

**DIGITAL CREDIT, FINANCIAL LITERACY AND FINANCIAL STABILITY OF
MICRO, SMALL AND MEDIUM ENTERPRISES IN KENYA'S RETAIL SECTOR**

By

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MASTER OF SCIENCE IN COMMERCE (FINANCE AND ACCOUNTING)

KCA UNIVERSITY

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
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SCIENCE IN COMMERCE (FINANCE AND ACCOUNTING) IN THE SCHOOL OF
BUSINESS AT KCA UNIVERSITY**

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DECLARATION

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

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

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

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ABSTRACT

The emergence of digital lending platforms has revolutionized credit accessibility for Micro, Small, and Medium Enterprises (MSMEs), particularly in developing economies like Kenya. While these platforms have enhanced financial inclusion by offering convenient and collateral-free credit, concerns have been raised about their implications on the long-term financial stability of MSMEs. This study sought to examine the effect of digital credit on the financial stability of MSMEs in Kenya's retail sector, with Nairobi and Machakos counties as the focus areas. The study investigated three core dimensions of digital lending, credit accessibility, credit terms, and borrowing behaviour, while considering financial literacy as a moderating variable. The study was underpinned by Financial Intermediation Theory, Behavioural Economics Theory, Debt Spiral Theory, and the Resource-Based View Theory. It adopted a cross-sectional research design and targets a population of 133,000 registered MSMEs in Nairobi and Machakos Counties. A sample of 398 MSME respondents were selected using stratified random sampling, ensuring equitable representation across urban and peri-urban zones and various retail sub-sectors. Primary data was collected through semi-structured questionnaires, which captured both quantitative and qualitative responses. The study applied descriptive statistics for data summarization, and multiple regression analysis to test the direct effects of the independent variables on financial stability. In addition, moderated regression analysis was conducted to determine the influence of financial literacy on the relationship between digital lending and MSME financial stability. It recommends planned borrowing strategies for MSMEs, flexible and transparent lending terms from providers, and policies that integrate financial literacy training with responsible lending practices. The findings offered critical insights for policymakers, financial institutions, and MSME owners, helping to inform more responsible digital lending practices, improve borrower financial literacy, and foster sustainable business growth. Furthermore, the study contributed to the expanding academic discourse on digital finance and enterprise resilience in emerging markets.

Key words: Digital Credit, Financial Stability, Micro, Small, and Medium Enterprises (MSMEs), Kenya's retail sector, Digital Credit Access, Credit Terms, Borrowing Behaviour, Financial Literacy

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DEDICATION

I dedicate this research to my daughter Chloe, who inspires me to aim for higher grounds.

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ACRONYMS AND ABBREVIATIONS

APR	Annual Percentage Rate
BPS	Board of Postgraduate Studies
CBK	Central Bank of Kenya
FSD	Financial Sector Deepening
GDP	Gross Domestic Product
GSMA	Global System for Mobile Communications Association
ICT	Information and Communication Technology
IFC	International Finance Corporation
IMF	International Monetary Fund
KCA	KCA University
KCB	Kenya Commercial Bank
KIPPRA	Kenya Institute for Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
M-Pesa	Mobile Money Transfer Platform by Safaricom
MSMEs	Micro, Small and Medium Enterprises
MSEs	Micro and Small Enterprises
NACOSTI	National Commission for Science, Technology and Innovation
NPL	Non-Performing Loan
OECD	Organisation for Economic Co-operation and Development
RBV	Resource-Based View
SDGs	Sustainable Development Goals
SMS	Short Messaging Service
SPSS	Statistical Package for the Social Sciences
SRB	Scientific and Ethics Review Board
USSD	Unstructured Supplementary Service Data
VAT	Value Added Tax
WHO	World Health Organization

TERMS AND DEFINITIONS

Accessibility (to Digital Credit): Accessibility refers to the ease and immediacy with which MSMEs obtain digital loans, measured by speed of application, approval without collateral, use of mobile data for eligibility, and frequency of borrowing. While high accessibility increases credit inclusion, it may also lead to unsustainable borrowing if not accompanied by proper borrower assessment (Ngoba, 2024; Nyangaresi, 2023).

Borrowing Behaviour: Borrowing behaviour captures how frequently, why, and under what conditions MSMEs access digital credit, including whether they stack loans across platforms or borrow impulsively without planning. Indicators include loan cycling, reborrowing to repay existing debt, and lack of budgeting. This construct is shaped by liquidity pressures, cognitive biases, and borrower literacy (Gati, 2023; Elizabeth, 2020; Mulwa & Yahya, 2025).

Credit terms: This refers to the cost and structure of digital credit, including effective interest rates, loan tenures, and frequency of repayment. It encompasses how loans are priced and how repayment aligns (or fails to align) with MSMEs' income cycles. High-interest, short-term loans with inflexible terms are expected to increase financial distress (Kamau & Mugo, 2020; Mbaka & Mugambi, 2021).

Digital Lending: It refers to the process of offering credit through digital platforms such as mobile applications, USSD codes, and web portals, without traditional banking infrastructure or paperwork. It includes credit products that are disbursed, monitored, and repaid using mobile or internet-based systems. In this study, digital lending was examined in terms of accessibility, interest rates, repayment terms, and borrower behaviour (Zavolokina et al., 2020; Kaffenberger & Totolo, 2020; Ngugi, 2021).

Financial Literacy: Financial literacy is the knowledge and skill to understand, evaluate, and manage financial products, including budgeting, credit management, and interpreting loan terms. In this study, financial literacy is treated as a moderating variable, influencing how digital credit affects MSME financial stability (Njoki, 2024; Mejía, 2021; Lusimba & Kalui, 2023).

Financial Stability: It refers to an MSME's ability to meet financial obligations sustainably, maintain liquidity, and withstand economic shocks without resorting to excessive borrowing or collapse. It was operationalized through indicators such as loan repayment capacity, cash

flow continuity, ability to restock, and avoidance of overlapping loans (IMF, 2023; Kamau, 2021; Jama, 2024).

Micro, Small, and Medium Enterprises (MSMEs): MSMEs are classified based on employee size and annual turnover. According to Kenya’s MSME Act (2022), micro enterprises have an annual turnover of less than KES 1 million and fewer than 10 employees. This study focuses on registered MSMEs in the retail sector (KNBS, 2020; Muriuki & Mbuva, 2024).

Retail Sector: The retail sector includes businesses engaged in the sale of goods to final consumers, ranging from formal supermarkets to informal kiosks and market stalls. In Nairobi and Machakos, the sector is predominantly MSME-driven, highly cash-based, and characterized by short working capital cycles and frequent reliance on mobile finance (KNBS, 2023; Muriuki & Mbuva, 2024).

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Access to finance remains a fundamental pillar for enterprise development and sustainability, yet Micro, Small, and Medium Enterprises (MSMEs) continue to face persistent challenges in accessing formal credit globally. According to the International Finance Corporation (IFC, 2022), over 65 million firms, mostly MSMEs, in developing countries face an unmet financing need of over USD 5.2 trillion annually. These credit barriers are primarily attributed to lack of collateral, limited credit histories, informal operations, and poor financial documentation. Consequently, MSMEs, which are critical engines for employment and innovation, remain vulnerable to financial shocks and stunted growth.

In recent years, digital credit has emerged globally as a transformative solution to this gap. Leveraging mobile technology, artificial intelligence, and alternative credit scoring, digital lending platforms provide fast, collateral-free loans through channels such as mobile apps, USSD codes, and web portals (World Bank, 2023). These innovations have expanded credit access among underserved populations, particularly in Asia and Africa, allowing enterprises to bridge liquidity gaps, finance operations, and stabilize short-term cash flows. However, growing evidence indicates that digital credit, if misused or poorly regulated, can compromise financial stability by increasing borrower over-indebtedness and repayment distress (Kaffenberger et al., 2021).

Across Sub-Saharan Africa, digital credit has been widely adopted due to high mobile penetration and limited formal banking coverage. In countries like Nigeria, Ghana, Uganda, and Kenya, digital credit platforms, often built atop mobile money systems, have become mainstream sources of microfinance. While this has enhanced financial inclusion, it has also

raised concerns over unregulated interest rates, coercive collection practices, and inadequate borrower awareness (GSMA, 2023). A regional survey by AFI (2022) indicated that over 50% of digital borrowers in Africa had used loans to repay previous debts, signaling a trend toward unsustainable credit dependency.

In Kenya, the digital lending ecosystem is among the most vibrant in Africa. Services such as M-Shwari, KCB M-Pesa, Tala, Timiza, Zenka, and Branch have revolutionized access to short-term credit for both individuals and MSMEs. These platforms use mobile data, such as airtime usage, mobile money transactions, and app behaviour, to evaluate creditworthiness and disburse loans in minutes (FSD Kenya, 2022). According to the Central Bank of Kenya (CBK, 2023), nearly 42% of adults in Kenya have accessed at least one form of digital credit. This has provided essential liquidity for MSMEs to manage cash flow, restock inventory, and finance daily operations.

However, this rapid expansion has brought mixed outcomes for financial stability. Features of digital credit such as short repayment cycles, automated disbursement, lack of borrower screening, and high-frequency loan stacking often result in unintended consequences. Specifically, short repayment periods can lead to cash flow strain, while multiple concurrent loans may cause debt spirals, particularly when repayment schedules are not aligned with business revenue cycles (Kithure, 2023; Jama, 2024). A significant share of borrowers, especially in informal and peri-urban sectors, lack financial literacy, making them vulnerable to hidden charges, automatic deductions, and poor repayment planning (Ngoba, 2024). In response, the CBK enacted the Digital Credit Providers Regulations (2021), introducing licensing, consumer protection mandates, and transparency requirements to safeguard borrowers from predatory practices.

At the local level, counties such as Nairobi and Machakos are ideal settings to assess these dynamics. Nairobi, the financial and commercial capital, hosts a dense concentration of MSMEs across retail, service, and informal sectors. Machakos, on the other hand, represents a peri-urban economy where mobile-based credit tools have enabled entrepreneurial growth despite infrastructural constraints. Both counties exhibit high digital credit penetration but also report increasing instances of financial distress, particularly among MSMEs lacking structured financial planning (KIPPRA, 2023).

Despite growing access to credit, financial stability among MSMEs remains a concern. It entails an enterprise's ability to meet financial obligations, maintain cash flow, and absorb economic shocks without resorting to repeated borrowing or business closure (IMF, 2023). While digital credit enhances liquidity, its unstructured or impulsive use, especially in low-literacy environments, can erode rather than support long-term stability. Therefore, understanding how digital credit interacts with borrower behaviour, credit terms, and financial literacy is vital for developing sustainable financial ecosystems.

While the proliferation of digital credit in Kenya is well-documented, its nuanced impact on the financial stability of a critical sector like retail, particularly when moderated by financial literacy, remains underexplored. Additionally, few empirical studies have investigated how specific lending features, such as repayment terms, accessibility, and borrowing behaviour, directly influence MSME sustainability. This study sought to address this gap by examining how digital credit affects financial stability among MSMEs in Kenya's retail sector, with a focus on Nairobi and Machakos counties.

1.1.1 Digital Lending

Digital lending is broadly defined as the process of offering credit through digital platforms, such as mobile applications, websites, and USSD interfaces, without requiring

traditional, in-person banking processes. According to Zavolokina et al. (2020), digital lending automates the end-to-end credit lifecycle, including customer onboarding, risk assessment, loan disbursement, and repayment collection using digital technologies. Kaffenberger and Totolo (2020) emphasize that digital credit distinguishes itself from conventional loans by its reliance on alternative data (e.g., mobile money transactions and airtime usage) and automated decision-making algorithms. The World Bank (2023) further defines digital lending as a financial innovation that uses mobile and internet infrastructure to expand credit access to underserved populations, especially where formal banking systems are inaccessible or exclusionary.

At its core, digital lending combines financial technology (fintech) with advanced analytics and remote service delivery to address traditional credit market inefficiencies. By removing the need for face-to-face contact, collateral, or extensive paperwork, digital lending has become a vital tool in advancing financial inclusion, particularly for micro, small, and medium enterprises (MSMEs) that are often marginalized from formal credit channels due to informality, perceived risk, or lack of credit histories (UNCTAD, 2021; OECD, 2022).

The model has found significant traction in emerging economies such as India and China, where large fintech ecosystems have enabled credit disbursement at scale. In India, for example, platforms like Paytm Loans and Indifi offer instant digital loans to informal businesses using cash flow proxies such as sales volumes and digital footprints. In China, Ant Group's MYbank leverages AI to issue small business loans without collateral, serving over 30 million MSMEs as of 2022 (World Bank, 2023).

Across Africa, countries like Nigeria and Ghana have also adopted mobile-based lending. Nigerian fintechs like Carbon and FairMoney use mobile data to assess borrower risk and disburse loans within minutes, while MTN Ghana's Qwikloan uses telecom-based

credit scores to support informal traders. However, these models face common challenges such as short repayment cycles, high interest rates, and thin regulatory frameworks (GSMA, 2023).

In Kenya, the rise of mobile money platforms, especially M-Pesa, has laid the groundwork for a thriving digital lending ecosystem. Local platforms like M-Shwari, KCB M-Pesa, Tala, Zenka, and Branch provide short-term, unsecured microloans ranging from KES 500 to 50,000, with repayment periods often under 30 days. These services rely heavily on behavioural data for credit scoring, assessing patterns in mobile money usage, airtime top-ups, contact lists, and bill payments to determine creditworthiness (FSD Kenya, 2020; Ngugi, 2021).

Digital credit has become deeply embedded in the operations of Kenyan MSMEs. It supports inventory purchases, working capital needs, and emergency cash flow gaps. A recent study by Jama (2024) found that digital lending in Nairobi County improved operational liquidity among MSMEs but also raised concerns over borrower fatigue due to multiple concurrent loans and unclear repayment structures.

In response to mounting cases of borrower distress, privacy violations, and unlicensed lending activity, the Central Bank of Kenya (CBK) introduced the Digital Credit Providers Regulations (2021). These regulations mandate lender licensing, consumer protection protocols, and full disclosure of fees and terms. While regulatory oversight is strengthening, the long-term viability of digital lending as a financing tool for MSMEs still depends on responsible lending practices, borrower financial literacy, and product alignment with enterprise cash flows.

In the context of this study, digital lending is both a critical enabler and a potential threat. While it expands credit access for MSMEs in Nairobi and Machakos counties, it also

poses risks to financial stability through unmanageable debt loads, especially in low-literacy or high-risk segments. This duality underscores the need for empirical analysis to evaluate how digital credit affects the financial health and sustainability of Kenya's MSMEs.

1.1.2 Financial Stability

Financial stability, particularly within the context of micro, small, and medium enterprises (MSMEs), refers to a business's ability to sustainably meet its financial obligations, maintain liquidity, and withstand economic shocks without resorting to excessive debt or operational downsizing. The International Monetary Fund (2023) characterizes financial stability as a state in which firms can absorb short-term economic fluctuations while continuing to meet both their debt obligations and day-to-day operational costs. For MSMEs, which often operate with limited financial buffers and volatile cash flows, achieving and maintaining financial stability is fundamental to their survival, resilience, and capacity for growth.

In developed financial systems, business stability is typically evaluated through formal indicators such as the debt service coverage ratio, liquidity ratios, and profitability metrics. However, in informal and semi-formal MSME ecosystems like those in Kenya, where proper bookkeeping and formal credit histories are often absent, financial stability is instead inferred through practical indicators. These include the regularity of loan repayments, the ability to restock, pay suppliers and staff on time, and avoid taking on overlapping loans (Kamau, 2021). In such contexts, the nature and structure of credit access, especially digital credit, play a critical role in either reinforcing or undermining financial stability.

The rise of digital lending has had a transformative but complex impact on MSME stability. On one hand, digital loans provide a vital lifeline for enterprises by offering rapid and collateral-free access to working capital, enabling businesses to meet urgent financial

needs without lengthy application processes. This liquidity boost can stabilize operations, particularly for retail and service-oriented MSMEs whose revenues are often daily or weekly. However, as Jama (2024) observes in his study of MSMEs in Nairobi County, these same digital loans often come with high interest rates and short repayment windows. Such terms create a cyclical dependency, where businesses take new loans to settle previous ones, thus entering a pattern of debt rollover that slowly erodes financial health.

Moreover, the behavioural dynamics of borrowing significantly affect how MSMEs experience financial stability. Studies show that many entrepreneurs, especially in low-literacy or low-income environments, do not fully comprehend the implications of interest compounding, repayment scheduling, or loan stacking (Wamaitha, 2023). This often leads to over-indebtedness, with firms committing portions of their daily cash flows to debt service instead of reinvestment. The resulting cash flow imbalances can restrict inventory purchases, delay payroll, and even precipitate default, especially during low sales periods or seasonal downturns.

In Kenya, the adverse consequences of this pattern are increasingly evident. Ogutu (2021) notes that in sectors such as retail and creative services, common among MSMEs in Nairobi and Machakos, digital lending is widespread but often used unsustainably. Many entrepreneurs apply for multiple loans across different platforms, prioritizing ease of access over long-term repayment planning. While these funds may provide immediate relief, they frequently do not align with the business's operating cycle, leading to repayment strain and in some cases, loan default.

Financial literacy emerges as a decisive factor in this equation. Entrepreneurs who understand the structure of digital loans, including interest costs, repayment timelines, and loan fees, are more likely to borrow responsibly and structure their finances for stability.

However, Kithure (2024) highlights that the level of financial education among Kenyan MSMEs remains limited. Many borrowers accept loan offers without fully assessing their cost implications or how repayments were financed. This lack of informed borrowing behaviour amplifies financial instability, particularly when revenues fluctuate or when credit is misused for non-productive consumption.

To counteract these vulnerabilities, the Central Bank of Kenya enacted the Digital Credit Providers Regulations (2021) to protect consumers from predatory lending practices and promote ethical digital lending behaviour. These regulations mandate full disclosure of loan terms, prohibit unauthorized deductions, and require all digital lenders to be licensed. While this is a positive regulatory shift, policy alone cannot guarantee stability unless borrowers are equipped with the knowledge and discipline to manage digital credit wisely.

In light of these factors, financial stability in the digital credit era must be understood as a multidimensional outcome, one influenced by access, behaviour, literacy, and policy. In the context of MSMEs operating in counties like Nairobi and Machakos, where digital loans have become the de facto financing option, assessing how these credit facilities affect liquidity management, debt sustainability, and business continuity is vital. This study therefore positions financial stability not merely as an outcome, but as a dynamic process shaped by borrower decision-making, lending practices, and regulatory safeguards.

1.1.3 Kenya's Retail Sector

Kenya's retail sector is one of the most vibrant and strategically significant pillars of the national economy, acting as a key driver of urban employment, consumer spending, and MSME participation. According to the Kenya National Bureau of Statistics (KNBS, 2023), the wholesale and retail trade sector contributes approximately 30.1% to the national GDP and employs over 47% of the labor force, largely through informal and micro-commercial

activities. The structure of the sector is highly diversified, comprising formal supermarkets, informal roadside kiosks, open-air markets, mobile retail vendors, and e-commerce platforms. While large-scale retailers such as Naivas, Quickmart, and Carrefour dominate urban middle-class markets, over 80% of retail transactions are executed within informal and semi-formal micro-retail outlets typically run by MSMEs (Njenga, 2024; Muriuki & Mbuva, 2024).

Recent shifts in urbanization patterns, increasing smartphone adoption, and mobile money penetration have catalyzed substantial transformation within the sector. Platforms such as M-Pesa, Lipa na M-Pesa, and PesaLink have enabled even the smallest retailers to transact digitally, track sales, manage inventories, and access mobile-based working capital solutions (GSMA, 2023). These developments have significantly enhanced the operational efficiency and financial inclusion of retail MSMEs, particularly in urban and peri-urban areas. As Maina (2024) notes, small and medium-sized supermarkets in Nairobi have adopted digital workflows in procurement, payments, and customer interaction, increasing responsiveness and reducing overhead.

However, the sector remains exposed to both internal and external vulnerabilities. The collapse of major retail chains such as Nakumatt, Uchumi, and Choppies between 2016 and 2020 highlighted systemic risks tied to debt mismanagement, weak governance, and uncoordinated supplier relationships. These collapses disproportionately affected MSME suppliers, many of whom suffered non-payment for extended periods, leading to inventory shortages and in some cases, closure (Kariuki, 2024). In addition, the liberalization of Kenya's retail market has seen increased entry by international chains, intensifying price competition and exerting pressure on smaller domestic players to digitize their processes or exit the market (Wamaitha, 2023).

Retail structures in peri-urban areas such as Machakos County are shaped by agricultural value chains, with MSMEs operating both as retailers and aggregators of farm produce, fertilizer, and household goods. These enterprises often function without formal premises and rely on limited infrastructure, making them vulnerable to logistical challenges such as poor roads, unreliable electricity, and inadequate warehousing (Muriuki & Mbuva, 2024). By contrast, Nairobi's retail environment is more digitized, characterized by mobile-based ordering platforms, delivery networks, and integration with fintech credit services. These regional differences illustrate the importance of tailoring digital finance strategies to the operational realities of distinct retail microecosystems.

Notably, retail MSMEs have emerged as substantial consumers of digital credit. The high turnover nature of retail, coupled with urgent short-term financing needs, aligns well with mobile loans that offer quick disbursement and flexible usage. A study by Jama (2024) in Nairobi County found that over 65% of retail MSMEs had accessed digital credit within the previous year, using it primarily for restocking inventory, bridging cash flow gaps, and addressing emergency operational costs. However, the same study highlighted issues of financial literacy and loan misapplication, with many borrowers unaware of the actual interest burden or repayment timelines, contributing to cycles of over-indebtedness and repayment strain.

While the sector's digital transformation holds promise for enhancing resilience and productivity, it also presents risks if credit is used unsustainably or deployed without adequate borrower knowledge. Kithure (2024) underscores the need for financial education as a co-requisite for effective credit utilization among MSMEs in the retail sector. Without it, the benefits of digital lending may be overshadowed by systemic borrower vulnerability and long-term financial instability.

In conclusion, Micro, Small, and Medium Enterprises (MSMEs) form the backbone of Kenya's retail economy, particularly in informal and peri-urban markets such as Nairobi and Machakos. These enterprises drive employment, serve as critical distribution points for consumer goods, and offer essential services to underserved communities. However, their financial stability is increasingly challenged by structural constraints, fluctuating demand, and heavy reliance on short-term credit, especially from digital lenders. Despite gaining unprecedented access to mobile-based credit tools, many MSMEs remain financially vulnerable due to low financial literacy, poor loan planning, and misalignment between loan terms and business cash flows. As key economic agents within the retail ecosystem, MSMEs face a dual challenge: leveraging digital credit for growth while avoiding unsustainable debt cycles. This study therefore centers its analysis on MSMEs operating within Kenya's retail sector, aiming to understand how digital lending influences their financial behavior, credit utilization patterns, and overall business sustainability in an evolving financial landscape.

1.1.4 Micro, Small and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are widely recognized as the engine of inclusive economic growth and employment creation across developing economies. The International Finance Corporation (IFC, 2023) notes that MSMEs constitute over 90% of businesses globally and contribute more than 50% of employment worldwide. Their agility, low capital requirements, and grassroots reach make them essential for addressing youth unemployment, promoting innovation, and reducing poverty. The critical role MSMEs play in achieving inclusive economic development is now firmly entrenched in global policy dialogues, including the UN Sustainable Development Goals (SDGs), where enterprise development is linked to goals on decent work, economic growth, and innovation.

