

**EFFECT OF DIGITAL LENDING PRACTICES ON ECONOMIC EMPOWERMENT
AMONG WOMEN IN RURAL AREAS IN MACHAKOS COUNTY AND THE
MODERATING ROLE OF DIGITAL LITERACY.**

NANCY TUMAINI KALAMA

(166977)

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DECLARATION

I confirm that this work has not been submitted before for a degree at Strathmore University or any other university. To the best of my knowledge, it contains no material previously published or authored by someone else, except where proper citation is made in the dissertation itself.

Name of Candidate: Nancy Tumaini Kalama

Signature:



Approval

The research dissertation of Nancy Tumaini Kalama was reviewed and approved by the following:

Name of Advisor: Dr. Erastus Mbithi



Faculty Affiliation: Strathmore Business School

Institution: Strathmore University

Date: 20 May 2026

DEDICATION

I dedicate this dissertation to my Parents, Dr. Francis Fondo and Beatrice Fondo whose unwavering love, encouragement and prayers have been my greatest source of strength throughout this journey. Your belief in me inspired perseverance during the most challenging moments.

To my siblings, Salama, Kabibi, Kahunda, Kalume and Karembo and Linda, my sister from another mother, thank you for your support and encouragement. To my lecturers and supervisors, your contributions have played an important role in the successful completion of this work.

Above all, I thank God for the wisdom, grace and strength to accomplish this milestone.

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ABSTRACT

Despite the rapid expansion of digital financial services in Kenya, rural women experience significant barriers to economic empowerment. Thus, this study examined the relationship between digital lending and the economic empowerment of rural women in Machakos County, Kenya. The study specifically examined the relationship between loan disbursement, mobile loan repayment, unsecured loans, credit scoring methods, and economic empowerment, and the moderating effect of digital literacy on these relationships. The study was anchored on the Theory of Capability Approach and supported by the Resource Control Theory. The study adopted a positivist philosophy and employed a descriptive cross-sectional research design. Primary data was collected using questionnaires from a stratified sample of 387 rural women in Machakos County who had experience using digital lending services. The findings revealed that loan disbursement, mobile loan repayment, unsecured loans, credit scoring methods, and digital literacy were all positively and significantly associated with economic empowerment among rural women in Machakos County. Mobile loan repayment demonstrated the strongest association with economic empowerment, suggesting the importance of flexible and accessible repayment systems within rural financial contexts. The findings further showed that digital literacy had a positive direct relationship with economic empowerment. However, digital literacy only significantly moderated the relationship between unsecured loans and economic empowerment, while its moderating effect on loan disbursement, mobile loan repayment, and credit scoring methods was not statistically significant. The study concluded that digital lending practices were associated with improved financial participation and economic opportunities among rural women, although the benefits appeared influenced by contextual factors such as affordability, repayment pressure, transparency, and digital capability. The study was limited by its cross-sectional design, which restricted the ability to establish causal relationships, and by reliance on self-reported data that may have been influenced by respondent bias. Additionally, the study focused only on rural women in Machakos County, which may limit the generalizability of the findings to other regions in Kenya. Despite these limitations, the study makes an original contribution to knowledge by examining specific dimensions of digital lending, namely loan disbursement, mobile loan repayment, unsecured loans, and credit scoring methods, in relation to women's economic empowerment within a rural Kenyan context. The study further contributes to existing literature by empirically demonstrating that digital literacy exerts a selective moderating effect within digital lending ecosystems, significantly influencing the relationship between unsecured loans and economic empowerment while showing limited moderating influence across other digital lending dimensions. The study recommended that policymakers and digital lenders prioritize user-friendly repayment systems, transparent credit scoring practices, targeted digital financial capability programs, and stronger consumer protection measures for unsecured digital lending products. The study further recommended context-specific digital literacy interventions that focus on financial decision-making and responsible borrowing practices among rural women.

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ABBREVIATIONS AND ACRONYMS

CBK	Central Bank of Kenya
GDP	Gross Domestic Product
NACOSTI	National Commission for Science, Technology, and Innovation
NGOs	Non-Governmental Organizations
NCPD	National Council for Population and Development
UN	United Nations
RCT	Resource Control Theory
TCA	Theory of Capabilities Approach

DEFINITION OF KEY TERMS

Credit Scoring Methods

Credit scoring methods are the systematic models and techniques that financial institutions use to assess a potential borrower's likelihood of repayment and overall risk prior to issuing credit (Björkegren et al., 2022).

Digital Lending

Digital lending is defined as the provision of short-term, small loans through mobile or online platforms to individuals, particularly rural women, enabling them to access credit without traditional banking intermediaries (Björkegren et al., 2022; Panakaje et al., 2023).

Economic Empowerment

The process by which individuals, particularly women, gain access to financial resources, enhance financial independence, and develop the capacity to make decisions that improve their livelihoods and those of their households (Cornish et al., 2021; Hendriks, 2019).

Economic Independence

This is defined as the ability to manage finances and make critical household or business decisions (Derera et al., 2020)

Financial Wellbeing

This refers to income levels, savings, and the ability to meet financial obligations, often as a result of economic empowerment efforts (Derera et al., 2020).

Loan Disbursement

Loan Disbursement refers to the processing of loan applications and making the funds available to borrowers (Choudhary & Jain, 2023).

Mobile Loan Repayment

Mobile loan repayment involves paying off a loan using a mobile app, USSD codes, or online banking. The increase in digital lenders and permeation of technology in Kenya has increased the usage of mobile repayments methods (Sungwacha et al., 2014).

Unsecured Loans

Unsecured Loans are credit facilities provided without requiring physical collateral, relying instead on creditworthiness, income history, or digital transaction records for loan approval (Bire et al., 2019).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Women's economic empowerment is widely recognized as an important component of inclusive and sustainable development. Despite global progress in education, healthcare, and political participation, women continue to experience unequal access to economic opportunities and financial resources compared to men (Hendriks, 2019; Laszlo et al., 2020). In many developing countries, particularly within rural communities, women face barriers such as limited asset ownership, inadequate financial infrastructure, and restrictive socio-cultural norms, which reduce their participation in formal financial systems (Klapper & Lusardi, 2020; Todaro & Smith, 2020). Consequently, many women rely on informal financial arrangements that limit their ability to invest in productive activities and improve household welfare.

The expansion of digital financial services, particularly mobile money and digital lending platforms, has improved financial inclusion across sub-Saharan Africa (Peter & Orser, 2024; Tampuri, 2023). In Kenya, digital lending platforms have rapidly expanded following regulatory reforms and increased mobile phone penetration. These platforms use mobile technology and alternative data to assess creditworthiness and provide unsecured loans without traditional collateral requirements (Björkegren et al., 2022; Panakaje et al., 2023). Digital lending therefore offers financially excluded populations faster and more convenient access to credit compared to conventional banking systems.

However, significant financial inclusion gaps persist among rural women in Kenya. More than 40% of rural women still lack access to formal financial services (UN Women – Africa, 2023). Challenges such as low digital literacy, limited smartphone ownership, unreliable internet connectivity, and concerns regarding high interest rates and over-indebtedness continue to limit the effective use of digital lending services (Kaiser et al., 2022; Machio et al., 2024). Rural women in Machakos County are particularly vulnerable because many depend on informal economic activities and micro-enterprises for their livelihoods (Mutisya, 2024).

Machakos County was selected for the study because it represents a predominantly rural setting where many women rely on informal economic activities, small-scale businesses, and mobile-based financial services for their livelihoods (Musyoka, 2019). The county has experienced increasing penetration of digital financial services similar to many rural counties in Kenya, making it an appropriate context for examining the relationship between digital lending and women's economic empowerment. The study did not assume that women in Machakos County are worse off economically compared to women in other counties, but rather considered the county suitable for generating context-specific evidence regarding how digital lending influences economic empowerment among rural women.

Although previous studies have examined digital lending and financial inclusion, many focus on urban populations or contexts outside Kenya. In addition, limited empirical evidence exists on how specific digital lending practices, including loan disbursement, mobile loan repayment, unsecured loans, and credit scoring methods, influence economic empowerment among rural women in Kenya. This study therefore sought to examine the effect of digital lending on economic empowerment among rural women in Machakos County, with emphasis on financial well-being, access to financial services, micro-business expansion, and economic decision-making¹.

1.1.1 Economic Empowerment

Economic empowerment has been defined in various ways, reflecting its multifaceted nature. According to Panakaje et al. (2023), economic empowerment refers to the process by which individuals gain the ability to make choices and transform those choices into desired actions and outcomes, particularly in financial and economic contexts. Cornish et al. (2021) defines economic empowerment as the capacity to participate in, contribute to, and benefit from economic growth in ways that recognize the value of an individual's contributions while promoting their well-being as well as dignity. Hendriks (2019) emphasizes that economic empowerment encompasses access to resources, opportunities, and agency to make decisions that improve one's financial and social standing. For this study, economic empowerment was defined as the process by which rural women gain access to financial resources, enhance their financial independence, and develop the capacity to make decisions that improve their livelihoods and those of their households (Cornish et al., 2021; Hendriks, 2019).

Economic empowerment in this study was assessed based on four key indicators. First, financial well-being assessed improvements in income levels, savings, and the ability to meet financial obligations (Friedline et al., 2021). Second, access to financial services considered the extent to which women utilize formal and digital financial platforms for credit, savings, and payments (Moghadam & Karami, 2023). Third, expansion of micro-businesses evaluated the growth of small enterprises, including increased revenues, diversification, and sustainability (Buvinić & Furst-Nichols, 2016). Lastly, economic independence and decision-making capabilities focused on women's autonomy in managing their finances and making critical household or business decisions (Moghadam & Karami, 2023).

1.1.2 Digital Lending

Digital lending has been defined in various ways, reflecting its evolution alongside technological advancements. According to the Lee and Megargel (2021), digital lending refers to the provision of loans through digital platforms, where the entire lending process, from application to disbursement, is conducted online, without the need for physical interaction with a financial institution. Panakaje et al. (2023) defines digital lending as the use of digital channels to extend credit to individuals, particularly in underserved markets, leveraging mobile phones, the internet, and digital records. For (Björkegren et al. (2022), digital lending is a mechanism that provides quick and affordable access to credit, using algorithms and data analytics to assess borrower risk and determine loan terms (Jumady et al., 2024). In this study, digital lending was defined as the provision of short-term, small loans through mobile or online platforms to individuals, particularly rural women, enabling them to access credit without traditional banking intermediaries (Björkegren et al., 2022; Panakaje et al., 2023).

Numerous aspects of digital lending have been shown to influence economic empowerment. One critical aspect is affordability of digital lending, which includes lower interest rates, minimal transaction fees, and flexible repayment terms compared to traditional financial systems (Cornish et al., 2021). Additionally, loan customization allows borrowers to access credit tailored to their specific needs, such as micro-loans for agricultural or entrepreneurial activities, which can directly impact income generation and sustainability (Klapper & Lusardi, 2020). The digital infrastructure supporting these platforms - such as mobile network coverage, internet connectivity, and user-friendly applications - also determines their success in reaching underserved populations (Aziz &

Naima, 2021). Moreover, data-driven credit scoring, which leverages digital footprints for assessing creditworthiness, enables financial inclusion for people without formal banking histories (Moghadam & Karami, 2023).

This study focused on loan disbursement, mobile loan repayment, unsecured loans and credit scoring methods used by digital lenders. Loan Disbursement refers to the processing of loan applications and making the funds available to borrowers (Choudhary & Jain, 2023). The speed at which loans are disbursed plays a crucial role in determining their effectiveness in empowering borrowers. For rural women, timely access to credit can enable them to respond to urgent financial needs, such as medical expenses, school fees, or business investment opportunities. Delays in loan disbursement can render credit ineffective, especially for time-sensitive entrepreneurial activities (Choudhary & Jain, 2023). By examining how fast loan disbursement influences economic empowerment, this study seeks to provide insights into whether digital lenders are meeting the financial needs of women in a timely manner. The indicators that were used to measure loan disbursement are loan disbursement speed, delays in loan disbursement, ability to use loan funds for urgent financial needs, and effect of disbursement speed on financial decision-making and planning (Braund & Schwittay, 2016).

