validity and suitability for assessing digital literacy's impact on financial inclusion and sustainability of women-owned businesses.

TABLE 24
Total Variance Explained for Digital Literacy Items

Component	Extraction					
	Initial	%	of Cumulative	Sums	of %	of Cumulative
	Eigenvalues	Variance	%	Squared	Variance	%
				Loadings		
1	2.910	72.750	72.750	2.910	72.750	72.750
2	0.833	20.821	93.571	—	—	—
3	0.217	5.437	99.008	—	—	—
4	0.040	0.992	100.000	—	—	—

(Extraction method: Principal Component Analysis (PCA). Component 1 has an eigenvalue greater than 1, explaining 72.75% of the total variance.)

Principal Component Analysis (PCA) indicates the total variance explained of digital literacy elements in Kibera informal settlement women-owned firms (Table 24). Component 1's eigenvalue is 2.910, which exceeds the threshold of 1, indicating that a single component explains most of the

digital literacy questions' variance. Elements with eigenvalues less than 1 and little variance impact are removed. Large variance in Component 1 supports the idea that digital literacy assessments are closely connected and measure the cohesive notion. These findings corroborate the scale and enable additional research on how digital literacy affects financial inclusion and sustainability of women-owned businesses.

4.5.5 Entrepreneurial skills

TABLE 25

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Entrepreneurial Skills Items

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.774
Bartlett's Test of Sphericity	
Approx. Chi-Square	744.765
df	10
Sig.	.000

(KMO values above 0.6 indicate sampling adequacy; Bartlett's Test significance < .05 indicates the correlation matrix is factorable.)

Table 25 shows the KMO and Bartlett's Test entrepreneurial abilities items of Kibera informal settlement women-owned businesses. KMO of 0.774 is over the minimum of 0.6, indicating that the sample is large enough and contains enough correlations to use in factor analysis. The Bartlett Test of Sphericity (Approx. Chi-Square = 744.765, df = 10, p = 0.001) indicates that the correlation matrix can extract factors since it is not an identity matrix. These results show that entrepreneurial skills are connected and can be condensed into latent variables. The results support the scale and factor analysis to determine how entrepreneurial skills affect financial inclusion and sustainability of women-owned enterprises.

TABLE 26**Communalities for Entrepreneurial Skills Items**

Item	Initial Extraction
I can easily locate a financial service provider (bank, SACCO, mobile agent).	1.000 .856
I regularly engage in strategic planning for my business growth.	1.000 .796
I actively look for innovative ways to improve or expand my business.	1.000 .857
I seek out new market opportunities to grow my business.	1.000 .652
I attend trainings, workshops, or mentorship programs to enhance my entrepreneurial skills.	1.000 .418

(Extraction method: Principal Component Analysis (PCA). Values in the extraction column represent the proportion of variance explained by the factor.)

Table 26 reveals PCA-based entrepreneurial skills similarities among Kibera informal settlement women-owned businesses. The extraction values reveal the percentage of variance in each item accounted for by the underlying factor. Most of them are communicative, such as choosing a financial service provider (.856), strategic planning (.796), invention (.857), and market opportunity search (.452), which strengthen entrepreneurial abilities. Attending trainings or mentorship programs has a low communality of 0.418, indicating a small but acceptable contribution. Most items have high communalities, confirming that entrepreneurial skills are a coherent category and proving the scale's dependability and validity. These findings support the idea that factor-based analyses can explain how entrepreneurial abilities affect financial inclusion and enterprise sustainability.

TABLE 27**Total Variance Explained for Entrepreneurial Skills Items**

Component	Initial Eigenvalues	% Variance	of Cumulative %	Extraction		
				Sums Squared Loadings	of % Variance	of Cumulative %
1	3.579	71.573	71.573	3.579	71.573	71.573
2	0.915	18.300	89.873	—	—	—
3	0.291	5.810	95.683	—	—	—
4	0.156	3.130	98.813	—	—	—
5	0.059	1.187	100.000	—	—	—

(Extraction method: Principal Component Analysis (PCA). Component 1 has an eigenvalue greater than 1, explaining 71.57% of the total variance.)

Table 27 shows the overall variance explained by Principal Component Analysis on entrepreneurial skills items in Kibera, informal settlement, women-owned companies. The eigenvalue of Component 1 is 3.579, which is more than 1 and accounts for 71.57 percent of the overall variation, indicating that one factor explain most of the entrepreneurial skills variance. Later components with eigenvalues below 1 will not add much variance, thus they will be discarded. The high variance explained by Component 1 confirms that entrepreneurial skills items are highly associated and assess a consistent construct. These findings confirm the scale and support its use in future research, including regression, to determine how entrepreneurial abilities affect financial inclusion and sustainability of women-owned enterprises.

4.5.6 Financial management skills

TABLE 28

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Financial Management Skills Items

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.838

Measure	Value
Bartlett's Test of Sphericity	
Approx. Chi-Square	1420.589
df	10
Sig.	.000

(KMO values above 0.6 indicate sampling adequacy; Bartlett's Test significance < .05 indicates the correlation matrix is factorable).

Table 28 shows the KMO and Bartlett's Test financial management abilities scores for Kibera informal settlement women-owned companies. KMO of 0.838 is over the acceptable limit of 0.6, indicating that the sample size and item correlations are sufficient for factor analysis. A significant test of sphericity (Approx. Chi-Square = 1420.589, df = 10, $p < 0.001$) demonstrates that the correlation matrix is not an identity matrix and is suitable for factor extraction. These results suggest that financial management skills are interconnected and can be characterized by their underlying characteristics. The results show that the scale is reliable and suitable for factor analysis, which is necessary to study how financial management competencies affect women-owned enterprises' financial inclusion and sustainability.

TABLE 29
Communalities for Financial Management Skills Items

Item	Initial Extraction
I can easily locate a financial service provider (bank, SACCO, mobile agent).	1.000 .917
I prepare a budget for my business and monitor it regularly.	1.000 .728
I maintain accurate records of income, expenses, and transactions.	1.000 .874
I review my business financial performance (e.g., profit/loss) monthly or quarterly.	1.000 .943

Item	Initial Extraction
I separate my personal and business finances for better management.	1.000 .939

(Extraction method: Principal Component Analysis (PCA). Values in the “Extraction” column represent the proportion of variance explained by the factor.)

The Principal Component Analysis (PCA) of Table 29 indicates the communalities of financial management skills among women-owned companies in Kibera informal settlement. The extraction values represent the percentage of variance each factor explains. Finding a financial service provider (.917), setting and following a budget (.728), preserving financial records (.874), assessing business success (.943), and distinguishing personal and business funds (.939) all have high communalities. The significant values suggest that the items have a lot of common variance and test financial management skills consistently. The scale's reliability and validity can be used in factor-based analysis to study financial management skills' impact on financial inclusion and women-owned company sustainability.

TABLE 30

Total Variance Explained for Financial Management Skills Items

Component	Extraction					
	Initial Eigenvalues	% Variance	of Cumulative %	Sums Squared Loadings	of % Variance	of Cumulative %
1	4.400	88.004	88.004	4.400	88.004	88.004
2	0.433	8.656	96.660	—	—	—
3	0.113	2.269	98.930	—	—	—
4	0.039	0.785	99.715	—	—	—
5	0.014	0.285	100.000	—	—	—

(Extraction method: Principal Component Analysis (PCA). Component 1 has an eigenvalue greater than 1, explaining 88.00% of the total variance.)

Table 30 illustrates the total variance of financial management skills elements among Kibera informal settlement women-owned companies using Principal Component Analysis. Component 1 has an eigenvalue of 4.400, which is more than one and interprets 88.00 percent of the overall variance, implying one component accounts for most of the financial management abilities item variability. The latter components are removed since their eigenvalues are less than 1 and they add little variation. The significant variance explained suggests that the items are connected and coherent. The findings support the scale and its use in future research, including regression, to examine how financial management competencies affect financial inclusion and women-owned business sustainability.

4.5.7 *Business sustainability*

TABLE 31

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test for Business Sustainability Items

Measure	Value
Kaiser-Meyer-Olkin (KMO)	.859
Bartlett's Test of Sphericity	
Approx. Chi-Square	1707.671
df	28
Sig.	.000

(KMO values above 0.6 indicate sampling adequacy; Bartlett's Test significance < .05 indicates the correlation matrix is factorable.)

Table 31 provides KMO and Bartlett results for Kibera informal settlement women's businesses' sustainability items. KMO of 0.859 is over the minimum of 0.6, indicating appropriate sample size

and strong inter-item correlations for factor analysis. The correlation matrix is not an identity matrix and can be removed to yield factors because Bartlett's Test of Sphericity is significant (Approx. Chi-Square = 1707.671, df=28, p=0.001). These findings show that business sustainability items are connected and can be condensed into intrinsic variables. The scale's validity and suitability for factor analysis are sufficient to analyze how financial inclusion, financial literacy, and entrepreneurship abilities affect firm sustainability.

TABLE 32
Communalities for Business Sustainability Items

Item	Initial Extraction
I can easily locate a financial service provider (bank, SACCO, mobile agent).	1.000 .897
My business has operated continuously for at least 3 years.	1.000 .786
My business is currently profitable.	1.000 .944
My monthly revenue has increased over the past year.	1.000 .931
I have expanded my business operations in the last 12 months.	1.000 .774
My business can withstand financial shocks (e.g., inflation, delayed payments, pandemics).	1.000 .893
I have created employment for others through my business.	1.000 .948
My business is growing in terms of market reach and customer base.	1.000 .835

(Extraction method: Principal Component Analysis (PCA). Values in the extraction column represent the proportion of variance explained by the factor.)

Table 32 presents the communalities of business sustainability factors among women-owned enterprises in the Kibera informal settlement, derived from Principal Component Analysis (PCA). The extraction numbers indicate the proportion of variance for each item that is attributable to the underlying factor. All items exhibit high communalities, including: finding a financial service provider (.897), a minimum of three years of continuous operation (.786), current profitability

(.944), an increase in monthly revenue (.931), business expansion (.774), resilience to financial shocks (.893), job creation (.948), and an expansion of market reach (.835). The elevated levels of communalities indicate that the items exhibit significant shared variance and combined provide a reliable measure of business sustainability. The results demonstrate that the scale is reliable and valid, suitable for factor-based analysis to examine the impact of financial inclusion, financial literacy, and entrepreneurial skills on enterprise sustainability.

TABLE 33
Total Variance Explained for Business Sustainability Items

Component	Extraction					
	Initial Eigenvalues	% Variance	of Cumulative %	Sums Squared Loadings	of % Variance	of Cumulative %
1	5.594	69.921	69.921	5.594	69.921	69.921
2	1.416	17.695	87.616	1.416	17.695	87.616
3	0.397	4.960	92.576	—	—	—
4	0.249	3.107	95.683	—	—	—
5	0.157	1.965	97.648	—	—	—
6	0.091	1.142	98.790	—	—	—
7	0.075	0.940	99.729	—	—	—
8	0.022	0.271	100.000	—	—	—

(Extraction method: Principal Component Analysis (PCA). Components 1 and 2 have eigenvalues greater than 1, explaining 87.62% of the total variance.)

Table 33 presents the comprehensive variance of business sustainability factors among women-owned firms in the Kibera informal settlement, analyzed by Principal Component Analysis (PCA). Components 1 and 2 possess eigenvalues exceeding 1, namely 5.594 and 1.416, respectively, and

collectively account for 87.62% of the total variance. The majority of the variability in the items is accounted for by these two variables, indicating strong interrelations among the indicators of company sustainability. The other components possess eigenvalues below 1 and contribute negligible variance; hence, they are excluded. The construct validity of the scale is substantiated by the substantial cumulative variance, demonstrating its capability to assess business sustainability. The results elucidate the appropriateness of factor-based analyses in assessing the effects of financial inclusion, financial literacy, and entrepreneurial skills on firm sustainability.

4.6 Descriptive Statistics

Descriptive statistics were used to describe and provide the features of responses to financial inclusion, entrepreneurial skills, and enterprise sustainability. Mean and other measures like standard deviations and variances were calculated in order to capture the central tendencies and dispersion of the variables. These statistics offer the general idea of the perceptions and experiences of respondents, showing the trends and variations of financial accessibility, literacy, and business performance. The findings provide the needed understanding of the process in which women-owned businesses within Kibera informal settlement access financial services and manage their activities.

4.6.1 Financial Access

TABLE 34

Descriptive Statistics for Financial Access Items

Item	N	Minimum	Maximum	Mean	SD
I can easily locate a financial service provider (bank, SACCO, mobile agent).	161	1	2	1.18	0.385
I have access to financial services within walking distance from my business or home.	161	1	2	1.18	0.385

Item	N	Minimum	Maximum	Mean	SD
The procedures for opening and operating financial accounts are straightforward.	161	1	2	1.25	0.433
I have access to digital financial services through my mobile phone or computer.	161	1	2	1.23	0.422
The cost of accessing financial services (e.g., transport, fees) is affordable.	161	1	2	1.30	0.462
I face few or no barriers related to identity or documentation when accessing services.	161	1	2	1.14	0.345

(SD = Standard Deviation. Scores range from 1 (No) to 2 (Yes).)

The mean values (1.14–1.30) indicate that most respondents generally have access to financial services. Few respondents face barriers related to identity or documentation (mean = 1.14, SD = 0.345), and access on foot is fairly common (mean = 1.18, SD = 0.385). Access costs show the highest mean (1.30, SD = 0.462), reflecting variability in affordability. Overall, these findings suggest that women entrepreneurs in Kibera have basic access to financial resources, which may positively influence business sustainability.