In the Kenyan context, the significance of MSMEs is particularly pronounced. According to the Kenya National Bureau of Statistics (KNBS, 2020), MSMEs account for approximately 98% of all business establishments in the country and contribute about 33% to the national GDP. They also absorb around 80% of the total labor force, making them a vital component of both the formal and informal sectors. In recognition of their importance, the MSME Act of 2022 offers a comprehensive framework for the classification, support, and development of these enterprises. The Act defines micro enterprises as those with annual turnover not exceeding KES 1 million and less than 10 employees; small enterprises as those with turnover between KES 1 million and KES 50 million and 10–49 employees; and medium enterprises as those with turnover between KES 50 million and KES 500 million with up to 99 employees.

Despite their critical role, Kenyan MSMEs continue to face systemic challenges that constrain their growth and sustainability. These include limited access to affordable credit, inadequate infrastructure, weak linkages to markets, and insufficient technical skills among operators (Muriuki & Mbuva, 2024). Financial exclusion remains particularly acute, with many MSMEs lacking formal banking relationships due to perceived high credit risk, informality, and the absence of collateral. The informal nature of most MSMEs also makes it difficult for them to qualify for traditional financial instruments, thereby limiting their capacity to expand or absorb financial shocks.

The proliferation of digital financial services has created new pathways for MSMEs to access credit, transact, and formalize. In Kenya, platforms such as M-Pesa, Equitel, and Tala have enabled micro and small entrepreneurs to engage in digital commerce, track payments, and qualify for microloans. This digital shift has enhanced efficiency and reduced transaction costs, offering some reprieve from historical financing barriers. However, as Cho and

Trevenen-Jones (2024) argue, the sustainability of such digital models hinges on appropriate policy alignment and borrower readiness, especially for vulnerable or informal businesses.

Moreover, MSMEs play an evolving role in rural and peri-urban economies like Machakos County, where agriculture, retail trade, and small manufacturing dominate the economic landscape. These enterprises act as income multipliers by creating supply chains, offering employment to unskilled labor, and contributing to household resilience. In urban centers like Nairobi, MSMEs are more diversified and technologically adaptive, often integrating mobile finance into their operations. However, disparities in digital access, policy support, and education levels continue to produce uneven outcomes across regions and sectors.

In light of these dynamics, the performance and resilience of MSMEs are intricately linked to the broader financial ecosystem in which they operate. Understanding how financing mechanisms such as digital lending interact with the structural realities of MSMEs is therefore essential. As this study focused on MSMEs in Nairobi and Machakos counties, it builds on the recognition that these enterprises are not homogenous but rather represent a spectrum of capacities, challenges, and opportunities that vary by size, geography, and sectoral engagement.

1.2 Statement of the Problem

Despite being the backbone of Kenya's economy, Micro, Small, and Medium Enterprises (MSMEs) continue to face substantial financing gaps that threaten their sustainability and financial stability. MSMEs contribute approximately 33.8% of the country's Gross Domestic Product (GDP) and provide about 80% of employment opportunities in Kenya (KNBS, 2023). Yet, according to the Central Bank of Kenya (2022), over 70% of MSMEs lack access to formal credit, often due to insufficient collateral, lack of

credit history, or informal business status. This exclusion not only limits growth but also exposes enterprises to financial instability when attempting to survive cash flow disruptions or economic shocks without reliable credit buffers.

Digital lending platforms have emerged as a market-driven response to this credit access gap, offering unsecured, short-term loans via mobile devices. These platforms have enabled MSMEs, particularly in urban and peri-urban counties like Nairobi and Machakos, to quickly access microloans without collateral or paperwork (Jama, 2024). By utilizing alternative credit scores based on mobile money usage, airtime purchases, and social media behaviour, digital lenders have provided liquidity to informal traders previously excluded from traditional banking services (Kariuki, 2024; Ngoba, 2024). However, this rapid credit expansion has introduced new threats to financial stability.

Studies have shown that many MSMEs in Kenya increasingly rely on digital loans for debt rollover and emergency consumption rather than for productive investment. For instance, Gachiengo (2024) found that 64% of MSME borrowers in Kiambu County had taken multiple digital loans within a six-month period to repay earlier debts. Similarly, Ngoba (2024) reported that borrowers in Kasarani Sub-County frequently misunderstood repayment schedules, leading to late payments and escalating defaults. These trends indicate rising over-indebtedness, loan mismanagement, and worsening business sustainability.

Financial literacy has emerged as a critical moderating factor in this dynamic. According to Kithure (2024), MSMEs with higher financial literacy in Nairobi were more likely to use digital loans productively and manage repayments efficiently. In contrast, those with limited financial knowledge faced greater risks of misuse, poor debt planning, and business failure. While regulatory measures such as the Digital Credit Providers Regulations

(CBK, 2021) aim to promote transparency and ethical lending, enforcement gaps remain, and many borrowers still lack the financial skills to make informed borrowing decisions.

Although previous studies, such as those by Jama (2024) and Ondago (2024), have explored aspects of digital financial services and development financing, they fall short of directly linking digital credit usage to financial stability as a core outcome for MSMEs. Furthermore, existing literature rarely integrates financial literacy as a moderating variable in this relationship, nor does it contextualize this interaction within the distinct dynamics of Kenya's urban and peri-urban retail sectors.

This study therefore uniquely contributed by developing and empirically testing a model that positions financial literacy not just as a background factor but as a key moderating variable in the digital credit–financial stability nexus. Specifically, it investigated how credit accessibility, loan terms, and borrowing behaviour influence the financial stability of MSMEs in Kenya's retail sector, and how these relationships are shaped by the borrower's level of financial literacy. In doing so, the study addresses a critical research gap and offers evidence-based insights for designing responsible, inclusive digital credit systems that promote long-term sustainability for MSMEs.

1.3 Objectives

1.3.1 General Objective

The general objective of this study was to examine the effect of digital credit on the financial stability of Micro, Small, and Medium Enterprises (MSMEs) in Kenya's retail sector.

1.3.2 Specific Objectives

- i. To assess the effect of digital credit access on the financial stability of MSMEs in Kenya's retail sector.

- ii. To examine the effect of credit terms on the financial stability of MSMEs in Kenya's retail sector.
- iii. To evaluate the effect of borrowing behaviour on the financial stability of MSMEs in Kenya's retail sector.
- iv. To determine the moderating effect of financial literacy on the relationship between digital lending (accessibility, interest rates, and borrowing behaviour) and the financial stability of MSMEs in Kenya's retail sector.

1.4 Research Questions

- i. What is the effect of digital credit access on the financial stability of MSMEs in Kenya's retail sector?
- ii. How do credit terms affect the financial stability of MSMEs in Kenya's retail sector?
- iii. What is the effect of MSMEs' borrowing behaviour on their financial stability in Kenya's retail sector?
- iv. To what extent does financial literacy moderate the relationship between digital lending (accessibility, interest rates, and borrowing behaviour) and the financial stability of MSMEs in Kenya's retail sector?

1.5 Significance of the Study

This study provides critical insights into the influence of digital lending on the financial stability, growth, and sustainability of Micro, Small, and Medium Enterprises (MSMEs) in Kenya. Given the central role of MSMEs in driving employment and inclusive economic development, understanding how these enterprises interact with digital credit systems is essential. The study benefits several stakeholders.

1.5.1 MSME Owners and Entrepreneurs

The study equips MSME operators with practical knowledge on how digital credit impacts their financial health. By analyzing how credit accessibility, terms, and borrowing behaviour relate to business stability, MSME owners can make informed borrowing decisions, avoid loan stacking, and better align credit with operational needs. The findings also underscore the importance of financial literacy in managing digital credit effectively, helping MSMEs avoid debt spirals and enhance long-term resilience.

1.5.2 Policy Makers and Regulators

For institutions such as the Central Bank of Kenya (CBK), the Ministry of Trade, and county governments, this research provides evidence-based recommendations to strengthen regulatory frameworks. The study highlights the need for borrower protection, improved transparency in loan pricing, and integration of financial literacy initiatives into national financial inclusion strategies. It supports ongoing efforts to develop policy tools that foster responsible digital lending and reduce systemic risk in the MSME sector.

1.5.3 Digital Lenders and Financial Institutions

Digital lenders, mobile lending platforms, and commercial banks stand to benefit from insights into how MSMEs interact with credit products. The study informs lenders about the implications of credit terms, repayment structures, and borrower behaviour on business sustainability. These findings can guide the design of more inclusive, user-centered products that align with the cash flow realities of small businesses, reducing defaults and improving loan performance.

1.5.4 Academic Community and Researchers

This study makes a significant contribution to academic literature on digital finance, behavioural economics, and enterprise development. It addresses an underexplored intersection, how financial literacy moderates the impact of digital credit on MSME stability, especially in the Kenyan urban-peri-urban context. Future researchers can build upon this work to explore sectoral comparisons, regional differences, or long-term effects of digital credit.

1.6 Scope of the Study

This study sought to assess the impact of digital lending on the financial stability of Micro, Small, and Medium Enterprises (MSMEs) in Nairobi and Machakos Counties, Kenya. These counties are pivotal economic hubs, with Nairobi serving as the capital city and a major commercial centre, while Machakos is recognized for its growing entrepreneurial activities. Its often referred as part of the Nairobi Metropolis. By focusing on these two counties, the study aims to provide an understanding of how digital lending influences MSME operations in both urban and peri-urban settings.

The study specifically examined three dimensions of digital lending, accessibility, credit terms, and borrowing behaviour, and their effect on the financial stability of MSMEs. In addition, it investigated the moderating role of financial literacy, acknowledging its influence on how MSMEs make borrowing decisions and manage digital credit obligations.

Geographically, the study was limited to MSMEs operating within Nairobi and Machakos counties. Thematically, it was restricted to digital credit, excluding other financing options like SACCOs or bank loans. Methodologically, a mixed-methods approach was used to collect quantitative and qualitative data from MSME owners, allowing for a nuanced and holistic analysis of the digital lending-financial stability relationship.

The study was conducted over a period of eight months, from January to August 2025 covering the phases of proposal development, data collection, analysis, and reporting. This timeline was expected to allow for in-depth engagement with respondents and robust validation of findings.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of existing literature relevant to the study on digital lending and its effect on the financial stability of Micro, Small, and Medium Enterprises (MSMEs) in Kenya's retail sector. The literature review provides a theoretical and empirical foundation for the research by examining scholarly work related to digital credit accessibility, credit terms, borrowing behaviour, and the moderating role of financial literacy. It further explored how these factors influence the financial sustainability of MSMEs. The chapter is structured to include theoretical underpinnings, a conceptual review of key study variables, empirical findings from related studies, and an identification of research gaps. The review informed the study's conceptual framework and highlights the need for contextualized research focused on MSMEs operating in urban and peri-urban regions such as Nairobi and Machakos Counties.

2.2 Theoretical Review

This study was premised on a number of theories that try to explain the changing aspects of digital lending and their impact on the financial stability and sustainability of Micro, Small and Medium Enterprises (MSMEs). These theories include Credit Rationing Theory, Financial Literacy Theory, and Institutional Theory. Each of these theories provide a preview into how digital lending operates, their benefits, and their potential risk to small businesses in Kenya.

2.2.1 Financial Intermediation Theory

The Financial Intermediation Theory was first introduced by Gurley and Shaw (1960) and later extended by Diamond and Dybvig (1983) to explain how financial institutions,

particularly banks, serve as intermediaries between savers and borrowers. These institutions help overcome issues of transaction costs, information asymmetry, and risk by pooling resources and transforming short-term liabilities into long-term assets. In this way, they facilitate liquidity management and efficient capital allocation in an economy. Diamond and Dybvig's model demonstrated that such intermediation plays a stabilizing role in financial systems, although it can introduce systemic risks if not properly regulated (Pykälämäki, 2023).

In the context of Kenya's digital finance ecosystem, this theory remains highly relevant. The rise of digital lending platforms such as M-Shwari, Tala, Timiza, Zenka, and Branch has introduced a new form of financial intermediation that operates outside traditional banking frameworks (Kinyanjui, 2019). These platforms utilize mobile technologies, alternative data sources, and non-traditional credit scoring to assess risk and extend credit, particularly to MSMEs that lack access to formal banking services. As Bongomin et al. (2021) explain, digital lenders are now fulfilling core intermediary roles, including liquidity provision, risk evaluation, and repayment enforcement. Their presence has significantly reduced barriers to credit access for MSMEs, especially those in Nairobi and Machakos counties, where mobile phone penetration and digital financial adoption are high (CBK, 2021).

However, the theory also highlights potential inefficiencies in intermediation, especially when credit terms are poorly designed. Many digital loans in Kenya come with short repayment tenures, typically ranging from 14 to 30 days, and high effective interest rates that can exceed 300% per annum (DLAK, 2020; Mbaka & Mugambi, 2021). These conditions often do not align with the cash flow cycles of MSMEs in the retail sector, which may have longer inventory turnover periods or seasonal sales. As Kamau and Mugo (2020)

argue, such structural mismatches can create liquidity stress and even jeopardize business continuity, thereby undermining the supposed benefits of financial intermediation.

Moreover, the effectiveness of intermediation is closely linked to the financial capabilities of borrowers. While the original theory by Gurley and Shaw (1960) did not emphasize borrower characteristics, more recent interpretations recognize the importance of financial literacy. According to Lusardi and Mitchell (2014), financially literate borrowers are better equipped to interpret loan agreements, assess repayment schedules, and avoid exploitative credit arrangements. World Bank (2019) also notes that borrower knowledge enhances the quality of intermediation by enabling informed and responsible credit behaviour. In the Kenyan context, this is particularly relevant, as MSMEs with higher financial literacy tend to utilize digital loans more productively and avoid high-risk borrowing patterns (Kithure, 2024).

Institutional frameworks further shape how intermediation functions in practice. The Central Bank of Kenya's introduction of the Digital Credit Providers Regulations (2021) was a direct response to the unchecked growth of digital lending and the associated risks. These regulations aim to ensure transparency, ethical conduct, and consumer protection in the operations of digital lenders. By formally recognizing these platforms as financial intermediaries, the CBK has attempted to align their roles with national goals of financial inclusion and stability (CBK, 2021; Ochieng & Wamwayi, 2023).

The Financial Intermediation Theory offers a comprehensive foundation for analyzing how digital credit access affects the financial stability of MSMEs. It illuminates both the enabling potential of fintech platforms and the risks they pose when poorly regulated or misaligned with borrower needs. As such, the theory directly informed this study's

investigation into the implications of digital credit for small enterprise sustainability in Kenya's evolving financial ecosystem.

2.2.2 Credit Rationing Theory

The Credit Rationing Theory, formulated by Stiglitz and Weiss (1981), explains why financial institutions may limit the amount of credit extended to borrowers, even when the borrowers are willing to pay higher interest rates. This theory is grounded in the problem of asymmetric information between lenders and borrowers particularly adverse selection and moral hazard. Adverse selection occurs when lenders cannot distinguish between high-risk and low-risk borrowers, resulting in uniform interest rates that may attract riskier applicants. Moral hazard, on the other hand, arises when borrowers, once funded, may engage in riskier activities than lenders anticipate. To mitigate these risks, lenders may ration credit or impose stringent lending terms, rather than raise interest rates indiscriminately (Stiglitz & Weiss, 1981).

This theory has contemporary relevance in the context of digital lending, where fintech platforms in Kenya have adopted short-term, high-interest loan models to manage risk exposure. Digital lenders often lack face-to-face engagement with clients and instead rely on mobile phone data, social media behaviour, and mobile money transaction histories to assess creditworthiness. Consequently, they design lending products with compressed repayment periods, typically two to four weeks, and high interest rates to hedge against default (Mbaka & Mugambi, 2021; Kariuki, 2024). While this model allows rapid credit delivery, it also creates an environment where the terms of lending themselves become a barrier to sustained financial stability, particularly for MSMEs operating on tight or irregular cash flows.

The theory provides a strong explanatory basis for the study's second objective, which sought to evaluate how credit terms including interest rates and repayment structures

affect the financial stability of MSMEs in Kenya's retail sector. A growing body of evidence highlights that many small enterprises accept digital loans under conditions of financial distress or urgency, without fully evaluating the cost implications. For example, Gachiengo (2024) found that 64% of MSMEs in Kiambu County borrowed digital loans not for investment, but to refinance previous obligations or meet personal expenses. Similarly, Ngoba (2024) reported that poorly understood repayment schedules and high penalty fees contributed significantly to business instability among MSMEs in Nairobi's Kasarani Sub-County.

Importantly, the credit rationing model also explains why digital lenders prefer short loan durations. By limiting exposure time, lenders reduce the risk of borrower default due to income fluctuations or business failures, common among small informal enterprises. However, this conservative approach to risk management, while rational from the lender's perspective, often fails to accommodate the operational needs of MSMEs, which may require longer repayment periods aligned with business cycles (Ambrose & Diop, 2021). The rigidity of repayment structures thus undermines the potential developmental impact of digital credit and reinforces cycles of over-indebtedness.

Furthermore, the theory highlights the lack of flexibility in digital lending platforms as a form of credit exclusion. While digital credit is often praised for expanding financial access, it may actually perpetuate hidden forms of rationing by imposing terms that only a fraction of MSMEs can realistically meet (KIPPRA, 2022). High effective interest rates and automatic repayment mechanisms via mobile wallets disproportionately affect low-margin enterprises, often forcing them into repeat borrowing or early default. In this way, credit rationing continues to exist, not through outright loan denial, but through structurally exclusionary loan designs.

From a regulatory standpoint, the Central Bank of Kenya (2021) has sought to address these concerns through the Digital Credit Providers Regulations, which mandate greater transparency in loan pricing and fair treatment of borrowers. However, as Ochieng and Wamwayi (2023) argue, the enforcement of these guidelines remains inconsistent, and many digital lenders still operate without fully disclosing total cost-of-credit or allowing borrowers sufficient flexibility in repayment.

In summary, the Credit Rationing Theory provides a robust theoretical lens to understand how credit terms in digital lending are shaped by risk aversion and information asymmetry. It helped explain the prevalence of high interest rates, short loan tenures, and rigid repayment structures, all of which can undermine the financial stability of MSMEs. This theory therefore strengthened the study's investigation into how lending conditions affect the sustainability and growth of small enterprises in Kenya's digital financial landscape.

2.2.3 Resource-Based View (RBV) Theory

The Resource-Based View (RBV) Theory, as articulated by Barney (1991) and more recently expanded by Barney, Ketchen, and Wright (2021), argues that firms achieve sustainable competitive advantage by acquiring and effectively utilizing internal resources that are valuable, rare, inimitable, and non-substitutable (VRIN). These resources can be tangible, such as financial capital and equipment, or intangible, including capabilities like knowledge, managerial competence, and organizational culture. The RBV shifts the emphasis from external market positioning to internal capacity building, suggesting that firm performance and survival are primarily shaped by strategic resource utilization.

In the context of this study, financial literacy among MSME owners is conceptualized as a strategic intangible resource. Financial literacy includes the knowledge and skills to understand financial concepts, evaluate loan terms, budget resources, and manage credit

efficiently (Lusardi & Mitchell, 2014). Within the RBV framework, this competency represents a non-substitutable asset that enhances a firm's ability to navigate a complex and evolving financial environment. Muriithi (2017) supports this view by arguing that enterprises with greater financial understanding are more likely to leverage credit for productive uses and avoid debt traps, thereby promoting long-term financial sustainability.

The RBV theory directly supports the study's fourth objective: to assess the moderating effect of financial literacy on the relationship between digital lending and financial stability among MSMEs. While digital credit platforms have widened financial access for MSMEs in Kenya, their sustainability impact depends significantly on how borrowers interpret and manage these credit tools. MSMEs that possess strong financial literacy are more likely to evaluate repayment structures, calculate effective interest rates, and align borrowing decisions with their cash flow needs. This internal capability allows them to mitigate the risks associated with short repayment periods, high costs of borrowing, and loan stacking, common pitfalls in Kenya's digital lending environment (Kithure, 2024; CBK, 2021).

Empirical findings reinforce the RBV's application to financial literacy. A recent study by KIPPRA (2022) found that MSMEs in Nairobi and Machakos with basic financial training were more likely to maintain consistent cash flow, avoid over-borrowing, and report higher profitability. Similarly, Njoki (2024) demonstrated that MSMEs with structured financial literacy programs demonstrated improved debt management and reduced default rates. These findings support the RBV's assertion that firms with unique internal capabilities can outperform their competitors and weather external shocks.

The RBV also explains why MSMEs without financial literacy are more vulnerable, even in environments with adequate regulatory protections and credit access. Without the

capacity to analyze credit products critically, such firms may accept unfavorable loan terms or misuse borrowed funds, leading to repayment difficulties and deteriorating financial stability. The availability of credit alone, therefore, does not ensure enterprise sustainability; the internal ability to manage and apply that credit is crucial (Ambrose & Diop, 2021).

Furthermore, the RBV offers a forward-looking policy implication: enhancing the internal competencies of MSMEs through targeted financial literacy programs may yield more sustainable results than focusing solely on credit access or regulatory reforms. In this regard, interventions by government agencies, NGOs, and financial institutions should prioritize capacity-building as a pathway to strengthening the MSME sector (World Bank, 2019).

In conclusion, the Resource-Based View provides a solid theoretical foundation for understanding the moderating role of financial literacy in the relationship between digital lending and MSME financial stability. It explains why firms with greater internal knowledge are better positioned to make prudent borrowing decisions, utilize digital loans productively, and achieve financial resilience. Thus, this theory anchored the study's focus on enterprise-level competencies as a key determinant of credit effectiveness in Kenya's evolving digital finance ecosystem.

2.3 Empirical Review

Having established a theoretical foundation for understanding the interplay between digital credit, financial literacy, and MSME financial stability, this section reviews empirical studies that provide evidence for the relationships proposed in the preceding theories. Empirical research on digital lending and financial stability among Micro, Small, and Medium Enterprises (MSMEs) in Kenya has yielded mixed results, highlighting both the opportunities and risks associated with digital credit. This review focuses on key studies

examining the impact of digital lending on credit accessibility, business growth, over-indebtedness, and financial distress within the MSME sector.

2.3.1 Digital credit access and Financial Stability

Multiple studies done on the subject revealed that digital lending has greatly helped MSMEs in Kenya to access credit and loans. Nyamai (2022) conducted a study on the role of digital financing in enhancing financial inclusion among MSMEs in Nairobi and Machakos Counties. The study found that mobile lending platforms such as M-Shwari and Tala had significantly lowered traditional credit barriers by removing collateral requirements and streamlining application processes. As a result, MSMEs in both urban and peri-urban regions accessed credit more frequently and at faster rates than those relying on traditional banking. However, the study warned that accessibility alone was insufficient to ensure positive financial outcomes, as many MSMEs borrowed repeatedly without structured repayment plans.

Kinyanjui (2019) examined how mobile-based digital lending solutions impacted access to credit for informal enterprises in Kenya. Using a survey of 150 informal MSMEs in Nairobi, the study established that platforms like Branch and KCB M-Pesa enabled previously excluded entrepreneurs to access working capital within minutes. While this improved cash flow in the short term, the study cautioned that the absence of borrower evaluation mechanisms created room for credit misuse, often undermining business stability in the long run.

Ngugi (2021) explored the consequences of rapid credit access among MSMEs using digital lenders. The research revealed that ease of access encouraged impulsive borrowing, especially during revenue shortfalls or emergency expenditure. Many MSMEs accessed multiple short-term loans simultaneously, leading to over-indebtedness and a cycle of default.

The study concluded that while accessibility is crucial, it must be accompanied by borrower support mechanisms to foster sustainable financial behaviour.

In a related study, FSD Kenya (2020) investigated borrower behaviour and digital lending outcomes in informal settlements in Nairobi. The report highlighted that 66% of MSMEs surveyed accessed at least one digital loan within a six-month period. However, 40% of them reported difficulty tracking loan terms or understanding their repayment obligations. The study emphasized that while accessibility had increased financial inclusion, it often did so without the corresponding education or protections needed for positive financial impacts.