Mobile loan repayment involves paying off a loan using a mobile app, USSD codes, or online banking. The increase in digital lenders and permeation of technology in Kenya has increased the usage of mobile repayments methods (FSD, 2019). Borrowers are typically required to repay their loans in regular installments for a predetermined period, soon after a loan is disbursed (Sungwacha et al., 2014). Borrowers who repay a sufficient number of installments of their current loan on time proceed up the loan ladder to a larger loan while those who default may be penalized or blocked from accessing credit (Carlson, 2018) Mobile loan repayment was measured by access to digital loan platforms, timely loan installment repayment and loan graduation as an incentive (Carlson, 2018).

Unsecured Loans are credit facilities provided without requiring physical collateral, relying instead on creditworthiness, income history, or digital transaction records for loan approval (Bire et al., 2019). Many women in rural areas lack the collateral needed to secure traditional loans; thus, making unsecured digital loans a critical tool for financial inclusion and empowerment (Kaiser et al., 2022). Unlike conventional lending, which often requires land or assets as security, unsecured

loans allow women to access credit based on factors such as mobile transaction history and repayment behavior (Björkegren et al., 2022). However, concerns have been raised about the risks of high interest rates and over-indebtedness associated with unsecured credit (Lee & Megargel, 2021). Unsecured loans were measured using loan limits for unsecured loans, interest rates for unsecured loans, ability to qualify for unsecured loans, perceived risk of unsecured loans, and use of unsecured loans for productive purposes (Morgan & Long, 2020).

Credit scoring methods are systematic models and techniques employed by lenders to assess a borrower's likelihood of repayment and overall risk prior to extending credit. These methods analyze factors such as income, repayment history, digital financial transactions, and other behavioral patterns to determine the likelihood of timely loan repayment (Björkegren et al., 2022). In digital lending, creditworthiness is increasingly assessed through alternative data (e.g., mobile money usage and utility payments) rather than standard financial histories. Credit scoring is essential in digital lending as it helps lenders assess risk efficiently, ensuring that loans are issued to borrowers who are likely to repay them (Raheem et al., 2024). It increases financial inclusion by allowing individuals without traditional credit histories to access loans based on digital footprints. Additionally, a well-structured credit scoring system helps in reducing default rates, lowering lending costs, and improving the sustainability of digital financial services (Tao et al., 2022; Tim et al., 2021). For borrowers, accurate and fair credit scoring can improve access to affordable credit, fostering economic empowerment by enabling investments in businesses, education, and essential needs. The indicators that were used to measure credit scoring in this study are accuracy, fairness, transparency, and efficiency of credit scoring (Aziz & Naima, 2021).

In addition to the structural features of digital lending, digital literacy plays a critical role in determining whether access to digital credit translates into meaningful economic empowerment. Digital literacy refers to the ability to effectively use mobile devices, digital platforms, and online financial services to access, interpret, and manage financial information (Aziz & Naima, 2021). While digital lending reduces traditional barriers such as collateral requirements and geographic distance (Björkegren et al., 2022; Panakaje et al., 2023), rural women with limited digital skills may struggle to navigate loan applications, understand loan terms, or manage mobile repayment systems. This suggests that digital literacy may moderate the relationship between digital lending and economic empowerment, such that the positive effects of digital lending are stronger among

women with higher levels of digital competence. Consistent with the Capability Approach, access to financial resources alone is insufficient unless individuals possess the capability to utilize them effectively (Sen, 1985; Robeyns, 2017). Empirical evidence also indicates that limited digital knowledge can hinder effective use of digital financial services and increase vulnerability to financial distress (Machio et al., 2024; Derera et al., 2020). In this study, digital literacy was measured using four indicators: (i) ability to navigate mobile loan applications or USSD platforms, (ii) ability to understand digital loan terms and conditions, (iii) ability to interpret digital financial messages such as SMS notifications and transaction alerts, and (iv) confidence in using mobile devices for financial transactions (Aziz & Naima, 2021; Lal, 2021).

1.1.3 Women in Rural Areas in Machakos County

Women's empowerment in Kenya has made significant progress over the years, with increased participation in education, business, and leadership. Government policies and initiatives, such as the Women Enterprise Fund (WEF) and the Uwezo Fund, have provided financial support to women entrepreneurs, improving their access to credit (UN Women – Africa, 2023). Additionally, digital financial services, particularly mobile money and digital lending, have enhanced women's financial inclusion, allowing many to engage in economic activities (Hasan et al., 2022; Kim & Duvendack, 2024; Tampuri, 2023). Despite these advancements, significant barriers to economic empowerment persist for women in rural areas. Gender inequalities in property ownership, limited access to formal employment, and inadequate financial literacy continue to restrict their ability to achieve full financial independence (UN Women – Africa, 2023).

Machakos County provides a theoretically relevant context for examining the relationship between digital lending and women's economic empowerment. While Kenya is widely recognized as a global leader in digital financial innovation, significant disparities persist between urban and rural populations in access to and effective use of digital financial services (Machio et al., 2024). Machakos presents a unique setting where digital financial infrastructure coexists with substantial rural populations that remain economically vulnerable.

Approximately 70.9% of Machakos County's population resides in rural areas, with women constituting roughly half of the county's total population (City Population, 2023). Many rural women in the county engage in informal economic activities, small-scale trading, subsistence

agriculture, and micro-enterprises that depend heavily on access to short-term working capital. However, limited asset ownership, low financial literacy levels, and restricted access to formal banking services constrain their ability to secure traditional loans (UN Women – Africa, 2023). These structural conditions make rural women in Machakos highly reliant on alternative financial solutions such as digital lending.

The county is also socio-economically diverse, with peri-urban areas experiencing spillover effects from Nairobi's economic activity while more remote rural areas continue to face infrastructural and technological limitations. This duality makes Machakos analytically significant for understanding whether digital lending can bridge financial inclusion gaps in rural contexts or whether digital divides persist despite national-level financial innovation (Aziz & Naima, 2021). In other words, Machakos represents a microcosm of Kenya's broader financial inclusion paradox: rapid digital finance growth alongside persistent rural financial exclusion.

By focusing on rural women in Machakos County, this study examined digital lending within a context where financial need is high, digital finance is present, yet structural barriers remain. This makes the county not merely a convenient location, but a theoretically relevant setting for assessing whether digital lending meaningfully contributes to economic empowerment among financially marginalized women.

1.2 Statement of the Problem

Despite the rapid expansion of digital lending platforms in Kenya, many rural women continue to experience limited economic empowerment characterized by financial vulnerability, dependence on informal economic activities, and restricted access to formal financial services. According to the Kenya National Bureau of Statistics (KNBS, 2025), rural women in Kenya remain disproportionately represented in informal employment and financially underserved populations despite increased adoption of mobile financial services. In Machakos County, a substantial proportion of women rely on small-scale businesses, subsistence agriculture, and informal economic activities for household livelihoods, making access to affordable and reliable financial services particularly important (State Department for Gender, 2020). Although digital lending has increased access to short-term credit by reducing traditional collateral requirements and geographic barriers, more than 40% of rural Kenyan women remain financially excluded (UN

Women – Africa, 2023). In addition, limited digital literacy, high interest rates, and vulnerability to over-indebtedness raise concerns about whether digital lending genuinely enhances economic empowerment or merely expands access to costly credit (Machio et al., 2024; Kaiser et al., 2022).

Existing studies provide mixed evidence regarding the impact of digital lending on women's economic empowerment. While some studies suggest that digital credit improves financial inclusion and income-generating capacity, others associate digital lending with debt cycles and financial distress (Chowdhury, 2015; Gutiérrez-Nieto et al., 2016). In addition, prior studies conceptualize economic empowerment differently. For example, Ozili (2018) viewed empowerment in terms of financing productive activities, Nugroho and Chowdhury (2015) linked it to financial inclusion, while Bhatia and Singh (2019) associated it with balancing household financial needs. These varying conceptualizations have resulted in inconsistent findings and limited comparability across studies.

Contextually, many existing studies on digital lending and women's empowerment have been conducted outside Kenya in countries such as India, Ghana, Hong Kong, and the United States (Kaiser & Menkoff, 2017; Lal, 2021; Law, 2024; Raheem et al., 2024). Consequently, the findings may not adequately reflect the socio-economic realities of rural women in Kenya, particularly those in Machakos County who face unique challenges related to financial exclusion, digital literacy, and limited access to formal financial systems.

Methodologically, previous studies have employed different research designs, including descriptive surveys, systematic reviews, and meta-analyses, leading to varying conclusions regarding the relationship between digital lending and economic empowerment (Kaiser et al., 2022; Morgan & Long, 2020). Furthermore, there is insufficient empirical evidence examining how specific digital lending practices such as loan disbursement, mobile loan repayment, unsecured loans, and credit scoring methods influence economic empowerment among rural women in Kenya. The moderating role of digital literacy in the relationship between digital lending and economic empowerment also remains underexplored.

Therefore, there is a need for context-specific empirical research to establish whether and how digital lending influences economic empowerment among rural women in Machakos County. This study sought to address the identified conceptual, contextual, and methodological gaps by

examining the effect of loan disbursement, mobile loan repayment, unsecured loans, and credit scoring methods on economic empowerment among rural women in Machakos County, while assessing the moderating role of digital literacy.

1.3 General Objective of the Study

The general objective of this research was to establish the effect of digital lending on economic empowerment among rural women in Machakos County.

1.3.1 Specific Objectives of the Study

- i. To establish the effect of loan disbursement on economic empowerment among rural women in Machakos County.
- ii. To determine the effect of mobile loan repayment on economic empowerment of rural women in Machakos County.
- iii. To establish the effect of unsecured loans on economic empowerment among women in Machakos County.
- iv. To establish the effect of credit scoring methods used by digital lenders on economic empowerment of women in Machakos County.
- v. To examine the moderating effect of digital literacy on the relationship between digital lending and economic empowerment among rural women in Machakos County.

1.4 Research Questions

- i. How does loan disbursement influence economic empowerment among rural women in Machakos County?
- ii. What is the effect mobile loan repayment on the economic empowerment of rural women in Machakos County?
- iii. How do unsecured loans influence economic empowerment among rural women in Machakos County?
- iv. What is the influence of credit scoring methods used by digital lenders on economic empowerment among rural women in Machakos County?
- v. Does digital literacy moderate the relationship between digital lending and economic empowerment among rural women in Machakos County?

1.5 Significance of the Study

1.5.1 Policymakers

This study provides policymakers and regulators such as the Central Bank of Kenya (CBK) with context-specific evidence on how digital lending practices influence the economic empowerment of rural women in Kenya. By addressing the contextual gap identified in previous studies, which largely focused on non-Kenyan and urban settings, the findings may support the development of policies that enhance equitable access to digital credit, strengthen consumer protection, and improve digital financial inclusion among rural women.

1.5.2 Practitioners

The study offers practical insights to digital lenders and financial service providers on the specific digital lending practices that influence women's economic empowerment, including loan disbursement, mobile loan repayment, unsecured loans, and credit scoring methods. By addressing methodological and contextual gaps in previous studies, the findings may help practitioners design user-friendly and inclusive digital lending systems that better respond to the financial needs and digital literacy levels of rural women in Machakos County and similar settings.

1.5.3 Scholars and Academicians

This study contributes to scholarly literature by addressing conceptual, contextual, and methodological gaps identified in previous research on digital lending and women's economic empowerment. Conceptually, the study provides a multidimensional understanding of economic empowerment by examining financial well-being, access to financial services, micro-business expansion, and economic decision-making. Contextually, the study contributes evidence from rural women in Machakos County, Kenya, where limited empirical research exists. Methodologically, the study applies a descriptive cross-sectional design to examine the relationship between digital lending practices and economic empowerment, while incorporating the moderating role of digital literacy. The findings may therefore provide a foundation for future studies on digital financial inclusion and women's empowerment in developing economies.