4.6.2 Financial usage

TABLE 35

Descriptive Statistics for Financial Usage Items

Item	N	Minimum	Maximum	Mean	SD
I regularly save money using formal financial services (e.g., bank, mobile wallet).	161	1	2	1.11	0.308
I have accessed credit from a financial institution in the past 12 months.	161	1	2	1.14	0.345
I frequently use mobile money platforms for business transactions.	161	1	2	1.12	0.331

Item	N	Minimum	Maximum	Mean	SD
I have an active insurance product (e.g., health, asset, business insurance).	161	1	2	1.61	0.490
I use financial services at least once a week.	161	1	2	1.23	0.422
I have used more than one type of financial product (e.g., savings, loan, insurance).	161	1	2	1.26	0.440

(SD = Standard Deviation. Scores range from 1 (No) to 2 (Yes).)

The findings indicate that respondents frequently engage with basic financial services such as savings (mean = 1.11), credit access (mean = 1.14), and mobile money (mean = 1.12). Usage of more complex products, particularly insurance (mean = 1.61), is less common, highlighting limited adoption. These results suggest that while basic financial services are widely used, low adoption of diverse financial products may affect financial strength and business sustainability.

4.6.3 Financial depth and quality

TABLE 36

Descriptive Statistics for Financial Depth and Quality Items

Item	N	Minimum	Maximum	Mean	SD
The financial products I use meet the specific needs of my business.	161	1	2	1.43	0.497
I can access loan amounts that are adequate for my business operations.	161	1	2	1.37	0.485
The terms and conditions of financial products I use are clear and reasonable.	161	1	2	1.57	0.496
I am satisfied with the financial services I receive.	161	1	2	1.39	0.488
Service providers are transparent in their fees, terms, and processes.	161	1	2	1.11	0.316

Item	N	Minimum	Maximum	Mean	SD
I can choose from a variety of financial products tailored to businesses like mine.	161	1	2	1.55	0.499
Financial service providers are responsive and convenient to work with.	161	1	2	1.60	0.492

(SD = Standard Deviation. Scores range from 1 (No) to 2 (Yes).)

The results suggest moderate satisfaction and accessibility. Financial responsiveness has the highest score (mean = 1.60), while transparency is lowest (mean = 1.11), indicating areas for improvement. Overall, financial products moderately meet business needs but require enhanced transparency to strengthen inclusion and enterprise sustainability.

4.6.4 Digital literacy

TABLE 37

Descriptive Statistics for Digital Literacy Items

Item	N	Minimum	Maximum	Mean	SD
I am comfortable using mobile money platforms (e.g., M-Pesa, Airtel Money).	161	1	2	1.02	0.156
I can download and use financial apps for my business operations.	161	1	2	1.24	0.426
I am familiar with different digital platforms that offer financial services.	161	1	2	1.17	0.375

(SD = Standard Deviation. Scores range from 1 (No) to 2 (Yes).)

Digital literacy is sufficient for basic financial transactions, with nearly universal comfort using mobile money (mean = 1.02). Competence with apps and platforms is moderate, suggesting potential for improvement to enhance financial inclusion.

4.6.5 Entrepreneurial skills

TABLE 38**Descriptive Statistics for Entrepreneurial Skills Items**

Item	N	Minimum	Maximum	Mean	SD
I regularly engage in strategic planning for my business growth.	161	1	2	1.13	0.338
I actively look for innovative ways to improve or expand my business.	161	1	2	1.15	0.357
I seek out new market opportunities to grow my business.	161	1	2	1.34	0.474
I attend trainings, workshops, or mentorship programs to enhance my entrepreneurial skills.	161	1	2	1.52	0.501

(SD = Standard Deviation. Scores range from 1 (No) to 2 (Yes).)

Respondents generally engage in planning and innovation. Participation in training and mentorship is moderate, indicating areas where skill-building interventions could enhance business sustainability.

4.6.6 Financial management skills

TABLE 39**Descriptive Statistics for Financial Management Skills Items**

Item	N	Minimum	Maximum	Mean	SD
I can easily locate a financial service provider (bank, SACCO, mobile agent).	161	1	2	1.18	0.385
I prepare a budget for my business and monitor it regularly.	161	1	2	1.10	0.300
I maintain accurate records of income, expenses, and transactions.	161	1	2	1.13	0.338

Item	N	Minimum	Maximum	Mean	SD
I review my business financial performance (e.g., profit/loss) monthly or quarterly.	161	1	2	1.17	0.375
I separate my personal and business finances for better management.	161	1	2	1.17	0.380

(SD = Standard Deviation. Scores range from 1 (No) to 2 (Yes).)

Table 39 shows that descriptive statistics of financial management skills items in women-owned enterprises in Kibera informal settlement have been obtained. The range of scores is 1 (No) to 2 (Yes) indicating the involvement of the respondents in financial management practices. There are no significant differences shown by the mean values, showing that respondents can find financial service providers (mean = 1.18, SD = 0.385) and prepare and monitor budgets on a regular basis (mean = 1.10, SD = 0.300). There is a consistent adoption of maintaining accurate financial records (mean = 1.13, SD = 0.338), conducting a periodic review of business performance (mean = 1.17, SD = 0.375) and separating personal and business finances (mean = 1.17, SD = 0.380). The standard deviations are very low implying consistency in responses. In general, these findings suggest that informal settlement women entrepreneurs possess sufficient financial management, which will probably lead to financial inclusion and positively reflect on their business sustainability and expansion.

4.6.7 Business sustainability

TABLE 40
Descriptive Statistics for Business Sustainability

Item	N	Minimum	Maximum	Mean	SD
I can easily locate a financial service provider (bank, SACCO, mobile agent).	161	1	2	1.18	0.385

Item	N	Minimum	Maximum	Mean	SD
My business has operated continuously for at least 3 years.	161	1	2	1.25	0.433
My business is currently profitable.	161	1	2	1.15	0.357
My monthly revenue has increased over the past year.	161	1	2	1.45	0.499
I have expanded my business operations in the last 12 months.	161	1	2	1.11	0.308
My business can withstand financial shocks (e.g., inflation, delayed payments, pandemics).	161	1	2	1.50	0.502
I have created employment for others through my business.	161	1	2	1.16	0.363
My business is growing in terms of market reach and customer base.	161	1	2	1.35	0.478

(SD = Standard Deviation. Scores range from 1 (No) to 2 (Yes).)

Table 40 shows descriptive statistics of business sustainability items among business women in the informal settlement of Kibera. Scores have a range of 1 (No) to 2 (Yes) depending on the level of sustainable practices and growth of businesses. The average values are moderately sustainable and the capacity to endure financial shocks has the highest mean (mean = 1.50, SD = 0.502), implying that some of the enterprises are resilient. The growth in monthly payments (mean = 1.45, SD = 0.499) and market expansion (mean = 1.35, SD = 0.478) is a good indicator of business. The longevity and social impact are moderate as indicated by continuous operation (mean = 1.25, SD = 0.433) and employment creation (mean = 1.16, SD = 0.363). In general, the findings indicate a diversity of sustainability practices and value the relevance of financial inclusion, literacy, and entrepreneurship skills as the key to increasing enterprise resilience and long-term growth.

4.7 Diagnostic Tests

Diagnostic tests including normality, multicollinearity, autocorrelation, and heteroscedasticity were performed to ensure that the regression model's results were valid, reliable, and robust. The test of normality determined whether the residual was normally distributed, the test of multicollinearity determined predictor interdependence, and the test of autocorrelation identified serial correlation.

4.7.1 Test of normality

TABLE 41
Tests of Normality

Construct	Kolmogorov-Smirnov	df	Sig.	Shapiro-Wilk	df	Sig.
Financial Access	.412	161	.000	.594	161	.000
Financial Usage	.335	161	.000	.722	161	.000
Financial Depth & Quality	.260	161	.000	.795	161	.000
Digital Literacy	.462	161	.000	.560	161	.000
Entrepreneurial Skills	.273	161	.000	.769	161	.000
Financial Management Skills	.495	161	.000	.471	161	.000
Business Sustainability	.292	161	.000	.770	161	.000

(a = Lilliefors Significance Correction. Sig. < .05 indicates non-normal distribution)

Table 42 presents the results of the normalcy test for all study constructs in women-owned companies within the Kibera informal settlement, utilizing the Kolmogorov-Smirnov and Shapiro-Wilk tests. The significance values for all variables, including financial access, financial usage, financial depth and quality, digital literacy, entrepreneurial skills, financial management skills, and business sustainability, are below 0.05 ($p = .000$), indicating that the data for each construct are not normally distributed. The observed non-normality suggests that the parametric assumptions required by procedures, such as some regression analyses that necessitate normally distributed

data, may not be fully met. Nevertheless, the sample size ($N = 161$) allows for robust estimations through parametric methods in correlation and regression, as supported by the Central Limit Theorem; however, it is important to note that non-normality may affect estimation accuracy and warrants cautious interpretation.

4.7.2 Multicollinearity

TABLE 42
Collinearity Statistics

Predictor Variable	Tolerance	VIF
Financial Access	0.39	2.55
Financial Usage	0.41	2.44
Financial Depth & Quality	0.89	1.12
Digital Literacy	0.49	2.02
Entrepreneurial Skills	0.40	2.50
Financial Management Skills	0.71	1.40

(VIF < 10 and Tolerance > 0.1 indicate no serious multicollinearity issues.)

Table 43 presents the collinearity diagnostics of predictor variables in the study of women-owned firms in the Kibera informal settlement. The tolerance values range from 0.39 to 0.89, above the critical threshold of 0.1, while the Variance Inflation Factor (VIF) values span from 1.12 to 2.55, remaining below the critical limit of 10. These findings indicate that multicollinearity across the study's predictors namely; financial access, financial usage, financial depth and quality, digital literacy, entrepreneurial skills, and financial management skills need not be a concern. Minimal multicollinearity ensures that all predictors in the regression model contribute distinct and reliable information, allowing for the interpretation of coefficient estimations. Consequently, the independent variables may be incorporated into regression studies without bias regarding their

redundancy, allowing for the examination of their individual and combined effects on business sustainability.

4.7.3 Heteroscedasticity

TABLE 43
Residuals Statistics

Statistic	Minimum	Maximum	Mean	SD	N
Predicted Value	0.979	2.008	1.280	0.345	161
Residual	-0.199	0.132	0.000	0.051	161
Standardized Predicted Value	-0.872	2.113	0.000	1.000	161
Standardized Residual	-3.818	2.530	0.000	0.981	161

(Dependent Variable = Business Sustainability. Standardized residuals with SD ~1 and mean ~0 indicate acceptable homoscedasticity)

Table 44 presents the residual statistics of the regression model that forecasts business sustainability in women-owned enterprises within the informal settlement of Kibera. The calculated values range from 0.979 to 2.008, with an average of 1.280 (SD = 0.345), representing the anticipated business sustainability scores. The residuals have a minimum value of -0.199 and a maximum value of 0.132, with a mean of 0.000 and a standard deviation of 0.051, indicating minimal differences between the observed and anticipated values. The standardized residuals range from -3.818 to 2.530, with a mean of around zero (0.000) and a standard deviation of nearly one (0.981), suggesting that homoscedasticity is satisfactory and there are no outliers. Overall, these findings indicate that the regression equation is suitable for the data, as the requirements of linearity and homoscedasticity are not significantly violated, hence justifying further research of the determinants of company sustainability.

4.8 Inferential Statistics

Inferential statistics were employed to determine the link between financial and entrepreneurial variables and the sustainability of women-owned companies in the Kibera informal community. Regression analysis was utilized to ascertain the efficacy of the predictors and the contributions of each predictor. The model summary demonstrated the overall fit, ANOVA was employed to assess statistical significance, and the regression coefficient was utilized to ascertain the strength and direction of the predictor in the model. These research provided empirical evidence establishing a connection among financial inclusion, financial literacy, and entrepreneurial abilities in relation to firm sustainability.

4.8.1 Model summary

TABLE 44

Regression Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	R ² Change	F Change	Sig. F Change
1	.989	.979	.978	0.052	.979	1170.669	.000

Dependent Variable = Business Sustainability; Predictors = Financial Management Skills, Financial Depth & Quality, Digital Literacy, Financial Access, Financial Usage, Entrepreneurial Skills.

Table 45 summarizes the regression model used to predict Kibera informal settlement women-owned company sustainability. The model's correlation between observed and predicted business sustainability values is high ($R = 0.989$) and $R^2 = 0.979$, indicating that financial management skills, financial depth and quality, digital literacy, financial access, utilization, and entrepreneurial skills explain 97.9% of the variation. According to the amount of predictors, the model fit is excellent with an adjusted $R^2 = 0.978$. The estimate has a tiny standard error (0.052), indicating a low variation from projected values. Significant F-test score ($F = 1170.669$, $p < 0.001$) indicates

the model's reliability in forecasting firm sustainability. Overall, the data show that entrepreneurship and financial considerations affect business sustainability.

4.8.2 ANOVA Analysis

TABLE 45

ANOVA for Regression Model

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	19.026	6	3.171	1170.669	.000
Residual	0.417	154	0.003		
Total	19.443	160			

(Dependent Variable = Business Sustainability; Predictors = Financial Management Skills, Financial Depth & Quality, Digital Literacy, Financial Access, Financial Usage, Entrepreneurial Skills.)

Table 46 shows the ANOVA of the regression equation predicting business sustainability for Kibera informal settlement women-owned companies. The regression sum of squares (19.026) is significantly higher than the residual sum (0.417), indicating that the predictor's financial management, depth, quality, digital literacy, access, usage and entrepreneurial skills explain a significant portion of business sustainability variation. Regression's mean square (3.171) is much larger than residues' (0.003), giving in a higher F-value (1170.669). The regression model's statistical significance ($p < 0.001$) indicates a significant impact of predictors on business sustainability, demonstrating its explanatory power.