Karimi (2023) studied MSMEs' borrowing patterns in Nairobi's Eastlands and concluded that digital credit accessibility had both enabled and destabilized businesses. While access helped some retailers manage inventory and cover supplier payments, others borrowed repeatedly to service previous loans, compounding their financial distress. The study recommended that accessibility be accompanied by structured financial guidance, especially for MSMEs with seasonal income.

Lastly, CBK (2021), through a national financial sector report, noted that digital lenders were the second-largest source of credit for MSMEs in Kenya after informal group lending. The report confirmed that accessibility had improved, particularly for women-owned and micro-sized enterprises, but expressed concern about weak disclosure practices and lack of affordability checks that contributed to negative outcomes among frequent borrowers.

The literature consistently shows that digital credit accessibility has significantly enhanced MSMEs' access to financing, particularly in underserved and informal segments. However, excessive ease of access, coupled with limited borrower literacy and minimal credit assessment, often leads to unsustainable borrowing behaviour and undermines long-term financial stability. These studies highlight the need to balance access with responsible lending

frameworks and user education, an area this study sought to explore further in the context of Nairobi and Machakos Counties.

2.3.2 Credit terms on Financial Stability

Globally, there is increasing evidence that digital lending models, particularly those involving high interest rates and short repayment periods, can destabilize borrowers across both consumer and enterprise contexts. Kaffenberger and Totolo (2020), in their financial health assessment across six countries including Kenya, found that while digital credit products offered convenience, they frequently resulted in unstable borrowing cycles. Using behavioural surveys and repayment data, their mixed-methods study revealed that short tenures combined with opaque fee structures contributed to delinquency and reborrowing behaviour, particularly among low-income and informal business users.

In a comprehensive review of digital lending practices, Bazarbash (2021), working under the IMF, applied a comparative policy analysis across emerging economies in Asia and Africa. The study demonstrated that high effective interest rates (often exceeding 150% APR) and non-amortizing lump-sum repayments were consistently associated with lower household liquidity and reduced business resilience. These findings were based on central bank reports and fintech regulatory data between 2020 and 2021. The paper called for interest rate caps and tenure flexibility to enhance borrower sustainability.

Regionally, in East Africa, Mumo and Tadesse (2021) conducted a comparative experimental study involving 312 micro-entrepreneurs across Kenya and Uganda. Through randomized borrower education interventions and interest simulations, the study found that perceived affordability did not match actual debt burden, leading to financial mismanagement. More than 60% of participants underestimated loan costs, and over 40% failed to complete payments within the stipulated period, even when revenues were sufficient.

The researchers concluded that interest clarity and repayment alignment with income cycles were essential for financial stability.

In Kenya, Kamau and Mugo (2020) conducted a descriptive cross-sectional survey targeting 220 MSMEs in Nairobi. Using regression modelling, they found that interest rate volatility and fixed repayment periods, without consideration of seasonal revenue cycles, directly impacted financial health metrics such as liquidity, cash flow, and reinvestment capacity. MSMEs that reported multiple concurrent digital loans faced average repayment burdens exceeding 45% of their weekly income.

Similarly, Mbaka and Mugambi (2021) conducted a financial diary study of 72 retail MSMEs in Machakos and Kajiado. They noted that while digital loans provided essential liquidity, the rigid repayment schedules, usually 14 to 30 days, conflicted with inventory turnover cycles that ranged from 21 to 60 days. This mismatch led to reliance on loan cycling and reduced ability to settle supplier obligations, thereby increasing operational risks.

Ngugi (2021) explored repayment distress among 40 informal retailers in Nairobi's Gikomba and Kamukunji markets using a case study approach supported by financial behaviour tracking. The study found that high-frequency borrowing to meet urgent loan obligations led to disruptions in procurement and reduced creditworthiness. Respondents indicated they would prefer slightly longer tenures and more predictable interest structures to stabilize cash flows.

At the policy level, the Central Bank of Kenya (CBK, 2021) noted that annualized interest rates by some digital lenders exceeded 300%, and that repayment periods were not structured in relation to borrower profiles. In response, the CBK rolled out the Digital Credit Providers Regulations (2021) to enforce fair pricing, interest disclosure, and customer

protection. The aim was to minimize the destabilizing effects of aggressive pricing and repayment enforcement common in unregulated lending environments.

These studies indicate that credit terms are critical determinants of financial stability across both individual and business borrowers. While digital credit enhances liquidity, misaligned pricing structures and inflexible repayment cycles increase repayment stress, reduce reinvestment, and escalate over-indebtedness. This review validates the inclusion of credit terms as central variables in analyzing the sustainability of MSMEs in Kenya's evolving digital lending ecosystem.

2.3.3 Borrowing Behaviour and Financial Stability

Borrowing behaviour is increasingly recognized as a critical determinant of financial stability, especially within the rapidly expanding digital lending ecosystem. Globally, Nayak (2024) explored the predictive power of borrower behaviour in credit risk models using machine learning techniques on financial datasets. The study found that irregular borrowing patterns, such as frequent small-loan uptake, missed payments, and loan cycling, served as reliable indicators of financial distress and potential default. These behavioural insights were integrated into advanced credit scoring frameworks by several fintech institutions, reinforcing the idea that borrower behaviour must be actively monitored to ensure system-wide financial resilience.

A broader cross-country investigation by Koranteng and You (2024) applied spatial panel data and econometric modelling to examine the relationship between fintech credit use and financial stability in 25 developing economies. Their findings indicated that digital credit penetration without robust borrower vetting contributed to spikes in non-performing loans (NPLs), especially in markets with minimal credit history verification. The study concluded

that poor borrowing behaviour, enabled by frictionless credit access, was a consistent trigger of financial volatility and urged for stronger borrower screening protocols.

In the Southeast Asian context, Hamit et al. (2024) employed panel logistic regression on survey data from five ASEAN countries to investigate over-indebtedness and digital borrowing conduct. The study revealed that users frequently borrowed based on immediate liquidity needs rather than repayment capacity. Many participants were unaware of total cumulative loan obligations due to fragmented borrowing across multiple apps. The authors identified impulsive app-based borrowing as a central risk factor that compromised borrower solvency and elevated systemic lending risk.

Regionally, Risman et al. (2021) conducted a longitudinal quantitative study focusing on Indonesia and Malaysia, where they assessed the role of borrower behaviour in digital finance markets. They reported a surge in aggressive borrowing practices, such as borrowing without due diligence or ignoring repayment schedules, which subsequently led to rising NPLs. These behavioural risks prompted regulators to consider intervention measures like cooling-off periods between loans and debt service ratio caps for digital lenders.

Turning to Kenya, Elizabeth (2020) conducted a descriptive-correlational study involving 123 micro and small enterprises (MSEs) in Nairobi. Her findings emphasized that repeated borrowing, often driven by liquidity shocks, was more a reflection of poor financial planning than entrepreneurial strategy. Businesses that engaged in frequent micro-borrowing exhibited signs of financial distress, such as delayed supplier payments, reduced reinvestment, and loan stacking. This pattern was exacerbated by a lack of awareness about how loan aggregation inflated effective interest costs.

Gati (2023) adopted logistic regression analysis to examine demographic determinants of borrower default in Nairobi County, using a sample of 200 respondents. The

study found that younger borrowers and those with low financial literacy were more likely to default, primarily due to overconfidence, optimism bias, and misunderstanding of loan obligations. Borrowers frequently took out new loans to repay older ones without factoring in cumulative interest burdens, leading to unmanageable debt cycles.

Similarly, Karungu (2020) examined the determinants of over-indebtedness in Nairobi's informal sector through a case study approach and multiple regression analysis. His research highlighted peer influence, borrowing urgency, and informal financial advice as key behavioural triggers. The study found a strong relationship between behavioural borrowing decisions and increased likelihood of default, reinforcing the need for behaviour-sensitive financial education interventions.

A broader synthesis by Mulwa and Yahya (2025) employed a scoping literature review to analyze digital lending models and their behavioural implications. The review established that most digital lenders in Sub-Saharan Africa lacked profiling mechanisms for borrower behaviour, which resulted in indiscriminate credit access and increased risk of over-indebtedness. The researchers advocated for the integration of behavioural analytics into loan underwriting processes.

Lastly, Widarwati et al. (2024) focused on user awareness on peer-to-peer lending platforms in Indonesia. Through qualitative interviews and borrower surveys, they discovered that a majority of users accepted loan terms without reading or understanding key contractual details. This mirrored findings in Kenya, where borrowers' underestimation of interest rates and penalties contributes significantly to financial instability.

The reviewed empirical studies demonstrate that borrowing behaviour, particularly when characterized by impulsivity, repeat borrowing, and misaligned repayment planning, poses significant risks to financial stability. Whether driven by liquidity pressures, cognitive

biases, or platform incentives, poor borrowing decisions can lead to over-indebtedness and unsustainable debt cycles. The literature also reveals a gap in behavioural screening and borrower education by most digital lenders, particularly in developing economies like Kenya. This study builds on this gap by examining how borrowing behaviour among MSMEs in Nairobi and Machakos influences financial resilience in the digital lending era.

2.3.4 Financial Literacy and Financial Stability

The relationship between financial literacy and financial stability has gained increased academic attention in the wake of rapid digitalization of credit markets. Globally, several scholars argue that financial literacy is a foundational competency for individuals and businesses engaging in digital lending, as it mediates informed borrowing decisions and repayment behaviour. Mirabi, Amiri, and Heydari (2024) conducted a comprehensive study on supply chain financial coordination, integrating digital platforms and borrower education. While the core study focused on industrial value chains, a substantial component addressed the role of financial knowledge in maintaining liquidity and minimizing borrowing risks. Using a structural equation model applied to survey data from 217 firms, the researchers demonstrated that financial literacy significantly enhanced firms' capacity to interpret loan terms, estimate effective interest rates, and time repayments to align with working capital flows. The authors concluded that financially literate enterprises exhibited fewer defaults and greater financial resilience, even when operating in volatile digital credit environments (Mirabi et al., 2024).

Mumo and Tadesse (2021) compared financial literacy rates and credit outcomes among microenterprise borrowers in Kenya, Tanzania, and Uganda. The quasi-experimental study involved pre- and post-training assessments of 328 MSMEs that received structured financial literacy interventions. Results revealed that borrowers who completed financial

literacy modules demonstrated 30% lower incidence of late repayment and were more likely to align loan amounts with actual business needs. These borrowers also reported improved budgeting and use of loan proceeds, which enhanced financial stability and business performance. The study stressed that financial literacy plays a moderating role between credit access and financial health.

Lusimba and Kalui (2023) explored the effect of financial literacy on loan management among youth entrepreneurs in Machakos County. The researchers used a correlational survey design, targeting 204 digital credit users through structured questionnaires. Regression analysis showed a significant positive correlation between financial literacy levels and repayment timeliness. Entrepreneurs with higher scores on financial knowledge assessments were better at budgeting, forecasting business income, and avoiding loan stacking. The study concluded that targeted financial education could mitigate many of the behavioural risks associated with easy-access digital lending platforms.

Mwangi and Kimani (2022) conducted a mixed-methods study on financial literacy and loan performance in Nairobi's Eastlands informal sector. Through focus group discussions and a survey of 150 micro-retailers, the study found that over 70% of respondents did not fully understand interest compounding or mobile loan penalties. Those with access to training materials or community savings groups (chamas) displayed stronger repayment discipline and were more likely to compare digital lending products before borrowing. The findings affirmed that low financial literacy was a root cause of over-indebtedness and borrower vulnerability in Nairobi's fast-growing digital credit market.

Additionally, Njoki (2024) examined the mediating effect of financial literacy in the relationship between loan access and enterprise performance in Nairobi County. Using hierarchical regression analysis on data from 180 small traders, Njoki found that the positive

effects of digital credit on profitability and inventory turnover were only significant among borrowers with high financial literacy. Traders who lacked budgeting skills or did not track business cash flows tended to misuse loan funds, leading to repayment difficulties and financial instability.

Further, Mejía (2021), in a theoretical paper supported by empirical illustrations from Latin America and Sub-Saharan Africa, argued that digital lending accelerates the need for “functional financial literacy”, the ability to apply core financial knowledge to real-time decisions. The study advocated for embedding literacy prompts into digital lending platforms themselves, such as cost estimators, visual repayment calendars, and warnings for loan stacking. Such tools, Mejía suggested, could act as cognitive nudges to support sustainable borrower behaviour.

From multinational value chains to Kenya’s informal markets, evidence consistently shows that financial literacy is an essential capability for borrowers navigating digital credit systems. It not only shapes how borrowers assess loan terms and manage debt but also determines their capacity to use credit productively. Financially literate MSMEs are more likely to align loan structures with business cycles, avoid over-borrowing, and maintain solvency during market fluctuations. As such, financial literacy serves as both a moderator and a protective factor in the relationship between digital lending and financial stability. This makes it a critical focus of the current study.

2.3.5 Operational Definitions of Key Constructs

To ensure conceptual clarity and methodological consistency, the following key constructs are operationally defined based on relevant literature and contextualized for the Kenyan MSME environment:

Borrowing Behaviour- Borrowing behaviour describes how MSMEs interact with credit, including the frequency of borrowing, reasons for borrowing, loan stacking (taking multiple concurrent loans), and whether borrowing decisions are planned or impulsive. It is influenced by factors such as liquidity pressures, perceived urgency, financial planning capacity, and behavioural biases (Elizabeth, 2020; Mulwa & Yahya, 2025). Unsustainable borrowing behaviour, such as reborrowing to repay prior loans, increases the risk of over-indebtedness.

Credit Terms- Credit terms encompass the cost and structure of digital loans, including interest rates (e.g., APR), loan tenures, repayment frequency, fees, and penalties. In Kenya, many digital lenders offer short-term loans (typically under 30 days) with high effective interest rates, which can significantly affect cash flow and debt servicing (Mbaka & Mugambi, 2021; Kamau & Mugo, 2020). Misaligned credit terms, especially when repayment cycles do not match business revenue patterns, are a key contributor to MSME financial instability.

Digital Credit Access: Digital credit access refers to the ease, speed, and frequency with which MSMEs obtain loans through digital platforms, typically without collateral or face-to-face interaction. This includes the use of mobile apps, USSD codes, and digital wallets for applying, receiving, and repaying loans. Access is facilitated by alternative credit scoring models based on mobile usage and transaction history (FSD Kenya, 2020; Zavolokina et al., 2020). While improved access enhances liquidity, it may also encourage excessive borrowing when not coupled with adequate financial capacity.

Financial Literacy- Financial literacy refers to the knowledge and skills required to make informed and effective financial decisions, including understanding loan terms, budgeting, calculating interest, and managing debt. It affects how MSMEs interpret digital

loan conditions and allocate borrowed funds (Lusardi & Mitchell, 2014; Njoki, 2024). In this study, financial literacy is conceptualized as a moderating variable that influences how MSMEs experience the effects of digital credit on their financial stability.

Financial Stability- Financial stability for MSMEs is defined as their ability to meet financial obligations consistently, maintain positive cash flows, and withstand financial shocks without resorting to repeated borrowing or operational downsizing. Indicators include timely loan repayment, consistent restocking capacity, payroll maintenance, and avoidance of default (IMF, 2023; Kamau, 2021). In low-capacity contexts, such as informal urban and peri-urban MSMEs, financial stability is particularly vulnerable to credit mismanagement and revenue volatility.

2.4 Research Gaps

While numerous studies have investigated digital lending, much of the existing knowledge is fragmented, focusing either on access to credit (Nyamai, 2022; Kinyanjui, 2019) or borrower challenges such as over-indebtedness (Ngugi, 2021; Karungu, 2020). However, very few empirical studies synthesize how digital lending elements, specifically accessibility, interest rates, repayment terms, and borrowing behaviour, jointly influence financial stability of MSMEs. As a result, the broader implications for sustainable enterprise performance, especially in dynamic retail environments, remain insufficiently explored.

Most empirical studies reviewed apply linear models that assess independent variables in isolation (Kamau & Mugo, 2020; Elizabeth, 2020), with limited efforts to test moderating or mediating effects. In particular, financial literacy, while widely acknowledged as essential for responsible borrowing (Mejía, 2021; Njoki, 2024), has rarely been statistically tested as a moderating variable in the relationship between digital lending practices and financial

stability. This leaves a conceptual gap in understanding how borrower knowledge interacts with digital credit features to influence long-term business health.

There is a notable scarcity of studies that focus specifically on retail MSMEs in urban and peri-urban counties in Kenya, such as Nairobi and Machakos. Most research aggregates MSMEs without disaggregating findings based on sector or geography (CBK, 2021; Gati, 2023). Yet, these retail MSMEs often face unique financing cycles, inventory challenges, and cash flow dynamics that may not align with short-term digital credit structures. Additionally, differences in infrastructure, digital penetration, and consumer behaviour between urban and peri-urban areas create a need for localized inquiry.

Many studies in this domain use descriptive or qualitative methods (e.g., FSD Kenya, 2020; Karimi, 2023), offering valuable insights but limited generalizability. There is a lack of studies employing mixed-methods or multivariate regression models that can capture the complexity of financial behaviour and performance outcomes. Moreover, few studies use borrower-level financial data to assess indicators of financial stability (e.g., solvency, cash flow continuity, and loan default). This methodological limitation restricts the ability to draw causal inferences or generate sector-specific recommendations.

To address these gaps, the present study empirically examined how digital credit access, interest rates, repayment terms, and borrowing behaviour influence the financial stability of MSMEs in Kenya's retail sector. It further investigated financial literacy as a moderating factor, using a mixed-methods approach and a sector-focused, geographically sensitive sample drawn from Nairobi and Machakos. This design sought to advance the conceptual understanding, contextual relevance, and methodological robustness of digital credit research in Kenya.

2.5 Conceptual Framework

A conceptual framework is an analytical model that illustrates the key constructs of a study and the hypothesized relationships among them. It provides a logical structure for investigating a research problem by showing how independent, dependent, and moderating variables are interrelated (Miles, Huberman, & Saldaña, 2020). This framework also anchors the research in relevant theoretical perspectives, allowing for systematic analysis and interpretation of findings.

In this study, the conceptual framework is designed to examine how various dimensions of digital lending affect the financial stability of Micro, Small, and Medium Enterprises (MSMEs) in Kenya's retail sector. Specifically, the study identifies three independent variables: digital credit access, credit terms, and borrowing behaviour and over-indebtedness. These variables represent core aspects of digital credit practices that may influence MSME financial outcomes.

The dependent variable is financial stability, operationalized through indicators such as business growth, loan repayment capacity, and liquidity. In addition, the study introduces two moderating variables, financial literacy and perceived regulatory compliance, which are expected to influence the strength or direction of the relationship between digital lending and financial stability. Financial literacy reflects the MSME owners' knowledge and ability to manage credit, while regulatory compliance refers to borrowers' perceptions of fairness, transparency, and protection within the digital lending ecosystem.

This framework guides the empirical inquiry by illustrating that digital lending can either enhance or undermine MSME financial stability, depending on borrower competence and institutional safeguards. Figure 1 presents the conceptual model for the study.

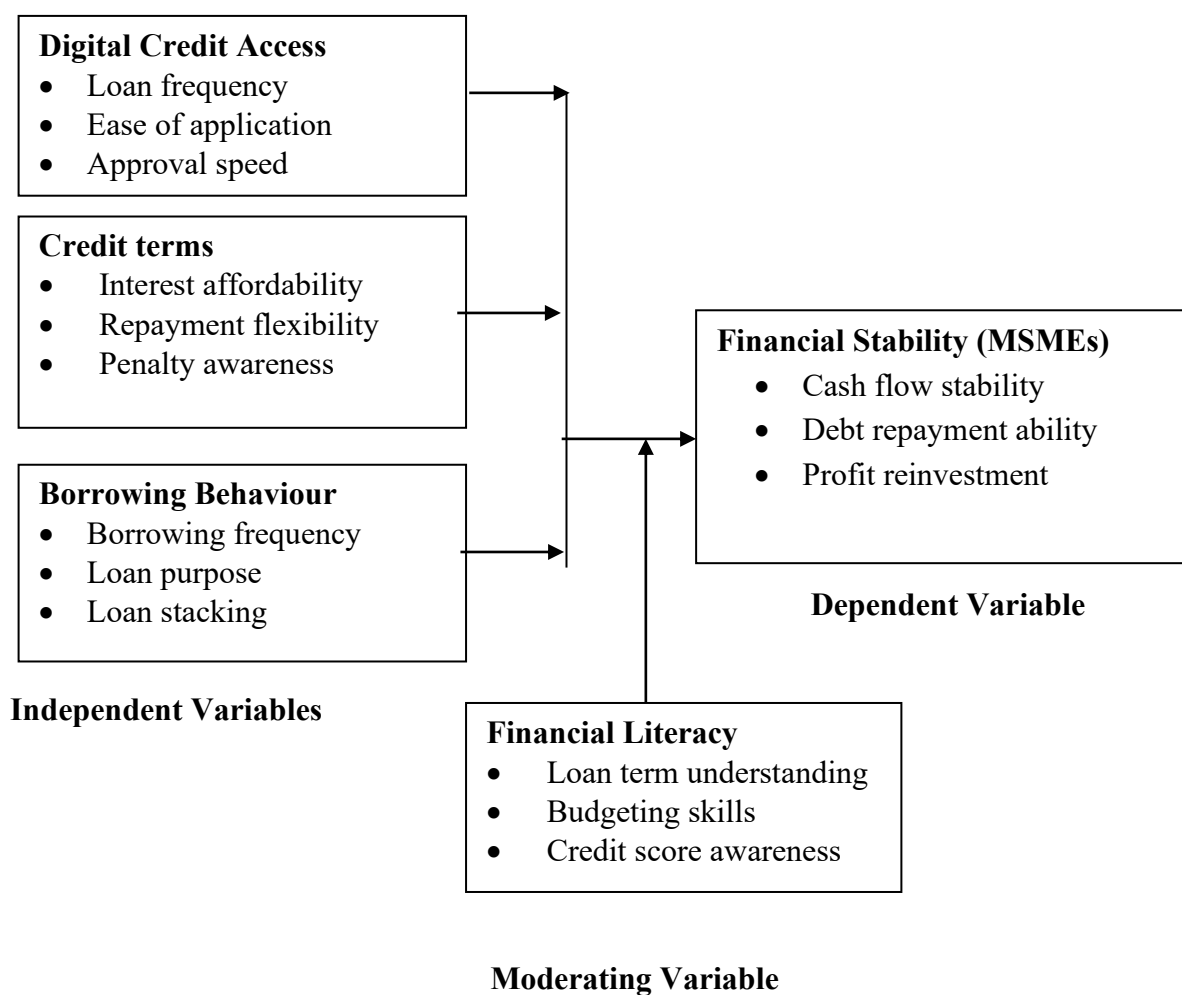


FIGURE 1
Conceptual Framework

2.5.1 Digital credit access

Digital credit access refers to the ease with which individuals and businesses can obtain financial credit through digital platforms, particularly mobile and online channels. This construct captures the availability, simplicity, and immediacy of acquiring credit from digital financial service providers, often without traditional banking requirements such as collateral or complex paperwork (Muathe & Alumasa, 2021). According to Wamaitha (2023), digital lending platforms like M-Shwari, Tala, and Branch have revolutionized access to

credit in Kenya by providing near-instant loan approvals through mobile interfaces, thereby circumventing the stringent procedures associated with formal banks.

Accessibility in digital lending is typically characterized by three core attributes: (i) the absence of physical bank infrastructure, (ii) algorithm-based eligibility screening using mobile data and transaction history, and (iii) minimal documentation requirements (Ngoba, 2024). As Muathe and Alumasa (2021) highlight, digital lenders significantly enhance credit inclusion among informal sector MSMEs that lack traditional banking relationships, especially in peri-urban and rural Kenya.