1.6 Scope of the Research

This research investigated the influence of digital lending on the economic empowerment of rural women, with a specific focus on Machakos County, Kenya. The county was selected as the study area because of its substantial population of rural women dependent on informal financial services. The study's participants were rural women who are current users of, or have potential access to, digital lending platforms. The study focused on women residing within the selected rural areas of Machakos County during the period of data collection. To minimize the possibility of including respondents whose economic empowerment outcomes were primarily influenced by residence or employment outside the county, the study targeted women actively engaged in economic and household activities within the local communities. Respondents were identified and selected from households within the sampled wards and villages in Machakos County, thereby ensuring that the findings reflected the experiences of women operating within the county's rural socioeconomic environment. The dimensions of economic empowerment that were explored included financial well-being, access to financial services, micro-enterprise expansion, and economic independence and decision-making capabilities. Factors outside these dimensions, such as broader macroeconomic influences, were not included. The methodological scope was quantitative, employing a descriptive cross-sectional design to capture data at a single point in time. The population of this study was an estimated 710966 women who reside in rural areas in Machakos County (City Population, 2023). The unit of analysis was the rural woman in Machakos County. The study was conducted between April and May 2025.

1.7 Chapter Summary

This chapter outlined the study's background, problem, objectives, and questions. It highlighted the critical challenge of financial exclusion hindering economic empowerment for rural Kenyan women, leading to the central aim of assessing digital lending's impact in Machakos County. The chapter also explained the study's relevance to key stakeholders and its defined scope.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter synthesizes the relevant literature on economic empowerment and details the research gaps, conceptual framework, and operationalization of variables that guide the study.

2.2 Theoretical Foundation

This study was anchored on the Theory of Capability Approach (TCA) and supported by the Resource Control Theory (RCT). The Theory of Capability Approach served as the anchoring theory because the study focused on how digital lending and digital literacy enhance women's economic opportunities, freedoms, decision-making abilities, and overall economic empowerment. The theory provided a broader perspective for understanding empowerment beyond mere access to financial resources. Resource Control Theory complemented the study by explaining how access to and control over financial resources such as digital loans, mobile repayment systems, and credit access mechanisms influence women's financial participation and economic agency. The theories therefore provided a comprehensive framework for explaining how digital lending practices influence economic empowerment among rural women in Machakos County.

2.2.1 Resource Control Theory

Resource Control Theory (RCT) was developed by Patricia Hawley (1999) to explain how access to and control over resources influence power dynamics, behavior, and decision-making. According to the theory, individuals or groups that control critical resources are more likely to gain influence and improve their socio-economic well-being (Hawley, 1999). These resources may include tangible assets such as finances and land, as well as intangible resources such as knowledge and social networks. A major proposition of the theory is that economic empowerment is achieved through the ability to access, control, and effectively utilize resources (Bower & Hawley, 2020).

One of the strengths of RCT is its applicability in studies related to economics, gender, and financial inclusion because it explains how unequal access to resources contributes to socio-economic disparities (Khoja et al., 2024). The theory is particularly relevant in examining the economic empowerment of marginalized groups such as rural women, who often experience limited access to formal financial systems. In addition, the theory highlights the importance of both tangible and intangible resources in enhancing economic participation and decision-making (Doepke & Tertilt, 2019).

However, the theory has been criticized for assuming that access to resources automatically leads to empowerment while paying limited attention to structural and socio-cultural barriers that may restrict effective resource utilization (Fisher, 2017; Turner & Roberts, 2023). Despite this limitation, the theory remains relevant to this study because digital lending platforms provide rural women with access to financial resources that may improve their economic participation and financial independence.

In the context of this study, Resource Control Theory explains how access to digital financial resources may influence economic empowerment among rural women in Machakos County. Empirical studies reviewed in this study showed that digital lending practices such as loan disbursement speed, mobile repayment systems, unsecured lending, and credit scoring mechanisms influence women's access to credit, financial participation, and business activities (Ahmad et al., 2021; Panakaje et al., 2023). These findings are consistent with RCT's proposition that access to and control over financial resources enhance socio-economic participation and decision-making (Bower & Hawley, 2020). The theory is particularly relevant within the rural Kenyan context where many women rely on informal economic activities, experience limited access to conventional banking services, and increasingly depend on mobile-based financial systems for household and business financing. Furthermore, digital literacy may be viewed as an intangible resource that strengthens women's ability to effectively utilize digital financial services. RCT therefore provides a useful framework for understanding how digital lending may strengthen women's financial agency and economic participation in Machakos County.

2.2.2 Theory of Capability Approach

The Theory of Capability Approach (TCA) was developed by Amartya Sen (1985) as a framework for understanding human development, well-being, and social justice. Sen (1985) argued that development should not only focus on income or wealth but also on individuals' ability to utilize available opportunities and achieve the lives they value. According to the theory, capabilities refer to people's freedoms and opportunities to make meaningful choices and improve their quality of life (Lorgelly, 2015).

The Capability Approach emphasizes that empowerment involves not only access to resources but also the ability to effectively utilize those resources through supportive conditions such as education, skills, and institutional support (Sen, 1985). The theory is widely recognized for its broad perspective on human development and its relevance in addressing gender inequality and economic empowerment (Nussbaum, 2011; Robeyns, 2017). Its focus on individual agency and freedom makes it particularly appropriate for studies examining women's access to economic opportunities and financial services (Gasper, 2010).

Despite its strengths, the theory has been criticized for being abstract and difficult to operationalize because it does not clearly specify which capabilities should be prioritized in empirical research (Naz, 2020). Additionally, some scholars argue that the theory does not sufficiently address institutional and structural barriers that limit access to opportunities (Kuhumba, 2017). Nevertheless, the theory remains useful in explaining how access to digital financial services may expand women's opportunities, freedoms, and economic participation.

The Theory of Capability Approach is relevant to this study because it explains how digital lending may expand women's freedoms, opportunities, and ability to participate in economic activities. Empirical studies reviewed in this study indicated that access to digital credit can improve financial inclusion, support micro-business activities, and enhance women's ability to manage household financial obligations, although concerns regarding over-indebtedness and repayment pressure still exist (Chowdhury, 2015; Gutiérrez-Nieto et al., 2016). These empirical findings align with TCA's argument that empowerment involves not only access to resources but also the ability to effectively utilize those resources to improve well-being and economic participation (Sen, 1985; Robeyns, 2017). In the context of rural Machakos County, where women often face challenges related to

low digital literacy, limited smartphone access, and restricted economic opportunities, digital lending and digital literacy may enhance women's capabilities by improving access to financial services and supporting income-generating activities. The theory therefore provides an appropriate framework for understanding how digital financial services may contribute to economic empowerment among rural women in Kenya.

The Theory of Capability Approach and Resource Control Theory complement each other in explaining the relationship between digital lending and economic empowerment among rural women in Machakos County. While Resource Control Theory emphasizes access to and control over financial resources, the Capability Approach explains how women can utilize those resources to improve their economic well-being, freedoms, and decision-making capabilities (Kuhumba, 2017). Together, the theories provide a comprehensive framework for understanding how digital lending and digital literacy may influence economic empowerment among rural women.

2.3 Empirical Literature

This section presents a review of existing literature on the economic empowerment of women. The focus of this section is on how accessibility of digital lending, digital lending education and training programs, and partnerships between digital lenders and community organizations influence economic empowerment.

2.3.1 Loan Disbursement and Economic Empowerment

Loan Disbursement refers to the processing of loan applications and making the funds available to borrowers (Nugroho & Chowdhury, 2015). In digital lending, this process is often automated by leveraging technology to reduce waiting times and enhance financial accessibility (Suri et al., 2021). Unlike traditional lending that may take days or weeks due to lengthy verification and paperwork, digital lending platforms aim to disburse funds within minutes or hours; thus, providing immediate financial relief for borrowers (Liu et al., 2021; Tang, 2022). The efficiency of loan disbursement is particularly crucial for rural women who often need quick access to credit for emergencies, business investments, and household needs (Tao et al., 2022; Tim et al., 2021). Delays in loan disbursement can negatively impact economic activities, forcing borrowers to seek expensive informal credit alternatives (Kaiser et al., 2022; Lal, 2021). A well-structured fast disbursement system enhances financial inclusion, reduces reliance on exploitative lenders, and

strengthens economic empowerment by ensuring that women can access timely financial support for productive use (Suri et al., 2021; Tao et al., 2022).

Empirical studies generally demonstrate a positive association between efficient loan disbursement processes and economic empowerment outcomes, although the dimensions of empowerment emphasized vary across contexts. Evidence from Bangladesh and Indonesia suggests that faster loan approval and disbursement enable women to respond to urgent financial needs and invest in time-sensitive business opportunities, thereby improving cash flow and reducing dependence on informal credit sources (Nugroho & Chowdhury, 2015). Similarly, findings from Turkey indicate that higher loan application success rates enhance women's ability to finance productive activities such as farming and micro-enterprises, resulting in improved household welfare (Ozili, 2018). Research conducted in India further highlights that the continuous availability of digital lending services enhances women's financial autonomy by allowing them to access funds outside conventional banking hours (Bhatia & Singh, 2019). Collectively, these studies suggest that speed, reliability, and accessibility of loan disbursement systems are positively linked to economic participation and income-generating capacity among women.

Despite this general consensus, differences emerge in how loan disbursement is conceptualized and how empowerment outcomes are measured. Some studies emphasize loan approval speed and success rates as central determinants of empowerment (Nugroho & Chowdhury, 2015; Ozili, 2018), while others focus on platform availability, service reliability, and ease of application (Bhatia & Singh, 2019; Shaikh et al., 2023). Additionally, the dependent variable is often operationalized narrowly in terms of financial inclusion or business growth rather than multidimensional economic empowerment that includes decision-making autonomy and financial well-being. Sectoral and contextual variations also influence findings. Most of the reviewed studies are drawn from South Asia, the Middle East, or urban settings, where regulatory frameworks, digital infrastructure, and socio-cultural norms differ from those in rural Kenya. These contextual differences limit the direct applicability of findings to Machakos County, where rural women face distinct structural constraints, including digital literacy limitations and limited asset ownership (Machio et al., 2024; UN Women – Africa, 2023).

Methodologically, variations are also evident. While some studies employ cross-sectional survey designs (Ozili, 2018; Bhatia & Singh, 2019), others rely on systematic reviews or case study

approaches (Nugroho & Chowdhury, 2015), which provide valuable insights but limit comparability in terms of statistical strength and generalizability. Furthermore, few studies simultaneously examine multiple disbursement indicators, such as speed, delays, usability for urgent needs, and implications for financial planning, within a unified analytical model. Consequently, there remains insufficient empirical evidence on how specific loan disbursement characteristics influence multidimensional economic empowerment among rural women in Kenya. This study sought to address these conceptual, contextual, and methodological gaps by quantitatively examining the relationship between loan disbursement features and economic empowerment among rural women in Machakos County.

2.3.2 Mobile Loan Repayment and Economic Empowerment

Mobile loan repayment refers to the process of repaying borrowed funds through digital financial platforms, often using mobile money services (Kulkarni & Ghosh, 2021). Unlike traditional bank loans, which require physical visits to financial institutions, mobile loan repayment allows borrowers to conveniently settle their debts through mobile apps, USSD codes, or automated deductions from mobile wallets (Björkegren et al., 2022). According to Aziz and Naima (2021), the ease of repayment enhances financial inclusion by reducing logistical barriers and ensuring that borrowers, especially those in rural areas, can meet their financial obligations without the need for physical banking infrastructure. Additionally, mobile loan repayment is crucial in economic empowerment because timely repayment builds creditworthiness, allowing borrowers to access larger loan amounts (loan graduation), lower interest rates, and better financial opportunities (Kim & Duvendack, 2024). However, challenges such as technical issues, unpredictable income streams, and high repayment frequencies can make repayment difficult; thus, can lead to financial distress or over-indebtedness (Panakaje et al., 2023).