4.8.3 Regression Coefficients

TABLE 46

Regression Coefficients

Predictor Variable	B	SE B	β	t	p
(Constant)	-0.027	0.024		-1.129	.261
Financial Access	0.227	0.056	0.242	4.049	.000
Financial Usage	-0.070	0.064	-0.064	-1.097	.274
Financial Depth & Quality	0.229	0.034	0.266	6.721	.000
Digital Literacy	0.102	0.067	0.080	1.515	.132
Entrepreneurial Skills	0.487	0.060	0.483	8.170	.000
Financial Management Skills	0.043	0.047	0.040	0.913	.363

(Dependent Variable = Business Sustainability; B = unstandardized coefficient; SE B = standard error; β = standardized coefficient; VIF = variance inflation factor.)

Table 46 shows the regression coefficients of predictors of business sustainability among informal settlement women-owned enterprises of Kibera informal settlements. The unstandardized coefficients (B) show the scale and direction of the effect of each of the predictors on business sustainability. Business sustainability is greatly affected and positively by financial access (B = 0.227, 0.242, $p < 0.001$), financial depth and quality (B = 0.229, 0.266, $p < 0.001$), and entrepreneurial abilities (B = 0.487, 0.483, $p < 0.001$), which implies that the better the access, the quality of financial services, and entrepreneurial capabilities, the more sustainable the businesses and their development. There was no statistically significant impact in this model on financial usage ($p = 0.274$), digital literacy ($p = 0.132$), and financial management skills ($p = 0.363$). The results highlight access to the right financial services and entrepreneurial skills as the major determinants of business sustainability in informal settlements.

TABLE 47

Regression Coefficients without Moderators

Predictor	B	Std. Error	Beta	t	Sig.
Constant	-0.014	0.021	—	-0.660	0.511
Financial Access	0.378	0.044	0.403	8.497	0.000
Financial Usage	-0.050	0.076	-0.046	-0.665	0.507
Financial Depth and Quality	0.447	0.025	0.520	17.870	0.000
Financial Management Skills	0.226	0.047	0.212	4.783	0.000

(Dependent Variable: Business Sustainability)

The regression outcomes of the financial access, financial depth and quality, and financial management skills illustrate that the use of moderators is not significant in predicting the business sustainability ($p < .001$). The strongest standardized effect ($\beta=.520$) is with financial depth and quality, which are very essential in the sustainability of businesses. In contrast, there is no significant financial usage ($p =.507$), which indicates that just utilizing financial services cannot directly increase sustainability without an effective management or access. The model suggests that the business is in the best position when the access to the quality financial services and management competencies are available. Practically, the key areas that policymakers should focus on are the development of better financial infrastructure and training financial management to entrepreneurs since these factors contribute greatly to the sustainability of businesses, most particularly in the developing economies.

TABLE 48

Regression Coefficients with Financial Literacy (without Entrepreneurial Skills)

Predictor	B	Std. Error	Beta	t	Sig.
Constant	-0.014	0.029	—	-0.490	0.625
Financial Access	0.377	0.063	0.403	5.983	0.000
Financial Usage	-0.050	0.076	-0.046	-0.662	0.509
Financial Depth and Quality	0.447	0.025	0.520	17.695	0.000
Financial Management Skills	0.226	0.049	0.212	4.558	0.000
Digital Literacy	0.001	0.079	0.000	0.007	0.994

(Dependent Variable: Business Sustainability)

The outcomes are the same when financial literacy is added (with no consideration of entrepreneurial skills): financial access, financial depth, and quality, as well as financial management skills remain high ($p < .001$). Nevertheless, the role of digital literacy is seen not to be crucial ($p = .994$), implying that although the role of digital tools is becoming more significant, there is not a significant independent influence of digital tools on the sustainability of the business without the presence of the entrepreneurial capacity. This means that literacy cannot be used to bring about sustainable results unless the entrepreneurs are willing to implement financial knowledge in decision making. The results indicate that learning programs ought to integrate monetary literacy and commercial training to yield clear results. Thus, initiatives combining financial literacy, managerial skills, and entrepreneurial creativity might help to make small and medium enterprises (SMEs) more resilient and successful in the long term.

TABLE 49

Regression Coefficients with Entrepreneurial Skills (without Financial Literacy)

Predictor	B	Std. Error	Beta	t	Sig.
Constant	-0.003	0.018	—	-0.145	0.885
Financial Access	0.287	0.039	0.307	7.335	0.000
Financial Usage	-0.065	0.064	-0.060	-1.021	0.309
Financial Depth and Quality	0.233	0.034	0.271	6.824	0.000
Financial Management Skills	0.067	0.044	0.063	1.512	0.133
Entrepreneurial Skills	0.471	0.059	0.466	7.995	0.000

(Dependent Variable: Business Sustainability)

The entrepreneurial skills become a powerful and meaningful predictor of the business sustainability ($\beta = .466$, $p < .001$) when entrepreneurial skills are taken into consideration (without financial literacy). Financial access and financial depth remain as well whereas financial usage and management skills turn out to be irrelevant. This observation demonstrates that entrepreneurial skill, expressed in terms of innovation, strategic taking of risks and flexibilities, is a key

determinant in keeping businesses afloat, despite lack of financial literacy. It highlights the importance of educating and developing entrepreneurship skills to ensure the sustainability of businesses. The policymakers and educators are thus advised to develop capacity building programs that focus on development of entrepreneurial skills since these skills would allow business owners to utilize the available financial resources in an efficient manner, respond to market changes, and retain their competitive edge particularly in resource-depleted conditions.

4.9 Discussions

4.9.1 Accessibility of financial services and sustainability of women owned enterprises

The findings indicate that access to financial services positively influences the sustainability of women-owned firms ($\beta = 0.242$, $p < 0.005$). This illustrates that the accessibility and availability of engagement with financial institutions significantly influence the stability of the firm. This aligns with the premise of loan Rationing Theory (Stiglitz and Weiss, 1981), which asserts that limitations on loan access impede economic expansion. Women in informal settlements typically own limited collateral and networks, which might be improved with increased access points, hence facilitating greater involvement in financial institutions.

Accessibility is crucial, signifying the significance of infrastructure and facilitating policies that enhance the resilience of women in entrepreneurship. The results align with studies such as FSD Kenya (2022), which found that enhanced access to financing through mobile money and microfinance enabled women to stabilize their income and expand their operations. However, they contradict the assertions that mere physical access is insufficient without financial literacy or appropriate conditions. In theory, while accessibility is statistically significant, it should be utilized alongside usage and quality to yield durable outcomes.

4.9.2 Usage patterns of financial services and sustainability of women-owned enterprises

The regression results indicate a negative albeit statistically negligible effect of financial services utilization on sustainability ($\beta = -0.064$, $p = 0.274$). This indicates that access does not equate to effective utilization. The Institutional Theory (North, 1990) posits that structural inefficiencies and a lack of trust in financial institutions often inhibit women from actively utilizing offered products. This may also reflect a cultural preference for informal savings organizations over conventional financial institutions.

Statistical insignificance indicates conceptual relevance, although it does not depend on actual application within organizations. In contrast to the studies by Demirgüç-Kunt et al. (2020), which emphasize the transformative impact of regular financial utilization on business growth, these findings suggest issues related to product design or its inapplicability for women in informal settlements. Inadequate literacy, high transaction costs, and limited credit turnover cycles may hinder optimal utilization. Consequently, utilization lacks statistical relevance; nonetheless, its theoretical importance lies in the formulation of long-term financial inclusion initiatives.

4.9.3 Financial Service Depth and Sustainability of Women-Owned Enterprises

The findings demonstrate that enterprise sustainability is significantly and favorably influenced by financial depth ($\beta = 0.266$, $p < 0.001$). This indicates that resilience is enhanced by the accessibility of diverse and flexible financial options. The Resource-Based View (Barney, 1991) asserts that resource diversity promotes competitive advantage, which explains why increased engagement in credit, savings, and insurance stabilizes firms. In informal settlements, more established financial links render women less vulnerable to shocks and enable them to participate in long-term development. The importance of the data demonstrates that financial depth is not only theoretically relevant but also practically essential.

These findings align with Mbiti and Weil (2023), who found that increased engagement with mobile banking reduced marginalization in Kenya. Similarly, Johnson et al. (2021) linked the diversified utilization of products to business success. Conversely, superficial participation cycles often generate instability. Financial depth theoretically transforms the survival models of women-owned firms into sustainable enterprises, hence affirming its dual statistical and theoretical value.

4.9.4 Quality of Financial Services and Sustainability of Women Entrepreneurs

The regression results indicate that the quality of financial services has a weak and statistically negligible correlation with sustainability ($\beta = 0.040$, $p = 0.363$). While cost, transparency, and responsiveness of service quality are conceptually significant, they may not yet be pivotal determinants of corporate success. Social Capital Theory (Coleman, 1988) posits that financial participation is contingent upon trust and relationships. In instances where institutions fail to cultivate robust trust, perceptions of excellence may not result in a quantifiable effect. The insignificance can be ascribed to the leniency in enforcing consumer protection standards in informal settlements.

The outcome contradicts the findings of Rahman et al. (2021), who determined that service quality significantly influences the performance of microenterprises in South Asia. In Nairobi, women are willing to invest in a financial service to gain access, given the limited availability of alternative options. The importance of quality persists as it affects long-term confidence and adoption, despite its statistical insignificance suggesting contextual problems.

4.9.5 Financial literacy and entrepreneurial skills and sustainability of women owned enterprises

The results indicate that the sustainability of women-owned businesses is strongly predicted by entrepreneurial skills ($\beta = 0.483$, $p < .001$) but seldom influenced by digital literacy ($\beta = 0.080$, p

=.132). This trend indicates that the ability to build capacity, financial skills, and effective use of knowledge hold more relevance to the existence of the enterprise than digital competency. The Resource-Based View (RBV) Theory confirms these findings by stating that internal capabilities especially entrepreneurial and financial management capabilities are strategic resources that offer a long-term competitive advantage. The relationship between financial access, management and business sustainability was reinforced when the moderating effects were added. This means that financial literacy augments the usefulness of entrepreneurial skills by boosting the decision-making power, strategic resource allocation, and the capability to make use of the market opportunity.

Ideally, women entrepreneurs who have financial and entrepreneurial strengths are more adaptable, risk-reduced and long-term resilient compared to those who hold either skill only. These results are consistent with Hagen et al. (2020) and Fatoki (2021), who have stressed that entrepreneurial competence and financial knowledge contribute to small business sustainability together due to the enhancement of planning and innovation.

On the other hand, they do not align with the research that highlights the increase of digital finance usage as the main source of change (e.g., Boateng et al., 2018), which indicates that in the environment with poor digital infrastructure or doubts about the use of digital tools, the moderating effect of financial literacy is stronger as compared to that of digital literacy. Thus, although the role of technology use cannot be ignored, the potential of financial literacy and entrepreneurial skills becomes the most effective avenue to sustainable development of women-owned businesses, especially in a less-resource or informal economy.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS.

5.1. Introduction

The chapter summarizes the research's primary findings, conclusions and analysis recommendations. It uses statistical, theoretical and empirical research to demonstrate the link between financial inclusion and women-owned business sustainability being moderated by financial management and entrepreneurship skills. This chapter summarizes major findings from the study objectives and draws conclusions on financial inclusion and sustainability of women owned enterprises. Government agencies, financial institutions and development partners receive policy and practice-based guidance. The chapter concludes with study limitations and suggestions for future research to improve understanding.

5.2. Summary

5.2.1. To examine the effect of accessibility of financial services on the sustainability of women-owned enterprises in Kibera

5.2.2. The research indicated that financial services improve the sustainability of women-owned businesses. Women entrepreneurs who can easily identify financial providers and manage banking infrastructure can grow their businesses, stabilize revenues and take long-term growth prospects. These findings support the Credit Rationing Theory, which holds that credit barriers hinder entrepreneur growth. Financial access is vital in Nairobi's informal settlements due to limited formal employment. Services including mobile banking, agency consignments and microfinance reduce financial exclusion. Accessibility alone cannot assure sustainability, it must be paired with favorable lending conditions and financial offerings.

Accessibility helps women develop successful enterprises that can weather economic shocks and capitalize on market possibilities, according to the findings.

5.2.3. To assess the influence of usage patterns of financial services on the sustainability of women-owned enterprises in Kibera

Financial service trends negatively affected women-owned businesses' sustainability but not significantly. Easy access has led to inconsistent use of financial goods like savings credit and insurance. According to Institutional Theory, institutional constraints and informal norms affect women's financial services involvement, which may explain the weak association. Many women entrepreneurs still use savings groups and rotating credit associations instead of traditional financial institutions. The modest size indicates how usage without policies or cheap products may not help the business expand. This contradicts contextually limited study that found substantial links between active financial use and performance. Usage is conceptually applicable but requires enabling conditions to produce sustained business results.

5.2.4. To determine the role of financial service depth on the sustainability of women-owned enterprises in Kibera

The study found that financial depth and quality greatly affected women-owned business sustainability. Access to credit, savings, insurance and internet finance improved firm resilience and performance over time. The multiplicity of resources boosts competitive advantage, and in-depth financial services involvement helps women entrepreneurs take risks and grow their enterprises. Empirical evidence shows that financial depth allows reinvestment, diversification, and economic shock adaptation. The results show that financial depth is theoretically and

statistically significant making a survivalist business sustainable and empowering women economically.

5.2.5. To evaluate how the quality of financial services affect the business sustainability of women entrepreneurs in Kibera

The findings revealed that the quality of financial services exerted a negligible and statistically insignificant influence on the viability of women-owned firms, despite the concept's significance. Affordability, transparency, reliability and customer support are characteristics of service quality that exhibited a weak correlation with business success in this study context. The Social Capital Theory asserts that trust is a crucial characteristic of financial engagement and the perceived importance of quality may be undermined by insufficient institutional trust. In the informal settlements of Nairobi, women prioritize access above quality due to limited options which may explain the weak statistical correlation. The results contradict previous studies that indicated service quality was a crucial determinant of entrepreneurial achievement. Despite being statistically small, there exists theoretical relevance, as the quality of financial services is crucial for fostering long-term confidence, adoption and fair financial inclusion among women entrepreneurs.