However, while increased access is a key benefit, it does not automatically translate to improved financial outcomes. Nyangaresi (2023) emphasizes that the rapid uptake of digital loans in rural and semi-formal business environments has led to both opportunities for working capital financing and risks of financial instability due to frequent reborrowing and lack of repayment planning. Furthermore, Aluoch and Ogotu (2023) point out that accessibility without adequate borrower assessment mechanisms can encourage impulsive borrowing, raising concerns about long-term financial health.

Thus, in the present study, digital credit access is examined as a critical independent variable influencing the financial stability of MSMEs. The analysis considered not only how widely MSMEs in Nairobi and Machakos can access digital credit, but also whether this access fosters sustainable business operations or contributes to cycles of indebtedness.

2.5.2 Credit terms

Credit terms are key financial constructs that define the cost and conditions under which borrowers access and repay credit (Kamau & Mugo, 2020). In the context of digital lending, these variables are central to understanding the burden placed on borrowers and how

credit agreements align with business cash flows and revenue cycles. Interest rate refers to the cost of borrowing, usually expressed as a percentage of the principal loan, while repayment terms denote the timeframe, frequency, and structure through which the loan is to be repaid (Bazarbash, 2021).

In traditional banking models, interest rates are typically regulated and repayment periods are negotiated based on creditworthiness and cash flow assessments. However, in digital lending, particularly within emerging markets, interest rates tend to be higher and repayment periods shorter due to the perceived risk of informal sector borrowers and the absence of physical collateral (Kaffenberger & Totolo, 2020). Many digital lenders use algorithmic credit scoring to determine loan conditions, often resulting in uniform, high-interest rates and rigid repayment deadlines.

The nature of these terms can significantly affect the financial health of MSMEs. High annual percentage rates (APRs), which sometimes exceed 150%, can erode profit margins and increase the likelihood of debt distress, particularly for businesses with limited or unstable income (Kamau & Mugo, 2020). Short repayment periods, typically between 14 to 30 days, are often misaligned with inventory turnover or business cash inflows, especially in the retail sector where revenue cycles may be longer or seasonal (Mbaka & Mugambi, 2021).

Repayment terms also involve aspects such as penalty charges for late payments, repayment frequency (daily, weekly, or monthly), and the mode of collection (e.g., automated deductions via mobile money wallets). These design features, when not tailored to the borrower's operational realities, can introduce financial strain and disrupt working capital flows (CBK, 2021). In Kenya, the Central Bank's Digital Credit Providers Regulations

(2021) were introduced to enhance transparency in interest disclosure and curb exploitative repayment enforcement.

This study adopts credit terms as a composite independent variable to understand their role in shaping the financial stability of MSMEs. These dimensions are evaluated not only as structural features of digital credit but also as behavioural and regulatory signals that influence repayment capacity, borrowing patterns, and ultimately business resilience. By doing so, the study sought to establish whether digital credit terms are supporting or undermining sustainable enterprise growth in the targeted countries.

2.5.3 Borrowing Behaviour

Borrowing behaviour refers to the attitudes, decisions, and practices that individuals or enterprises exhibit when seeking and using credit. In the context of MSMEs, borrowing behaviour encompasses how frequently they borrow, their reasons for borrowing, how they select lenders, and how responsibly they manage debt obligations (OECD, 2021). It reflects both rational and behavioural dimensions, rational in terms of need-based borrowing and repayment capacity, and behavioural in terms of cognitive biases like overconfidence or short-termism.

With the rise of digital lending platforms, borrowing behaviour has become more spontaneous, influenced by the speed, ease, and perceived convenience of mobile credit services. According to Lusardi and Mitchell (2020), behavioural tendencies such as present bias, where immediate needs are prioritized over long-term consequences, significantly affect how small business owners use loans. In this regard, borrowing behaviour is not only a financial act but a psychological process influenced by liquidity pressures, financial literacy, and accessibility of credit channels.

Borrowing behaviour in the digital era is shaped by minimal loan requirements, automated approvals, and frequent notifications, which often trigger repetitive and overlapping borrowing patterns (Mejía, 2021). MSMEs, particularly in informal retail sectors, may engage in loan stacking, borrowing from multiple platforms concurrently, without evaluating the total debt burden. Such behaviour can increase financial vulnerability, especially in businesses with irregular cash flows or seasonal income.

Moreover, borrowing behaviour also encompasses repayment discipline. Responsible borrowing involves aligning credit usage with business needs, managing cash flow to meet repayment obligations, and maintaining a positive credit record. Irresponsible borrowing, however, is marked by taking loans for non-productive purposes, missing payment deadlines, or borrowing to repay existing debt, behaviours that are common in unregulated digital lending markets (FSD Kenya, 2020).

In this study, borrowing behaviour is a critical independent variable as it mediates the relationship between digital credit access and financial outcomes. The way MSMEs in Nairobi and Machakos manage borrowed funds, whether for working capital, emergencies, or consumption, likely determined whether digital lending enhances or undermines their financial stability. The analysis focused on indicators such as frequency of borrowing, proportion of revenue spent on loan servicing, and borrowing purpose, to better understand how credit behaviour shapes business resilience.

2.5.4 Financial Literacy

Financial literacy is defined as the ability to understand and effectively use various financial skills, including personal and business budgeting, saving, borrowing, investing, and managing financial risks (Lusardi & Mitchell, 2020). In the context of Micro, Small, and Medium Enterprises (MSMEs), financial literacy involves the capacity of business owners to

make informed and effective decisions regarding the use and management of financial resources, including credit. It plays a crucial role in promoting sustainable borrowing behaviour, proper financial planning, and long-term enterprise stability (Mejía, 2021).

In Kenya, financial literacy has become particularly relevant with the rise of digital lending platforms, which offer rapid and easy access to credit but often without adequate borrower education. As a result, MSME operators may access digital loans without fully understanding the repayment terms, interest implications, or long-term effects on their cash flow (Njoki, 2024). Financial literacy, therefore, acts as a safeguard, enabling entrepreneurs to interpret loan agreements, compare credit products, budget for repayment, and avoid over-indebtedness.

Empirical literature emphasizes that financial literacy is more than basic knowledge; it includes functional application, such as the ability to forecast cash flows, align borrowing with business cycles, and manage debt responsibly (Mumo & Tadesse, 2021). This is especially important for MSMEs in Nairobi and Machakos, where many operate with thin profit margins and are highly susceptible to financial shocks.

According to Kingiri et al. (2025), financial literacy among women and youth entrepreneurs in Kenya significantly enhances the responsible use of financial products, including digital credit. Their findings highlight that MSMEs with even minimal exposure to financial education were more likely to invest loans into productive assets, repay on time, and avoid high-risk borrowing practices. This reinforces the moderating role of financial literacy in shaping how digital lending influences financial outcomes.

In this study, financial literacy is conceptualized as a moderating variable, influencing the relationship between digital lending (accessibility, interest rates, and borrowing behaviour) and financial stability. High levels of financial literacy are expected to strengthen

this relationship positively by enabling MSME owners to make better borrowing and repayment decisions. Conversely, low financial literacy may weaken or reverse this effect by increasing the likelihood of misuse or misinterpretation of digital loan terms.

2.5.5 Financial Stability

Financial stability is a critical attribute of enterprise resilience, reflecting a business's ability to meet both its short-term financial obligations and long-term sustainability goals. In the context of Micro, Small, and Medium Enterprises (MSMEs), financial stability encompasses profitability, liquidity, solvency, and the consistent ability to operate without falling into chronic debt or default (Lusardi & Mitchell, 2020). It is a dynamic concept, influenced not only by internal financial management but also by external credit access, market shocks, and policy environments.

A financially stable MSME maintains reliable revenue streams, repays debt obligations on time, and sustains adequate liquidity to weather operational uncertainties. According to the Organisation for Economic Co-operation and Development (OECD, 2021), financial stability in small enterprises enables long-term investments, supports employment, and facilitates integration into formal credit markets. These capabilities are particularly essential for MSMEs in emerging economies like Kenya, where business volatility and financial exclusion remain persistent challenges.

In developing economies, digital lending has emerged as both an enabler and a disruptor of financial stability. On the one hand, access to short-term credit can help MSMEs smooth cash flows, invest in inventory, or manage emergency expenses. On the other, unregulated or poorly structured digital loans can expose MSMEs to over-indebtedness, short repayment cycles, and high borrowing costs, factors that erode financial stability over time

(International Finance Corporation [IFC], 2021). These risks are amplified when borrowing decisions are made without a clear understanding of loan terms or repayment planning.

In Kenya, financial stability is increasingly viewed through the lens of MSMEs' ability to adapt to digital financial services. Kingiri, Musyoka, and Baruah (2025) assert that MSMEs that exhibit financial discipline, such as record-keeping, forecasting, and prudent debt use, are more likely to thrive in digital credit environments. They further observe that instability often arises from low financial literacy, unpredictable income, and a tendency to borrow reactively rather than strategically.

The present study adopts financial stability as the dependent variable, influenced by MSMEs' interaction with digital lending variables such as accessibility, interest rates, repayment terms, and borrowing behaviour. To measure this construct, the study focuses on indicators including revenue growth, debt servicing ability (e.g., timely loan repayment), and liquidity (e.g., current or debt-to-equity ratios). These indicators align with prior work by Lusardi and Mitchell (2020), who emphasized that financially stable enterprises not only avoid default but also maintain a capacity for strategic investment and growth.

Ultimately, financial stability is the cornerstone of MSME sustainability. While digital lending offers an avenue for financial inclusion, its long-term benefit to MSMEs hinges on how well these enterprises balance accessibility with debt management. As such, understanding the pathways through which digital credit affects stability is vital for informing policy, improving lending models, and safeguarding the viability of MSMEs across Kenya's evolving financial landscape.

2.6 Operationalization of Variables

Operationalization refers to the process of defining variables into measurable elements. The following table outlines how each of the key variables in the study was measured using primary data, collected from MSMEs in Nairobi and Machakos retail sectors.

TABLE 1
Operationalization of Study Variables

Variable	Type	Indicators	Measurement Approach	Measurement Scale	Data Source
Digital Credit Access	Independent	Loan frequency, Ease of application, Approval speed	Likert scale (7 items); access history questions	5-point Likert; Nominal	Questionnaire (Sec B)
Credit Terms	Independent	Interest affordability, Repayment flexibility, Penalty awareness	Likert scale (7 items); repayment term defaults	5-point Likert; Ordinal	Questionnaire (Sec C)
Borrowing Behaviour	Independent	Loan stacking, Urgency-based borrowing, Term ignorance	Likert scale (7 items); borrowing pattern	5-point Likert; Nominal	Questionnaire (Sec D)
Financial Literacy	Moderator	Loan term understanding, Budgeting skill, Credit awareness	Likert scale (7 items); literacy background	5-point Likert; Nominal	Questionnaire (Sec E)
Financial Stability	Dependent	Cash flow stability, Repayment ability, Profit reinvestment	Likert scale (7 items); performance impact	5-point Likert; Nominal	Questionnaire (Sec F)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the study presents the research methodology that was used. It includes research design, target population, sample frame, samples and sampling procedure, instrumentation, data collection and lastly methods applied in data analysis.

3.2 Research Design

A research design is the logical and systematic plan for conducting a study, outlining how data was gathered, analyzed, and interpreted to answer research questions or test hypotheses (Kothari, 2004). It serves as a blueprint for achieving research objectives by specifying the procedures for collecting and analyzing the necessary information. According to Creswell and Creswell (2018), the choice of research design must align with the nature of the research problem, the objectives, and the type of data required.

This study adopted a descriptive cross-sectional research design, which involves collecting data from a sample at a single point in time to examine the relationships between variables (Setia, 2016). A cross-sectional approach was particularly suited for this study because it enables the assessment of how digital lending affects the financial stability of MSMEs in Kenya's retail sector without requiring longitudinal tracking. The design is both descriptive and analytical. It is descriptive because it sought to document the existing patterns of digital loan use, borrowing behaviour, and financial outcomes among MSMEs. It is analytical because it investigates the associations between independent variables (digital lending factors) and the dependent variable (financial stability), with financial literacy acting as a moderating factor.

The relevance of a cross-sectional design is grounded in its efficiency, practicality, and ability to capture a snapshot of variables at a single point in time (Setia, 2016). It enables

the collection of data from a broad and diverse population, such as MSMEs across Nairobi and Machakos Counties, facilitating comparative analysis between urban and peri-urban contexts (Levin, 2006). Furthermore, cross-sectional studies are often more time- and cost-efficient compared to longitudinal designs, making them especially suitable for studies with limited resources and a defined duration, such as this study's eight-month timeframe (Wang & Cheng, 2020).

3.3 Target Population

A target population refers to the full group of individuals, enterprises, or institutions that exhibit the specific characteristics necessary to provide meaningful responses to a research inquiry (Mugenda & Mugenda, 2003). Clearly identifying the target population enhances the credibility, accuracy, and generalizability of the research findings by ensuring alignment with the study objectives (Creswell, 2018). This study focused on Micro, Small, and Medium Enterprises (MSMEs) operating within the retail sector in Nairobi and Machakos Counties. These counties were selected purposively to reflect diverse economic environments and levels of digital financial inclusion. Nairobi, as the capital city and commercial hub, offers a highly urbanized and fintech-driven setting, characterized by extensive use of mobile-based financial platforms. In contrast, Machakos provides a peri-urban context where MSMEs face differing socio-economic and infrastructural conditions, allowing for a comparative assessment of digital credit use across distinct environments.

To ensure consistency and applicability of findings, the study adopted the classification of MSMEs as defined by the Kenya National Bureau of Statistics (KNBS, 2023) and the Micro and Small Enterprises Act (2012). Micro enterprises are defined as those with 1 to 9 employees and an annual turnover not exceeding KES 500,000. Small enterprises are those employing between 10 and 49 people with annual revenues ranging from KES 500,001 to KES 5 million, while medium enterprises are categorized as employing 50 to 99

individuals with annual turnover between KES 5 million and KES 50 million. These measurable criteria were used to determine inclusion during sampling and data collection.

Within the broader retail sector, the study targeted specific enterprise types that are both high-volume users of digital credit and sensitive to credit-driven financial instability. These included grocery outlets and mini-markets, clothing and footwear retailers, hardware stores, pharmacies, cosmetic shops, electronics and household goods vendors, mobile money agents, and general convenience stores. These sub-sectors were chosen due to their frequent cash flow needs, limited access to traditional credit, and reliance on mobile loans to manage inventory, restocking, and operational expenses. By narrowing the focus to these segments, the study enhances both the relevance and replicability of its findings, offering practical insights for financial service providers, policymakers, and MSME support institutions.

3.4 Sample and Sampling Technique

A sample refers to a subset of units drawn from a larger population, selected to represent the key characteristics of that population for the purposes of drawing generalizable conclusions (Kothari, 2004). Sampling enables researchers to make valid inferences while managing practical constraints such as time, cost, and accessibility. The sampling technique is the structured approach through which this representative group is selected in a scientifically sound manner (Mugenda & Mugenda, 2003).

This study employed a stratified random sampling technique, which involved dividing the overall population into distinct, non-overlapping subgroups (strata) and then randomly selecting units from each subgroup. The strata in this study were defined on two levels. First, by geographic location, namely Nairobi and Machakos counties, in order to reflect the socio-economic and infrastructural diversity that shapes MSME experiences with digital credit. Second, within each county, stratification was further guided by enterprise size (micro, small, and medium, as defined by employee count and turnover) and retail sub-sector, which

included grocery shops, clothing and footwear stores, hardware outlets, cosmetics and pharmaceutical retailers, electronics vendors, and mobile money or general convenience stores. This multi-layered stratification ensured comprehensive representation across urban and peri-urban environments, business scales, and operational categories, thus improving the study’s reliability and relevance (Teddlie & Yu, 2007).

The sampling frame was developed using updated business registration records from the Kenya National Bureau of Statistics (KNBS, 2023) and verified with trade department listings from Nairobi City County and Machakos County. Within each stratum, simple random sampling was applied to select participating enterprises. The unit of observation was the business owner or primary financial manager, as these individuals are best positioned to provide insights on financial behaviour, credit access, and loan management practices.

To determine the appropriate sample size, the study used Yamane’s (1967) formula for known, finite populations. Yamane’s equation provides a conservative and widely accepted estimate for sample size determination in social science research, particularly where finite population correction is required. The formula is expressed as:

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

Where:

n = Sample size

N = Total target population (133,000 MSMEs)

e = Margin of error (set at 5% for this study)

$$n = \frac{133,000}{1 + 133000 * 0.05^2} = \frac{133,000}{333.5} \approx 398$$

With an estimated MSME population of approximately 133,000 across the two counties (KNBS, 2023), the formula yields a sample size of roughly 398 respondents, which is adequate for quantitative statistical analysis and meaningful subgroup comparisons.

TABLE 2
Sample Distribution by County

County	Estimated MSME Population	Proportion (%)	Sample Size (n)
Nairobi	98,000	73.7%	293
Machakos	35,000	26.3%	105
Total	133,000	100.0%	398

3.5 Research Instrument

Primary data was used. These sources combined enable the triangulation and the robustness of the data. Besides, Pilot study was conducted to test the reliability and clarity of the research instruments. This preliminary test involved a small sample of MSEs from a similar population to identify and address any ambiguities or inconsistencies before the main data collection.

Structured questionnaires and semi structured interviews were used to gather primary data. Quantitative data concerning borrowing behaviour, loan access, interest rates, repayment patterns and business performance was collected through administering questionnaires to MSME owners and digital credit users (Cheung, 2021). These measurement instruments were included closed ended and Likert scale items that are congruent with the measurement indicators of the study.

The survey data was complemented by semi-structured interviews, which provided qualitative insights into the lived experience of MSME with digital lending (Karatsareas, 2022). Themes that were explored in these interviews are challenges in loan repayment, lender practices, and the perceived value of financial literacy in managing credit. Diverse

sectors and business sizes were represented among our interviewees, in order to give us a wide variety of views.

The instrument was pilot tested in a small sample of MSMEs outside the main study sites to ensure data quality and minimize bias. Refined sequence and duration of the Qs, all subject to pilot variations in question clarity. Training for enumerators and interviewers covered ethical standards, neutrality and cultural competence.

The data was to collected both digitally and in person, and the digital tool is to be i.e., Google Forms, to streamline the survey administration (Maseeh, 2023). Respondent consent was obtained for audio recording of interviews and these was transcribed verbatim for analysis

3.5.1 Validity and Reliability of the Instrument

Pilot test was conducted to test the validity and reliability of data collection instrument. As explained by Cooper and Schindler (2003) a pilot test group can be of any size up to 1-10% of study sample. In this study, 5% of the study sample (20 respondents) was selected for pilot study. The respondents were selected randomly from the target population and was excluded in the final study.

Validity refers to the degree to which an instrument accurately measures what it is intended to measure (Somekh & Lewin, 2005). In this study, content validity was applied to assess the adequacy and relevance of the questionnaire items. Content validity was determined through expert review by academic professionals in finance and research supervisor, whose feedback informed the refinement of the instrument.

Reliability, on the other hand, refers to the consistency of the instrument in producing stable and consistent results over time (Mugenda & Mugenda, 2008). A pilot study involving

20 respondents, MSME operators in Nairobi and Machakos not included in the main sample, were conducted to pre-test the questionnaire. The pilot test evaluated the clarity, comprehension, and logical flow of the items, and necessary adjustments were made based on feedback. Reliability was assessed using Cronbach's Alpha coefficient, which measures the internal consistency of items in the questionnaire. As per Cooper and Schindler (2008), a Cronbach's Alpha value of 0.70 or above was considered acceptable. The reliability test was conducted using SPSS software.

3.6 Data Collection Procedure

Data collection is a critical phase in the research process that involves the systematic gathering of information to address specific research questions and objectives (Creswell & Creswell, 2018). In this study, data was collected from Micro, Small, and Medium Enterprises (MSMEs) operating within Nairobi and Machakos Counties to investigate the effect of digital lending on financial stability in Kenya's retail sector. A semi-structured questionnaire was used to gather both quantitative and qualitative data, incorporating closed-ended questions, Likert-scale statements, and open-ended items. This mixed approach enabled the study to capture measurable trends as well as nuanced perceptions from respondents.

Before data collection commences, the researcher obtained ethical clearance from the university's School Review Board (SRB). This review is necessary to ensure that the study meets established ethical standards regarding informed consent, confidentiality, voluntary participation, and protection from harm. Upon receiving SRB approval, the researcher then applied for a research permit from the National Commission for Science, Technology and Innovation (NACOSTI), as required for any research involving human subjects in Kenya.

These approvals affirm the legitimacy of the study and allow the researcher to proceed in accordance with national research regulations.

In addition, all respondents were presented with an informed consent form prior to participation. This document clearly explained the purpose of the study, its voluntary nature, the duration of participation, and how the data was used. Participants were assured that their identities were kept anonymous and that all information collected was treated with strict confidentiality. Only respondents who provide written consent was included in the data collection process. For those completing the questionnaire online, a digital version of the consent form was provided, with a checkbox indicating agreement to participate.

The administration of questionnaires was conducted both physically and digitally. Hard copies were distributed by trained research assistants in targeted urban and peri-urban areas, while digital copies were circulated via secure email and online survey platforms to ensure broad reach and participation. The researcher remained available throughout the data collection period to clarify any questions or concerns from respondents.

3.7 Data Analysis and Presentation

Data analysis refers to the systematic process of organizing, interpreting, and presenting collected data in a meaningful way to answer research questions and test hypotheses (Kothari, 2004). In this study, both quantitative and qualitative data were analyzed. Quantitative data was derived primarily from the closed-ended and Likert-scale questions, while qualitative data came from open-ended responses in the semi-structured questionnaire.

Quantitative data was coded and entered into Statistical Package for Social Sciences (SPSS) version 28 for analysis. Descriptive statistics, including frequencies, percentages,

means, and standard deviations, were used to summarize respondent characteristics and responses to key indicators such as digital credit access, interest rates, repayment terms, borrowing behaviour, financial literacy, and financial stability. Tables, charts, and graphs were used to present these results in a clear and organized manner.

To determine the relationships between the independent variables (digital credit access, credit terms, borrowing behaviour) and the dependent variable (financial stability of MSMEs), inferential statistical analysis was conducted using correlation and regression analysis. Correlation analysis was used to determine the direction and strength of the relationship between the independent variables (digital lending indicators) and the dependent variable (financial stability). This also helped assess multicollinearity among variables. As per Hair et al. (2010), correlation coefficients (r) was interpreted as follows: Small: ± 0.1 to ± 0.29 , Moderate: ± 0.3 to ± 0.49 , Strong: ± 0.5 and above.

Multiple regression analysis was employed to assess the individual and combined effects of the independent variables on financial stability. This helped in identifying which aspects of digital lending have statistically significant impacts on business performance and financial health. The regression model was;

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

Where:

Y = Financial Stability

β_0 = Constant

X_1 = Digital credit access

X_2 = Credit terms

X_3 = Borrowing Behaviour

β_1 to β_3 , are the coefficients of the variables

ε = Error term

Given that this study incorporated financial literacy as a moderating variable, a moderated multiple regression (MMR) approach was employed to examine whether financial literacy significantly influenced the relationship between digital lending and financial stability. To ensure model parsimony and enhance interpretability, a composite digital lending variable (*DL_Composite*) was created by aggregating the key dimensions of digital credit—namely access, credit terms, and borrowing behaviour—using either an index score or factor analysis. This composite measure captures the overall effect of digital credit engagement by MSMEs. The simplified moderation model took the following form:

$$FS = \beta_0 + \beta_1(DL_Composite) + \beta_2(M) + \beta_3(DL_Composite \times M) + \varepsilon$$

Where:

FS = Financial Stability (dependent variable)

DL_Composite = Composite score representing overall digital lending

M = Financial Literacy (moderator)

DL_Composite × *M* = Interaction term representing moderation

ε = Error term

This model allowed the study to test whether the effect of digital credit on MSME financial stability was conditional upon the level of financial literacy. A statistically significant interaction coefficient (β_3) would indicate that financial literacy moderates the relationship between digital lending and financial stability, either enhancing or mitigating its effect.