Empirical evidence generally indicates that effective mobile loan repayment systems contribute positively to women's economic empowerment, particularly by enhancing financial discipline, creditworthiness, and access to progressive lending opportunities. Studies conducted in Bangladesh and South Africa demonstrate that user-friendly digital repayment platforms improve timely repayment rates, which in turn strengthen business sustainability and financial independence among women entrepreneurs (Sarker & Rahman, 2024; Msomi & Olarewaju, 2022). Similarly, research in India and Ethiopia shows that consistent repayment behavior is associated

with loan graduation, allowing women to access larger loan amounts and more favorable terms, thereby facilitating business expansion and income stability (Bai, 2019; Esayas & Tolossa, 2015). Collectively, these studies suggest that mobile repayment systems, when accessible and flexible, enhance economic empowerment by reinforcing credit histories and enabling upward financial mobility.

Despite this convergence, the literature reveals differences in both conceptualization and outcome measurement. Some studies focus primarily on repayment timeliness and SME sustainability (Msomi & Olarewaju, 2022), while others emphasize loan progression and poverty reduction as indicators of empowerment (Bai, 2019; Brody et al., 2015). In several cases, empowerment is inferred indirectly through improved business performance rather than measured through multidimensional indicators such as financial well-being, access to financial services, or decision-making autonomy. Furthermore, contextual variations influence findings. Many studies are situated in South Asia or Southern Africa, where institutional frameworks, income stability patterns, and digital infrastructure differ from those in rural Kenya. In rural Kenyan settings, irregular income streams and digital literacy limitations may affect repayment behavior differently (Machio et al., 2024), thereby limiting direct generalization of findings.

Methodological inconsistencies further complicate interpretation. While some studies employ large-scale quantitative survey designs (Sarker & Rahman, 2024), others rely on mixed-methods or systematic review approaches (Brody et al., 2015), which vary in analytical rigor and comparability. Additionally, few studies simultaneously examine multiple dimensions of mobile repayment systems, such as access to repayment platforms, installment flexibility, and loan graduation incentives, within a single analytical framework. As a result, there remains limited empirical evidence assessing how mobile loan repayment mechanisms influence multidimensional economic empowerment among rural women in Kenya. This study addressed these conceptual, contextual, and methodological gaps by quantitatively examining the effect of mobile loan repayment features on financial well-being, access to financial services, micro-business expansion, and economic decision-making capabilities among rural women in Machakos County

2.3.3 Unsecured Loans and Economic Empowerment

Unsecured loans are credit facilities provided to borrowers without requiring physical collateral, such as land, property, or savings (Okello et al., 2016). Instead, lenders assess a borrower's creditworthiness using alternative methods, such as income levels, transaction history, and digital footprints (Björkegren et al., 2022). These loans are particularly important for financially underserved groups who often lack the traditional assets needed to secure bank loans (Shoma, 2019). By eliminating collateral requirements, unsecured loans promote financial inclusion and provide a pathway for borrowers to access funding for business expansion, household needs, and emergency expenses (Chowdhury, 2015). However, unsecured loans also come with higher risks for both borrowers and lenders, often leading to higher interest rates and stricter repayment terms. The ease of access and flexibility of these loans can enhance economic empowerment, but when mismanaged, they may result in over-indebtedness and financial distress (Sarania, 2015).

Empirical studies present a cautiously positive relationship between unsecured loans and women's economic empowerment. Evidence from Bangladesh and Pakistan suggests that access to unsecured credit enables women entrepreneurs to expand small businesses, stabilize income streams, and participate more actively in economic activities (Shoma, 2019; Rashid & Ejaz, 2019). Similarly, findings from Nigeria indicate that women who meet qualification criteria for unsecured digital loans are more likely to invest in productive ventures and improve household financial outcomes (Peter & Orser, 2024). These studies collectively suggest that removing collateral requirements expands financial access for women who traditionally lack asset ownership, thereby supporting economic participation and enterprise growth.

However, the literature also reveals significant tensions regarding the sustainability and long-term empowerment effects of unsecured credit. Research conducted in Indonesia demonstrates that high interest rates substantially reduce business profitability and increase repayment burdens, limiting the transformative potential of unsecured loans (Zunaida et al., 2019). Other studies caution that while unsecured loans increase accessibility, they simultaneously elevate the risk of over-indebtedness when regulatory oversight is weak or borrowers lack financial literacy (Chowdhury, 2015; Sarania, 2015). This duality suggests that unsecured lending may function as both an enabler of financial inclusion and a potential source of financial vulnerability, depending on loan pricing structures, borrower capacity, and institutional safeguards.

Conceptually, variations are evident in how empowerment outcomes are defined and measured. Some studies emphasize business sustainability and income stability (Shoma, 2019), while others focus on qualification criteria, interest rates, or perceived risk (Peter & Orser, 2024; Zunaida et al., 2019). In many cases, empowerment is inferred indirectly through financial performance indicators rather than measured through broader dimensions such as financial well-being, access to formal financial systems, or economic decision-making autonomy. Contextually, much of the empirical evidence originates from South Asia, Southeast Asia, and West Africa, where regulatory environments and digital credit ecosystems differ from Kenya's evolving regulatory framework under the Central Bank of Kenya. These contextual differences limit the generalizability of findings to rural women in Machakos County, who operate within distinct socio-economic and technological conditions (Machio et al., 2024).

Methodologically, studies vary in design, ranging from descriptive surveys to mixed-method approaches, with limited consistency in measurement frameworks. Few studies integrate multiple unsecured loan characteristics, including loan limits, interest rates, qualification criteria, perceived risk, and productive use, into a single empirical model assessing multidimensional economic empowerment. Consequently, there remains insufficient context-specific evidence on how unsecured digital loans influence economic empowerment outcomes among rural women in Kenya. This study aimed to tackle these conceptual, contextual, and methodological gaps by quantitatively examining the relationship between unsecured loan characteristics and economic empowerment indicators among rural women in Machakos County.

2.3.4 Credit Scoring Methods and Economic Performance

Credit scoring methods refer to the techniques and models used by lenders to assess a borrower's creditworthiness and risk profile before approving a loan (Ngaiyaye, 2024). Traditional credit scoring relies on banking history, employment status, and financial assets while modern digital lending platforms use alternative data sources, such as mobile money transactions, bill payments, and social media activity, to evaluate potential borrowers (Kostka, 2019). Effective credit scoring methods should be accurate, fair, transparent, and efficient, ensuring that financially capable borrowers can access credit while minimizing lender risks (Gutiérrez-Nieto et al., 2016). When well-implemented, credit scoring facilitates financial inclusion, allowing individuals, especially underserved groups to access affordable loans and invest in income-generating activities.

However, poor credit scoring practices such as biased assessment criteria, lack of transparency, or delays in credit evaluations, can restrict access to finance, limit economic opportunities, and reinforce financial exclusion (Gulati et al., 2017).

Empirical literature generally recognizes credit scoring methods as central to the sustainability and inclusiveness of digital lending systems. Studies indicate that accurate and data-driven credit scoring models improve loan approval efficiency, reduce default risk, and expand financial access to previously underserved populations (Mhlanga, 2021; Kumar et al., 2024). In particular, predictive analytics and alternative data sources, such as mobile money transactions and digital payment histories, have been shown to enhance identification of creditworthy borrowers who lack formal banking records (Kumar et al., 2024). These improvements in accuracy and efficiency can lead to better loan terms, higher approval rates, and expanded access to capital, which in turn support business development and financial participation.

However, the literature also highlights concerns regarding fairness, transparency, and potential bias in credit scoring systems. Evidence from the United States demonstrates that traditional scoring models, which rely heavily on formal financial histories and asset ownership, may disproportionately exclude women and marginalized groups (Henderson et al., 2015). Similarly, scholars argue that opaque or poorly communicated scoring criteria may undermine borrower trust and limit perceived financial empowerment (Gutiérrez-Nieto et al., 2016; Gulati et al., 2017). While technological innovation improves efficiency, it may simultaneously reinforce structural inequalities if alternative data algorithms are not designed inclusively. Thus, the empowering potential of credit scoring systems depends not only on predictive accuracy but also on perceived fairness and transparency.

Conceptually, variations emerge in how credit scoring outcomes are evaluated. Some studies focus primarily on default reduction and lending efficiency (Mhlanga, 2021), whereas others emphasize approval rates and financial inclusion metrics (Kumar et al., 2024). Few studies directly measure economic empowerment as a multidimensional construct encompassing financial well-being, business expansion, and decision-making autonomy. Contextually, much of the empirical evidence originates from developed or technologically advanced economies, where digital infrastructure and consumer protection frameworks differ significantly from rural Kenyan settings. In counties

such as Machakos, perceptions of fairness and understanding of scoring processes may influence how borrowers engage with digital lending platforms (Machio et al., 2024).

Methodologically, many studies employ technical modeling approaches, secondary datasets, or algorithmic performance evaluations, with limited emphasis on borrower-level perceptions and empowerment outcomes. As a result, there is insufficient empirical evidence examining how perceived accuracy, fairness, transparency, and efficiency of credit scoring systems influence economic empowerment among rural women in Kenya. This study addressed these conceptual, contextual, and methodological gaps by incorporating borrower perceptions of credit scoring mechanisms into a quantitative model assessing economic empowerment in Machakos County.

2.3.5 Moderating Effect of Digital Literacy

Empirical literature increasingly recognizes digital literacy as a critical enabler of economic empowerment in the digital era. Across diverse contexts, studies consistently demonstrate that individuals with higher digital competencies are better positioned to participate in financial systems, engage in entrepreneurship, and improve socio-economic outcomes (Anzak & Sultana, 2020; Mosobalaje et al., 2024; Al-Afeef & Alsmadi, 2025). Evidence from Indonesia further indicates that digital financial literacy exerts a stronger influence on women's economic empowerment than traditional financial literacy, particularly in contexts characterized by rapid FinTech expansion (Rahayu et al., 2023). Similarly, mixed-method and systematic review studies highlight that digital literacy initiatives enhance access to online services, employment opportunities, and community participation (Prasastiningtyas et al., 2024; Meherali et al., 2021). Collectively, these findings suggest a generally positive and significant relationship between digital literacy and socio-economic empowerment.

Despite this broad consensus, important conceptual differences emerge in how digital literacy and empowerment are operationalized. Some studies conceptualize digital literacy primarily as technical competence in using digital tools (Anzak & Sultana, 2020; Setiawan, 2024), while others expand the construct to include digital financial literacy, decision-making capacity, and responsible use of FinTech platforms (Rahayu et al., 2023; Al-Afeef & Alsmadi, 2025). Similarly, empowerment outcomes vary substantially. In certain contexts, empowerment is measured in terms of entrepreneurship participation and financial inclusion (Mosobalaje et al., 2024), whereas in

others it is framed around health decision-making, educational access, or social participation (Meherali et al., 2021). This variation creates inconsistency in understanding whether digital literacy directly influences economic empowerment or operates indirectly through improved financial behaviors and access to services.

Contextual limitations further constrain the generalizability of findings. Much of the empirical evidence originates from South Asia, Southeast Asia, and Middle Eastern contexts, with limited focus on rural sub-Saharan African settings. Moreover, several studies examine adolescents, students, or general marginalized populations rather than rural women engaged in informal economic activities (Meherali et al., 2021; Prasastiningtyas et al., 2024). Institutional, infrastructural, and regulatory differences across countries may significantly shape how digital literacy translates into economic outcomes. In rural Kenyan contexts such as Machakos County, digital infrastructure gaps, income instability, and socio-cultural dynamics may alter the strength and direction of this relationship (Machio et al., 2024).