5.2.6. To determine the moderating effects of financial literacy and entrepreneurial skills in the relationship between financial inclusion and sustainability of women-owned enterprises in Kibera, Kenya

Entrepreneurial abilities highly predicted women-owned business sustainability while digital literacy was not statistically significant but favorably associated. Financially literate women entrepreneurs who budgeted, saved and invested had superior resiliency, profitability and sustainability. The Resource-Based View considers such capabilities important resources that

boost business growth and competitiveness. However, inadequate digital literacy effects may imply infrastructural restrictions, low internet use and informal settlements' skepticism of the digital platform. Digital competencies are less effective at maintaining firms than conventional entrepreneurial competencies, according to empirical research. Digital literacy is still important for future competitiveness since financial ecosystems are getting more technical. The findings show that strengthening entrepreneurial and financial knowledge helps women-owned enterprises survive.

5.3. Conclusion

5.3.1. Accessibility of financial services and sustainability of women owned enterprises

The study found that financial services are crucial to women-owned enterprises' sustainability. Women entrepreneurs benefit from physical and digital financial institutions, mobile banking agents and microfinance shops. Women will have access to financial systems that help them grow their businesses due to lower entry costs. Access is insufficient without suitable items and conditions. The findings support Credit Rationing Theory, which highlights current credit access barriers for credit categories. Access to more means helps women stabilize income and reduce vulnerability in informal settlements without collateral or formal records. To remedy this scenario, more access points, supportive lending programs and inclusive legislation are needed to help women entrepreneurs turn accessibility into long-term business viability.

5.3.2. Usage patterns of financial services and sustainability of women owned enterprises

The research concludes that, although relevant within the conceptual framework, the consumption pattern of financial services does not substantially affect the sustainability of women-owned firms at now. Women in informal settlements often acquire financial products but refrain from utilizing them due to structural concerns such as elevated business expenses, lack of trust and cultural

reliance on informal institutions. The negligible correlation shown indicates that access without appropriate utilization fails to yield quantifiable economic benefits. This conclusion is elucidated by informal norms and fragile institutional frameworks.

According to Institutional Theory, active engagement is constrained by these informal norms. This contrasts with previous study that associated high frequency with enterprise growth, suggesting contextual variations. It is determined that without the support of economical and user-friendly products, the latter will remain an underutilized element. Financial literacy, cultural acceptance and trust-building are essential for achieving sustainable business outcomes.

5.3.3. Financial service depth and sustainability of women owned enterprises

The study concludes that the depth of financial services significantly contributes to the viability of women-owned ventures. Women entrepreneurs with access to a range of services, such as credit, savings, insurance and digital solutions, are more inclined to manage risks, diversify their revenue sources and reinvest in growth. The Resource-Based View Theory emphasizes the significance of resource variability in bolstering resilience and financial depth, allowing women to sustain resource allocations with a unique array of instruments.

The statistical significance validates the impact of depth in transitioning enterprises from survivalist to sustainable endeavors. The level of engagement was crucial in enhancing resilience in Nairobi's informal settlements, where economic shocks are prevalent. It may also be inferred that sustainable financial inclusion policies must transcend mere access to enable diversified and flexible utilization of services, ensuring that women-owned firms can thrive over time and achieve economic empowerment.

5.3.4. Quality of financial services and sustainability of women entrepreneurs

The research found that financial service quality theoretically affects the sustainability of women-owned companies in informal settlements, but not quantifiably. Cheapness, openness and accountability did not affect business growth by themselves. Lack of alternatives makes women choose access above service quality. Because informal networks of trust replace formal quality considerations, the Social Capital Theory may explain this. The statistical difference was not significant but service quality is still crucial to long-term trust in formal finance. Previous study suggests contextual restrictions, which undervalue quality due to necessity-driven decisions.

5.3.5. Financial literacy and entrepreneurial skills and sustainability of women owned enterprises

Entrepreneur and financial literacy are key sustainability drivers of women-owned firms, but digital literacy is less important yet growing. Entrepreneurs with strong planning, savings and investment skills are more successful and expanded. The Resource-Based View Theory emphasizes such abilities as strategic resources that help women turn financial access into competitive advantage. Digital literacy is irrelevant to informal settlements' infrastructural and cultural challenges but its conceptual importance is significant due to financial framework technologization. Enhancing entrepreneurial and financial literacy has short-term, measurable advantages, while digital literacy requires long-term capacity. All these qualities ensure that women entrepreneurs can mobilize financial resources, adapt to the market and survive environmental and institutional obstacles.

5.4. Recommendations

5.4.1. Accessibility of financial services and sustainability of women owned Enterprises

Policies must increase physical and digital financial service locations in informal settlements to improve access. Financial institutions could launch more mobile banking agents and digital platforms for women entrepreneurs, while government initiatives like women empowerment funds and SACCOs should be more inclusive. Women with minimal resources can get collateral-free loans and streamlined documentation. County governments can also promote services through community-based campaigns. Overall, a multi-level strategy is needed to remove physical, regulatory and informational impediments and help women-owned enterprises flourish sustainably in informal settlements.

5.4.2. Usage patterns of financial services and sustainability of women owned enterprises

To enhance utilization, measures exceeding basic access are required. Financial service providers must create affordable solutions that are readily available, tailored to the incomes of women in informal settlements in order to facilitate enterprise initiation and sustainability. The encouragement of regular usage can be achieved by the provision of flexible repayment schemes, reduced transaction fees and user-friendly interfaces. Financial literacy training should be integrated into entrepreneurship programs by the government and non-governmental organizations to empower women to utilize financial products for business expansion rather than household consumption. Online record-keeping tools enable women to track savings, loans and expenditures, enhancing consistent engagement.

Cultural obstacles and the skepticism towards formal services must be addressed in community awareness efforts. The trend of rising usage demands focus on relevance, affordability and trust-building, ensuring that women-owned firms not only establish accounts but also engage in ongoing and consistent utilization of these accounts for sustainable growth.

5.4.3. Financial service depth and sustainability of women owned enterprises

Women entrepreneurs should be afforded the chance to adopt a portfolio approach encompassing credit, savings, insurance and digital tools to enhance their engagement with financial services. Banks are urged to bundle products, including credit and savings accounts as well as micro-insurance, to bolster resilience. Policymakers should promote product diversification by urging banks and microfinance organizations to develop specialized offerings for low-income women.

Partnerships with mobile money firms can enhance digital credit and savings services, hence reducing dependence on informal channels. The efficacy of integrating various services, such as utilizing funds as collateral or employing insurance for risk management, must be exemplified in the training programs. The augmented depth enables women entrepreneurs to stabilize cash flows, diversify risks and reinvest consistently, ensuring that financial inclusion transcends mere access to encompass comprehensive involvement for sustainable enterprise outcomes.

5.4.4. Quality of financial services and sustainability of women entrepreneurs

Enhancing the quality of financial services necessitates the establishment of trust, affordability, and user-friendliness within formal institutions. Regulators are urged to enhance consumer protection measures to mitigate hidden fees, fraud and predatory tactics that lead women to disdain formal finance. Banking institutions should facilitate adoption by providing cheap loan solutions with flexible repayment options aligned with women's business cycles. Community engagement efforts must incorporate women's participation in product creation to ensure that services meet their needs and difficulties.

Re-educating frontline staff on delivering gender-sensitive services can improve client experiences and encourage ongoing utilization. Financial service providers can enhance trust and long-term commitment among women in business by prioritizing openness, equity and dependability, to foster sustainability.

5.4.5. Financial literacy and entrepreneurial skills and sustainability of women owned enterprises

Women entrepreneurs ought to concentrate on capacity-building initiatives that equip them with financial literacy, entrepreneurial acumen and digital proficiency. Government agencies, non-governmental groups and individuals are anticipated to deliver targeted instruction on budgeting, savings, investment planning and debt management. Practical mentorship programs will enable women to innovate, diversify and extend their enterprises by providing them with entrepreneurial skills. Given the centralization of digital finance, training in mobile money, online banking and digital record-keeping is essential to improve digital literacy.

The ongoing enhancement of skills can be facilitated by community-oriented peer learning models, such as women's savings groups. County governments must integrate financial and entrepreneurship education into enterprise development programs while institutions should enhance training alongside credit provision in more effective initiatives. By enhancing these competencies, women entrepreneurs will be equipped to optimize financial services, so fostering the sustainability and long-term development of their businesses.

5.5. Limitations of the Study

This research exhibited the following methodological deficiency. The utilization of self-reported data through questionnaires may have been subject to response bias, since some respondents might have provided socially desirable answers rather than true representations of their activities.

The exact number of women-owned enterprises in Kibera could not be ascertained due to the informal nature of most businesses and the absence of comprehensive official records. The study therefore relied on triangulated estimates from community-level data sources, consistent with previous research approaches in similar informal contexts such as Kedir et al., 2022. While this

introduced some level of estimation error, it remains an accepted methodological approach in research on informal sector enterprises.

5.6. Suggestion for the Future Research

Future research should build upon the fact that the accessibility and comprehensiveness of financial services significantly contribute to the sustainability of women-owned firms by examining the impact of specific products, such as green finance or digital loans, on this outcome. A reevaluation of the various institutions within informal sectors and marginalized populations may provide a deeper comprehension of systemic restrictions. Expanding current models to include cultural, technological and policy dimensions would enhance understanding of entrepreneurial sustainability. These study avenues will enhance the literature and evidence-based methodologies for empowering women-owned firms.

References

- Abbasi, T. &. (2017). *The impact of digital financial services on firm performance: A literature review*. Tilburg University.
- Abebe, A. K. (2023). The role of microfinance institutions on women's entrepreneurship development. *Journal of Innovation and Entrepreneurship* 12(17), 1-24.
- Achuti, E. (2025). Financial Accessibility Challenges and Sustainability of Women Owned Enterprises in Kisii Township, Kenya. *Est African Finance Journal* 4(3), 62 - 75.
- Adam, A. A. (2022). The Resource-Based View Theory and Women Microbusiness Entrepreneurs: A Contribution to Business Sustainability. *International Journal of Academic Research in Business and Social Sciences*, 12(10), 2915–2932.
- Addi, B. A. (2024). Exploring the street economy in African cities: A review of practices, regulatory policies, and challenges of urban governance in Ghana. *Journal of Urban Affairs*. , 15.
- Adede, M. (2007). The merry-go-round concept and informal financial markets in Kenya . *University of Nairobi Research Archive*. .
- AFAWA. (2025). *Why AFAWA*. Retrieved from African Development Bank Group: <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/afawa-affirmative-finance-action-for-women-in-africa/why-afawa>
- AFI. (2016). *Indicators of the Quality Dimension of Financial Inclusion*. Kuala Lumpur: Alliance for Financial Inclusion .

- AFI. (2019). *Core Set of Financial Inclusion Indicators: Measurement Guide*. Kuala Lumpur: Alliance for Financial Inclusion.
- Africa Development Bank. (2021). *The African Development Bank Group Gender Strategy 2021-2025*. AFB. Retrieved from Africa Growth Initiative via Brookings.
- African Development Bank. (2024). *Executing human-centred design research for smartphone-enabled digital financial services*. Africa Digital Financial Inclusion Facility.
- African Union. (2015). *Agenda 2063: The Africa we want*. Addis Ababa: African Union Commission.
- Agarwal, R. A.-D. (2021). Financial access and business performance: Evidence from fintech lending. *Journal of Financial Economics*, 140(2), 263–283.
- Agesa, J. R. (2025). Households' Decision to Join an Informal Financial Sector Social Group: Evidence from Kenya. *Journal of African Development* 26(1), 30-49.
- Ajema, C., Suubi, K., Wandera, N., & Mugenyi, C. &. (2021, 9 16). *Informal women workers and missed opportunities: The pandemic economic stimulus package in Kenya*. Retrieved from Gender and Public Health Emergencies: <https://genderandcovid-19.org/uncategorized/informal-women-workers-and-missed-opportunities-the-pandemic-economic-stimulus-package-in-kenya/>
- Alibhai.S., D. G. (2019). *Gender Bias In SME Lending : Experimental Evidence From Turkey*. Washington, D.C., USA: World Bank.
- Allen, F. D.-K. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, 27, 1-30.

Alliance for Financial Inclusion. (2020). *Policy framework for women's financial inclusion*. .

Alom, K., Z., R., Khan, A., Akbar, D., Hossain, M., & Ali, A. &. (2025). Digital finance leads women entrepreneurship and poverty mitigation for sustainable development in Bangladesh. *Jouranal of Innovation and Entrepreneurship* 14(34), 1- 18.

Al-Qahtani, M. Z. (2022). Female Entrepreneurship for Sustainable Economy and Development—Challenges, Drivers, and Suggested Policies for Resource-Rich Countries. *Sustainability*, 14(20), 13412.

Amran, C. N. (2019). Microfinance services and performance of women owned small scale business enterprises in Nairobi City County, Kenya. *International Academic Journal of Economics and Finance*, 3(4), 267–285.

Anoman, I. (2023, 7 28). *Breaking Down Barriers: How Fintech powers financial inclusion in Kenya*. Retrieved from Progressive African Commuinities and Territories: <https://africanpact.org/2023/07/28/breaking-down-barriers-how-fintech-powers-financial-inclusion-in-kenya/?utm>

Appiah, G. Z. (2025). The weaker vessel: Survival tactics of women entrepreneurs in Ghana's informal economy. *International Small Business Journal*.

Arbelo Antonio, A. P.-G. (2024). Internationalization and individual firm performance: a resource-based view. *Eurasian Business Review* 14, 881 - 915.

Armendáriz, B. &. (2010). *The economics of microfinance (2nd ed.)*. . MIT Press.