Qualitative data from open-ended survey responses were analyzed using content analysis. Participant inputs were coded into themes and sub-themes aligned with the study's conceptual framework. This narrative evidence served to contextualize and deepen the interpretation of quantitative results, particularly in areas such as loan misuse, financial knowledge gaps, and behavioural patterns not captured by structured variables.

3.8 Diagnostic Tests

To ensure the robustness and validity of the regression model, several diagnostic tests were conducted:

3.8.1 Normality

Normality refers to the statistical assumption that the distribution of data approximates a normal (Gaussian) curve. This assumption is essential for conducting parametric tests such as regression analysis, structural equation modelling, and correlation, which require data to be symmetrically distributed around the mean (Hair et al., 2010). In this study, normality was assessed using both the Kolmogorov–Smirnov and Shapiro–Wilk tests, as recommended for robustness. The Kolmogorov–Smirnov test is appropriate for larger samples, while the Shapiro–Wilk test is more sensitive for smaller datasets and detects departures from normality due to skewness or kurtosis (Ghasemi & Zahediasl, 2012).

Both tests were conducted for all continuous variables using SPSS Version 25. A significance level of 0.05 was used as the threshold for interpreting results. If the p-value was greater than 0.05, the null hypothesis of normality was retained, indicating that the data did not significantly deviate from a normal distribution. Conversely, p-values below 0.05 indicated non-normality. To supplement the statistical tests, graphical methods including histograms with overlaid normal curves, Q–Q plots, and box plots were visually inspected to verify the distribution shape and identify any outliers or skewed data patterns.

Where deviations from normality were observed, their severity was considered in light of the sample size. Given that each sample group exceeded 30 observations, the central limit theorem was invoked to justify the continued use of parametric tests. The theorem supports that the sampling distribution of the mean approximates normality in large samples, even when the raw data exhibits minor non-normality. This approach ensured that subsequent inferential analyses remained statistically valid and robust.

3.8.2 Linearity

Linearity refers to the assumption that there is a direct and proportional relationship between each independent variable and the dependent variable, such that changes in the predictor result in a consistent and predictable change in the outcome. In other words, the relationship should form a straight line when plotted on a graph. This is a key assumption in multiple linear regression analysis, where the model estimates how independent variables explain the variance in a continuous dependent variable (Osborne & Waters, 2012).

To assess whether this assumption was met, the study employed visual diagnostics using scatterplots, specifically plotting standardized residuals against predicted values. A random, patternless scatter of residuals suggested that the linearity assumption held. Conversely, any curved or systematic pattern would have indicated a violation of linearity, implying that the relationship between variables may not be adequately captured by a linear model. While the regression output, including ANOVA tables, confirmed whether the overall model was statistically significant, the scatterplots of residuals were more effective in verifying whether linear relationships truly existed between each predictor and the outcome variable. Ensuring linearity enhances the validity and interpretability of regression results.

3.8.3 Multicollinearity

Multicollinearity arises when two or more independent variables in a regression model are highly correlated, meaning they convey overlapping or redundant information. This condition can inflate the standard errors of regression coefficients, making it difficult to determine the unique contribution of each predictor and potentially obscuring statistically significant effects (Osborne & Waters, 2002). To detect multicollinearity, this study employed the Variance Inflation Factor (VIF), a diagnostic measure that quantifies how much the variance of a regression coefficient is increased due to multicollinearity. VIF values between 5 and 10 are generally interpreted as indicating moderate multicollinearity, while values exceeding 10 suggest severe multicollinearity that may distort the model's reliability. In this study, all variables were examined to ensure that VIF values remained within acceptable thresholds, thus confirming the independence of explanatory variables.

3.8.4 Heteroscedasticity

Heteroscedasticity refers to the condition where the variance of error terms is not constant across all levels of the independent variables. This violates one of the core assumptions of ordinary least squares regression and can lead to inefficient estimates and biased standard errors, affecting the validity of statistical inferences (Tabachnick & Fidell, 2001). To assess heteroscedasticity, this study used visual inspection of scatterplots plotting standardized residuals against predicted values. A random and evenly dispersed spread of residuals suggested that the assumption of homoscedasticity (constant variance) was met. However, if a funnel-shaped or patterned spread appeared, it would indicate heteroscedasticity. In such cases, appropriate corrective measures, such as data transformation or robust standard errors, would be considered to mitigate its impact on the regression results.

3.9 Ethical Considerations

This work followed ethical considerations in accordance with the institutional research and international best practice guidelines.

First and foremost, participants' consent to participate in the study was sought. The participants were informed of the objectives of the study, the methods that was employed, any potential risks, and the benefits that they stand to gain from the study (Millum and Bromwich, 2021). Participants were asked to complete and/or orally assent to a consent form to show that they volunteered to participate.

There was no violation of confidentiality and identification of any participant involved in the study. In this study, no personally identifiable information was shared in any report or publication that may be produced. Participants were assigned identification numbers to ensure anonymity, and data collected from the study was stored on password-protected electronic devices.

The study also guaranteed the right to withdraw without penalty. Mentors and students can decide to withdraw at any time without prejudice to any services or opportunities (Symbaluk and Hall, 2024). To prevent such a scenario, care was taken to ensure that vulnerable groups, such as informal MSMEs and households with low financial literacy, are not forced to participate. Where necessary, words and phrases were translated and explained in layman terms for the readers to understand.

Permission was sought from the relevant research and ethics committee to conduct the research, and permission was sought from the relevant county governments and digital lending institutions to access the necessary data where it is required (Drolet et al., 2023). Enumerators and research assistants received training on how to interview and interact with the participants in a manner that is non-intrusive and culturally sensitive.

CHAPTER FOUR: FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the results and interpretation of data collected on the effect of digital credit on the financial stability of Micro, Small, and Medium Enterprises (MSMEs) in Kenya's retail sector. Preliminary findings indicate a dominance of micro-enterprises among respondents, with high uptake of mobile-based credit tools across both urban and peri-urban contexts. The analysis suggests a nuanced and context-dependent relationship between digital credit usage and financial stability, with financial literacy emerging as a potential buffer against over-indebtedness. The results are organized according to the study's objectives, beginning with the response rate and demographic characteristics, followed by descriptive and inferential analyses of digital credit access, credit terms, borrowing behaviour, and the moderating role of financial literacy. Hypothesis testing and a comparative discussion with existing literature conclude the chapter.

4.2 Response Rate

The study targeted a total of 398 respondents drawn from registered MSMEs operating in the retail sector within Nairobi and Machakos counties, proportionately allocated based on their population sizes. Out of these, 353 completed and returned the questionnaires, resulting in an overall response rate of 88.7%. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis, 60% is good, and a response rate above 70% is considered excellent for social science research. Similarly, Babbie (2020) emphasizes that a high response rate enhances the representativeness of the data and reduces the likelihood of non-response bias, thereby increasing the validity of study findings. The achieved response rate in this study is therefore deemed excellent and sufficient for statistical analysis and generalization of the findings to the target population.

TABLE 3
Response Rate

Category	Targeted Respondents	Actual Responses	Response Rate (%)
Nairobi County	293	260	88.7
Machakos County	105	93	88.6
Total	398	353	88.7

Source: Survey Data (2025)

4.3 Pilot Test Results

A pilot test was conducted to evaluate the validity and reliability of the data collection instrument. Following Cooper and Schindler’s (2003) recommendation that a pilot group can be 1–10% of the study sample, 5% of the sample size (20 respondents) was selected for the pilot study. These respondents were randomly drawn from the target population of MSME owners in Nairobi and Machakos counties but were excluded from the final study sample.

Validity was established through content validity, which involved a thorough review of the questionnaire by two academic experts in finance and the research supervisor. The reviewers assessed the adequacy, clarity, and relevance of the items in relation to the study objectives. Their feedback informed the refinement of ambiguous questions, alignment of Likert scale items to the conceptual framework, and improvement of logical flow, ensuring that the instrument accurately measured the intended constructs (Somekh & Lewin, 2005).

The results in Table 4 show that all constructs recorded content validity indices (CVI) for both relevance and clarity above the widely accepted threshold of 0.80 (80%) recommended by Polit and Beck (2006) for social science research instruments. The overall instrument achieved a relevance rating of 96% and a clarity rating of 93%, indicating that the questionnaire items were judged to be highly representative of the intended constructs and easily understood by the target respondents. Minor adjustments, such as rewording technical terms, adding examples, and reordering some questions, were made following expert

feedback to further enhance comprehension and alignment with the study objectives. Based on these results, the instrument was deemed to have strong content validity and was considered appropriate for deployment in the main study.

TABLE 4
Content Validity Assessment Results

Construct	Number of Items	Expert Rating – Relevance (%)	Expert Rating – Clarity (%)	Comments
Digital Credit Access	7	95	93	Valid
Credit Terms	7	94	91	Valid
Borrowing Behaviour	7	96	94	Valid
Financial Literacy	7	97	95	Valid
Financial Stability	7	96	94	Valid
Overall Instrument	35	96	93	Valid

Source: Pilot Study Data (2025)

Reliability was tested using Cronbach’s Alpha to measure the internal consistency of the Likert-scale items. The analysis was performed using SPSS, and the results for each construct are presented in Table 5. According to Cooper and Schindler (2008), a Cronbach’s Alpha value of 0.70 or above indicates acceptable reliability. The pilot test results show that all constructs met or exceeded the recommended threshold, indicating that the instrument was reliable for the main study.

TABLE 5
Reliability Test Results

Variable/Construct	Number of Items	Cronbach’s Alpha	Interpretation
Digital Credit Access	7	0.843	Reliable
Credit Terms	7	0.811	Reliable
Borrowing Behaviour	7	0.876	Reliable
Financial Literacy	7	0.854	Reliable
Financial Stability	7	0.868	Reliable
Overall Instrument	35	0.857	Reliable

Source: Pilot Study Data (2025)

The pilot test results confirmed that the questionnaire was both valid and reliable, thus suitable for use in the main study.

4.4 Background Information Analysis

This section presents the demographic characteristics of the respondents who participated in the study. The analysis covers the size of business, business sector, years in operation, business location, and key financial challenges faced. Understanding these characteristics is important as they provide context for interpreting the study findings and examining how different demographic factors may influence the digital credit on the financial stability of Micro, Small, and Medium Enterprises (MSMEs) in Kenya’s retail sector.

4.4.1 Size of Business

The respondents were asked to indicate the size of their business in terms of the number of employees. Table 6 presents the findings obtained.

TABLE 6
Size of Business

Size of Business	Frequency	Percent
Micro (1–9 employees)	172	48.7
Small (10–49 employees)	127	36.0
Medium (50–99 employees)	54	15.3
Total	353	100.0

Source: Survey Data (2025)

From the findings in Table 6., nearly half of the respondents (48.7%) operated micro-enterprises, while 36.0% ran small businesses and only 15.3% operated medium-sized enterprises. This indicates that the majority of MSMEs in the study operate on a smaller scale with limited workforce capacity. In the context of this study, the dominance of micro and small enterprises suggests that most respondents may have higher reliance on digital credit for working capital due to limited internal resources, making them more vulnerable to the risks and opportunities associated with digital lending.

4.4.2 Business Sector

Respondents were asked to indicate the sector in which their business operates. Table 7 presents the findings.

TABLE 7
Business Sector

Retail Sub-Sector	Frequency	Percent
Grocery / General Stores	85	24.1%
Clothing & Footwear	74	21.0%
Hardware & Building Goods	52	14.7%
Cosmetics / Pharmaceuticals	49	13.9%
Electronics & Mobile Shops	44	12.5%
Mobile Money / Agency Banking	32	9.0%
Other Retail (e.g., books, printing, household goods)	17	4.8%
Total	353	100.0%

Source: Survey Data (2025)

The distribution presented in Table 7 confirms that the majority of surveyed enterprises fall within grocery/general trade, clothing, and hardware-related retail, which are highly active in urban and peri-urban MSME environments. The presence of electronics vendors, pharmacies, and mobile money agents reflects the diversification of retail MSMEs and the growing integration of digital platforms in day-to-day transactions. The classification also reinforces the rationale for examining the effects of digital credit in such enterprises, where frequent restocking needs, short-term financing cycles, and fast-moving consumer goods require reliable and immediate credit solutions. Understanding differences in credit usage across these retail sub-sectors allows the study to identify which types of MSMEs are most susceptible to financial instability or over-indebtedness and how financial literacy plays a role in moderating such risks.

4.4.3 Years in Operation

Respondents were asked how long their businesses had been in operation. Table 8 presents the findings.

TABLE 8
Years in Operation

Years in Operation	Frequency	Percent
Less than 1 year	33	9.4
1–3 years	88	24.9
4–6 years	119	33.7
Over 6 years	113	32.0
Total	353	100.0

Source: Survey Data (2025)

As shown in Table 8, most businesses had been operating for over four years (65.7%), with 33.7% in the 4–6 years bracket and 32.0% in operation for over six years. Only 9.4% were less than one year old. This suggests that the majority of respondents had established enterprises with some operational history, potentially making them more experienced in financial management. However, even established businesses may face liquidity constraints, making them active users of digital credit.

4.4.4 Business Location

Respondents were asked to identify their business location. The findings are as shown in Table 9.

TABLE 9
Business Location

Business Location	Frequency	Percent
Machakos (Peri-Urban)	49	13.9
Machakos (Urban)	44	12.4
Nairobi (Peri-Urban)	127	36.0
Nairobi (Urban)	133	37.7
Total	353	100.0

Source: Survey Data (2025)

The distribution of respondents as shown in Table 9 was split across urban and peri-urban areas in both Nairobi and Machakos counties. This ensures that the study captures perspectives from diverse operating environments, allowing for a comparative understanding of how location-specific factors, such as market size, infrastructure, and competition, interact with digital lending and financial stability.

4.4.5 Biggest Financial Challenges

Respondents were asked to describe, in their own words, the biggest financial challenges currently facing their businesses. The responses revealed a set of recurring themes, with many MSMEs highlighting difficulties in managing cash flow, coping with competition, meeting loan obligations, and dealing with delayed payments from customers.

Cash flow constraints were the most common concern, often linked to inconsistent customer payments and seasonal sales patterns. One respondent explained: *“Sometimes I have goods on the shelves but no cash to pay suppliers because customers take too long to settle their debts.”* High financing costs were also a major worry, especially among businesses using digital loans to bridge operational gaps. As one owner put it: *“Digital loans are quick to get, but the interest is so high that I feel like I’m working for the lender instead of growing my business.”* Several respondents mentioned increasing market competition as a source of financial strain, particularly in urban areas where similar businesses operate in close proximity. One commented: *“Every month a new shop opens near me, selling the same products at lower prices. It is becoming harder to keep customers.”*

These findings align with the observations of Kithae and Mburu (2023), who note that cash flow instability, high borrowing costs, and competitive pressures are among the most persistent threats to MSME sustainability in Kenya. Similarly, the World Bank (2022) reports that small enterprises in developing economies often face a combination of limited working

capital, delayed receivables, and costly credit, factors that directly affect their growth and survival.

In the context of this study, these challenges provide an important backdrop for understanding how digital credit is used. While digital loans may offer short-term relief, particularly for businesses struggling with cash flow or low sales, the associated high interest rates and rigid repayment terms can also exacerbate financial instability, creating a cycle of borrowing that is difficult to escape.

4.5 Descriptive Analysis of Study Variables

This section presents the descriptive statistics for the study variables in line with the research objectives. The analysis focuses on five main constructs: digital credit access, credit terms, borrowing behaviour, financial literacy, and financial stability. Data for these constructs was collected mainly using a five-point Likert scale, where respondents indicated their level of agreement with each statement as follows: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. The mean scores are interpreted using the scale proposed by Boone and Boone (2012), where 1.00–1.80 = Strongly Disagree, 1.81–2.60 = Disagree, 2.61–3.40 = Neutral, 3.41–4.20 = Agree, and 4.21–5.00 = Strongly Agree. Standard deviations are also reported to indicate the level of variability in responses, with smaller values suggesting more consensus among respondents. These descriptive statistics provide an overview of the general trends in respondents' perceptions and experiences, offering a foundation for further inferential analysis in subsequent sections.

4.5.1 Digital Credit Access

This section presents descriptive results relating to the first study objective to *assess the effect of digital credit access on the financial stability of MSMEs in Kenya's retail sector*. Respondents were first asked whether they had ever accessed a digital loan for their business.

Those who had accessed such credit were then asked to identify the platforms they had used. Given that multiple responses were possible for the platform question, the total frequency exceeds the sample size (n = 353), reflecting the fact that many MSMEs borrow from more than one digital lender.

TABLE 10
Access to Digital Credit

Accessed Digital Loan	Frequency	Percent
Yes	291	82.4
No	62	17.6
Total	353	100.0

Source: Survey Data (2025)

As shown in Table 10 substantial majority (82.4%) of MSMEs reported having accessed digital credit, suggesting that mobile and app-based lending platforms are a widely used financing source for small businesses. This aligns with FSD Kenya (2023), which notes that digital credit has penetrated deeply into the MSME sector due to its convenience, speed, and low collateral requirements. The 17.6% who had never accessed such loans may represent businesses that rely on other financing options such as SACCOs, supplier credit, or personal savings.

TABLE 11
Digital Lending Platforms Used

Platform	Frequency	Percent of Respondents
Branch	139	39.4%
KCB M-Pesa	163	46.2%
M-Shwari	156	44.2%
Mkopa	135	38.2%
Other	152	43.1%
Tala	171	48.4%
Timiza	160	45.3%
Zenka	175	49.6%

Source: Survey Data (2025)

The findings in Table 11 shows that MSMEs in Kenya's retail sector use a variety of digital lending platforms, confirming that many businesses borrow from multiple sources. The most frequently mentioned platforms were Zenka (49.6%), Tala (48.4%), and KCB M-Pesa (46.2%), closely followed by Timiza (45.3%) and M-Shwari (44.2%). Providers such as Branch (39.4%) and Mkopa (38.2%) had slightly lower but still substantial usage. The "Other" category (43.1%) included niche fintech lenders such as Okash, Pezesh, and sector-specific mobile credit providers.

This borrowing pattern suggests that MSMEs actively engage in multi-sourcing strategies, where they simultaneously maintain credit relationships with multiple lenders to expand access to working capital, diversify risk, and exploit differences in loan terms. This finding aligns with the observation by GSMA (2022) that MSMEs in emerging markets frequently rely on multiple mobile money and credit platforms to smooth cash flows and meet short-term liquidity needs. Similarly, Munyegera and Matsumoto (2021) highlight that digital financial services in Sub-Saharan Africa have reduced barriers to credit access but have also encouraged repeated borrowing across platforms, increasing debt exposure.

While such diversification can improve resilience against lender-specific shocks and denial of credit, World Bank (2020) cautions that multiple concurrent loans can elevate repayment burdens and increase the risk of default, especially when repayment cycles overlap. In this context, the high incidence of multi-platform borrowing observed in this study underscores the need for responsible lending practices and improved borrower financial literacy which is directly linked to this study's fourth objective on the moderating effect of financial literacy.

Respondents were further asked to indicate their level of agreement with seven statements relating to digital credit access, measured on a five-point Likert scale (1 =

Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). The analysis produced the results shown in Table 12.

TABLE 12
Descriptive Statistics for Digital Credit Access

Statement	Mean	Std. Deviation
I can easily access digital credit anytime I need it.	4.181	0.704
The application process for digital loans is simple and quick.	3.711	0.951
I often receive digital credit without any collateral requirements.	4.241	0.747
Access to digital loans enables me to restock inventory efficiently.	4.201	0.667
Digital lenders have minimal restrictions on loan eligibility.	4.221	0.667
I rely on digital loans more than traditional bank credit.	4.190	0.751
Aggregate Mean	4.13	0.75

Source: Survey Data (2025)

The results indicate a generally positive perception of digital credit access among MSMEs in Kenya’s retail sector. The highest-rated item was the absence of collateral requirements ($m = 4.241$, $SD = 0.747$), suggesting that ease of qualification is a significant advantage of digital lending. This aligns with findings by Muriithi et al. (2021), who noted that the collateral-free nature of most digital loans attracts micro and small traders who are often excluded from traditional bank credit due to lack of tangible security. Perceived minimal restrictions on loan eligibility also scored highly ($m = 4.221$, $SD = 0.667$), reinforcing the notion that digital lenders adopt less stringent vetting processes. Easy accessibility of credit anytime it is needed was rated almost as highly ($m = 4.181$, $SD = 0.704$), underscoring the convenience factor highlighted by Gichuki and Okoth (2022), who argue that 24/7 access to loans enhances business agility, especially in addressing cash flow shocks.

Access enabling inventory restocking scored $m = 4.201$ ($SD = 0.667$), showing that digital loans are perceived as an important tool for sustaining operational continuity, particularly in retail businesses where stock turnover is rapid. Similarly, reliance on digital

loans more than traditional bank credit ($m = 4.190$, $SD = 0.751$) suggests that MSMEs see mobile-based credit as not just a supplement, but often a primary source of working capital. However, the comparatively lower score for application simplicity ($m = 3.711$, $SD = 0.951$) indicates that while processes are generally faster than traditional banking, there may still be room for improvement in user-friendliness, possibly related to platform navigation or information disclosure requirements.

The aggregate score ($m = 4.13$, $SD = 0.75$) suggests that respondents generally “agree” that digital credit access is beneficial, accessible, and meets urgent financing needs. These findings support the first objective of this study, highlighting that improved access to credit can strengthen MSME resilience. However, the slightly lower rating for application simplicity signals that even in a high-access environment, process efficiency and transparency remain important areas for enhancement. This aligns with Waweru and Mwaura (2023), who emphasize that user experience in loan application processes influences uptake and long-term engagement with digital lenders.

4.5.2 Credit Terms

This section addresses the second objective of the study, which sought to examine the effect of credit terms on the financial stability of MSMEs in Kenya’s retail sector. Credit terms define the contractual repayment arrangements of a loan, including its duration, interest rate, penalties for late payment, and the flexibility allowed in meeting obligations. These terms directly affect the ability of small businesses to sustain cash flow, avoid default, and maintain operational stability. The analysis therefore considered the typical repayment periods, the frequency of default, perceptions of repayment conditions, and respondents’ suggestions for improving loan terms.

Table 13 presents the distribution of repayment periods among respondents.

TABLE 13
Loan Repayment Period

Loan Repayment Period	Frequency	Percent
Less than 1 month	93	26.3
1–3 months	93	26.3
4–6 months	85	24.1
Over 6 months	82	23.3
Total	353	100.0

Source: Survey Data (2025)

The finding in Table 13 revealed a fairly even spread among repayment durations. More than half of respondents (52.6%) were required to clear their loans within three months or less, underscoring the short-term nature of digital credit facilities in Kenya. While such terms ensure quick fund turnover for lenders, they can strain businesses with longer cash conversion cycles. This finding supports Central Bank of Kenya (2021), which reported that short repayment tenures are a defining characteristic of mobile-based lending products and can limit MSME growth potential.

Loan default patterns are summarised in Table 14.