Methodological inconsistencies are also evident. The literature includes qualitative case studies (Anzak & Sultana, 2020; Setiawan, 2024), descriptive surveys (Mosobalaje et al., 2024), structural equation modeling approaches (Rahayu et al., 2023), systematic reviews (Meherali et al., 2021), and mixed-method designs (Prasastiningtyas et al., 2024). While these approaches provide valuable insights, they vary in rigor, measurement consistency, and causal inference capability. Importantly, most studies examine digital literacy as a direct predictor of empowerment rather than as a moderating variable influencing the relationship between digital financial services and economic empowerment outcomes. There remains limited empirical research testing whether digital literacy strengthens or weakens the impact of digital lending mechanisms on multidimensional economic empowerment among rural women.

Therefore, although existing literature establishes digital literacy as an important driver of socio-economic participation, insufficient evidence exists regarding its moderating role within digital lending ecosystems in rural Kenyan contexts. This study addressed these conceptual, contextual, and methodological gaps by examining whether digital literacy moderates the relationship between digital lending features and economic empowerment among rural women in Machakos County. By incorporating measurable indicators of digital competence into a quantitative model, the study

sought to determine whether digital lending translates into empowerment more effectively among women with higher levels of digital literacy.

2.4 Research Gap

In the current literature on digital lending and women's economic empowerment, conceptual, contextual, and methodological gaps persist. Conceptually, women's economic empowerment has been defined in various ways. Ozili (2018) viewed it as the ability to finance productive economic activities, while Nugroho and Chowdhury (2015) linked it to financial inclusion. On the other hand, Bhatia and Singh (2019) conceptualized it as balancing financial needs with household responsibilities. These differing definitions create a research gap since they lead to inconsistent interpretations and measurements of the concept, making it difficult to compare findings across studies. This study aimed to address the conceptual gap by defining economic empowerment as the process by which rural women gain access to financial resources, enhance their financial independence, and develop decision-making capacities to improve their livelihoods and those of their families (Cornish et al., 2021; Hendriks, 2019).

Contextually, studies on economic empowerment have been conducted in diverse settings, such as Hong Kong (Law, 2024), Ghana (Raheem et al., 2024), India (Lal, 2021), and the United States (Kaiser & Menkoff, 2017). However, cultural and economic differences across these contexts may limit the applicability of their findings to rural Kenya. This study addressed this contextual gap by focusing specifically on rural women in Machakos County, ensuring the findings are relevant to the Kenyan context.

Methodologically, variations in research approaches have contributed to contrasting results regarding the factors influencing economic empowerment. For instance, Morgan and Long (2020) utilized a descriptive survey design to examine how skills acquired through financial literacy training affect economic outcomes, while Kaiser et al. (2022) adopted a meta-analysis approach to evaluate the long-term impact of follow-up support on financial behaviors. To bridge this methodological gap, this study employed a descriptive cross-sectional design, which allows for the collection of data from a large sample of rural women in Machakos County, providing generalizable findings.

Table 2.1: Summary of Research Gaps

Study	Focus of the Study	Findings	Research Gap	Focus of the current study
Nugroho and Chowdhury (2015)	Investigated the role of mobile lending applications in promoting financial inclusion among women entrepreneurs	The findings revealed that faster loan approval times were a critical factor in empowering women economically.	Contextual gap – the study was conducted in Indonesia and Bangladesh, which means the findings cannot be applied. Methodological gap – the current study adopted a systematic review approach	The context of the present research was Machakos County, Kenya. The current research used of a descriptive cross-sectional research design to examine the influence of digital lending on women's economic empowerment. The concepts of interest in this study were fast disbursement, access to finance, credit scoring, and unsecured loans.
Ozili (2018)	Examined how digital financial services influence household welfare	A higher loan application success rate significantly improved economic empowerment in terms of financing productive activities such as micro-enterprises.	Contextual gap – this study was conducted in Turkey; hence, the findings cannot be applied in Kenya.	The context of the current study was Kenya, especially rural women in Machakos county. The study examined the influence of digital lending on women's economic empowerment, with a focus on fast disbursement, access to finance, credit scoring, and unsecured loans
Olaniyi (2018)	Explored the role of technology in delivering digital lending education programs to the financially-excluded poor	Participants who engaged with mobile training platforms demonstrated better financial decision-making and loan management skills	Contextual Gap – the context of this study was South Africa. Conceptual gap – the study focused on financial behaviors.	The context of the current study was Kenya, especially rural women in Machakos county. The study examined the influence of digital lending on women's economic empowerment, with a focus on fast disbursement, access to finance, credit scoring, and unsecured loans

Bhatia and Singh (2019)	Investigated the availability of digital lending services and its influence on economic outcomes	The results showed that the 24/7 availability of digital lending services allowed users to access funds without the constraints of traditional banking hours, which in turn reduced financial exclusion and promoted self-reliance.	Contextual gap – this study was conducted India; thus, the findings are not applicable in the rural Kenyan context. Conceptual gap – the study focused on financial inclusion.	The context of the current study was Kenya, especially rural women in Machakos county. The study examined the influence of digital lending on women's economic empowerment, with a focus on fast disbursement, access to finance, credit scoring, and unsecured loans
Morgan and Long (2020)	Investigated how the practical application of skills acquired through financial literacy training impacts economic outcomes, especially savings behaviors and financial inclusion	Findings indicated that respondents who applied the skills learned during the training were able to increase their savings, scale their micro-enterprises, and increase profits	Contextual Gap – the context of this study was Laos. Conceptual gap – the study focused on financial inclusion.	The context of the current study was Kenya, especially rural women in Machakos county. The study examined the influence of digital lending on women's economic empowerment, with a focus on fast disbursement, access to finance, credit scoring, and unsecured loans
Lal (2021)	Explored the relationship between digital lending awareness and its impact on financial inclusion and empowerment	The findings showed that respondents who were more aware of digital lending services were more likely to apply for and utilize these platforms, which	Contextual gap – the study was conducted in India; as a result, the findings may not be applicable in Kenya.	The context of the current study was Kenya, especially rural women in Machakos county.

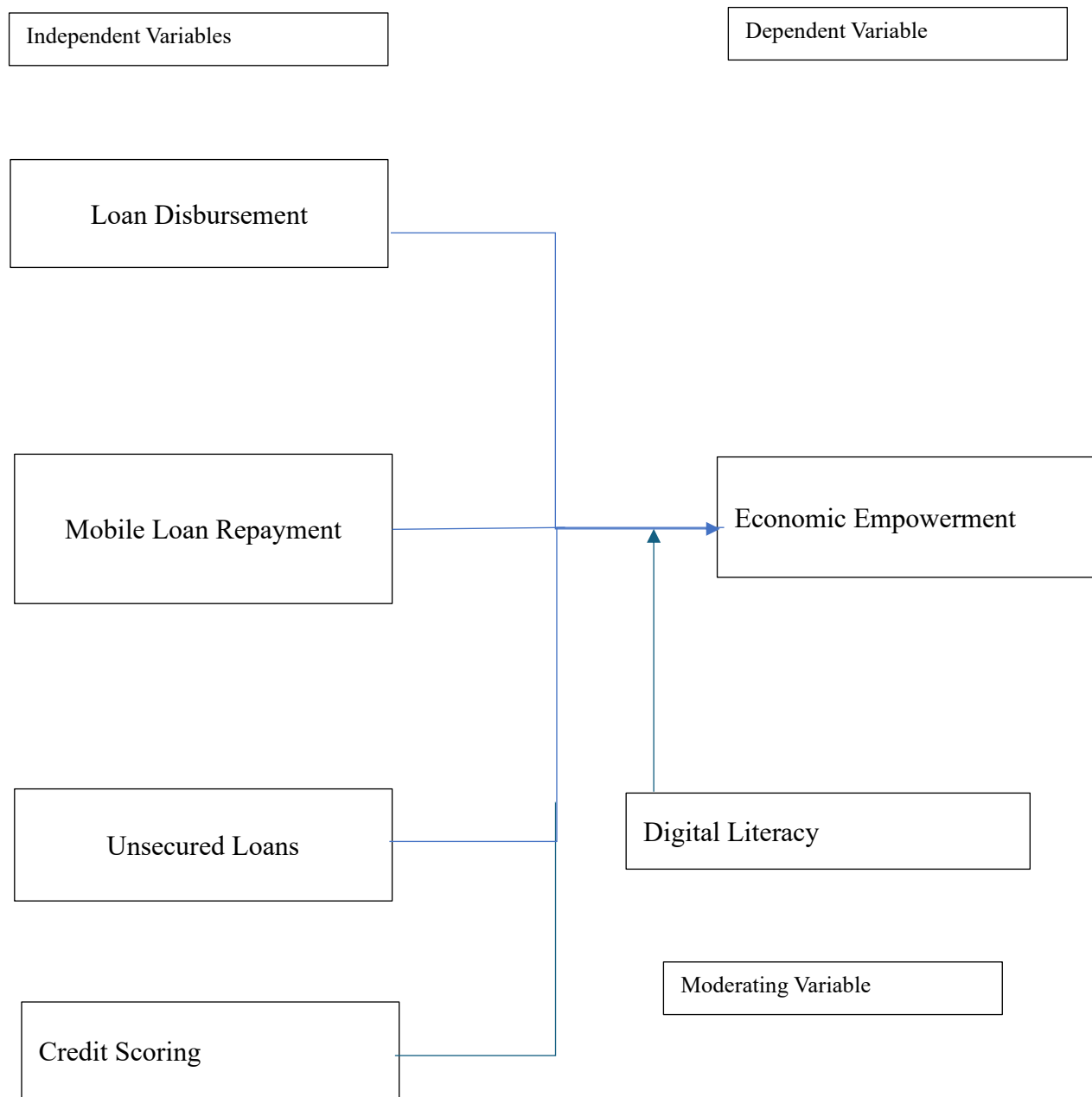
		led to increased financial inclusion.		
Kaiser et al. (2022)	Assessed the impact of follow-up support on the effectiveness of financial education programs in influencing financial behaviors long-after completing the program	The findings revealed that follow-up support, such as periodic check-ins, refresher courses, and mentorship, reinforced the knowledge gained during initial training	Contextual gap – this study was conducted in the United States. Methodological gap – this study adopted a meta-analysis approach Conceptual gap – the focus of the study was on financial behaviors.	The context of the present research was Machakos County, Kenya. The current research used of a descriptive cross-sectional research design to examine the influence of digital lending on women's economic empowerment. The concepts of interest in this study were fast disbursement, access to finance, credit scoring, and unsecured loans.
Shaikh et al. (2023)	Examined the reliability of mobile money lending platforms and their influence on economic empowerment in Ghana	Findings revealed that the reliability of digital lending systems, including consistent loan disbursement and secure transaction processes, played a vital role in economic empowerment.	Contextual gap – the study was conducted in Ghana; as a result, the findings may not be applicable in Kenya.	The context of the current study was Kenya, especially rural women in Machakos county.
Law (2024)	Explored the impact of user-friendly digital lending platforms on financial inclusion	Simplified loan application processes, including minimal documentation and intuitive interfaces, encouraged more	Conceptual gap – this study focused on financial inclusion. Contextual gap - the context of the study was Hong	The context of the present research was Machakos County, Kenya. The current research used of a descriptive cross-sectional research design to examine the influence of digital lending on women's economic empowerment. The concepts of interest in this study were fast

		women to apply for loans	Kong; thus, the findings might not be replicated in Kenya. Methodological gap – the study used a qualitative approach.	disbursement, access to finance, credit scoring, and unsecured loans.
Raheem et al. (2024)	Examined the affordability of digital credit and its impact on low-income women in Ghana	The findings revealed that low-interest rates and flexible repayment terms allowed women to borrow and invest without the fear of falling into debt cycles.	Contextual gap – the study was conducted in Ghana, which means the findings might not be replicated in the rural Kenyan context. Methodological gap – the study used a qualitative case study design Conceptual – this study examined access to credit as the outcome variable.	The context of the present research was Machakos County, Kenya. The current research used of a descriptive cross-sectional research design to examine the influence of digital lending on women's economic empowerment. The concepts of interest in this study were fast disbursement, access to finance, credit scoring, and unsecured loans.