Arnold, J. E.-Z. (2021). *Normative Constraints to Women's Financial Inclusion: What We Know and What We Need to Know*. Washington, D.C.: Center for Financial Inclusion.

- Ashubwe, J. W. (2024). *Gender Disparities in Financial Inclusion: The Potential of Digital Loans in Empowering Female Health Entrepreneurs in Kenya*. . ResearchGate.
- Aterido, M. B. (2019). How does access to formal credit impact microenterprise productivity? Evidence from Sub-Saharan Africa. *World Bank Economic Review*, 33(1), 199–216.
- Aterido, R. B. (2013). Access to finance in sub saharan Africa : Is there a gender Gap? *World Development*,(47), 102-120.
- Atiase, V. Y. (2022). Investigating financial resilience and survivability of SMEs in Africa: A panel study. In ISBE 2022: New approaches to Raising Entrepreneurial Opportunity (pp. 1–15), York. *ISBE 2022: New approaches to Raising Entrepreneurial Opportunity* (pp. 1-15). York: Institute of small business and entrepreneurship.
- Balch, O. (2025, 3 10). *Mary Ellen Iskenderian’s mission to ensure one billion women have bank accounts*. Retrieved from Reuters: <https://www.reuters.com/sustainability/society-equity/mary-ellen-iskenderians-mission-ensure-one-billion-women-have-bank-accounts-2025-03-10/?utm>
- Banerjee, A. K. (2015). Six randomized evaluations of microcredit: Introduction and further steps. *American Economic Journal: Applied Economics*, 7(1), 1–21.
- Banerjee, A. V. (2011). *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. Public Affairs.
- Bank for International Settlements. (2019). *Measuring financial inclusion: A multidimensional index (IFC Bulletin No. 38)*. . Basel, Switzerland: Bank for International Settlements.

- Bannor, R. D. (2020). Village savings and loans association participation and impact on off-farm income among rural women. *Journal of Enterprising Communities People and Places in the Global Economy*, 539-569.
- Barajas, A. a. (2020). *Financial inclusion: What have we learned so far? What do we have to learn? (IMF Working Paper No. 20/157 – Report)*. Washington, D.C: International Monetary Fund.
- Barasa, L. K. (2020). When does firm innovation lead to employee job satisfaction? The moderating roles of workplace stability and family-supportive organizational perceptions. *. Journal of Small Business Management* 58(4), 732–755.
- Barasa, S. O. (2020). Constraints to access and usage of financial services by women-owned MSMEs in Kenya. *. International Journal of Economics and Business Research*, 19(2), 157–172.
- Baraza, L. O. (2018). Effects of Competitive Advantage Strategies on Performance of Micro-Finance Institutions at Kenya Women Micro-Finance Bank. *Research Gate*, 243-246.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B. (2021). Resource-Based Theory and the Value Creation Framework. *Journal of Management*, 47(7), 1840–1867.
- Bashir, A. &. (2018). Effect of Financial Products on Financial Performance of Small and Medium Enterprises in Nairobi County. *Journal of International Business, Innovation and Strategic Management* 1(16), 1 -36.

- Batista, C. &. (2020). . Improving access to savings through mobile money: Experimental evidence from African smallholder farmers. *World Development*, 129, 104905.
- Beck, T. P. (2018). Payment instruments, finance and development. . *Journal of Development Economics*, 133, 162–186.
- Berfond, J. S. (2024). *Experiencing Impact: Evidence on Financial Services and women empowerment*. Women's World Banking.
- Bialus, D., Tam, L., & Hien, N. &. (2022). Financial access of women owned small andmedium sized enterprise in Viet Nam. *ADB SouthEast Asia*, 1 -70. Retrieved from ADB South East Asia.
- Bolarinwa, O. A. (2016). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. . *Nigerian Postgraduate Medical Journal*, 22(4), , 195–201.
- Borham, A. A. (2024). Formal and informal institutional factors and women entrepreneurship in Egypt: A qualitative perspective. . *SAGE Open*, 14(3), .
- Boudreaux, C. J. (2021). Social capital and small business productivity: The mediating roles of financing and customer relationships. . *Small Business Economics*, 1-45.
- Braniff, L. &. (2018, 7 10). *Bringing health microinsurance to Kenyans via mobile phone*. Retrieved from CGAP: <https://www.cgap.org/blog/bringing-health-microinsurance-to-kenyans-mobile-phone>

- Bruhn, M., Hommes, M., Khanna, M., Singh, S., Sorokina, A., & Wimpey, J. S. (2017). *MSME Finance Gap: Assessment of the Shortfalls and Opportunities in Financing Micro, Small and Medium Enterprises in Emerging Markets*. Washington,D.C.: IFC.
- Burlando, A. &. (2020). Long-term effects of financial access: Evidence from microenterprise growth. *World Development*, 136, 105120.
- Buviniv, M. J. (2020). *Can boosting savings and skills support female business owners in Indonesia?* Washington D.C.: World Bank.
- Cai J., M. M. (2025). *Microfinance*. VoxDevL.
- Cai, J. D. (2015). Social networks and the decision to insure. *American Economic Journal: Applied Economics*, 7(2), 81–108.
- CARE . (2025). *Measuring women entrepreneurs' financial resilience: The STRIVE Micro report 2025* . Geneva: . CARE International.
- Carter, M. (2022). Can Digitally-Enabled Financial Instruments Secure an Inclusive Agricultural Transformation? . *Agricultural Economics*, 53(2), 175–190..
- CBK,KNBS & FSD Kenya. (2021). *inAccess Household Survey 2021: Tracking developments in financial inclusion in Kenya*. Nairobi: Central Bank of Kenya.
- CBK;FSD Kenya;KNBS. (2021). *2021 FinAccess Household Survey*. Nairobi, Kenya: CBK.
- Cenfri. (2017). *A measurement framework for depth of financial inclusion*. Cefri.
- Cenfri. (2018). *Biometrics and Financial Inclusion: A Roadmap for Implementing Biometric Identity Systems in Sub-Saharan Africa*. Cape Town, South Africa: Cenfri.

- Center for Financial Inclusion. . (2022). *Financial inclusion and service quality*. Center for Financial Inclusion.
- CGAP . (2021). *Measuring women's financial inclusion: A toolkit*. Consultative Group to Assist the Poor.
- CGAP. (2025). *Financial Inclusion 2.0*. Retrieved from CGAP: <https://www.cgap.org/topics/collections/financial-inclusion-2-0#:~:text=Financial%20Inclusion%202.0%20aims%20to,contribute%20to%20meaningful%20development%20outcomes>.
- Chant, S. &. (2012). Fixing women or fixing the world? ‘Smart economics’, efficiency approaches, and gender equality in development. . *Gender & Development*, 20(3), , 517–529.
- Chant, S. (2006). Re-thinking the “feminization of poverty” in relation to aggregate gender indices. . *Journal of Human Development*, 7(2), 201–220.
- Chatterjee, S. &. (2021). Financial inclusion and its impact on entrepreneurship: A study of women entrepreneurs in India. . *Journal of Business Research*, 130, 248-256.
- Cheng, S. &. (2019). Institutional theory and its applications in understanding entrepreneurship in developing countries. . *Journal of Business Research*, 104, 135-146.
- Cheruiyot, J. K. (2016). A study on operations and impact of rotating savings and credit associations (ROSCAs): A case of Embakasi Constituency, Nairobi County, Kenya. . *International Journal of Economics, Commerce and Management* 4(5), 871-897.
- Chikoko, R. M. (2023). Financial literacy and the usage of financial products among informal women traders. *African Review of Economics and Finance*, 15(1), 78–97.

- Chironga, M. (2017). *Accelerating financial inclusion in Africa*. . New York: McKinsey & Company.
- Chironga, M. D. (2017). *Mobile financial services in Africa: Winning the battle for the customer*. McKinsey & Company.
- Choi, S., & L, W. K.-W. (2020). How resource orchestration drives innovation and firm performance: The role of entrepreneurial orientation. *Sustainability* 12(13):5415, 1-13.
- Chowdhury, M. S. (2019). Institutions and entrepreneurship quality. . *Entrepreneurship Theory and Practice*, 43(1), 51–81.
- Coleman, S. H. (2019). Policy support for women entrepreneurs' access to financial capital. . *Journal of Small Business Management*, 57(2), 296–322. .
- Conning, J. &. (2007). Rural financial markets in developing countries. In R. E. Pingali, *Handbook of Agricultural Economics Vol 3* (pp. 2857–2908). Elsevier.
- Cottier, L. (2024, 3 1). *How economic empowerment programs for women affect household decision making dynamics and intimate partner violence in Kibera*. Retrieved from CFK Africa: <https://cfkafrica.org/how-economic-empowerment-programs-for-women-affect-household-decision-making-dynamics-and-intimate-partner-violence-in-kibera/?utm>
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.)*. SAGE Publications.
- Cull, R. (2020). Financial inclusion: A key to women’s entrepreneurship in developing economies. *World Bank Policy Research Working Pape*.

- Dalton, P. S. (2022). E-payment technology and business finance: A randomized controlled trial with mobile money. *Management Science*, 70(4), 2590–2625.
- Data2X & Financial Alliance for Women. (2022). *Towards Women's Financial Inclusion: A Gender Data Diagnostic of Kenya*. Data2X & Financial Alliance for Women.
- Data2X. (2022). *Data Diagnostics: Kenya Country Report*. Washington D.C.: United Nations Foundation. .
- Delali, P. Y. (2022). Formal finance and household enterprise performance in Ghana: The gender dimension. *Frontiers in Psychology* 13, 1-18.
- Demirguc-Kunt, A. K. (2017). *Financial inclusion and inclusive growth: a review of recent empirical evidence*. World Bank.
- Demirgüç-Kunt, A. K. (2018, 4 19). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. Retrieved from The World Bank.: <https://doi.org/10.1596/978-1-4648-1259-0>
- Demirgüç-Kunt, A. K. (2022). *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*. . Washington D.C.: World Bank.
- Dennis, P. (2016). *Banking on the Poor*. Retrieved from Stanford Social Innovation Review: https://ssir.org/articles/entry/banking_on_the_poor?utm
- Dissaux, T. (2023). Geographies of monetary exclusion in Kenyan slums: Financial inclusion in question. . *Development and Change*, 54(2), 87–116.

- Do, H., Budhwar, P., Shipton, H., & Nguyen, H. &. (2022). Building organizational resilience, innovation through resource-based management initiatives, organizational learning and environmental dynamism. *Journal of Business Research* ,Elsevier 141(c), 808-821.
- Doris, A. &. (2019, 5 22). *Why female entrepreneurs are missing out on funding*. Retrieved from London Business School: [ondon.edu/think/iie-why-female-entrepreneurs-are-missing-out-on-funding?](https://london.edu/think/iie-why-female-entrepreneurs-are-missing-out-on-funding?)
- Dudi, M., Muiruru, P., & . &Kibutu, T. (2023). Effectiveness of Street Vendors Associations among Women Street Vendors: A Case Study of Nairobi CBD. *East African Journal of Arts and Social Sciences* 6(2).
- Dupas, P. &. (2013). Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya. . *American Economic Journal: Applied Economics*, 5(1), 163–192.
- Dupont, V. &. (2016). Savings for entrepreneurs: Evidence from field experiments in developing countries. *Journal of Development Economics*, 125-144.
- Dzisi, S. &. (2021). Microfinance and the performance of women-owned small and medium enterprises (SMEs) in Ghana. *International Journal of Entrepreneurship and Small Business*, 42(3), 305 - 320.
- East African Community . (2016). *Financial sector development strategy (2016–2021)*. Arusha: East African Community Secretariat.

- Ebewo, P. S. (2025). Towards Inclusive Entrepreneurship: Addressing Constraining and Contributing Factors for Women Entrepreneurs in South Africa. *Administrative Sciences* 15(1), 14.
- El-Zoghbi, M. &. (2019). *Women's financial inclusion in the Arab world: A strategic approach for addressing the gender gap in access to finance.* . CGAP.
- El-Zoghbi, M. (2019, April 2). *Financial inclusion: Beyond access to empowerment*. Retrieved from Consultative Group to Assist the Poor: <https://www.cgap.org/blog/financial-inclusion-beyond-access-empowerment>
- Estrada, C. S. (2022, July 6). *Women , SMEs and sustainable development –lessons learnt for the road ahead*. Retrieved from United Nations Industrial Development Organization(UNIDO): <https://www.unido.org/stories/women-smes-and-sustainable-development-lessons-learnt-road-ahead>
- Fambeu, A. H. (2022). State fragility and the determinants of women's financial inclusion in Sub-Saharan Africa. . *Région et Développement*, 56, , 61–76.
- Fatoki, O. (2011). The impact of access to finance on the performance of small and medium enterprises in South Africa. . *Journal of Social Sciences*, 29(3), 193–204.
- Fekete-Farkas, M. Z. (2023). Women's adoption of digital financial services: Evidence from Southeast Asia. . *Journal of Financial Services Marketing*, 28(1), 15–30.
- Field, A. (. (2018). *Discovering statistics using IBM SPSS Statistics (5th ed.)*. . Sage.
- FinMark Trust. (2023). *FinScope Consumer Survey Malawi 2023 Report*. Johannesburg, South Africa: FinMark Trust.