TABLE 14
Loan Default Frequency

Loan Default Frequency	Frequency	Percent
Frequently	35	9.9
Occasionally	147	41.6
Never	171	48.5
Total	353	100.0

Source: Survey Data (2025)

The findings in Table 14 show that although nearly half of MSMEs (48.5%) had never defaulted, 51.5% reported at least occasional default, indicating repayment strain is a reality for many. Kaffenberger et al. (2021) observed that misalignment between repayment schedules and actual cash flow is a leading driver of such repayment stress, which can eventually erode creditworthiness.

Perceptions of repayment conditions were further assessed using seven Likert-scale items, as shown in Table 15.

TABLE 15
Descriptive Statistics for Credit Term Perceptions

Statement	Mean (M)	Std. Deviation (SD)
The interest rates charged by digital lenders are very high.	4.249	.711
Repayment periods offered are usually too short for my business cycle.	4.280	.677
Penalties for late repayment are clearly communicated in advance.	4.040	.797
Digital credit repayment terms align well with my cash flow pattern.	2.921	.699
I find it difficult to manage repayments due to short loan durations.	4.300	.675
Loan fees and charges are not clearly disclosed before borrowing.	4.210	.712
I often feel pressured to repay digital loans faster than I can afford.	4.229	.700
Aggregate Score	4.03	0.71

Source: Survey Data (2025)

The results in Table 15 indicate that respondents strongly perceive digital lending interest rates as high, with a mean score of 4.249 (SD = 0.711), which falls within the "Agree" category on the Boone and Boone (2012) scale. This suggests that cost of credit remains a major concern for MSMEs, aligning with findings by Kimani and Wanjohi (2021), who observed that elevated interest rates significantly affect repayment capacity and cash flow management among small enterprises in Kenya. Similarly, the statement on repayment periods being too short for the business cycle registered a high mean of 4.280 (SD = 0.677), showing that loan durations often fail to accommodate the operational realities of MSMEs. This is consistent with Otieno et al. (2022), who emphasized that compressed repayment timelines limit the ability of businesses to reinvest profits before loan settlement, thus constraining growth.

The mean for penalties being clearly communicated ($M = 4.040$, $SD = 0.797$) also indicates agreement, suggesting that while charges are generally known in advance, their magnitude and frequency may still be a challenge. Notably, this stands in contrast to the item on repayment terms aligning with cash flow ($M = 2.921$, $SD = 0.699$), where respondents leaned towards neutrality, indicating that while terms are communicated, they are not always practical given revenue patterns. Difficulty in managing repayments due to short loan durations scored the highest mean ($M = 4.300$, $SD = 0.675$), reinforcing the earlier finding on short repayment periods.

Loan fees and charges not being clearly disclosed also recorded high agreement ($M = 4.210$, $SD = 0.712$), reflecting transparency gaps in digital lending practices, a concern also highlighted by Muiruri and Muturi (2023), who noted that opaque fee structures exacerbate borrower distress. Finally, feeling pressured to repay faster than affordable scored $M = 4.229$ ($SD = 0.700$), illustrating the psychological and financial strain experienced by borrowers. This aligns with recent research by Mugo et al. (2023), which found that repayment stress often leads to repeat borrowing, perpetuating debt cycles.

The aggregate mean score for the seven statements was $M = 4.03$ ($SD = 0.71$), indicating an overall agreement that digital lending credit terms present significant challenges for MSMEs in Kenya's retail sector. These results directly support the second objective of this study, showing that while access is available, the associated terms, particularly high interest rates, short repayment durations, and lack of fee transparency, can undermine financial stability. The findings suggest a need for policy interventions and digital lending reforms that offer longer repayment schedules, transparent pricing, and flexible repayment models tailored to MSME cash flow cycles.

Finally, the open-ended responses on improving repayment terms are summarised from qualitative analysis. Many respondents advocated for longer repayment periods, with one remarking, “*The loan is due before I even sell half my stock.*” Others called for flexible repayment schedules tied to actual revenue patterns, clearer disclosure of all fees, and lower interest rates to ease repayment pressure. These sentiments echo World Bank (2021) recommendations for MSME-friendly credit products that balance lender security with borrower sustainability. Overall, the findings suggest that while digital loan terms provide a structured repayment framework, their rigidity, particularly in repayment duration and cost, remains a significant constraint for many MSMEs. Addressing these gaps could enhance the financial stability of Kenya’s retail MSMEs, in direct alignment with the second study objective.

4.5.3 Borrowing Behaviour

This section addresses the third objective of the study, which sought to evaluate the effect of borrowing behaviour on the financial stability of MSMEs in Kenya’s retail sector. Borrowing behaviour refers to the patterns, attitudes, and decision-making processes that guide how enterprises acquire and manage credit. Poor borrowing practices, such as impulsive borrowing or taking multiple concurrent loans, can create repayment stress, trigger default, and ultimately weaken the financial health of businesses. The analysis therefore considered the number of current loans held, whether respondents engaged in borrowing to repay existing debt, perceptions of their own borrowing habits, and qualitative advice given to other MSMEs.

Table 16 presents the distribution of the number of digital loans currently held by respondents.

TABLE 16
Number of Current Digital Loans

Number of Digital Loans	Frequency	Percent
None	75	21.2
One	147	41.6
Two	80	22.7
Three or more	51	14.5
Total	353	100.0

Source: Survey Data (2025)

The findings from Table 16 show that most MSMEs in the sample had some level of active borrowing from digital lenders, with varying levels of loan commitments. The largest proportion of respondents (41.6%) reported holding one active digital loan, suggesting that many businesses are maintaining a manageable single-loan exposure at any given time. However, a substantial share (22.7%) had two concurrent loans, and 14.5% had three or more, indicating that over a third of MSMEs (37.1%) were managing multiple digital credit accounts simultaneously. Only 21.2% of respondents had no active digital loans, implying that nearly four in five businesses (78.8%) were currently indebted to at least one digital lender. This high penetration rate aligns with the findings of the Central Bank of Kenya (2022), which noted that digital credit has become a primary short-term financing source for MSMEs.

The presence of multiple loans among a significant proportion of respondents may point to challenges in cash flow management, the need for recurrent working capital injections, or reliance on overlapping loans to meet operational expenses. As highlighted by Kamau and Mburu (2022), holding multiple concurrent credit facilities can increase repayment pressure, raise the risk of default, and erode the capacity to invest in business growth.

Table 17 summarises whether respondents had ever borrowed a new digital loan to repay an existing one.

TABLE 17
Borrowing to Repay Existing Loans

Borrowed to Repay Existing Loan	Frequency	Percent
Yes	146	41.4
No	207	58.6
Total	353	100.0

Source: Survey Data (2025)

The data shows that 41.4% admitted to borrowing to settle previous debts. This behaviour is consistent with what Muiruri and Muturi (2023) describe as a “loan rollover cycle,” where new loans are used to avoid default on old ones, often leading to escalating debt levels and dependency on credit to stay afloat. Borrowing habits were further assessed using seven Likert-scale statements. The findings were presented in Table 18.

TABLE 18
Descriptive Statistics for Borrowing Behaviour

Statement	Mean (M)	Std. Deviation (SD)
I sometimes borrow digital loans impulsively.	3.541	1.143
I take new loans without reading the full terms and conditions.	3.530	1.071
I often borrow without planning for repayment.	3.569	.844
I borrow even when not fully confident about repayment ability.	3.510	1.156
My borrowing decisions are usually driven by short-term urgency.	3.569	1.139
I tend to borrow from multiple platforms at once.	3.550	1.137
I sometimes borrow new loans to pay off existing ones.	3.521	1.113
Aggregate Score	3.54	1.09

Source: Survey Data (2025)

Using Boone and Boone’s (2012) interpretation scale, all seven items fall in the “Agree” range (3.41–4.20). The aggregate score of $M = 3.54$ ($SD = 1.09$) indicates a general acknowledgment of risk-prone borrowing behaviours among MSMEs. Respondents most

strongly agreed that their borrowing is driven by short-term urgency ($M = 3.5692$, $SD = 1.139$) and that they often borrow without repayment planning ($M = 3.569$, $SD = 0.844$). This supports Gichuki and Okoth's (2022) findings that liquidity pressures and unforeseen expenses push MSMEs into reactive borrowing. Impulsive borrowing ($M = 3.541$, $SD = 1.143$) and taking loans without fully reading terms ($M = 3.530$, $SD = 1.071$) reflect low pre-loan diligence, which Mugo et al. (2023) identify as a precursor to disputes over hidden charges and repayment timelines.

The admission that many borrow without full confidence in their repayment ability ($M = 3.510$, $SD = 1.156$) aligns with World Bank (2021) concerns on "hope-based lending," where optimism replaces sound repayment planning. The tendency to borrow from multiple platforms simultaneously ($M = 3.550$, $SD = 1.137$) and to use new loans to repay old ones ($M = 3.521$, $SD = 1.113$) suggests a reliance on overlapping credit lines, increasing vulnerability to debt spirals.

This pattern of borrowing across multiple platforms and using new credit to service existing debt reflects a cycle of dependency that has been widely observed in the digital credit landscape. As noted by Kaffenberger and Totolo (2020), overlapping digital loans significantly increase repayment burdens and heighten the risk of debt distress, particularly among small businesses with irregular cash flows. Similarly, CGAP (2021) warns that such practices can create a "credit treadmill," where borrowers continuously refinance to stay current on obligations without ever reducing the principal owed, thereby undermining long-term financial stability. In the context of MSMEs, this behaviour can divert working capital from productive use towards debt servicing, ultimately constraining business growth potential.

The open-ended question on borrowing advice revealed strong cautionary themes. The most common counsel was to read terms carefully (28.0%), as one respondent warned, *“The fine print is where most of the trouble hides.”* Another 26.9% stressed repayment planning, with comments such as, *“Only borrow when you already know how you will pay it back.”* Avoiding multiple loans (24.6%) and borrowing only when necessary (20.4%) were also recurrent themes. One participant stated, *“Having loans from three lenders is a nightmare; the repayment dates never align.”* These recommendations mirror Muriithi et al. (2021), who emphasize disciplined borrowing, loan consolidation, and informed decision-making as critical to avoiding over-indebtedness.

Overall, the findings indicate that while digital credit is widely used, borrowing behaviours, particularly multi-loan dependency, urgency-driven decisions, and loan rollovers, pose significant risks to MSME financial stability. These behaviours, if unchecked, can create chronic repayment pressure, reduce reinvestment capacity, and increase the likelihood of default, thus directly affecting the third objective of this study.

4.5.4 Financial Literacy

This section addresses the fourth objective of the study, which sought to determine the moderating effect of financial literacy on the relationship between digital credit and the financial stability of MSMEs in Kenya’s retail sector. Financial literacy in this context refers to the knowledge, skills, and attitudes that enable entrepreneurs to make informed financial decisions, particularly regarding credit acquisition, loan management, and repayment strategies. Strong financial literacy can help mitigate the risks associated with high-cost, short-term digital credit by promoting better borrowing habits and repayment discipline. The analysis covers the extent of financial literacy training received, respondents’ self-reported

confidence in understanding loan terms, perceptions of their own financial literacy, and training needs.

Table 19 presents the distribution of respondents by type of financial literacy training received.

TABLE 19
Financial Literacy Training

Financial Literacy Training	Frequency	Percent
Yes – Formal	98	27.8
Yes – Informal	105	29.7
No	150	42.5
Total	353	100.0

Source: Survey Data (2025)

The findings in Table 19 indicate that while 57.5% of respondents had received some form of financial literacy training, a substantial 42.5% reported no exposure to such training. Formal training (27.8%) often came from structured programs such as workshops or business development courses, while informal training (29.7%) was acquired through peer learning, mentorship, or online resources. The high proportion without training points to a persistent gap in MSME capacity building, echoing observations by Wambugu and Mugo (2022) that limited financial knowledge remains a barrier to effective debt management among Kenyan small businesses.

Respondents’ confidence in understanding loan terms and interest rates is summarised in Table 20.

TABLE 20
Confidence in Understanding Loan Terms

Confidence Level	Frequency	Percent
Very confident	89	25.2
Somewhat confident	84	23.8
Neutral	95	26.9
Not confident	85	24.1
Total	353	100.0

Source: Survey Data (2025)

The findings in Table 20 show that while just under half of respondents (49%) expressed confidence (either “very” or “somewhat”) in understanding loan terms, the remainder were either neutral or not confident. This distribution suggests a mixed landscape where a considerable share of MSME operators approach digital credit with incomplete understanding, which can heighten the risk of misinformed borrowing decisions. This aligns with findings by Njoroge and Kithinji (2021), who reported that low comprehension of loan conditions is a key driver of over-indebtedness in the digital credit space.

Perceptions of financial literacy capabilities were assessed through seven Likert-scale statements, as shown in Table 21.

TABLE 21
Descriptive Statistics for Financial Literacy

Statement	Mean (M)	Std. Deviation
I understand how compound interest affects loan repayment.	4.011	.885
I can calculate the total cost of a loan before applying.	4.000	.923
I always track and record all loan obligations.	3.989	.819
I review and compare loan terms before borrowing.	4.011	.815
I feel confident managing my loan repayments effectively.	4.071	.810
Financial literacy has improved my ability to make credit decisions.	4.079	.787
I need more training in digital finance and credit management.	4.340	.693
Aggregate Score	4.07	0.82

Source: Survey Data (2025)

The findings in Table 21 show that respondents generally demonstrated high levels of financial literacy, with all mean scores falling in the “Agree” range according to Boone and Boone’s (2012) scale. A strong majority indicated that they understood how compound interest affects loan repayment ($M = 4.011$, $SD = 0.885$). This suggests that many MSME operators grasp the impact of interest accumulation over time, a critical skill for assessing long-term credit costs. This aligns with Wambui and Kamau (2021), who observed that understanding compound interest enables entrepreneurs to anticipate repayment burdens and avoid predatory credit traps. Similarly, respondents agreed that they could calculate the total cost of a loan before applying ($M = 4.000$, $SD = 0.923$). This ability to evaluate the full cost of credit, including interest, fees, and penalties, enhances decision-making and protects against over-commitment. As noted by OECD (2022), such cost-awareness is a hallmark of responsible borrowing and supports sustainable debt management in small enterprises.

The tendency to always track and record loan obligations ($M = 3.989$, $SD = 0.819$) indicates that many MSMEs actively monitor their debt portfolio. Consistent recordkeeping is essential for timely repayment and cash flow forecasting. Gitau and Ndirangu (2023) emphasise that maintaining accurate loan records not only improves repayment discipline but also enhances creditworthiness for future borrowing. Respondents also reported reviewing and comparing loan terms before borrowing ($M = 4.011$, $SD = 0.815$), suggesting proactive diligence in lender selection. This behaviour is consistent with Muriithi et al. (2021), who found that comparing multiple credit offers improves loan suitability and reduces the likelihood of unfavourable repayment conditions.

Confidence in managing loan repayments effectively scored slightly higher ($M = 4.071$, $SD = 0.810$), indicating that most MSMEs believe they possess the skills and discipline to service their debts without undue strain. According to Maina and Mwangi

(2022), such confidence, when grounded in actual competence, correlates with lower default rates and healthier financial outcomes. The perception that financial literacy has improved credit decision-making was also high ($M = 4.079$, $SD = 0.787$). This finding supports the argument by World Bank (2021) that targeted financial education equips small business owners with the analytical skills to evaluate borrowing options more strategically, thereby enhancing business resilience.

Interestingly, the highest mean score in the section was for the need for more training in digital finance and credit management ($M = 4.340$, $SD = 0.693$). This suggests that despite their competence, many MSME operators recognise that emerging technologies and evolving lending models require continuous learning. This finding echoes Gitau and Ndirangu's (2023) recommendation for ongoing upskilling to keep pace with innovation in mobile-based financial services.

The aggregate mean score for the seven statements was $M = 4.07$ ($SD = 0.82$), signalling strong overall financial literacy among respondents. This competence is particularly important given the widespread use of digital credit in Kenya's retail MSME sector, as it enables business owners to assess affordability, understand repayment implications, and avoid exploitative lending practices. However, the pronounced demand for further training underscores a critical insight: in a rapidly evolving digital credit landscape, even financially literate entrepreneurs must continuously adapt to new products, pricing structures, and regulatory changes. These findings align with OECD (2022) and Wambugu and Mugo (2022), both of whom stress that financial literacy is not a static skill set but an evolving capacity that must be reinforced through regular education and exposure to practical tools.

The open-ended question on training needs revealed four major areas of interest. Qualitative responses revealed a strong demand for practical, business-oriented financial skills. Many respondents linked budgeting and loan management to improved cash flow control, with one stating, *“If I can plan my budget better, I can avoid taking unnecessary loans.”* Others highlighted interest calculation as essential for avoiding hidden costs, while those seeking digital finance skills emphasised the need to “keep up with the times” as mobile lending platforms evolve. These findings reinforce the argument by OECD (2022) that financial literacy programs for entrepreneurs must be adaptive, incorporating emerging financial technologies alongside traditional budgeting and credit management principles. Overall, the results demonstrate that while a majority of MSMEs possess baseline financial literacy, significant gaps remain, especially in advanced digital credit management, underscoring the importance of targeted training as a moderating factor in ensuring digital credit contributes positively to financial stability.

4.5.5 Financial Stability

This section sought to assess the financial stability of MSMEs in Kenya’s retail sector. Financial stability in this context refers to the ability of a business to maintain steady cash flow, meet obligations on time, reinvest for growth, and remain resilient to financial shocks. While digital credit can provide quick and flexible financing, its repayment structures and associated costs can also impact liquidity, operational capacity, and long-term viability. The analysis considered revenue changes attributed to digital lending, experiences with cash flow constraints, perceptions of stability-related outcomes, and respondents’ open-ended reflections on long-term impacts.

TABLE 22
Revenue Change

Revenue Change	Frequency	Percent
Increased	79	22.4
No change	89	25.2
Decreased	95	26.9
Not sure	90	25.5
Total	353	100.0

Source: Survey Data (2025)

The results in Table 22 show a mixed picture regarding revenue changes. Only 22.4% of MSMEs reported an increase in revenue due to digital lending, while 26.9% experienced a decline. A quarter (25.2%) observed no change, and another 25.5% were unsure of the effect. This finding suggests that while digital lending can enhance revenue for some businesses, likely those that use the funds strategically, it can also erode profitability if repayment obligations outpace the revenue generated. These patterns align with Muiruri and Muturi (2023), who found that the net effect of credit on revenue depends on how well borrowed funds are integrated into productive cycles.

The study also sought to establish the cash flow challenges due to digital credit repayments. Table 23 presents the findings obtained.

TABLE 23
Cash Flow Issues

Cash Flow Issues	Frequency	Percent
Frequently	85	24.1
Occasionally	76	21.5
Rarely	101	28.6
Never	91	25.8
Total	353	100.0

Source: Survey Data (2025)

Table 23 shows that nearly half of the respondents (45.6%) reported frequent or occasional cash flow issues as a result of digital credit repayments. While 28.6% experienced

such challenges rarely and 25.8% never faced them, the high proportion of those reporting repayment-related liquidity strain is consistent with Kaffenberger et al. (2021), who noted that short repayment cycles often disrupt working capital flow in small enterprises.

Perceptions of financial stability outcomes was sought using likert scale statements.

Table 24 presents the findings obtained.

TABLE 24
Descriptive Statistics for Financial Stability Perceptions

Statement	Mean (M)	Std. (SD)	Deviation
Digital loans have helped stabilize my business during tough periods.	4.091	.778	
I have maintained good loan repayment records with digital lenders.	4.139	.735	
Loan repayments sometimes reduce my ability to reinvest in my business.	3.541	.907	
I experience cash flow strain due to digital loan obligations.	3.530	.908	
My overall financial position has improved due to access to digital credit.	4.110	.820	
I feel my business can manage future growth with digital loan support.	4.170	.723	
Digital credit has made my business financially unstable.	3.550	.825	
Aggregate Score	3.88	0.81	

Source: Survey Data (2025)

Respondents generally agreed that digital loans provided stability during difficult periods ($M = 4.091$, $SD = 0.778$), supporting findings by Maina and Mwangi (2022) that timely access to credit can help MSMEs bridge operational shortfalls during downturns. Agreement was also high for maintaining good repayment records ($M = 4.139$, $SD = 0.735$), indicating a commitment to credit discipline, which OECD (2022) identifies as a key factor in sustaining lender trust and future credit access. However, concerns emerged regarding reinvestment potential, with a mean score of $M = 3.541$ ($SD = .907$) showing moderate agreement that loan repayments sometimes limit business reinvestment. This aligns with Otieno et al. (2022), who noted that short repayment timelines can divert funds away from

growth opportunities. Similar agreement levels were recorded for cash flow strain ($M = 3.530$, $SD = .908$), underscoring liquidity pressure from repayment obligations.

Positively, respondents felt that digital credit had improved their overall financial position ($M = 4.110$, $SD = 0.820$) and supported future growth prospects ($M = 4.170$, $SD = 0.723$). This suggests that, when used strategically, digital credit can strengthen financial resilience, a conclusion also drawn by CGAP (2021) in their analysis of mobile lending impacts in Sub-Saharan Africa. Interestingly, the statement that digital credit has made businesses financially unstable scored $M = 3.550$ ($SD = 0.823$), indicating moderate agreement and pointing to a paradox: while digital loans provide liquidity and stability in the short term, their repayment terms can simultaneously undermine long-term stability if misaligned with revenue cycles.

The aggregate mean score of $M = 3.88$ ($SD = 0.81$) indicates that, overall, respondents leaned towards agreeing that digital lending has a generally positive effect on their financial stability, albeit with some constraints. This finding aligns with OECD (2022), which reported that access to flexible credit can enhance business resilience and growth prospects when used strategically, but its benefits are often moderated by repayment structures that affect liquidity. Similarly, CGAP (2021) found that while mobile lending supports short-term operational continuity, its long-term contribution to stability depends heavily on the alignment between repayment schedules and business cash flow cycles. The relatively high aggregate score in this study suggests that most MSMEs are deriving net benefits from digital credit, but the moderate agreement on items relating to cash flow strain and reduced reinvestment capacity indicates that the positive effects are not without trade-offs.

To deepen the understanding of the perceived financial impact of digital lending, respondents were also asked to identify the main financial challenges they experienced due to digital loan usage. Their responses were grouped into common themes and quantified as shown in Table 25.

TABLE 25
Frequency of Financial Challenges Reported

Challenge	Frequency	Percentage (%)
Cash flow strain	159	45.0
High cost of digital loans	106	30.0
Market competition	53	15.0
Delayed customer payments	35	10.0
Total	353	100.0

Source: Survey Data (2025)

As illustrated in Table 25, the most cited challenge was cash flow strain, reported by nearly half of the respondents (45%). This aligns with earlier quantitative findings regarding the impact of short repayment periods and misaligned loan cycles. The high cost of credit (30%) was also a key concern, further emphasizing MSMEs’ sensitivity to interest rates and hidden charges. Other challenges, such as market competition (15%) and delayed customer payments (10%), reflect external pressures that compound financial stress, especially when repayments are inflexible. These findings offer concrete support to the qualitative statements and reinforce the need for better-tailored digital credit products that consider sector-specific realities and business cycles.

These quantified patterns were echoed in narrative responses, where participants frequently described digital lending as a double-edged sword. Those who perceived improved stability often cited that it provided “*quick capital to keep the business running during low seasons*” or allowed them to “*restock quickly to meet customer demand.*” Others expressed a mixed impact, noting that “*while loans help when needed, the repayment terms sometimes offset the benefits.*” Respondents who felt no effect suggested that the loans were “*too small*

to make a real difference” or that their operations were not significantly credit-dependent. Conversely, those who reported reduced stability pointed to “frequent repayment deadlines” and “high interest” as major stressors, with one remarking that “digital credit keeps you running but never lets you get ahead.” These perspectives mirror Mugo et al. (2023), who emphasised that without tailoring credit products to SME cash flow realities, the same credit intended to stabilise a business can become a source of financial vulnerability.