Source: Researcher (2026)

2.5 Conceptual Framework

Figure 2.1: Conceptual Framework



Source: Researcher (2026)

2.6 Operationalization of Study Variables

Table 2.2 shows how the variables in this study were operationalized.

Table 2.2: Operationalization of Study Variables

Variable	Indicators	Measurement	Literature source	Supporting Theory
Loan Disbursement	Loan disbursement speed	5-point Likert Scale	Ozili (2018)	Resource Control Theory
	Delays in loan disbursement	5-point Likert Scale	Nugroho and Chowdhury (2015)	
	Ability to use loan funds for urgent financial needs	5-point Likert Scale	Ozili (2018)	
	Benefits of disbursement speed on financial decision-making and planning	5-point Likert Scale	Bhatia and Singh (2019); (Olaniyi, 2018)	
	Ease of loan application	5-point Likert Scale	Nugroho and Chowdhury (2015)	
Mobile loan repayment	Access to digital loan platforms	5-point Likert Scale	Lal (2021)	Resource Control Theory
	Timely loan installment repayment	5-point Likert Scale	Lal (2021)	
	Loan graduation as an incentive	5-point Likert Scale	Shaikh et al. (2023)	
Unsecured Loans	Loan limits for unsecured loans, interest rates for unsecured loans	5-point Likert Scale	Potrich et al. (2015)	Resource Control Theory
	Ability to qualify for unsecured loans	5-point Likert Scale	Ngaiyaye (2024)	
	Perceived risk of unsecured loans, and use of unsecured loans for productive purposes	5-point Likert Scale	Ngaiyaye (2024)	
Credit Scoring	Accuracy based on mobile money transaction history	5-point Likert Scale	Hudon and Meyer (2016)	Resource Control Theory
	Alignment with digital loan repayment history	5-point Likert Scale	(Riaz et al., 2017).	

Variable	Indicators	Measurement	Literature source	Supporting Theory
	Scoring in line with credit bureau data	5-point Likert Scale	(Ripain et al., 2017)	
Digital Literacy	Ability to navigate mobile loan applications or USSD platforms	5-point Likert Scale	(Al-Afeef & Alsmadi, 2025)	Theory of Capability
	Ability to understand digital loan terms and conditions	5-point Likert Scale	(Anzak & Sultana, 2020)	
	Ability to interpret digital financial messages such as SMS notifications and transaction alerts, and	5-point Likert Scale	(Rahayu et al., 2023)	
	Confidence in using mobile devices for financial transactions	5-point Likert Scale	(Mosobalaje et al., 2024)	
Economic Empowerment	Financial well-being	5-point Likert Scale	Sarania (2015)	Theory of Capability
	Access to financial services	5-point Likert Scale	Chowdhury (2015)	
	Expansion of micro-businesses	5-point Likert Scale	Bhatia and Singh (2019)	
	Economic independence and decision-making capabilities	5-point Likert Scale	Law (2024)	

Source: Researcher (2026)

2.7 Chapter Summary

This chapter has presented a review of the theoretical and empirical literature on economic empowerment. This study was underpinned by the Resource Control Theory and Theory of Capability. The research gaps, including the conceptual, conceptual and methodological gaps were

also discussed. In addition, conceptual framework and operationalization of study variables were also discussed in this chapter.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter details the research methodology for the current study. It is structured into the following sections: research philosophy, research design, population and sampling, data collection and analysis procedures, measures to ensure research quality, and ethical considerations.

3.2 Research Philosophy

Research philosophy refers to the set of beliefs and assumptions regarding the nature of reality, knowledge, and the methods through which knowledge can be generated and validated (Bell et al., 2022). Research philosophy guides the overall research process by influencing the choice of research design, data collection methods, data analysis procedures, and interpretation of findings. Philosophical assumptions in research are commonly categorized into ontology and epistemology. Ontology concerns assumptions about the nature of reality and whether reality exists independently of human perception, while epistemology focuses on how knowledge about that reality can be acquired and validated (Bougie & Sekaran, 2019). In social science research, commonly used philosophical approaches include positivism, interpretivism, realism, and pragmatism, each differing in their assumptions regarding objectivity, measurement, and the role of the researcher.

This study adopted the positivist research philosophy. Positivism is founded on the assumption that reality is objective, observable, and measurable through empirical investigation (Bougie & Sekaran, 2019). Positivist researchers believe that social phenomena can be studied in the same manner as natural sciences by using systematic observation, quantification, and statistical analysis to identify patterns and relationships among variables. The philosophy further assumes that knowledge is generated through observable evidence rather than subjective interpretation, and that the researcher should remain independent and detached from the research process to minimize bias and enhance objectivity (Bell et al., 2022).

Positivism is particularly associated with quantitative research because it emphasizes hypothesis testing, measurement of variables, use of standardized instruments, and statistical analysis. The

philosophy supports deductive reasoning, where theories and hypotheses are tested using empirical data collected from a sample population. In addition, positivism seeks to produce findings that are reliable, generalizable, and replicable across similar contexts. Consequently, studies grounded in positivism commonly employ structured questionnaires, numerical data, and inferential statistical techniques to examine relationships between variables.

The positivist philosophy was considered appropriate for this study because the research sought to examine measurable relationships between digital lending practices, digital literacy, and economic empowerment among rural women in Machakos County. The study relied on structured questionnaires and standardized Likert scale measures to collect quantifiable data from respondents. Statistical techniques such as descriptive statistics, correlation analysis, and regression analysis were then used to test the relationships among the study variables. Furthermore, the philosophy aligned with the descriptive cross-sectional research design adopted in the study because the objective was to generate objective and generalizable findings regarding the influence of digital lending on economic empowerment among rural women. By emphasizing empirical measurement, objectivity, and statistical testing, positivism provided an appropriate philosophical foundation for the study.

3.3 Research Design

The research design is the comprehensive blueprint that guides a study, ensuring the research questions are answered effectively. It determines the methods for collecting, analyzing, and interpreting data, thereby providing a coherent structure for the entire project. A well-defined research design ensures that the study is systematic, coherent, and aligned with its objectives (Schindler, 2022).

This study adopted a descriptive cross-sectional research design. This design involves collecting data at a single point in time to describe and analyze relationships among variables. It is particularly useful for understanding phenomena as they exist and identifying patterns and associations within a specific context (Zikmund et al., 2013).

The choice of a descriptive cross-sectional design was justified by the study's aim to examine the influence of digital lending on economic empowerment among rural women in Machakos County. This design allows for the collection of data from a large sample within a short period, making it

cost-effective and time-efficient (Saunders et al., 2015). Moreover, it is well-suited for studies that seek to measure and analyze quantifiable variables, which is the case with the current study (Vell et al., 2022).

Additionally, a cross-sectional approach was appropriate for identifying relationships between the independent variables (digital lending factors) and the dependent variable (economic empowerment). Since this study did not aim to establish causal relationships over time, but rather to understand the current situation, the design provided a practical and reliable framework. Its ability to capture data from diverse participants in a structured way ensured robust and generalizable findings (Zikmund et al., 2013).

3.4 Population of the Study

Population refers to the entire group of individuals, events, or objects that a researcher seeks to study and draw conclusions about (Saunders et al., 2015). It includes all members of a defined group who share specific characteristics relevant to the research. In research, the population forms the basis from which samples are drawn for data collection and analysis (Bryman, 2016). The population for this study consisted of rural women residing in Machakos County, Kenya. According to recent estimates, approximately 710,966 women live in rural areas of Machakos County (City Population, 2025).

3.5 Sampling Design

This study employed a stratified multi-stage sampling technique to ensure representativeness while maintaining feasibility within a rural context. Multi-stage sampling is a probability-based approach in which sampling is conducted progressively from larger administrative units to smaller units until individual respondents are selected (Saunders et al., 2015). According to Zikmund et al. (2013), this method is particularly appropriate for large and geographically dispersed populations such as rural women in Machakos County.

In the first stage, Machakos County was stratified into its eight administrative sub-counties: Machakos Town, Mavoko, Kathiani, Yatta, Masinga, Kangundo, Matungulu, and Mwala. Proportionate allocation was applied to distribute the total sample size across the sub-counties

based on their relative rural population estimates. This ensured that sub-counties with larger rural populations contribute proportionately more respondents to the study.

In the second stage, rural wards within each sub-county were identified using official county administrative records. From the list of rural wards in each sub-county, two wards were selected using simple random sampling. This was done by assigning each ward a number and using a random number generator to select the required wards. This procedure ensured that each rural ward has an equal probability of selection and reduces selection bias.

In the third stage, within each selected ward, a list of villages was obtained from the local chief or ward administrator. From this list, three villages per ward were selected using simple random sampling. This step further narrowed the sampling units while maintaining probability principles (Hennink et al., 2020).

In the fourth stage, systematic sampling was employed to select households within each selected village. Upon arrival in the village, the research team obtained an approximate count of households from local administrative records. The sampling interval (k) was determined by dividing the estimated number of households in the village by the number of respondents required from that village (Easterby-Smith et al., 2021). For example, if a village has approximately 150 households and 30 respondents are required, the sampling interval was calculated as $150/30 = 5$. In this case, every 5th household was selected after randomly determining the starting point between 1 and 5. If the randomly selected starting number was 3, the research team began with the 3rd household and subsequently select every 5th household (i.e., 3rd, 8th, 13th, 18th, and so forth) until the required number of respondents was reached (Raju & Prabhu, 2019).

Within each selected household, eligibility criteria was applied. If more than one eligible woman (aged 18 years and above and a user of digital lending platforms) resides in the household, one respondent was selected using simple random selection, such as the ballot method. If no eligible respondent was found in a selected household, the next immediate household was approached to maintain the sampling interval. Only women currently residing in the selected rural areas of Machakos County and actively using digital lending services within the county were eligible to participate in the study.

This structured multi-stage sampling procedure ensured that each eligible rural woman within the selected clusters has a known and non-zero probability of selection. By combining stratification, random selection at ward and village levels, and systematic household sampling, the study enhanced representativeness, minimizes selection bias, and aligned with the positivist research philosophy underpinning the study (Raju & Prabhu, 2019).

The sample size for this study was been determined using Yamane's Formula - $n = N/(1+N(e)^2)$ (Saunders et al., 2015). N was the population size, which in this case was 710966, and e was the margin of error (5%). The calculated sample size is $710966 / (1 + 710966 (0.05)^2) = 400$. Therefore, 400 women were surveyed for the quantitative research. Table 3.1 shows the targeted distribution of the respondents.

Table 3.1: Distribution of Respondents by Sub-County

Sub-County	Estimated Rural Proportion (%)	Sample Allocation (n)
Machakos Town	15%	40
Mavoko	14%	40
Kathiani	12%	48
Yatta	10%	60
Masinga	13%	52
Kangundo	12%	48
Matungulu	14%	56
Mwala	10%	56
Total	100%	400

3.6 Data Collection Methods

Primary data for this study was collected using structured questionnaires containing closed-ended questions to obtain standardized responses from participants (Zikmund et al., 2013). The questionnaire was translated into Swahili to address language barriers among respondents in rural Machakos County, and back translation was used to maintain accuracy of meaning. For respondents with reading difficulties, the questionnaire was administered verbally.

The questionnaire consisted of three sections: Section A collected demographic information, Section B gathered data on the independent variables, and Section C focused on the dependent variable. All items were measured using a five-point Likert scale. Composite mean scores were generated for each variable by averaging responses across related items to facilitate statistical

analysis. This approach enhanced measurement reliability and enabled the use of parametric analyses such as correlation and regression (Bell et al., 2022).

Paper-based questionnaires were distributed directly to selected respondents in rural areas of Machakos County. The research team worked with local administrators and village elders to facilitate community entry and household identification. Eligible participants were women aged 18 years and above who used digital lending platforms. A fill-and-wait approach was adopted to improve response rates, while trained research assistants guided respondents and collected completed questionnaires on-site.

3.7 Research Quality

The steps that were taken to enhance the quality of the findings produced by this study are discussed in the following sections.