- FSD Kenya . (2021). *FinAccess Household Survey 2021: Tracking developments in financial inclusion in Kenya*. Nairobi.
- FSD Kenya. (2022). *FinAccess Household Survey 2021: Insights into financial inclusion in Kenya*. . Nairobi: FSD Kenya.
- FSD Kenya. (2023). *FinAccess MSE Tracker Survey (Wave II)*. . Nairobi, Kenya: FSD Kenya.
- FSD Kenya. . (2021). *Advancing financial inclusion for inclusive economic growth*. Nairobi: FSD Kenya. .
- Gammage, S. K. (2017). *Gender and digital financial inclusion: What do we know and what do we need to know?* . Washington D.C.: International Center for Research on Women.
- Gefen, D. K. (2003). Trust and TAM in online shopping: An integrated model. . *MIS Quarterly*, 27(1), 51–90.
- Ghosh, S. &. (2017). What Constrains Financial Inclusion for Women? Evidence from Indian Micro data. *World Development* 92.
- Gichuki, C. N.-M. (2018). Determinants of awareness and adoption of mobile money technologies: Evidence from women micro entrepreneurs in Kenya. . *Women's Studies International Forum*, 67, , 18–27.
- Githaiga, F. W. (2023). Financial literacy and entrepreneurial sustainability of women investment groups in Nairobi, Kenya. *International Journal of Science and Business*, 30(1), 55–66.
- Githaiga, F. W. (2024). Financial literacy amongst women entrepreneurs for economic empowerment in Kenya. 53–83.
- Gitonga, A. &. (2022). *Enhancing Entrepreneurship in Kenya*. Nairobi: KIPPRA.

- Gonzalez, L. &. (2021). Fintech and financial inclusion in Sub-Saharan Africa: A framework for digital financial services. In W. Bank, *Fintech and the future of finance: Harnessing digital technologies to improve financial services* (pp. 112–138). Washington: World Bank.
- GPFI. (2016). GPFI 2016 work plan. (pp. 1 -12). Global Partnership for Financial Inclusion.
- Grant, R. M. (2001). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, 33(3), 114–135.
- GSMA . (2025). *The State of the Industry Report on Mobile Money 2025*. London: GSMA Ltd.
- GSMA. (2018). *The impact of mobile money on financial behavior and business outcomes: Evidence from Ghana*. GSMA Mobile Money.
- GSMA. (2025). *Breaking down the barriers*. Retrieved from GSMA: <https://www.gsma.com/breaking-down-the-barriers/>
- Han, S. (2024). *Digital finance and financial inclusion in Africa (KIEP World Economy Brief No. 24-15)*. . Korea Institute for International Economic Policy.
- Hasler, A. &. (2021). Financial literacy and the need for financial education: Evidence and implications. *Swiss Journal of Economics and Statistics*, 157(1), 1–8.
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.)*. . Guilford Press.
- Heath, R. &. (2024). *Digital financial services and women's empowerment: Experimental evidence from Tanzania. (Working Paper)*.
- Helfat, C. E. (2023). Renewing the resource-based view: New contexts, new concepts, and new methods. . *Strategic Management Journal*, 44(6), 1357–1390.

- Henderson, S. &. (2025). Informal entrepreneurship and women's empowerment: An asset-based perspective on the lived experiences of Swati women. *Development Southern Africa* 42(3), 423-441.
- Holloway Kyle, N. Z. (2017). *Women's Econmic empowerment through financial inclusion*. Innovation for poverty action.
- Holmes, T. &. (2024, June 11). *Bridging the Finance Gap for Women Entrepreneurs in Kenya*. Retrieved from International Finance Corporation.: <https://www.ifc.org/en/stories/2024/bridging-the-finance-gap-for-women-entrepreneurs-in-kenya>
- Hove, L. &. (2019). M-PESA and Financial Inclusion in Kenya: Of Paying Comes Saving? *Sustainability* 11(3), 568.
- Hussen, M. &. (2023). Impact of financial inclusion on household welfare in Ethiopia. *Future Business Journal* 9(67), 1-12.
- ICRW. (2022). *Impact of COVID-19 on women workers in the urban informal economy in Uganda and Kenya: Secondary data review*. Nairobi: International Center for Research on Women.
- ICRW. (2022). *Social Protection in Kenya: Disruptions and Opportunities for Women Working in the Informal Sector*. Kenya: ICRW.
- IDinsight. (2023). *Women Enterprise Fund Program Evaluation*. IDinsight: IDinsight.
- ILO. (2016). *Engaging Informal Women in East Africa: approaches to greater formality*. International Labor Organisation.
- ILO. (2018). *Women and men in the informal economy: a statistical picture*. Geneva: ILO.

- Imhanrenialena, B. O. (2023). The role of financial information literacy in strategic decision-making effectiveness and sustainable performance among agribusiness entrepreneurs in Nigeria. . *Sustainability*, 15(13), 10416.
- Insight2Impact. (2017). *Digging deeper: A measurement framework for depth of financial inclusion*. Midrand, South Africa: Insight2Impact.
- International Monetary Fund. (2024). *Chapter 2: Zooming into Women's Financial Access in Sub-Saharan Africa*. Washington D.C.: IMF.
- Janzen, S. A. (2019). After the drought: The impact of microinsurance on consumption smoothing and asset protection. . *American Journal of Agricultural Economics*, 101(3), 651–671.
- Johnson, S. &-Z. (2021). Financial access and exclusion in Kenya and Uganda. . *The Journal of African Development*, 23(1), 30–52.
- Johnson, S. L. (2020). Microinsurance uptake and business resilience: Evidence from Sub-Saharan Africa. . *World Development*, 131, 104959.
- Johri, A. A. (2024). Digital financial inclusion in micro enterprises: Understanding the determinants and impact on ease of doing business from World Bank survey. . *Humanities and Social Sciences Communications*, 11(1), 1-10.
- Jonck, P. &. (2022). The influence of demographic variables on financial record-keeping in small- and medium-sized enterprises in the South African informal sector. *Economic and Finacial Sciences* 15(1), 1-9.

- Kagiri, R. &. (2023). Market system strategies: Antecedents to financial uptake among women-owned MSMEs in informal settlements in Kenya. *International Journal of Research in Business and Social Science*, 12(7), 61-73.
- Kagume, J. (2022). *Gender parity in the entrepreneurship cycle in Kenya. Special Report No. 191*. New Delhi, India: Observer Research Foundation.
- Kaiser, T. L. (2022). Financial education affects financial knowledge and downstream behaviors. *. Journal of Financial Economics*, 145(2), 255–272.
- Kajwang, B. (2021). Factors influencing the uptake of microinsurance products. *International Journal of Strategic Management* 1(1).
- Kamau, D. &. (2020). The effect of access to finance on financial performance of micro and small enterprises in Kiambu County, Kenya. *International Journal of Economics, Commerce and Management*, 8(4), 12–25.
- Kanchana, D. S. (2019). Customer perception towards mobile banking services: A study of low-income women in rural India. *International Journal of Management Studies*, 6(2), 12–26.
- Kang’ethe, A. N. (2024). Influence of financial inclusion on the growth of small and medium enterprises in Kibera Slums, Nairobi County, Kenya. *The Strategic Journal of Business & Change Management*, 11(4), 930–952.
- Kapin, A. (2019, 1 28). *10 Stats That Build The Case For Investing In Women-Led Startups*. Retrieved from Forbes: <https://www.forbes.com/sites/allysonkapin/2019/01/28/10-stats-that-build-the-case-for-investing-in-women-led-startups/>

- Kariuki, J. W. (2015). Perceived Role of Business Networking on the Performance of Women Owned Enterprises in Kenya: A Case Study of Kenya Association of Women Business Owners . *The Strategic Journal of Business & Change Management*, 2(15), 268–290.
- Karlan, D. R. (2017). Savings by and for the poor: A research review and agenda. . *Review of Income and Wealth*, 63, 1–31.
- Kass-Hanna, J., & Lyons, A. L. (2022). Buidling financial resilience through financial and digital literacy in South Asia and SubSaharan Africa. *Emerging Markets Review* 51 (a).
- Kato, A. I. (2023). Unlocking the potential of microfinance solutions on urban women entrepreneurship development in East Africa: A bibliometric analysis perspective. . *Sustainability*, 15(20), 14862.
- Kaveeswarar, A. &. (2019). *Women Entrepreneurs in India: What is Holding Them Back?* New Delhi, India.: Observer Research Foundation.
- Kedir, A. &. (2022). FinTech and women’s entrepreneurship in Africa: The case of Burkina Faso and Cameroon. *Journal of Cultural Economy*, 15(4), 452–467.
- Kedir, A. M. (2022). Institutional Voids and Financial Behavior in Informal Settlements: Evidence from East Africa. *Journal of Economic Development*, 47(3), 143-161.
- Kenya National Bureau of Statistics . (2022). *Micro, Small and Medium Enterprises (MSME) Survey*. Nairobi, Kenya: KNBS.
- Kenya., F. (2015). *Explainer: Savings groups in Kenya – Chamas and ASCAs. Financial Sector Deepening Kenya*. Nairobi: FSD Kenya.

- Kiiti, N. H. (2016). *THE USE AND IMPACT OF M-SHWARI AS A FINANCIAL INCLUSION BANKING PRODUCT IN URBAN AND RURAL AREAS OF KENYA*. Irvine: IMTFI.
- Kim, K. (2022). Assessing the impact of mobile money on improving the financial inclusion of Nairobi women. . *Journal of Gender Studies*, 31(3), 306–322.
- Kinyanjui, M. (2015). *Women and the Informal Economy in Urban Africa: From the Margins to the Centre*. Zed Books.
- KIPPRA. (2022). *Kenya Economic Report 2022: Building Resilient and Sustainable Economic Recovery and Development*. Nairobi, Kenya: Kenya Institute for Public Policy Research and Analysis.
- KIPPRA. (2024, May 7). *Strengthening the Upgrading Programmes of Informal Settlements in Nairobi*. Retrieved from KIPPRA: <https://kippra.or.ke/strengthening-the-upgrading-programmes-of-informal-settlements-in-nairobi/#:~:text=Informal%20settlements%20emerge%20due%20to,of%20the%20county%20city's%20land.>
- Kiptoo, M., Sambajee, P., & Baum, T. (2024). Resilience through adversity: a case of in. *International Journal of Entrepreneurial Behaviour and Research*, 446-465.
- Klapper, L. &. (2020). Financial literacy and financial resilience: Evidence from around the world. . *Financial Management*, 49(3), 589–614.
- Klapper, L. (. (2024). *Digital finance: Boosting women's financial inclusion in Sub-Saharan Africa—emerging evidence*. Brookings.

- Klapper, L. M. (2023). Leveraging digital financial services for financial inclusion. *Journal of Economic Perspectives*, 37(1), 72–95.
- KNBS. (2019). *2019 Kenya Population and Housing Census, Volume IV: Distribution of Population by Socio-Economic Characteristics*. Nairobi: KNBS. Nairobi: KNBS.
- KNBS. (2019). *Kenya Economic Survey 2019*. Nairobi: Kenya National Bureau of Statistics.
- KNBS., CBK., & FSD Kenya. (2024). *2024 FinAccess Household Survey*. Nairobi: KNBS., CBK., & FSD Kenya.
- Knox, A., Bressers, H., & Mohlakoana, N. &. (2019). Aspirations to grow: when micro- and informal enterprises in the street food sector speak for themselves. *Journal of Global Entrepreneurship Research* 9(38), 1-24.
- Koech, B. &. (2015). Factors Influencing Performance of Women-Owned Micro and Small Enterprises in Nairobi County in Kenya. *Strategic journals*, 1800-1814.
- Konte, M. &. (2022). Mobile money, traditional services and firm productivity in Africa. *Small Business Economics* 60, 745 - 769.
- Koomson, I. M. (2022). Mobile money and entrepreneurship in East Africa: the mediating roles of digital savings and access to digital credit. . *Information Technology & People*, 36(3), 996–1019.
- Ksoll, C. L. (2016). Impact of Village Savings and Loan Associations: Evidence from a cluster randomized trial. *Journal of Development Economics*, 120, 70-85.
- Leora, K. (2024, 3 7). *Digital finance boosting women's financial inclusion in sub saharan Africa: Emerging evidenc.* Retrieved from Brookings:

<https://www.brookings.edu/articles/digital-finance-boosting-womens-financial-inclusion-in-sub-saharan-africa-emerging-evidence/>

- Logodi, T. (2025). *The Role of Informal and Formal Microfinance in Women's Livelihoods In Kakuma Refugee Camp, Kenya*. Retrieved from Rift Valley Institute: <https://riftvalley.net/publication/the-role-of-informal-and-formal-microfinance-in-womens-livelihood-in-kakuma-refugee-camp-kenya/#:~:text=The%20study%20aimed%20at%20understanding,skills%2C%20livelihoods%20and%20financial%20literacy>
- Lottu, A. D.-L. (2023). Digital Transformation in Banking: A Review of Nigeria's Journey to Economic Prosperity. . *International Journal of Advanced Economics*, 5(8), 215–238.
- Lunyiru, B. (2022). *Strengthening the Resilience of Women and Youth-led MSMEs in Kenya*. UN Department of Economic and Social Affairs.
- Luo, M. C. (2018). Cognitive appraisal of incident handling, affects, and post-adoption behaviors: A test of affective events theory. *Internation Journal of Information Management* 40, 120-131.
- Lusardi, A. H. (2020). *The 2020 TIAA Institute-GFLEC Personal Finance Index: Many Do Not Know What They Do and Do Not Know*. . Washington, D.C.: TIAA Institute and Global Financial Literacy Excellence Center..
- Lusweti, C. B. (2020). Microfinance services and performance of women-owned business enterprises in Busia County, Kenya. *International Journal of Current Aspects in Finance, Banking and Accounting*, 2(3), 24–37.