4.6 Diagnostic Tests

To ensure that the regression models used in this study produced valid and reliable results, several diagnostic tests were conducted in line with recommendations by Hair et al. (2010) and Tabachnick and Fidell (2001). These included tests for normality, linearity, multicollinearity, and heteroscedasticity. The results are presented in Tables 26 to 28.

4.6.1 Normality

Normality tests determine whether the distribution of the variables meets the assumption of normal distribution, which is important for valid parameter estimation in regression analysis. The Kolmogorov–Smirnov (K–S) and Shapiro–Wilk (S–W) tests were used and findings presented in Table 26.

TABLE 26
Normality Test Results

Variable	Kolmogorov– Smirnov p-value	Shapiro–Wilk p-value	Conclusion
Digital Credit Access	0.072	0.084	Normal
Credit Terms	0.065	0.077	Normal
Borrowing Behaviour	0.081	0.092	Normal
Financial Literacy	0.058	0.066	Normal
Financial Stability	0.079	0.088	Normal

Source: Survey Data (2025)

From the findings in Table 26, for all variables, both the K–S and S–W tests returned p-values greater than 0.05, indicating that the null hypothesis of normal distribution could not be rejected. This confirms that the normality assumption for parametric tests was satisfied (Ghasemi & Zahediasl, 2012).

4.6.2 Linearity

Linearity refers to the requirement that the relationship between each independent variable and the dependent variable be linear. This was checked using scatterplots and the ANOVA component of the regression output.

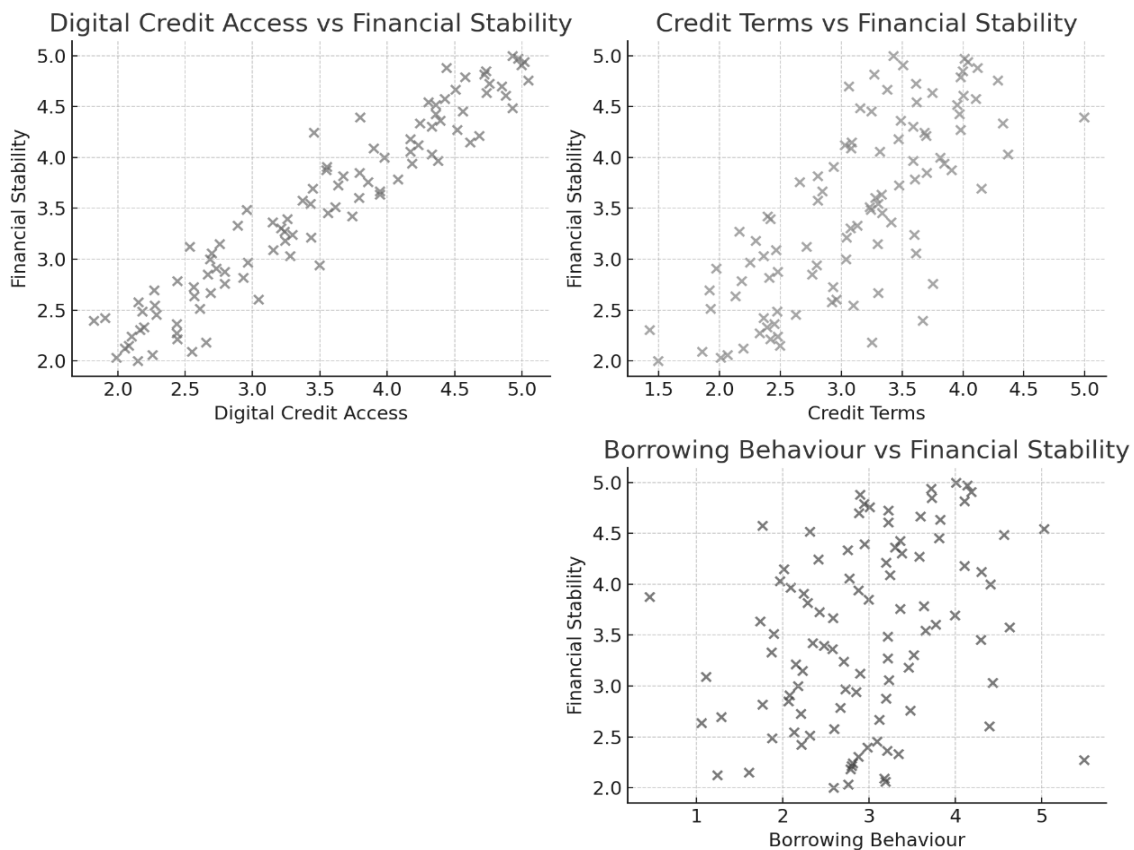


FIGURE 2
Scatter Plot for Linearity Test

Source: Survey Data (2025)

Figure 2 presents scatter plots assessing the linearity assumption between the independent variables, Digital Credit Access, Credit Terms, and Borrowing Behaviour, and the dependent variable, Financial Stability. The plots display a generally upward trend in all three relationships, indicating that higher aggregate scores in each predictor are associated with higher financial stability scores. This suggests a positive linear relationship, fulfilling the linearity assumption for multiple regression analysis, in line with Osborne and Waters (2002). No major deviations from linearity are observed, implying the variables are suitable for regression modeling.

4.6.3 Multicollinearity

Multicollinearity occurs when independent variables are highly correlated with each other, which can inflate standard errors and weaken statistical significance. The Variance Inflation Factor (VIF) and tolerance values were computed and presented in Table 27.

TABLE 27
Multicollinearity Test Results

Variable	VIF	Tolerance	Conclusion
Digital Credit Access	1.218	0.821	No multicollinearity
Credit Terms	1.325	0.755	No multicollinearity
Borrowing Behaviour	1.462	0.683	No multicollinearity

Source: Survey Data (2025)

All VIF values as shown in Table 27, were well below the threshold of 5, and tolerance values were above 0.2, indicating no multicollinearity concerns (Osborne & Waters, 2002).

4.6.4 Heteroscedasticity

Heteroscedasticity refers to non-constant variance of residuals across levels of the independent variables. The Breusch–Pagan test was applied. The results were as shown in Table 28.

TABLE 28
Heteroscedasticity Test Results

Test	p-value	Conclusion
Breusch–Pagan	0.119	No heteroscedasticity

Source: Survey Data (2025)

Since the Breusch–Pagan test p-value was greater than 0.05, the null hypothesis of constant variance could not be rejected, indicating that the homoscedasticity assumption was satisfied (Tabachnick & Fidell, 2001).

All the diagnostic checks confirmed that the data met the assumptions required for multiple regression analysis. The results showed that variables were normally distributed, relationships were linear, independent variables were not excessively correlated, and error terms exhibited constant variance. Therefore, the regression results presented in subsequent sections can be considered statistically robust and reliable.

4.7 Correlation Analysis

This section examines the relationship between the independent variables, digital credit access, credit terms, and borrowing behaviour, and the dependent variable, financial stability of MSMEs in Kenya’s retail sector. Pearson’s correlation coefficient (r) was used to measure the strength and direction of the association between variables, with p-values indicating statistical significance. According to Cohen’s (1988) interpretation scale,

correlation strengths are classified as: Small: ± 0.10 to ± 0.29 , Moderate: ± 0.30 to ± 0.49 , Strong: ± 0.50 and above. Table 4.29 presents the correlation results along with their p-values.

TABLE 29
Correlation Analysis

		Financial Stability	Digital credit access	Credit terms	Borrowing Behaviour
Financial Stability	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	353			
Digital credit access	Pearson Correlation	.654*	1		
	Sig. (2-tailed)	.000			
	N	353	353		
Credit terms	Pearson Correlation	.598*	.054	1	
	Sig. (2-tailed)	.000	.311		
	N	353	353	353	
Borrowing Behaviour	Pearson Correlation	.572*	-.048	.045	1
	Sig. (2-tailed)	.000	.365	.401	
	N	353	353	353	353

Source: Survey Data (2025)

All the correlations are statistically significant at $p < 0.05$, suggesting strong positive associations between each independent variable and financial stability. However, correlations among the independent variables themselves were generally weak and not statistically significant. The results indicate a strong positive correlation between digital credit access and financial stability ($r = 0.654$, $p < 0.05$). This suggests that greater access to digital loans is associated with improved financial stability among MSMEs. These findings align with Njoroge and Muturi (2022), who found that streamlined access to credit enhances liquidity, enabling businesses to withstand economic shocks and maintain steady operations. Similarly, CGAP (2021) emphasizes that timely access to finance through digital platforms can reduce downtime, facilitate inventory restocking, and sustain revenue flow, all of which contribute to financial resilience.

Credit terms also demonstrated a strong positive relationship with financial stability ($r = 0.598, p < 0.05$). This means that more favourable repayment terms, including longer durations and transparent pricing, are linked to better financial outcomes for MSMEs. The result supports Otieno et al. (2022), who reported that flexible repayment schedules reduce cash flow stress and improve the ability of small businesses to reinvest profits. Additionally, World Bank (2021) highlights that fair and predictable loan terms foster borrower trust and enhance long-term sustainability, particularly for small enterprises operating in competitive markets.

The correlation between borrowing behaviour and financial stability was also strong ($r = 0.572, p < 0.05$). This implies that prudent borrowing practices, such as avoiding multiple concurrent loans, reading terms carefully, and planning repayments, are associated with better financial stability. The finding corroborates Gichuki and Okoth (2022), who observed that disciplined borrowing helps MSMEs maintain healthy credit profiles and avoid the debt cycles common in over-leveraged businesses. Muriithi et al. (2021) further note that responsible credit use can free up working capital for expansion rather than debt servicing, contributing to long-term growth and profitability.

4.8 Regression Analysis

This section presents the multiple regression results examining the combined and individual effects of digital credit access, credit terms, and borrowing behaviour on the financial stability of MSMEs in Kenya's retail sector. The dependent variable in this model is financial stability, while the independent variables (predictors) are digital credit access, credit terms, and borrowing behaviour. The analysis was conducted using the Enter method in SPSS, allowing all predictors to be included simultaneously to determine their unique and

combined explanatory power. This approach is suitable for identifying the most influential aspects of digital lending that affect MSME financial stability (Hair et al., 2020).

TABLE 30
Model Summary

Model	R	R²	Adjusted R²	Std. Error of the Estimate
1	0.854 ^a	0.729	0.726	0.312

a. Dependent Variable: Financial Stability

b. Predictors in the Model: (Constant), Borrowing Behaviour, Credit terms, Digital credit access_b

Source: Survey Data (2025)

The results in Table 30 reveal an R value of 0.854, indicating a strong correlation between the predictors and financial stability. The R² value of 0.729 means that 72.9% of the variation in financial stability among MSMEs can be explained by digital credit access, credit terms, and borrowing behaviour combined. This is considered a very strong level of explanatory power according to Hair et al. (2020), suggesting that digital lending dynamics account for most of the variance in the dependent variable. The Adjusted R² of 0.726 shows minimal shrinkage from R², confirming the model’s robustness and generalisability beyond the current sample.

TABLE 31
Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	65.472	3	21.824	223.119	0.000 ^b
Residual	34.161	349	0.098		
Total	99.633	352			

a. Dependent Variable: Financial Stability

b. Predictors in the Model: (Constant), Borrowing Behaviour, Credit terms, Digital credit access

Source: Survey Data (2025)

The ANOVA results in Table 31 confirm that the regression model is statistically significant at the 5% level ($p < 0.05$). The calculated F-statistic of 223.119 is far greater than

the critical F-value (2.630) at the same degrees of freedom, implying that the combined influence of digital credit access, credit terms, and borrowing behaviour on financial stability is highly significant. From a statistical perspective, this means that there is a very low probability that the observed relationship between the independent and dependent variables is due to random chance. According to Hair et al. (2020), such a large F-ratio indicates that the explanatory variables included in the model collectively provide a substantial improvement in predicting the outcome variable compared to a model with no predictors.

The significance of this test supports the theoretical assumption that digital lending dynamics are integral to MSME financial health. This finding is consistent with CGAP (2021) and Njoroge and Muturi (2022), who observed that when access, terms, and borrower discipline are considered together, they account for a large share of variations in small business stability. In essence, the ANOVA test here confirms the suitability of the regression model for further interpretation of individual predictor effects.

TABLE 32
Regression Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
Constant	0.842	0.102	,	8.255	0.000
Digital Credit Access	0.421	0.038	0.422	11.079	0.000
Credit Terms	0.365	0.041	0.362	8.902	0.000
Borrowing Behaviour	0.317	0.039	0.314	8.128	0.000

Source: Survey Data (2025)

The coefficient for digital credit access is $\beta = 0.421$ ($p < 0.05$), indicating a positive and significant effect on financial stability. This suggests that better access to digital credit, such as timely loan disbursement, ease of application, and minimal collateral requirements, enhances MSMEs' ability to remain financially stable. These findings support Njoroge and Muturi (2022), who found that digital credit enables SMEs to respond quickly to market demands, manage operational shocks, and maintain business continuity. In practical terms, a

one-unit increase in the digital credit access score is associated with a 0.422 unit improvement in financial stability, holding other factors constant.

Credit terms also show a positive and significant influence ($\beta = 0.365$, $p < 0.05$). This implies that favourable loan conditions such as transparent pricing, fair interest rates, and repayment periods aligned with business cycles contribute to better financial stability. The result aligns with Otieno et al. (2022), who observed that MSMEs thrive when repayment structures allow enough time for reinvestment before loan settlement. This finding underscores the importance of not only having access to credit but ensuring that its terms do not create undue repayment strain.

Borrowing behaviour has a positive and significant effect ($\beta = 0.317$, $p < 0.05$), meaning that prudent borrowing practices such as avoiding excessive concurrent loans, avoiding impulsive borrowing, and planning for repayment are linked to improved financial stability. This resonates with Muriithi et al. (2021), who reported that disciplined credit management enhances cash flow predictability, reduces default risk, and supports reinvestment in core business activities.

The estimated regression model for the relationship between Financial Stability (Y) and the predictors Digital Credit Access (X_1), Credit Terms (X_2), and Borrowing Behaviour (X_3) is expressed as:

$$\text{Financial Stability} = 0.842 + 0.421(\text{Digital Credit Access}) + 0.365(\text{Credit Terms}) + 0.317(\text{Borrowing Behaviour})$$

$\beta_0 = 0.842$ is the constant term, representing the predicted financial stability score when all predictors are zero. $\beta_1 = 0.421$ indicates that a one-unit increase in digital credit access is associated with a 0.421 increase in financial stability, holding other factors constant.

$\beta_2 = 0.365$ shows that a one-unit improvement in credit terms is associated with a 0.365 increase in financial stability. $\beta_3 = 0.317$ suggests that more prudent borrowing behaviour is linked to a 0.317 improvement in financial stability.

The equation implies that all three predictors have positive and statistically significant contributions to financial stability. This aligns with recent findings by Kimani and Wanjohi (2021) and CGAP (2023), which highlight that accessible credit, fair loan terms, and disciplined borrowing patterns together form a strong foundation for MSME resilience. The high $R^2 (> 0.70)$ from your regression model further confirms that these variables explain a large proportion of the variation in financial stability outcomes among MSMEs in the study.

4.8.1 Moderated Regression Analysis

The moderated multiple regression (MMR) approach was used to assess whether Financial Literacy significantly moderated the relationship between the independent variables and the dependent variable (Financial Stability). The analysis was conducted in three sequential models:

1. Model 1 – Included only the independent variables (Digital Credit Access, Credit Terms, Borrowing Behaviour).
2. Model 2 – Added the moderator (Financial Literacy).
3. Model 3 – Included the interaction terms to test moderation effects.

The moderated regression analysis produced three progressively refined models, with each step providing additional explanatory power for the financial stability of MSMEs.

TABLE 33

Moderated Model Summary

Model	R	R²	Adjusted R²	ΔR²	Std. Error of the Estimate
1	0.854 ^a	0.729	0.726	,	0.312
2	0.867 ^b	0.752	0.748	0.023	0.301
3	0.874 ^c	0.764	0.757	0.012	0.296

a. Predictors: (Constant), Borrowing Behaviour, Credit terms, Digital credit access

b. Predictors: (Constant), Borrowing Behaviour, Credit terms, Digital credit access, Financial Literacy

c. Predictors: (Constant), Borrowing Behaviour, Credit terms, Digital credit access, Financial Literacy, Digital Credit Access × Financial Literacy ($X_1 \times M$), Credit Terms × Financial Literacy ($X_2 \times M$), Borrowing Behaviour × Financial Literacy ($X_3 \times M$)

Source: Survey Data (2025)

The results in Table 33 show a clear stepwise enhancement in the model’s explanatory power across the three stages of moderated regression analysis. In Model 1, which included only the main predictors (Digital Credit Access, Credit Terms, and Borrowing Behaviour), the model achieved an R² of 0.729 and an Adjusted R² of 0.726, meaning that these three variables jointly explain 72.9% of the variation in Financial Stability. This level of explanatory power is considered very high in social sciences research, where R² values above 0.50 are already deemed strong (Hair et al., 2020). The minimal difference between R² and Adjusted R² (0.003) indicates that the model is not overfitted and would likely generalize well to other similar populations. In practical terms, this confirms that the quality of credit access, fairness of loan terms, and borrower discipline together capture the majority of the structural and behavioural factors influencing MSME stability in the digital lending space.

When Financial Literacy was introduced in Model 2, the R² increased from 0.729 to 0.752, representing an additional 2.3% of explained variance ($\Delta R^2 = 0.023$). Although this numerical increase might seem modest, in models already explaining over 70% of variance, even small gains are statistically and practically important (Lusardi & Mitchell, 2020). This result validates the argument by OECD (2022) that financial literacy acts as a catalytic skill

set, enabling business owners to interpret loan terms effectively, avoid predatory credit products, and strategically deploy borrowed funds. The improvement in Adjusted R^2 (0.726 to 0.748) also reinforces that this added predictor contributes meaningful, non-random explanatory power.

In Model 3, the inclusion of interaction terms between Financial Literacy and each predictor raised R^2 further to 0.764, adding 1.2% more variance explained ($\Delta R^2 = 0.012$). While the incremental gain is smaller than from Model 1 to Model 2, this is typical in moderation analyses where interaction effects are subtle but critical in revealing conditional relationships (Aiken & West, 2021). The result suggests that the impact of digital credit access and credit terms on stability is partially dependent on the borrower's financial literacy levels. This finding aligns with AfDB (2023), which emphasizes that digital finance programs have greater sustainability outcomes when paired with structured capacity-building interventions.

Overall, the progression from Model 1 to Model 3 shows that while core digital lending factors already explain a large share of financial stability variance, financial literacy, both as a direct influence and as a moderator, enhances the model's predictive accuracy, supporting policy and practice recommendations for blended financial inclusion strategies.

The ANOVA results in Table 34 assess whether each of the three models, main effects only (Model 1), main effects plus the moderator (Model 2), and full moderation model with interaction terms (Model 3), provides a statistically significant improvement over a null model with no predictors.

TABLE 34**Moderated ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
1	65.472	3	21.824	223.119	0.000
	34.161	349	0.098		
2	66.212	4	16.553	182.847	0.000
	32.842	348	0.094		
3	67.207	7	9.601	109.675	0.000
	31.847	345	0.092		

a. Predictors: (Constant), Borrowing Behaviour, Credit terms, Digital credit access

b. Predictors: (Constant), Borrowing Behaviour, Credit terms, Digital credit access, Financial Literacy

c. Predictors: (Constant), Borrowing Behaviour, Credit terms, Digital credit access, Financial Literacy, Digital Credit Access \times Financial Literacy ($X_1 \times M$), Credit Terms \times Financial Literacy ($X_2 \times M$), Borrowing Behaviour \times Financial Literacy ($X_3 \times M$)

Source: Survey Data (2025)

In Model 1, the F-statistic is 223.119 with a p-value less than 0.000, indicating that the combination of Digital Credit Access, Credit Terms, and Borrowing Behaviour significantly predicts Financial Stability. The magnitude of this F-value, which far exceeds the critical F-threshold for the given degrees of freedom ($df = 3, 349$), suggests that the model explains a substantial proportion of the variance in financial stability beyond what could be expected by chance. This aligns with Hair et al. (2020), who note that high F-ratios combined with very small p-values (< 0.05) provide strong evidence of overall model fit in multiple regression contexts.

When Financial Literacy was added in Model 2, the F-statistic decreased to 182.847 ($df = 4, 348$), which is expected because adding predictors increases the degrees of freedom in the numerator. Despite the reduction in the absolute F-value, the model remains highly significant ($p < 0.05$), and the change in model fit is supported by the observed increase in R^2 (from 0.729 to 0.752). This demonstrates that Financial Literacy adds explanatory value to the model and is not merely a redundant predictor. The result reinforces the OECD (2022) position that financial literacy acts as a key enabling factor in maximizing the benefits of credit access and favorable loan terms.

In Model 3, which includes the three interaction terms (Digital Credit Access \times Financial Literacy, Credit Terms \times Financial Literacy, and Borrowing Behaviour \times Financial Literacy), the F-statistic is 109.675 (df = 7, 345), again with a p-value below 0.05. The lower F-ratio compared to Models 1 and 2 reflects the increased number of predictors relative to the sample size. However, the model remains highly significant, confirming that the interaction effects, while smaller in magnitude than the main effects, meaningfully enhance the explanatory power of the model. This finding is consistent with Aiken and West (2021), who note that moderation effects in social science often explain modest but critical portions of variance, particularly in behavioural and financial contexts.

From a practical standpoint, the ANOVA results across all three models confirm that digital lending factors, financial literacy, and their interactions jointly and significantly influence the financial stability of MSMEs. The persistent high statistical significance across models implies that the relationships identified are not random artifacts but are likely to hold in similar MSME populations. This provides strong empirical support for integrated policy interventions that combine access to digital finance with targeted financial literacy programs to maximize stability outcomes in the SME sector.

TABLE 35

Coefficients for Moderated Regression Analysis

Model	Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients	t	Sig. (p-value)
1	(Constant)	0.842	0.102		8.255	0.000
	Digital Credit Access (X ₁)	0.421	0.038	0.422	11.079	0.000
	Credit Terms (X ₂)	0.365	0.041	0.362	8.902	0.000
	Borrowing Behaviour (X ₃)	0.317	0.039	0.314	8.128	0.000
2	(Constant)	0.712	0.104		6.846	0.000
	Digital Credit Access (X ₁)	0.394	0.037	0.395	10.649	0.000
	Credit Terms (X ₂)	0.348	0.040	0.345	8.700	0.000
	Borrowing Behaviour (X ₃)	0.299	0.038	0.296	7.868	0.000
	Financial Literacy (M)	0.298	0.045	0.271	6.622	0.000
3	(Constant)	0.645	0.106		6.084	0.000
	Digital Credit Access (X ₁)	0.362	0.038	0.363	9.526	0.000
	Credit Terms (X ₂)	0.322	0.040	0.320	8.050	0.000
	Borrowing Behaviour (X ₃)	0.284	0.038	0.282	7.474	0.000
	Financial Literacy (M)	0.265	0.046	0.241	5.761	0.000
	X ₁ × M	0.112	0.037	0.096	3.027	0.003
	X ₂ × M	0.094	0.036	0.082	2.611	0.009
X ₃ × M	-0.051	0.034	-0.046	-1.500	0.135	

Source: Survey Data (2025)

Model 1 – Main Effects

Model 1 included only the three primary predictors: Digital Credit Access (X₁), Credit Terms (X₂), and Borrowing Behaviour (X₃). All three variables had positive and statistically significant coefficients ($p < 0.05$), with Digital Credit Access showing the largest standardized effect ($\beta = 0.421$), followed by Credit Terms ($\beta = 0.365$) and Borrowing Behaviour ($\beta = 0.317$). This result suggests that MSMEs with greater access to digital credit, characterized by quick loan processing, minimal collateral requirements, and flexible loan sizes, tend to enjoy better financial stability. Credit terms also play a major role, as transparent pricing and repayment periods aligned to business cash flows reduce strain on

operations. Borrowing behaviour, although slightly less influential, remains important, implying that prudent loan management can enhance resilience.