3.7.1 Validity

Validity refers to the extent to which a research instrument accurately measures what it is intended to measure (Zikmund et al., 2013). In this study, validity ensured that the questionnaire captures the intended constructs. To enhance validity, two strategies were employed. First, a pilot study was conducted with a sample of 40 women from rural areas in Machakos County, representing 10% of the final sample size, as recommended by Schindler (2022). The pilot study sought to identify ambiguities, errors, or misunderstandings in the questionnaire, ensuring that revisions can be made before full-scale data collection. The pilot findings indicated that respondents clearly understood the questionnaire items and were able to complete the instrument within a reasonable time. The respondents also confirmed that the questions were relevant and appropriately captured issues relating to digital lending and economic empowerment. The pilot study therefore established that the questionnaire was suitable for the main study, and no major revisions to the instrument were considered necessary prior to full-scale data collection. Second, the questionnaire underwent an expert review process to assess its relevance and appropriateness. The tool was developed with the guidance of a supervisor from Strathmore University.

3.7.2 Reliability

Reliability refers to the consistency of a research instrument in measuring a variable, ensuring that the results are stable and reproducible over time (Saunders et al., 2015). A reliable questionnaire generates consistent responses when administered under similar conditions (Schindler, 2022). For this study, reliability was assessed using Cronbach's alpha, a statistical measure used to evaluate the internal consistency of a set of items within a questionnaire (Saunders et al., 2015).

Cronbach's alpha values range from 0 to 1, with higher values indicating greater reliability. Different authors recommend varying thresholds for satisfactory reliability. For instance, Schindler (2022) suggests that a reliability coefficient of 0.7 or higher is acceptable in social sciences. Others, such as Greener (2008), categorize coefficients of 0.7 to 0.8 as acceptable, and those above 0.8 as excellent. In this study, a threshold of ≥ 0.7 was adopted as the minimum acceptable level of reliability (Schindler, 2022). Table 3.2 confirms that the variables were reliable.

Table 3. 2: Reliability Statistics

Variable	Number of Items	Cronbach's Alpha
Loan Disbursement	10	0.812
Mobile Loan Repayment	9	0.798
Unsecured Loans	10	0.826
Credit Scoring Methods	8	0.774
Digital Literacy	12	0.841
Economic Empowerment	8	0.787

Source: Research Data (2026)

3.8 Data Analysis

The data collected in this study was systematically analyzed to address the research objectives and test the relationships between variables. For this purpose, the Statistical Package for the Social Sciences (SPSS) software was utilized. Initially, descriptive statistics, such as means, frequencies, and standard deviations, were calculated to summarize the demographic and primary variables. Measures such as frequencies, percentages, means, and standard deviations provided a clear overview of the demographic characteristics of the respondents and the key variables under study (Chatterjee & Simonoff, 2013). For inferential analysis, correlation analysis was conducted to assess the strength and direction of relationships between the independent variables (digital lending factors) and the dependent variable (economic empowerment) (Chatterjee & Simonoff,

2013). To further investigate these relationships, a hierarchical multiple linear regression analysis was conducted to assess the degree to which the independent variables, both collectively and individually, predict the level of economic empowerment in the main effects model as well as the moderation model. Regression results, including coefficients and significance levels, helped identify key predictors of economic empowerment among rural women in Machakos County.

$$EE = \beta_0 + \beta_1 LD + \beta_2 MR + \beta_3 UL + \beta_4 CS + \epsilon$$

Where:

- Y: Economic empowerment (dependent variable)
- β_0 : Constant term (intercept)
- $\beta_1, \beta_2, \beta_3$: Regression coefficients for the independent variables
- LD: Loan Disbursement
- MR: Mobile Loan Repayment
- UL: Unsecured Loans
- CS: Credit Scoring Methods
- ϵ : Error term

Moderation analysis was conducted using hierarchical multiple regression. In the first step, independent variables and the moderator (digital literacy) were entered into the model. In the second step, interaction terms between digital lending variables and digital literacy were introduced. A statistically significant interaction coefficient indicated the presence of a moderating effect. The regression equation was specified as:

$$EE = \beta_0 + \beta_1 LD + \beta_2 MR + \beta_3 UL + \beta_4 CS + \beta_5 DL + \beta_6 (LD \times DL) + \beta_7 (MR \times DL) + \beta_8 (UL \times DL) + \beta_9 (CS \times DL) + \epsilon$$

Where:

- EE = Economic Empowerment
- LD = Loan Disbursement
- MR = Mobile Repayment

- UL = Unsecured Loans
- CS = Credit Scoring
- DL = Digital Literacy
- (LD × DL) = Interaction between Loan Disbursement and Digital Literacy
- (MR × DL) = Interaction between Mobile Repayment and Digital Literacy
- (UL × DL) = Interaction between Unsecured Loans and Digital Literacy
- (CS × DL) = Interaction between Credit Scoring and Digital Literacy
- ε = Error term

Diagnostic tests for multiple regression focused on evaluating whether key assumptions of linearity, independence, homoscedasticity, normality, and absence of multicollinearity, are met. Linearity was assessed through residual-versus-fitted plots. Independence was tested using the Durbin–Watson statistic. Homoscedasticity was checked through Breusch–Pagan. Normality of residuals is examined using the Shapiro-Wilk test. Multicollinearity was assessed using Variance Inflation Factors (VIFs). The following regression equation was used.

3.9 Ethical Considerations

Prior to data collection, formal approval was sought from Strathmore University’s Ethical Review Board and the National Commission for Science, Technology, and Innovation (NACOSTI). Informed consent was obtained from all participants before they take part in the study. Before administering questionnaires, potential participants were fully briefed on the research purpose and what their involvement entails, and they were given a clear opportunity to voluntarily agree or decline to participate. The confidentiality and privacy of respondents was strictly maintained: no personally identifiable information such as names was collected in the questionnaires. All collected data were stored securely on a password-protected computer accessible only to the researcher.

3.10 Chapter Summary

This chapter has discussed the research methodology for the current research. The research positivism philosophy, descriptive cross-sectional research design, population (women in rural Machakos), judgmental sampling, procedures for data collection and analysis, steps to enhance research quality, and ethical considerations have been discussed.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the findings of the study on the effect of digital lending practices on economic empowerment among women in rural areas in Machakos County. The chapter covers the response rate, respondents' characteristics, descriptive statistics, and inferential analysis. The inferential analysis includes correlation and regression results used to determine the relationship between digital lending practices and economic empowerment among rural women in Machakos County. The chapter concludes with a summary of the key findings.

4.2 Response Rate

A total of 400 questionnaires were administered to rural women in Machakos County. Out of these, 387 questionnaires were successfully completed and returned, representing a response rate of 96.8%. According to Mugenda and Mugenda (2019), a response rate above 70% is considered adequate for statistical analysis and generalization of findings. Therefore, the response rate achieved in this study was considered highly adequate for further analysis.

Table 4.1: Response Rate

Response Category	Frequency	Percentage (%)
Questionnaires Administered	400	100.0
Questionnaires Returned	387	96.8
Questionnaires Not Returned	13	3.2
Total	400	100.0

Source: Research Data (2026)

4.3 Respondents' Characteristics

Table 4.2: Characteristics of Respondents

Characteristic	Category	Frequency	Percentage (%)
Age Category	18–24 years	41	10.6
	25–34 years	154	39.8
	35–44 years	129	33.3
	45–54 years	47	12.1
	55 years and above	16	4.1
	Total	387	100.0

Highest Level of Education	No formal education	22	5.7
	Primary education	113	29.2
	Secondary education	148	38.2
	Diploma/Certificate	71	18.3
	Bachelor's degree	26	6.7
	Master's degree or higher	7	1.8
	Total	387	100.0
Employment Status	Self-employed	189	48.8
	Employed (formal)	31	8.0
	Employed (informal)	118	30.5
	Unemployed	38	9.8
	Other	11	2.8
	Total	387	100.0
Marital Status	Single	54	14.0
	Married	247	63.8
	Widowed	42	10.9
	Divorced/Separated	36	9.3
	Other	8	2.1
	Total	387	100.0
Use of Digital Lending Services	Yes	387	100.0
	No	0	0.0
	Total	387	100.0
Duration of Using Digital Lending Services	Less than 6 months	29	7.5
	6 months to 1 year	51	13.2
	1–2 years	94	24.3
	More than 2 years	213	55.0
	Total	387	100.0
Frequency of Using Digital Lending Services	Rarely	36	9.3
	Occasionally	117	30.2
	Regularly	234	60.5
	Total	387	100.0
Primary Reason for Using Digital Lending Services	Personal expenses	146	37.7
	Business-related expenses	91	23.5
	Emergencies	121	31.3
	Education	19	4.9
	Other	10	2.6
	Total	387	100.0
Access to Smartphone or Internet	Yes	332	85.8
	No	55	14.2
	Total	387	100.0

Source: Research Data (2026)

Table 4.2 presents the characteristics of the respondents. The findings showed that the majority of respondents were within the economically active age groups, with 39.8% aged between 25–34 years and 33.3% aged between 35–44 years, while only 4.1% were aged 55 years and above. This suggests that most respondents were actively involved in income-generating and household activities, making them suitable participants for the study.

Regarding education level, the majority of respondents had attained secondary education (38.2%), while only 1.8% had master's degree qualifications or higher. This indicates that most respondents possessed basic to moderate levels of education, which enabled them to understand and use digital lending platforms.

The findings further revealed that most respondents were self-employed (48.8%) or engaged in informal employment (30.5%), while only 8.0% were formally employed. This implies that many rural women relied on informal economic activities and were therefore likely to depend on digital lending services to finance businesses, household needs, and emergencies.

In terms of marital status, the majority of respondents were married (63.8%), while only 2.1% reported other marital statuses. This suggests that most respondents had family and financial responsibilities that may increase reliance on digital credit services.

All respondents (100%) indicated that they had used digital lending services, confirming that the participants had direct experience with digital lending platforms. In addition, 55.0% had used digital lending services for more than two years, while only 7.5% had used them for less than six months, indicating substantial experience with digital lending among most respondents.

The findings also showed that 60.5% of respondents used digital lending services regularly, whereas only 9.3% used them rarely. The primary reasons for using digital loans were personal expenses (37.7%) and emergencies (31.3%), while only 2.6% used them for other purposes. This demonstrates that digital lending played an important role in meeting immediate household and financial needs among rural women.

Lastly, the majority of respondents (85.8%) had access to smartphones or internet services for accessing digital lending platforms, while only 14.2% lacked such access. This indicates relatively high levels of digital connectivity among respondents despite the rural setting.

4.4 Descriptive Statistics

4.4.1 Loan Disbursement

Table 4.3 presents the descriptive statistics on loan disbursement, which was measured using 10 items focusing on loan disbursement speed, delays in loan disbursement, ability to use loan funds for urgent financial needs, and the benefits of disbursement speed on financial decision-making and planning. Respondents rated the statements on a five-point Likert scale. A composite score was computed by averaging the responses across all the items such that a higher score indicated a more positive perception of loan disbursement practices, including quicker access to loans, reduced delays, improved financial planning, and greater ability to address urgent financial needs through digital lending platforms.