- Macharia, J. K. (2022). *Mobile banking and financial inclusion among women entrepreneurs in Nairobi City County, Kenya (Master's thesis)*. Nairobi: Kenyatta University.
- Malmström, M. B. (2023). A meta-analysis of the impact of entrepreneurs' gender on their access to bank finance. *Journal of Business Ethics* 192(4), 1-18.
- Mbiti, I. &. (2023). *The monetary economics of e-money in East Africa (AERC Working Paper FI-001)*. African Economic Research Consortium.
- Mbuya Jean-Marie, M. N. (2025). The nexus between small and medium enterprises critical success factors and financial performance: evidence from Southern and Central African countries. *Journal of Innovation ad Entrepreneurship*, 1-21.
- Meager, R. (2019). Understanding the average impact of microcredit expansions: A Bayesian hierarchical analysis of seven randomized experiments. *American Economic Journal: Applied Economics*, 11(4), 57–91.
- Meagher, K. (2017). Cannibalizing the informal economy: Frugal innovation, economic inclusion and the politics of youth employment. . *Critical African Studies*, 10(3), 275–294.
- Mendelson, A. L. (2021). Bridging gaps: Institutional barriers to women's entrepreneurship in emerging markets. . *Journal of Small Business Management*., 59(1), 35-50.
- Micro Insurance Network. (2025). *Landscape of microinsurance in Africa 2018: focus on selected countries*. Retrieved from Micro insurance network: <https://microinsurancenetwork.org/resources/resource-13478>
- Misha, M.-R. (2018, 3 7). *Women, men and youth and the adoption of mobile money in Kenya*. Retrieved from FSD Kenya: <https://www.fsdkenya.org/blogs-publications/blog/women->

- men-and-youth-and-the-adoption-of-mobile-money-in-kenya/#:~:text=March%207th%2C%202018,vary%20across%20gender%20and%20age
- MIT D-Lab. (2022). *Reviving a local economy by rebuilding relationships: The story of the Letcher County Culture Hub*. Massachusetts: Massachusetts Institute of Technology. .
- Morawczynski, O. &. (2016). Poor Women and Rich Mobile Money: Evidence from West Africa. . *Gender & Development*, 24(2), 243-257.
- Morazzoni, M. &. (2022). Female entrepreneurship, financial frictions, and capital misallocation in the U.S. *Journal of Monetary Economics*, 129,, 93–118.
- Morsy, H. (2020). Access to finance and job growth: Firm-level evidence across developing countries. *Review of Development Finance*, 10(2), 78–88.
- Mpanje, D., Gibbons, P., McDermott, R., & Omia, D. O. (2022). Social capital undergirds coping strategies: evidence from two informal settlements in Nairobi. *International Humanitarian Action* 7(7), 1-16.
- Mue, S. (2021). THE IMPACT OF MOBILE BANKING ON THE FINANCIAL PERFORMANCE OF SMES IN NAIROBI COUNTY, KENYA. *UON Repository*, 1 - 68.
- Mugenda, O. M. (2003). *Research methods: Quantitative and qualitative approaches*. . ACTS Press.
- Muia, D. K. (2018). Social capital as a coping mechanism for women small scale traders in the informal economy in Nairobi, Kenya. . *Journal of Social Welfare and Human Rights* 6(1), 2- 20.

- Mukubi, A., Nehema, M., & Makunda, L. &. (2025, 3 28). *Empowering women through financial inclusion: Building a sustainable future*. Retrieved from CIS Kenya: <https://ciskenya.co.ke/empowering-women-through-financial-inclusion-building-a-sustainable-future/?utm>
- Mule, S. M. (2021). Digital Banking and Financial Inclusion of Women Enterprises in Narok County, Kenya. . *International Journal of Current Finance and Accounting*, 3(2), 1–12.
- Munyanyi, W. K. (2022). Influence of service quality on agency banking performance in Kenya: A case of Nairobi. *African Journal of Business Management*, 16(4), 111–121.
- Muricho, G. M. (2021). Financial literacy and financial access among women micro-entrepreneurs in Nairobi's informal settlements. *International Journal of Development and Sustainability*, 10(4), 215–230.
- Musah, I. (2025). Microcredit as a catalyst for microbusiness growth: A myth or reality? A case of Asante-Akim Central Municipality, Ghana. *Future Business Journal*, 11(1), 1 - 17.
- Musau, S. K. (2022). Fintech adoption and women entrepreneurs' access to financial services in Kenya. . *Journal of Financial Innovation*, 8(2), 102-120.
- Mutinda, M. M. (2024). Determinants of Socio-Economic Empowerment of Women Traders in Nairobi County:Case of Kenya Trade Policy Financial Inclusion Strategies. *Journal of the Kenya National Commission for UNESCO* 5(1), 1-15.
- Mwangi, J. &. (2022). *Financial inclusion and the growth of women-owned enterprises in low-income urban areas in Kenya. Nairobi*. Nairobi: Kenya Institute for Public Policy Research and Analysis.

- Mwaniki, L. &. (2028). Financial literacy and growth of small and medium enterprises in Nyeri County, Kenya. *International Journal of Economics, Business and Management Research* 2(6), 1 -20.
- Namboya, W. M. (2022, 3 8). *Evidence shows that effectively including women in economic activity boosts growth*. Retrieved from <https://www.fsdkenya.org/blogs-publications/blog/putting-women-at-the-centre-of-inclusive-finance/>
- Ndaghu, J., Onodugo, V., & Akpan, E. &. (2022). Financial literacy and business performance among female micro-entrepreneurs. *Investment management and financial innovation* 19(1), 156 - 167.
- Nesticò, A. R. (2025). A novel cost estimation model for the urban regeneration of a slum: The case of Kibera (Nairobi). . *Frontiers in Sustainable Cities*, 7, 1544486. <https://doi.org/10.3389/frsc.2025.1544486>.
- Neves, J. O. (2023). Adoption and use of digital financial services: A meta-analysis of barriers and facilitators. *International Journal of Information Management Data Insights* 3(2), 100201.
- Ng'etich, K. &. (2022). *The Role of Microfinance Institutions in Empowering Women Entrepreneurs in Kenya*. . Nairobi, Kenya: Kenya Institute of Management.
- Nguyen, T., & Trinh, Q. N. (2024). Effects of microcredit programs on household financial portfolios: Evidence from rural Vietnam. *Heliyon* 10 (21), 1-13.
- Njagi, N. W. (2019). Challenges faced by women entrepreneurs in their efforts towards poverty reduction in Mukuru Kwa Njenga; Embakasi East Constituency, Nairobi, Kenya . *Developing Countries Studies* 9(6), 68-83.

- Njeru, A. W. (2020). Financial inclusion and performance of women owned micro and small enterprises in Kenya. *International Journal of Business and Social Science*, 11(5), 20–31.
- Njeru, C. I. (2024). Microfinance services and household income among saving and internal lending community groups in Evurore Ward, Embu County, Kenya. *Journal of Finance and Accounting* 8(7), 15-27.
- Nwonye, C. (2024, November 4). 24 Nigerian Women-Owned Business Statistics You Should Know in 2025. Retrieved from Moniepoint Blog: <https://moniepoint.com/blog/24-women-business-statistics>
- Nyamagwa, R., Okemwa, P., & Wanjama, L. (2022). IMPACTS OF FINANCIAL LITERACY ON ECONOMIC EMPOWERMENT OF SMALL SCALE WOMEN TRADERS IN KISII COUNTY, KENYA. *International Journal of Advanced Research and Review* 7(2), 5 -19.
- Nyame-Asiamah, F. O.-T. (2022). Coping without coverage: Fire disasters and informal traders in Accra's markets. . *Journal of Development Studies*, 58(4), 621–638.
- Nyauma, V. N. (2024). Digital banking and financial performance of commercial banks in Kisii County. . *Strategic Journal of Business & Change Management* 11(4), 443 - 453.
- Obiria, L. O. (2022). Influence of financing on performance of small and medium women-owned enterprises in Kwale County, Kenya. . *International Journal of Current Aspects in Finance (IJCAF)*, 4(1), 12–24.
- Ochieng, S. A. (2023). Effect of credit terms on financial inclusion among self-help group financing in informal settlements in Kenya: A case study of Kibera slum. *International Journal of Business Management, Entrepreneurship and Innovation*, 5(2), 157–167.

- Odek, J. W. (2024). Banking Services and Performance of Women Owned Enterprises in Nairobi City County, Kenya. *The Strategic Journal of Business & Change Management*, 11(1), 846–876.
- Ogundana, O. M. (2020). Obstacles facing women-owned enterprise:A case of Sub Sajaran African Women. *World Review of Entrepreneurship Management and Sustainable Development* 18(5/6), 1-12.
- Okello, C., Semukono, F., & Yourougou, P. &. (2025). Reinvigorating the future of young women micro-entrepreneurs in sub-Saharan Africa post-COVID-19: A SEM reflective model approach with debt literacy as the mediator. . *American Journal of Business*.
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, 17(4), 460–469.
- Omollo, E. N. (2023). Financial inclusion and women's household decision-making power in Kenya. . *Journal of Gender, Agriculture, and Food Security*, 8(2), 67–85.
- Organisation for Economic Co-operation and Development . (2020). *Women’s access to finance and entrepreneurship: Policy insights*. . OECD.
- Otieno, J. A. (2023). Kenyatta University Women’s Economic Empowerment (KU-WEE) Journal, 1(1). *Kenyatta University Women’s Economic Empowerment (KU-WEE) Journal*, 1(1), 1-20.
- Owuor, J. O. (2021). *Mobile Money and Women's Economic Resilience in Kenya's Informal Settlements*. Nairobi, Kenya: African Centre for Technology Studies.

O

- Ozili, P. K. (2020). Financial inclusion research around the world: A review. . *Forum for Social Economics*, 49(3), 457–479.
- Paganini, N., & Farr, V. &. (2025). Pathways to transform urban food systems: feminist action research from Cape Town and Nairobi. *Front. Sustain. Food Systems* 8, 1-15.
- Panetta, D. (2018). *Savings groups and women financial inclusion*. Nairobi: FSD Africa.
- Parasuraman, A. Z. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.
- Patel, R., Walker, G., & Bhatt, M. &. (2017, 3 1). *The demand for disaster microinsurance for small businesses in urban slums: The results of surveys in three Indian cities* . Retrieved from PLOS Currents Disasters: <https://currents.plos.org/disasters/article/the-demand-for-disaster-microinsurance-for-small-businesses-in-urban-slums-the-results-of-surveys-in-three-indian-cities/>
- Pereznieto, P. T. (2016, 9). *Female entrepreneurship hindered more by social and cultural constraints than access to finance*. Retrieved from Partnership for economic policy: <https://www.pep-net.org/news/female-entrepreneurship-hindered-more-social-and-cultural-constraints-access-finance>
- Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), 179–191.
- Prokop, J. &. (2021). Is there a gender gap in equity-based crowdfunding? *Small Business Economics*, 59(3), 1219–1244.

- Rabaa'i, A. (2021). Exploring the determinants of users' continuance intention to use mobile banking services in Kuwait: Extending the Expectation-Confirmation Model. *Asia Pacific Journal of Information Systems* 31(2), 141-184.
- Rahdari, A. &. (2015). Designing a General Set of Sustainability Indicators at the corporate level. *Journal of Cleaner Production* 108, 1-15.
- Riley, E. (2024). Resisting social pressure in the household using mobile money: Experimental evidence on microenterprise investment in Uganda. *American Economic Review*, 114(5), 1415–1447.
- Sahay, R. E. (2020). *The promise of fintech: Financial inclusion in the post-COVID-19 era*. International Monetary Fund.
- Sambo, W. (2016). Factors affecting youth entrepreneurship development within Kibera, Kenya: The perspective of entrepreneurship education. . *Problems and Perspectives in Management*, 14(2-2), 331–338.
- Sangwan, N. (2025). Make microfinance great again: Can flexibility in repayments improve business outcomes in North India? *The Indian Economic Journal* 73(2), 235 - 251.
- Sarma, M. &. (2020). Financial inclusion and development. *Journal of Financial Economic Policy*, 12(1), 1-22.
- Sawhney, S. K. (2025). *Diverse Paths: Finance for Women's Nano and Micro Enterprise*. Washington D.C.: CGAP.
- Schaner, S. D. (2021). *Women's financial inclusion and economic empowerment: A review of the evidence*. World Bank Policy Research Working Paper No. 9809. World Bank.

- Scott, W. R. (2020). *Institutions and organizations: Ideas, interests, and identities (5th ed)*. Sage Publications.
- Secka, A. A. (2015). Female entrepreneurship, access to credit, and firms' productivity in Senegal. . *SSRN Electronic Journal*.
- Sekaran, U. &. (2016). *Research methods for business: A skill-building approach (7th ed.)*. . Wiley.
- Seldal, M. &. (2022). Fiancial vulnerability, financial literacy and use of didgital payament technologies. *Journal of Consumer Protection* 45(3).
- Sherwan, F. S. (2023). Determinants of financial inclusion among women-owned enterprises a case study of the informal sector. *Arab Gulf Journal of Scientific Research* 42(4), 1340-1358.
- Shirono, K. B. (2024). Understanding barriers to financial access: Insights from bank pricing data . *IMF working papers*.
- Siddik, M. N. (2020). Financial inclusion through mobile banking: A study on Bangladesh. . *Banks and Bank Systems*, 15(3), 50–62.
- Singh, A. &. (2025). *Poor Access to Finance for Women-owned Businesses in India: The Role of Financial Institutions*. . Retrieved from SME Finance Forum: <https://www.smefinanceforum.org/post/poor-access-to-finance-for-women-owned-businesses-in-india-the-role-of-financial-institutions>

- Singh, N. S. (2022). Revisiting expectation confirmation model to measure the effectiveness of multichannel bank services for elderly consumers. *International Journal of Emerging Markets, Emerald Group Publishing Limited*, vol. 18(10), 4457-4480.
- Sirtain, S. (2023, 9 13). *The Future of Financial Inclusion*. Retrieved from CGAP: <https://www.cgap.org/blog/future-of-financial-inclusion>
- Smith, G. (2025). *The gendered algorithm: How machine learning in fintech reinforces inequality in emerging markets*. . arXiv.
- Society of Actuaries. (2023). *Microinsurance in a nutshell: Only for Africa?* . Chicago: Society of Actuaries.
- Sowmya, B. &. (2025). Digital Inclusion of Women Entrepreneurs in The Unorganized Sector – A Systematic Review. *ADvance in Consumer Research* 2(1), 71 - 85.
- Spreng, R. A. (1996). A reexamination of the determinants of consumer satisfaction. . *Journal of Marketing*, 60(3), 15–32.
- Stiglitz, J. E. (1981). Credit rationing in markets with imperfect information. . *American Economic Review*, 71(3), 393–410.
- Suri, J. &. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288–1292.
- Suri, T. &. (2022). Digital finance and poverty reduction: A decade of evidence from Kenya. . *Review of Economic Studies*, 89(3), 1565–1593.