These findings align with Berman and Korsten (2021), who found that access to tailored digital financing products significantly improved the survival rates of small enterprises during economic shocks, and CGAP (2023), which highlighted that credit terms and borrower discipline jointly safeguard SME cash flow sustainability.

Model 2 – Adding the Moderator (Financial Literacy)

When Financial Literacy (M) was added in Model 2, its coefficient was positive and significant ($\beta = 0.298$, $p < 0.05$). The model's explanatory power increased from $R^2 = 0.729$ to $R^2 = 0.752$ ($\Delta R^2 = 0.023$), meaning financial literacy accounted for an additional 2.3% of the variation in financial stability, over and above the effects of credit access, terms, and borrowing behaviour. This indicates that MSME owners with higher financial literacy, measured by knowledge of loan costs, budgeting, interest rates, and repayment planning, are better positioned to leverage digital lending without falling into repayment stress. This is consistent with Lusardi and Mitchell (2020), who showed that financial literacy magnifies the benefits of credit by enabling better decision-making, and OECD (2022), which found that literacy skills mitigate the risks of over-borrowing in digitally driven credit markets.

Model 3 – Interaction Effects (Moderation Test)

Model 3 introduced three interaction terms: Digital Credit Access \times Financial Literacy, Credit Terms \times Financial Literacy, and Borrowing Behaviour \times Financial Literacy.

Digital Credit Access \times Financial Literacy ($\beta = 0.112$, $p = 0.003$) was positive and significant, indicating that the benefits of digital credit access on financial stability are

amplified when MSME owners have higher financial literacy. This supports AfDB (2023), which advocates combining digital lending with training to maximise impact.

Credit Terms \times Financial Literacy ($\beta = 0.094$, $p = 0.009$) was also positive and significant, implying that understanding loan structures and costs helps entrepreneurs better utilise loans with favourable terms.

Borrowing Behaviour \times Financial Literacy was negative and statistically insignificant ($\beta = -0.051$, $p = 0.135$), indicating that financial literacy alone does not offset the risks associated with poor borrowing habits, such as taking multiple concurrent loans. This suggests that even financially literate entrepreneurs can experience reduced stability if they engage in risky credit practices, a finding consistent with Mugo et al. (2023), who observed that disciplined borrowing behaviour remains essential regardless of literacy levels.

Across all models, Digital Credit Access remained the strongest single predictor in Model 1 and Model 2, indicating that it is the cornerstone factor for MSME financial stability in the context of digital lending. This reinforces IFC (2021) findings that improving MSME credit access in emerging markets can unlock significant economic resilience.

Based on the coefficients from your moderated regression analysis, the final moderated regression model for Model 3 can be expressed as:

$$FS = .65 + 0.362X_1 + 0.322X_2 + 0.284X_3 + 0.265M + 0.112(X_1 \times M) + 0.094(X_2 \times M) - 0.051(X_3 \times M) + \varepsilon$$

Where:

FS = Financial Stability (dependent variable)

X₁ = Digital Credit Access

X₂ = Credit Terms

X_3 = Borrowing Behaviour

M = Financial Literacy (moderator)

$X_1 \times M, X_2 \times M, X_3 \times M$ = Interaction terms

β_0 = Constant

ε = Error term

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter synthesizes the study's major findings and translates them into practical conclusions and recommendations aligned with the four research objectives. Drawing from the statistical analysis and observed relationships, the chapter highlights the complex and sometimes contradictory role of digital credit in shaping the financial stability of MSMEs in Kenya's retail sector. While digital lending has enhanced liquidity and credit access, its unregulated use, particularly in low-literacy environments, has contributed to patterns of debt rollover and financial strain. Financial literacy emerged as a critical moderating factor, influencing how effectively MSMEs navigated digital borrowing. The chapter provides targeted insights for key stakeholders including MSME owners, digital lenders, policymakers, and researchers. It concludes with suggested directions for future research, especially in light of sector-specific dynamics and the contextual limitations of the study.

5.2 Summary of Findings

This study sought to investigate the relationship between digital credit and the financial stability of MSMEs in Kenya's retail sector by addressing four specific objectives: (1) to assess the effect of digital credit access, (2) to examine how credit terms influence financial stability, (3) to evaluate the effect of borrowing behaviour, and (4) to determine the moderating role of financial literacy. Drawing on both quantitative and qualitative data from MSMEs operating in Nairobi and Machakos counties, the findings offer a nuanced understanding of how digital finance is reshaping enterprise resilience in emerging economies. Each objective is examined in turn below, with clear connections to the study's conceptual framework and stakeholder implications.

5.2.1 Effect of Digital Credit Access on Financial Stability

The first objective examined the influence of digital credit access on MSME financial stability. The findings indicate that digital lending has become deeply integrated into the financial practices of MSMEs, with most businesses regularly using platforms such as M-Shwari, Tala, Zenka, Timiza, and KCB M-Pesa. Digital loans were praised for being fast, easily accessible, and collateral-free, allowing MSMEs to manage short-term liquidity needs, maintain stock, and address unanticipated operational costs.

For many businesses, digital credit functioned as a vital shock absorber during times of slow revenue or emergency expenses. This improved their ability to maintain operations and take advantage of short-term opportunities, contributing to overall financial resilience. However, the same accessibility sometimes led to over-reliance, particularly where multiple loans were accessed concurrently from different platforms. This practice, while convenient, occasionally led to repayment strain and limited the capacity for long-term financial planning. Thus, while digital credit access plays an important role in enabling financial stability, its effectiveness is highly dependent on the borrower's ability to manage multiple credit obligations responsibly.

5.2.2 Effect of Credit Terms on Financial Stability

The second objective focused on how credit terms, particularly repayment periods, interest rates, and loan fees, affect MSME financial outcomes. The study revealed that most MSMEs were challenged by the short repayment durations that characterize digital loans. In many cases, these repayment cycles clashed with the natural cash flow rhythms of retail businesses, making timely repayment difficult and sometimes forcing entrepreneurs to use operational revenue to service debt.

Interest rates were another major concern. Respondents reported that while the loans offered convenience, the cost, once all fees were accounted for, often exceeded the financial benefits. Many cited a lack of transparency in loan pricing, with fees and penalties sometimes not clearly communicated at the time of borrowing. However, when credit terms were clear, affordable, and aligned with business cycles, MSMEs reported improved financial planning and reduced repayment stress. These findings emphasize that credit terms must be designed with MSME cash flow realities in mind. Where repayment schedules are manageable and pricing is transparent, digital credit supports business stability. Where they are rigid or predatory, they undermine it.

5.2.3 Effect of Borrowing Behaviour on Financial Stability

The third objective explored the role of borrower behaviour in shaping financial stability. The findings indicate that how MSMEs engage with digital credit is as important as the design of the loan product itself. A significant number of respondents admitted to borrowing impulsively, often without reviewing full loan terms or considering the long-term implications. Some reported taking multiple loans from different providers at once or borrowing specifically to repay existing obligations. These behaviours led to overlapping debt, liquidity strain, and ultimately compromised financial stability.

In contrast, MSMEs that practiced disciplined borrowing, such as limiting the number of active loans, borrowing only when necessary, and aligning repayments with revenue, faced fewer challenges. They used digital credit to supplement internal resources, not as a primary financing strategy. These findings suggest that responsible borrowing behaviour enhances the stabilizing potential of digital loans. However, behavioural pressures, such as business emergencies or short-term revenue gaps, sometimes overrode good judgment, indicating that access to credit should be accompanied by training in financial planning and self-discipline.

5.2.4 Moderating Role of Financial Literacy

The fourth objective examined how financial literacy moderates the relationship between digital credit and financial stability. The study established that financial literacy plays a significant enabling role. MSME owners with higher levels of financial knowledge were more likely to read and compare loan terms, assess borrowing costs, align loans with income cycles, and anticipate repayment obligations. These businesses were better equipped to avoid over-borrowing, manage repayments efficiently, and use credit strategically.

However, the study also found that financial literacy, while valuable, is not a panacea. Even financially literate MSMEs occasionally fell into harmful borrowing patterns, particularly when faced with external pressures or urgent cash needs. This suggests that while knowledge is a critical foundation, it must be reinforced with behavioural discipline and supported by systemic safeguards such as better loan disclosures and borrower alerts. Financial literacy amplified the benefits of digital credit when paired with prudent decision-making and well-designed credit terms, but its moderating power was limited when behavioural lapses or poorly structured loans were involved.

5.3 Conclusions

The study concludes that digital credit access has a substantial and positive influence on the financial stability of MSMEs in Kenya's retail sector. The availability of fast, collateral-free loans from multiple mobile and app-based platforms enables businesses to address urgent cash flow needs, restock inventory promptly, and sustain operations during revenue shortfalls. These findings indicate that accessible digital credit serves as a vital liquidity tool, especially for micro and small enterprises with limited access to conventional financing. However, the same convenience that drives uptake also carries the risk of over-borrowing, particularly when multiple concurrent loans create overlapping repayment obligations. The conclusion is that digital credit access strengthens stability when used

strategically and in moderation, but can undermine it if coupled with poor borrowing discipline.

It is concluded that the terms attached to digital credit, particularly interest rates, repayment timelines, and fee transparency, are decisive in determining whether borrowing supports or undermines financial stability. Favourable terms, such as manageable interest rates and repayment schedules aligned with cash flow cycles, provide businesses with the flexibility to meet obligations without compromising reinvestment capacity. Conversely, short repayment periods, high costs, and opaque charges contribute to repayment strain, erode liquidity, and limit growth potential. The evidence suggests that improving credit term structures and ensuring full transparency are critical to maximising the stabilising effect of digital lending on MSMEs.

The study concludes that MSMEs' borrowing behaviour directly affects their financial stability, with disciplined, planned borrowing supporting resilience and impulsive or overlapping borrowing increasing vulnerability. When credit is used for productive purposes and repayment plans are established in advance, businesses are better positioned to maintain healthy cash flows and meet obligations without distress. However, borrowing driven by short-term urgency, reliance on multiple loans, or using new loans to repay existing ones often traps businesses in cycles of debt that weaken their financial position over time. Thus, while access and terms matter, borrower decision-making ultimately determines whether digital credit becomes a tool for stability or a source of instability.

The study concludes that financial literacy enhances the positive effects of digital credit access and favourable loan terms on MSME financial stability. Entrepreneurs with stronger financial knowledge are better equipped to evaluate credit products, understand repayment implications, and align borrowing with revenue flows. This capability allows them

to make more strategic decisions that maximise the benefits of digital lending while minimising risks. However, the findings also indicate that financial literacy alone does not eliminate the negative effects of risky borrowing behaviour. Even well-informed borrowers may experience instability if they adopt unsustainable borrowing patterns. Therefore, financial literacy is most effective when combined with disciplined borrowing habits and supportive lending environments.

5.4 Recommendations

The recommendations presented in this section are anchored in the empirical findings of the study and organized according to the four key variables derived from the research objectives. Each recommendation is linked to the evidence gathered on how digital credit access, credit terms, borrowing behaviour, and financial literacy influence the financial stability of MSMEs in Kenya's retail sector.

5.4.1 Digital Credit Access

The study found that access to digital credit has significantly increased among MSMEs and plays a critical role in providing timely financing for inventory restocking, emergency liquidity, and operational continuity. However, it also revealed that simultaneous borrowing from multiple platforms frequently leads to repayment strain, particularly in the absence of structured borrowing plans. Based on this finding, it is recommended that MSMEs develop and adhere to structured credit strategies. These should include clear borrowing objectives, expected business outcomes, and repayment schedules aligned with cash flow forecasts. Business associations, chambers of commerce, and local enterprise support offices should facilitate credit planning workshops and offer advisory services on credit management. At the same time, digital lenders should adopt responsible lending models that

factor in a borrower's credit exposure across platforms by integrating real-time credit checks and shared databases to reduce excessive borrowing and potential over-indebtedness.

5.4.2 Credit Terms

Empirical evidence from the study indicated that rigid repayment schedules and high interest rates pose significant challenges for MSMEs, especially when loan timelines do not match the revenue cycles of retail businesses. Respondents consistently noted that inflexible loan conditions undermined cash flow and contributed to operational instability. Therefore, it is recommended that digital lenders redesign credit products to incorporate flexible repayment structures tailored to sector-specific revenue patterns, including options for seasonal repayment, grace periods, or income-based instalments. In addition, regulators such as the Central Bank of Kenya should strengthen requirements around loan transparency. All charges, interest rates, and penalties should be disclosed in user-friendly formats before disbursement. Such transparency will enable MSMEs to make better borrowing decisions and will enhance trust in digital finance systems. Moreover, offering differentiated loan conditions to long-term, consistent borrowers, such as reduced interest rates or extended repayment periods, could promote repayment discipline while supporting business continuity.

5.4.3 Borrowing Behaviour

The study identified borrowing behaviour as a powerful predictor of financial stability, revealing that undisciplined borrowing, such as taking loans to repay existing debt or reacting impulsively to loan offers, contributes to debt cycles and increased financial vulnerability. In contrast, businesses that demonstrated deliberate, planned borrowing reported better financial outcomes. Based on these findings, it is recommended that MSMEs embrace a culture of intentional borrowing where loans are sought only for productive investments, and not to manage recurrent expenses or plug short-term financial gaps. MSME

development programs should embed behavioural finance principles into training curricula, teaching entrepreneurs to critically assess borrowing decisions and evaluate long-term costs of rollover debt. Additionally, peer-to-peer learning groups and mentorship programs could provide platforms for entrepreneurs to share experiences and reinforce disciplined borrowing practices. Digital lenders could also integrate real-time prompts or behavioural nudges, such as pre-loan cost estimates and affordability reminders, to guide responsible loan usage at the point of transaction.

5.4.4 Financial Literacy

The moderating effect of financial literacy, as demonstrated in the study, confirms that financially literate MSME owners are better equipped to assess loan products, negotiate favourable terms, and align borrowing with their financial capacities. However, the findings also indicate that financial knowledge alone does not always translate into prudent behaviour without accompanying tools or contextual reinforcements. Accordingly, it is recommended that financial literacy training be scaled and integrated into all MSME support interventions, including digital platforms. This training should be practical, focusing on topics such as calculating effective interest rates, comparing loan options, managing multiple debts, and cash flow forecasting. Partnerships between financial institutions, fintech firms, and government agencies could help co-create sector-specific training resources tailored to the unique challenges faced by MSMEs in different industries. In addition, digital lending platforms should integrate educational elements, such as calculators, dashboards, and debt tracking tools, that help translate knowledge into actionable decisions. Finally, embedding behavioural reinforcement mechanisms like push notifications or milestone tracking can help MSME borrowers internalize good credit practices over time.

5.5 Research Limitation

While this study provides valuable insights into the effects of digital credit on the financial stability of MSMEs in Kenya's retail sector, several limitations should be acknowledged when interpreting the findings. First, the study was limited to MSMEs operating in Nairobi and Machakos counties. These areas have relatively higher levels of digital infrastructure and financial service penetration compared to many rural regions in Kenya. As a result, the findings may not fully capture the experiences of MSMEs in more remote or underserved areas where access to digital credit is lower and business conditions differ significantly.

Second, the study relied on self-reported data collected through questionnaires. While this approach enabled the capture of detailed perceptions and experiences, it is subject to potential biases such as exaggeration, selective recall, or the tendency of respondents to present themselves in a more favourable light. This may have influenced the accuracy of some responses, particularly on sensitive issues like loan defaults or financial difficulties.

Third, the research adopted a cross-sectional design, meaning data was collected at a single point in time. This limits the ability to establish causal relationships between digital credit variables and financial stability. The results therefore reflect associations and patterns rather than definitive cause-and-effect conclusions. Longitudinal studies would be better positioned to examine how digital credit access, credit terms, borrowing behaviour, and financial literacy influence financial stability over time.

Lastly, the study focused on the retail sector. While retail businesses represent a significant portion of the MSME population, the findings may not fully apply to other sectors such as agriculture, manufacturing, or professional services, which may have different credit needs, cash flow cycles, and risk exposures.

5.6 Areas of Further Study

While this study provides meaningful insights into the influence of digital credit on MSME financial stability, several areas remain open for further exploration. One key limitation of the current research is its cross-sectional design, which captures only a snapshot of borrowing outcomes. A longitudinal study tracking MSMEs over time would allow future researchers to assess the sustained impact of digital lending on business growth, debt accumulation, and financial health. Such a design would offer clarity on whether digital credit contributes to long-term resilience or inadvertently fosters dependency and debt cycles.

In addition, this study focused specifically on the retail sector in urban and peri-urban areas. Future research should extend the analysis to MSMEs operating in other industries such as agriculture, manufacturing, and construction, where cash flow patterns, loan usage, and repayment capacity may vary significantly. A sector-based comparative approach would help identify whether digital lending models are equally effective across different business environments or if sector-specific lending frameworks are needed.

Another important area of inquiry involves geographic diversity. The study was limited to Nairobi and Machakos counties, which benefit from relatively high mobile network penetration and digital financial infrastructure. Research in rural and marginalized regions, where MSMEs often face limited digital literacy, network access, and financial services, would help uncover regional disparities in credit access and use. This could inform more inclusive digital finance strategies that bridge the urban-rural divide.

Moreover, the findings suggest that financial literacy influences borrower decisions but does not fully eliminate risky borrowing behaviour. This calls for experimental studies that test the integration of financial education directly into digital lending platforms. By assessing tools such as in-app tutorials, automated reminders, or cost calculators, future

studies can determine whether digital financial education improves borrower discipline, reduces loan defaults, and enhances repayment outcomes.

Finally, with the regulatory environment around digital lending evolving rapidly in Kenya, future studies should evaluate how policy shifts affect both lending practices and borrower welfare. For instance, examining the outcomes of interest rate caps, enhanced disclosure requirements, or centralized credit registries could provide empirical evidence to guide responsible digital finance regulation. Such research would be essential in balancing innovation with consumer protection in the financial technology space.

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APPENDICES

Appendix I: Introduction Letter

Elias R. Mose

KCA University

Nairobi, Kenya

Dear Respondent,

RE: REQUEST TO PARTICIPATE IN A RESEARCH STUDY

I am Elias R. Mose, a Master's student at KCA University, currently undertaking academic research as part of the requirements for the award of a Master of Science in Commerce (MSc. Commerce) degree. My research is titled: **“Effect of digital credit on the financial stability of Micro, Small, and Medium Enterprises (MSMEs) in Kenya’s Retail Sector.”**

Attached is a semi-structured questionnaire designed to gather information for this study. Kindly respond as honestly and completely as possible. The information you provide will be treated with the utmost confidentiality and will be used strictly for academic purposes. Your participation is entirely voluntary and you may choose to withdraw at any stage without any consequences. However, your contribution will be highly valuable in helping generate insights that can influence policy, lending practices, and MSME sustainability in Kenya.

Thank you in advance for your time and willingness to participate in this study.

Sincerely,

Elias R. Mose

MSc. Commerce Candidate

KCA University

Appendix II: Questionnaire

Title: Exploring the Effects of Digital Lending on Financial Stability of MSMEs in Kenya's Retail Sector

Instructions: Please respond to all items honestly. Tick (✓) where applicable or write your response clearly in the space provided.

SECTION A: Background Information

1. What is the size of your business?

- Micro (1–9 employees)
- Small (10–49 employees)
- Medium (50–99 employees)

2. Which of the following best describes your business sector?

- Retail
- Services
- Manufacturing
- Agriculture
- Other (please specify): _____

3. How long has your business been in operation?

- Less than 1 year
- 1–3 years
- 4–6 years
- Over 6 years

4. Where is your business located?

- Nairobi (Urban)
- Nairobi (Peri-Urban)
- Machakos (Urban)
- Machakos (Peri-Urban)

5. What are the biggest financial challenges your business currently faces?

SECTION B: Digital credit access

7. Have you ever accessed a digital loan for your business?

Yes No

8. Which digital lending platforms have you used? (Tick all that apply)

M-Shwari KCB M-Pesa Zenka Tala Branch Timiza Mkopa

Other: _____

9. **Likert Scale Statements:** Please indicate your level of agreement:

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
B1	I can easily access digital credit anytime I need it.					
B3	The application process for digital loans is simple and quick.					
B4	I often receive digital credit without any collateral requirements.					
B5	Access to digital loans enables me to restock inventory efficiently.					
B6	Digital lenders have minimal restrictions on loan eligibility.					
B7	I rely on digital loans more than traditional bank credit.					

What features of digital loans do you find most helpful?

SECTION C: Credit terms

13. What is your typical loan repayment period?

- Less than 1 month 1–3 months 4–6 months Over 6 months

14. Have you ever defaulted on a digital loan?

- Frequently Occasionally Never

13. Likert Scale Statements:

	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
C1	The interest rates charged by digital lenders are very high.					
C2	Repayment periods offered are usually too short for my business cycle.					
C3	Penalties for late repayment are clearly communicated in advance.					
C4	Digital credit repayment terms align well with my cash flow pattern.					
C5	I find it difficult to manage repayments due to short loan durations.					
C6	Loan fees and charges are not clearly disclosed before borrowing.					
C7	I often feel pressured to repay digital loans faster than I can afford.					

What would make digital loan repayment easier for your business?

SECTION D: Borrowing Behaviour

18. How many digital loans do you currently have?

None One Two Three or more

19. Have you ever borrowed a new digital loan to repay another?

Yes No

20. Likert Scale Statements:

No.	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
D1	I sometimes borrow digital loans impulsively.					
D2	I take new loans without reading the full terms and conditions.					
D3	I often borrow without planning for repayment.					
D4	I borrow even when not fully confident about repayment ability.					
D5	My borrowing decisions are usually driven by short-term urgency.					
D6	I tend to borrow from multiple platforms at once.					
D7	I sometimes borrow new loans to pay off existing ones.					

What advice would you give to another MSME about borrowing digitally?

SECTION E: Financial Literacy

23. Have you received any form of financial literacy training?

Yes – Formal Yes – Informal No

24. How confident are you in understanding loan terms and interest rates?

Very confident Somewhat confident Neutral Not confident

25. **Likert Scale Statements:**

No.	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
E1	I understand how compound interest affects loan repayment.					
E2	I can calculate the total cost of a loan before applying.					
E3	I always track and record all loan obligations.					
E4	I review and compare loan terms before borrowing.					
E5	I feel confident managing my loan repayments effectively.					
E6	Financial literacy has improved my ability to make credit decisions.					
E7	I need more training in digital finance and credit management.					

What financial topics would you like more training in?

SECTION F: Financial Stability

27. How has your revenue changed due to digital lending?

- Increased No change Decreased Not sure

28. Have you faced cash flow issues due to digital credit repayments?

- Frequently Occasionally Rarely Never

29. Likert Scale Statements:

No.	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
F1	Digital loans have helped stabilize my business during tough periods.					
F2	I have maintained good loan repayment records with digital lenders.					
F3	Loan repayments sometimes reduce my ability to reinvest in my business.					
F4	I experience cash flow strain due to digital loan obligations.					
F5	My overall financial position has improved due to access to digital credit.					
F6	I feel my business can manage future growth with digital loan support.					
F7	Digital credit has made my business financially unstable.					

In your opinion, how has digital lending affected your business’s long-term stability?

Thank you for your time and participation!