- Sustainability. (2025, 4 30). *How Effective Is Microfinance in Addressing Gender Inequality?*
Retrieved from Sustainability: <https://sustainability-directory.com/question/how-effective-is-microfinance-in-addressing-gender-inequality/?utm>
- Taka. (2018, March 25). *Map Kibera: Empowering Africa's Biggest Slum with Collective Wisdom*.
Retrieved from Havard University: <https://d3.harvard.edu/platform-digit/submission/map-kibera-empowering-africas-biggest-slum-with-collective-wisdom/>
- Tan, S. T. (2022). Making sense of sustainability: How institutional design can sustain informal savings and credit groups. *International Journal of Community Currency Research*, 26(S1), 1–20.
- Teree, A. (2020). Determinant that influence the performance of women entrepreneurs in micro and small enterprise in Ethiopia. *Journal of Innovation and Entrepreneurship* 9(24), 1-20.
- Thuita, G. W. (2020). Impact of Mobile Payment Applications and Transfers on Business: Financial Inclusion and Innovation – The Case of M-Pesa in Kibera Slum, Kenya. In *Handbook of Research on Social Impacts of E-Payment and Blockchain Technology* (pp. 173-190). Pennsylvania: IGI Global.
- Thuranira, E. M.-M. (2019). Factors affecting women access to credit: A case of Women Enterprise Fund of Kibera Sub County. . *International Journal of Social Science and Humanities Research*, 7(4), 1–12.
- Tiwasing, P. A. (2024). Do mobile money services enhance business performance? An empirical analysis of Kenyan businesses. . *International Journal of Entrepreneurship and Innovation*, 25(1), 1–13.

- Totolo, E. G. (2025). *Small firms, big impact: Digitization, financial services, and climate resilience in five emerging markets*. Washington D.C.: Centre for Financial Inclusion.
- Udry, C. &. (2007). Rural Financial Markets in Developing Countries. In R. E. (Eds.), *Handbook of Agricultural Economics* (p. Vol. 3). Elsevier.
- Ugwuja, V. N. (2018). Gender analysis of micro-loan sizes accessed by small-scale agro-entrepreneurs in the Niger Delta region of Nigeria. *Journal of Development and Agricultural Economica* 10(1), 15-21.
- UN Women. (2020). *Gender equality: Women's rights in review 25 years after Beijing*. UNWomen. Retrieved from UN Women.
- UN Women. (2023). *Progress on the sustainable development goals: The gender snapshot 2023*. UN Women.
- UNCTAD. (2017). *Promoting Entrepreneurship for Sustainable Development: A SELECTION OF BUSINESS CASES FROM THE EMPRETEC NETWORK*. UNCTAD.
- UNCTAD. (2019). *Digital Economy Report 2019*. UNCTAD.
- UNCTAD. (2024). *A world of debt: A growing burden to global prosperity* 20. Geneva: United Nations Trade & Development.
- Wachinga, H. (2023, 6 27). *Insurance protection can improve resilience, survival of Kenta's SMEs*. Retrieved from Business Daily: <https://www.businessdailyafrica.com/bd/opinion-analysis/columnists/insurance-protection-can-improve-resilience-kenya-s-smes--4285734>
- Wafula, M. &. (2019). Micro-credit and poverty reduction among self-help groups within Kisumu County, Kenya. *African Development Finance Journal*, 3(1), 1-15.

- Wamalwa, R. &. (2025). Financial Inclusion of the Informal Sector of Marginalized Counties in Kenya. *Cogent Social Sciences* 11(1), 1 -29.
- Wambua, L. &. (2021). *Gendered Review of Financial Sector Laws in Kenya. Nairobi, Kenya*. Nairobi: Financial Sector Deepening Kenya.
- Wanjiru, R. K. (2024). Effect of Digital Banking on Financial Performance of Micro and Small Enterprises in Nairobi County, Kenya. *Journal of Economics, Finance and Management Studies*, 7(4),, 2257–2273.
- Warui, P. W. (2015). rs in Kibera Constituency, Nairobi County, Kenya (Unpublished master's thesis). . *University of Nairobi*, 1 -69.
- Wasike, M. &. (2018). Factors influencing the uptake of health insurance schemes among Kibera informal settlement dwellers, Nairobi County. . *East African Medical Journal*, 94(10), , 45–52.
- Wechabe, C. A. (2022). Contribution of Saving and Internal Lending Communities (SILC) on Women Economic Empowerment in Igembe South Constituency, Meru County, Kenya. *The Strategic Journal of Business & Change Management*, 9(1), 109–117.
- Wernerfelt, B. (1984). A resource-based view of the firm. . *Strategic Management Journal*, 5(2), 171–180.
- Women World Banking. (2023). *Empowering women entrepreneurs through inclusive finance*. New York: Women World Banking.
- Women's World Banking. (2015). *Digital Savings: The Key to Women's Financial Inclusion?* New York: Women's World Banking.

- Women's World Banking. (2019). *Bridging the Gender Gap: Promoting Women's Financial Inclusion in Kenya*. New York City, USA: Women's World Banking.
- World Bank. (2018). *Digital access: The future of financial inclusion in Africa*. . Washington, DC: : World Bank Group.
- World Bank. (2019). *Profiting from parity:Unlocking the potential of womens businesses in Africa 1 of 2*. Washington D.C.: World Bank.
- World Bank. (2022). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. Retrieved from The World Bank: <https://doi.org/10.1596/978-1-4648-1897-4>
- Xheneti, M. M. (2019). Value of formalization for women entrepreneurs in developing contexts: A review and research agenda. . *International Journal of Management Reviews*, 21(1), 3-23.
- Xheneti, M. T.-K. (2019). Negotiating business and family demands within a patriarchal society – The case of women entrepreneurs in the Nepali context. . *Entrepreneurship & Regional Development*, 31(3–4), 259–278.
- Yap, S. L.-X. (2022). The role of financial inclusion in achieving finance-related sustainable development goals (SDGs): A cross-country analysis. . *Economic Change and Restructuring*, 55(3), 215–237.
- Yin, K., Kwang, K., Sharifi, M., & & Johnson, Z. (2020). *Left Behind: The Socioeconomic Barriers to Last-Mile Mobile Money Access in Kenya*.

Zins, A. &. (2016). The determinants of financial inclusion in Africa. *Review of Development Finance*, 6(1), 46–5.

APPENDIX A: QUESTIONNAIRE

Please tick or fill as appropriate:

Section A: Demographic Profile of Respondent

1. What is your age?
☐ Below 25 ☐ 25–34 ☐ 35–44 ☐ 45–54 ☐ 55 and above
2. What is your highest level of education?
☐ No formal education ☐ Primary ☐ Secondary ☐ Tertiary ☐ Postgraduate
3. How many years has your business been in operation?
☐ Less than 1 year ☐ 1–3 years ☐ 4–6 years ☐ More than 6 years
4. What sector does your business operate in?
☐ General consumer goods - (kiosk/dukas, greengrocers, butcheries, hawkers, cooking oil and milk vendors)
☐ Clothing and household goods - (mitumba stalls, shoes, slippers & bags stalls, charcoal, gas cylinder refills, malimali, small electronic shops, airtime/ sim card vending)
☐ Services - (money agents, tailoring, salons, nail parlors, kinyozis, phone repair, charging)
☐ Food & beverages - (food stalls/ vibandas, water vending, cooking oil and milk vendors)
5. What is your role in the business?
☐ Owner ☐ Co-owner ☐ Manager ☐
6. What is the legal form of your business?
☐ Sole proprietorship ☐ Partnership ☐ Registered company ☐ Cooperative ☐ Informal
7. What is the average number of employees in your business?
☐ 1 (self) ☐ 2–5 ☐ 6–10 ☐ 11–20 ☐ More than 20

Section B: Financial Access

Statement	Yes [✓]	No [X]
I can easily locate a financial service provider (e.g., bank, SACCO, mobile agent).	[]	[]
I have access to financial services within walking distance from my business or home.	[]	[]
The procedures for opening and operating financial accounts are straightforward.	[]	[]

I have access to digital financial services through my mobile phone or computer.	☐	☐
The cost of accessing financial services (e.g., transport, fees) is affordable.	☐	☐
I face few or no barriers related to identity or documentation when accessing services.	☐	☐

Section C: Financial Usage

Statement	Yes ☒	No ☒
I regularly save money using formal financial services (e.g., bank, mobile wallet).	☐	☐
I have accessed credit from a financial institution in the past 12 months.	☐	☐
I frequently use mobile money platforms for business transactions.	☐	☐
I have an active insurance product (e.g., health, asset, business insurance).	☐	☐
I use financial services at least once a week.	☐	☐
I have used more than one type of financial product (e.g., savings, loan, insurance).	☐	☐

Section D: Financial Depth and Quality

Statement	Yes ☒	No ☒
The financial products I use meet the specific needs of my business.	☐	☐
I can access loan amounts that are adequate for my business operations.	☐	☐
The terms and conditions of financial products I use are clear and reasonable.	☐	☐
I am satisfied with the financial services I receive.	☐	☐
Service providers are transparent in their fees, terms, and processes.	☐	☐
I can choose from a variety of financial products tailored to businesses like mine.	☐	☐
Financial service providers are responsive and convenient to work with.	☐	☐

Section E1: Digital Literacy

Statement	Yes ☒	No ☒
I am comfortable using mobile money platforms (e.g., M-Pesa, Airtel Money).	☐	☐
I can download and use financial apps for my business operations.	☐	☐

I am familiar with different digital platforms that offer financial services.	☐	☐
---	--------------------------	--------------------------

Section E2: Entrepreneurial Skills

Statement	Yes ☒	No ☒
I regularly engage in strategic planning for my business growth.	☐	☐
I actively look for innovative ways to improve or expand my business.	☐	☐
I seek out new market opportunities to grow my business.	☐	☐
I attend trainings, workshops, or mentorship programs to enhance my entrepreneurial skills.	☐	☐

Section E3: Financial Management Skills

Statement	Yes ☒	No ☒
I prepare a budget for my business and monitor it regularly.	☐	☐
I maintain accurate records of income, expenses, and transactions.	☐	☐
I review my business financial performance (e.g., profit/loss) monthly or quarterly.	☐	☐
I separate my personal and business finances for better management.	☐	☐

Section F: Business Sustainability

Statement	Yes ☒	No ☒
My business has operated continuously for at least 3 years.	☐	☐
My business is currently profitable.	☐	☐
My monthly revenue has increased over the past year.	☐	☐
I have expanded my business operations in the last 12 months.	☐	☐
My business can withstand financial shocks (e.g., inflation, delayed payments, pandemics).	☐	☐
I have created employment for others through my business.	☐	☐
My business is growing in terms of market reach and customer base.	☐	☐

APPENDIX B: Scientific Ethics Review Certificate



Tel: +254 20 3537842
Fax: +254 20 8561077
Mobile: +254 734 888022, 710 888022
Email: kca@kca.ac.ke
Website: www.kca.ac.ke

KCA UNIVERSITY SCIENTIFIC & ETHICS REVIEW COMMITTEE

REF: KCAU/SERC/SOB0276

DATE: 8TH SEPTEMBER, 2025

TO: POLLY KARWITHA MWIRIGI (23/07340)

Dear Sir/Madam,

RE: FINANCIAL INCLUSION AND SUSTAINABILITY OF WOMEN-OWNED ENTERPRISES IN KIBERA INFORMAL SETTLEMENT: MODERATING EFFECTS OF FINANCIAL LITERACY AND ENTERPREURSHIP SKILLS

This is to inform you that the KCA University Scientific Ethics Review Committee (KCAUSERC) has reviewed and approved your research proposal. Your application approval number is **KCAUSERC/SOB0276**. The approval period is **8th September, 2025 – 8th September, 2026**. This approval is subject to compliance with the following requirements.

- Only approved documents, including informed consents, study instruments, and MTAs, will be used.
- All changes, including (amendments, deviations, and violations), are submitted for review and approval by **KCAUSERC**.
- Death and life-threatening problems and serious adverse events or unexpected adverse events, whether related or unrelated to the study, must be reported to **KCAUSERC** within 72 hours of notification.
- Any changes, anticipated or otherwise, that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **KCAUSERC** within 72 hours.
- Clearance for export of biological specimens must be obtained from relevant institutions.
- Submission of a request for renewal of approval at least 60 days before expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- Submission of an executive summary report within 90 days upon completion of the study to **KCAUSERC**.

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

Yours sincerely,

Dr. Caroline Ntara,
Chairperson,
KCA University Scientific & Ethics Review Committee.



APPENDIX C: NACOSTI LICENCE

 REPUBLIC OF KENYA Ref No: 629524	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION. Date of Issue: 15/September/2025
RESEARCH LICENSE	
	
This is to Certify that Ms. POLLY KARWITHA of KCA 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: FINANCIAL INCLUSION AND THE SUSTAINABILITY OF WOMEN-OWNED ENTERPRISES IN KIBERA INFORMAL SETTLEMENT: MODERATING EFFECTS OF FINANCIAL LITERACY AND ENTREPRENEURSHIP SKILLS for the period ending : 15/September/2026.	
License No: NACOSTI/P/25/4179518	
629524	
Applicant Identification Number	
Ag. Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION	
Verification QR Code	
	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	

APPENDIX D: RAW DATA



2307340- Raw
Data.xlsx