Table 4.3: Descriptive Statistics for Loan Disbursement

	N	Mean	Std. Deviation
The loans I apply for through digital lending platforms are disbursed quickly, allowing me to address financial needs on time.	387	3.17	1.104
Fast loan disbursement has enabled me to take advantage of business opportunities that require immediate financial input.	387	3.20	1.101
Delays in receiving digital loans have negatively impacted my ability to pay for urgent expenses, such as school fees or medical bills (R).	387	3.15	1.060
When loan disbursement takes too long, I am forced to seek alternative, often more expensive, sources of credit (R).	387	3.06	1.092
Digital lending has provided me with immediate access to funds, helping me manage unexpected financial emergencies.	387	3.24	1.177
The quick availability of digital loans has reduced my reliance on informal borrowing, improving my financial stability.	387	3.22	1.254
Fast loan disbursement allows me to plan my finances more effectively, ensuring that I can meet my business and household obligations on time.	387	3.27	1.249
Receiving digital loans quickly has improved my ability to make well-informed financial decisions without the pressure of delayed funding.	387	3.14	1.203
The process of applying for digital loans is simple and does not require lengthy paperwork, making it easier for me to access credit when needed.	387	3.14	1.019

I prefer digital lending platforms because they provide a convenient and efficient way to apply for and receive loans.	387	3.01	1.041
Loan Disbursement – Overall Score	387	3.16	.976

Source: Research Data (2026)

The findings indicated that respondents generally had moderately positive perceptions regarding loan disbursement practices among digital lending platforms, as reflected by the composite mean score of $M = 3.16$. Respondents particularly agreed that fast loan disbursement enabled them to plan finances more effectively and meet business and household obligations on time ($M = 3.27$, $SD = 1.249$), suggesting that timely access to credit enhanced financial planning and management among rural women. Similarly, respondents agreed that digital lending provided immediate access to funds for managing unexpected financial emergencies ($M = 3.24$, $SD = 1.177$), highlighting the importance of digital loans as a financial safety net.

The findings also showed that respondents perceived digital lending platforms as relatively accessible and supportive of business opportunities. Respondents moderately agreed that fast loan disbursement enabled them to take advantage of business opportunities requiring immediate financial input ($M = 3.20$, $SD = 1.101$). In addition, the reverse-coded items suggested that digital lending reduced delays in accessing emergency funds and lowered dependence on costly alternative credit sources.

However, the lowest-rated item related to respondents' overall preference for digital lending platforms as a convenient and efficient way to apply for and receive loans ($M = 3.01$, $SD = 1.041$). Although the finding still reflects a generally positive perception, it suggests that some respondents may have experienced challenges related to service reliability, network connectivity, or lender efficiency. Overall, the findings imply that while digital lending platforms improved access to timely financial support among rural women in Machakos County, the effectiveness of loan disbursement practices depended on the consistency and reliability of service delivery.

4.4.2 Mobile Loan Repayment

Table 4.4 presents the descriptive statistics for mobile loan repayment. This variable was measured using 9 items focusing on access to digital loan platforms, timely loan installment repayment, and loan graduation as an incentive. Respondents rated the statements on a five-point Likert scale. A composite score was computed by averaging the responses across all the items such that a higher

score indicated a more positive perception of mobile loan repayment practices, including ease of accessing repayment platforms, timely repayment of loans, improved loan eligibility, and enhanced motivation to maintain responsible borrowing behavior.

Table 4.4: Descriptive Statistics for Mobile Loan Repayment

	N	Mean	Std. Deviation
I find it easy to access mobile platforms (apps/USSD) to repay my digital loans.	387	2.96	1.101
The availability of mobile repayment options allows me to manage my financial obligations more independently.	387	3.20	1.121
Mobile loan repayment services are available to me whenever I need to make a payment, including outside normal banking hour	387	3.39	1.117
I am able to repay my digital loan installments on time using mobile repayment platforms.	387	3.39	1.163
Timely repayment through mobile platforms has improved my ability to access additional or larger loans when needed.	387	3.36	1.142
Receiving mobile reminders or notifications helps me avoid missing my loan repayment deadlines	387	3.29	1.062
Repaying my digital loans on time has enabled me to qualify for higher loan limits.	387	3.13	1.242
Loan graduation (access to bigger loans after successful repayment) has improved my ability to expand my business or income-generating activities.	387	3.10	1.156
Knowing that consistent repayment improves my future borrowing opportunities motivates me to repay my loans responsibly.	387	3.06	1.216
Mobile Loan Repayment - Overall Score	387	3.2090	.98966

Source: Research Data (2026)

The findings indicated that respondents had a moderately positive perception of mobile loan repayment practices, as reflected by the composite mean score of $M = 3.21$ ($SD = 0.990$). Respondents particularly valued the availability of mobile repayment services outside normal banking hours ($M = 3.39$, $SD = 1.117$) and the ability to repay loan installments on time using mobile platforms ($M = 3.39$, $SD = 1.163$). These findings suggest that flexibility and convenience were important features of mobile repayment systems among rural women in Machakos County.

The results further showed that respondents perceived mobile repayment systems as supportive of financial management and future borrowing opportunities. Respondents moderately agreed that timely repayment improved their ability to access additional or larger loans ($M = 3.36$, $SD =$

1.142), while mobile reminders and notifications helped them avoid missing repayment deadlines ($M = 3.29$, $SD = 1.062$). These findings imply that mobile repayment platforms enhanced repayment discipline and strengthened access to future credit opportunities.

However, respondents were relatively neutral regarding the ease of accessing mobile repayment platforms such as applications and USSD services ($M = 2.96$, $SD = 1.101$), which was the lowest-rated item. This suggests that some respondents experienced challenges related to internet connectivity, technical difficulties, or mobile device limitations. Similarly, the relatively lower rating regarding motivation from future borrowing opportunities ($M = 3.06$, $SD = 1.216$) implies that repayment behavior may also be influenced by factors such as financial pressure and unstable incomes.

Overall, the findings suggest that mobile loan repayment systems positively contributed to financial management, repayment convenience, and access to future credit among rural women. Nevertheless, technological and infrastructural challenges may still limit the effectiveness of mobile repayment platforms for some users

4.4.3 Unsecured Loans

Unsecured loans were measured using 10 items presented in Table 4.5 focusing on loan limits for unsecured loans, interest rates for unsecured loans, ability to qualify for unsecured loans, perceived risk of unsecured loans, and the use of unsecured loans for productive purposes. Respondents rated the statements on a five-point Likert scale. A composite score was computed by averaging the responses across all the items such that a higher score indicated a more positive perception of unsecured loans, including adequate loan limits, affordable interest rates, easier qualification processes, lower perceived risks, and greater use of unsecured loans for productive and income-generating activities.

Table 4.5: Descriptive Statistics for Unsecured Loans

	N	Mean	Std. Deviation
The loan limits for unsecured digital loans are sufficient to support my business or personal financial needs.	387	3.15	1.106
Increasing the loan limit for unsecured loans would allow me to invest in more income-generating activities.	387	3.11	1.114

The interest rates on unsecured loans are affordable and manageable within my financial capacity.	387	3.16	1.192
High interest rates on unsecured loans make it difficult for me to repay on time (R).	387	3.34	1.210
I find it easy to qualify for unsecured loans due to minimal requirements from digital lenders.	387	3.23	1.070
Strict eligibility criteria for unsecured loans limit my ability to access credit when needed (R).	387	3.20	1.007
I worry about the risks associated with unsecured loans, such as high penalties for late repayment (R).	387	3.25	1.090
I avoid unsecured loans because of concerns about debt accumulation and financial instability (R).	387	3.18	1.194
I have used unsecured loans to expand my business and improve my financial independence.	387	3.17	1.215
Access to unsecured loans has enabled me to invest in productive activities that enhance my income.	387	3.36	1.206
unsecured Loans - Overall Score	387	3.2142	.98493

Source: Research Data (2026)

The findings indicated that respondents had a moderately positive perception of unsecured loans, as reflected by the composite mean score of $M = 3.21$ ($SD = 0.985$). Respondents particularly agreed that access to unsecured loans enabled them to invest in productive activities that enhanced their income ($M = 3.36$, $SD = 1.206$), which was the highest-rated item. This suggests that unsecured digital loans contributed to income generation and supported small-scale business activities among rural women in Machakos County. Similarly, respondents generally disagreed with the reverse-coded statement that high interest rates made repayment difficult ($M = 3.34$, $SD = 1.210$), implying that many respondents considered repayment obligations relatively manageable.

The findings further showed that respondents perceived unsecured loans as accessible and supportive of financial inclusion. Respondents moderately agreed that they found it easy to qualify for unsecured loans due to minimal requirements from digital lenders ($M = 3.23$, $SD = 1.070$), while reverse-coded items suggested that strict eligibility criteria and repayment risks were not viewed as major barriers to loan access. These findings indicate that digital lending platforms reduced traditional borrowing barriers such as collateral requirements and extensive documentation.

However, the lowest-rated item related to the perception that increasing loan limits would enable greater investment in income-generating activities ($M = 3.11$, $SD = 1.114$). This suggests that although respondents valued unsecured loans, some considered the available loan amounts insufficient for larger investments and long-term business expansion. Moderate responses regarding repayment risks and debt accumulation also imply that some borrowers still experienced concerns about financial pressure and repayment obligations.

Overall, the findings suggest that unsecured digital loans positively contributed to financial inclusion and economic empowerment among rural women by improving access to credit and supporting productive activities. Nevertheless, limitations related to loan size and repayment pressures may reduce the ability of unsecured loans to generate substantial long-term economic transformation.

4.4.4 Credit Scoring Methods

Credit scoring was measured using 8 items focusing on accuracy based on mobile money transaction history, alignment with digital loan repayment history, and scoring in line with credit bureau data. Respondents rated the statements on a five-point Likert scale. A composite score was computed by averaging the responses across all the items such that a higher score indicated a more positive perception of credit scoring methods, including perceptions of fairness, accuracy, transparency, and efficiency in how digital lenders assess borrowers' creditworthiness and process loan approvals. The descriptive statistics for credit scoring are presented in Table 4.6.

Table 4.6: Descriptive Statistics for Credit Scoring Methods

	N	Mean	Std. Deviation
The credit scoring methods used by digital lenders accurately assess my ability to repay loans.	387	3.34	1.092
I have received fair loan limits and repayment terms based on my credit score.	379	3.15	1.104
The criteria used to determine my credit score are fair and do not discriminate against me.	387	3.06	1.134
My financial history is evaluated fairly when determining my eligibility for digital loans.	387	3.04	1.127
I clearly understand how my credit score is calculated by digital lenders.	387	3.21	1.131
Digital lenders provide transparent information on how I can improve my credit score.	387	3.15	1.260

The credit scoring process is efficient, allowing me to receive loan approvals quickly.	387	3.25	1.141
Digital lenders process my loan applications in a timely manner based on my credit score.	387	3.14	1.019
Credit Scoring Methods - Overall Score	387	3.1652	.94327

Source: Research Data (2026)

The findings indicated that respondents had a moderately positive perception of credit scoring methods, as reflected by the composite mean score of $M = 3.17$ ($SD = 0.943$). Respondents particularly agreed that the credit scoring methods used by digital lenders accurately assessed their ability to repay loans ($M = 3.34$, $SD = 1.092$), which was the highest-rated item. This suggests that many respondents generally trusted the reliability of digital lenders in evaluating borrower repayment capacity. Similarly, respondents agreed that the credit scoring process was efficient and enabled quick loan approvals ($M = 3.25$, $SD = 1.141$), indicating that automated scoring systems enhanced efficiency and timely access to credit.

The findings further showed that respondents perceived credit scoring systems as relatively fair and transparent. Respondents moderately agreed that they understood how their credit scores were calculated ($M = 3.21$, $SD = 1.131$) and that digital lenders provided transparent information on how to improve credit scores ($M = 3.15$, $SD = 1.260$). These findings imply that digital lenders provided some level of communication regarding loan evaluation and repayment expectations, although understanding of the scoring process was not uniform among all respondents.

However, the lowest-rated item related to the fairness of evaluating respondents' financial histories when determining loan eligibility ($M = 3.04$, $SD = 1.127$). This suggests that some respondents remained uncertain about how previous financial behavior and repayment records influenced loan decisions. Moderate ratings on fairness and transparency also indicate that some borrowers may not have fully understood how lending decisions were made, which could contribute to dissatisfaction among those receiving lower loan limits or unfavorable repayment terms.

Overall, the findings suggest that respondents viewed credit scoring methods as an important component of digital lending that improved efficiency, facilitated timely loan access, and supported financial inclusion among rural women in Machakos County. Nevertheless, concerns regarding fairness and transparency in evaluating financial history remain important issues for some borrowers.

4.4.5 Digital Literacy

Digital literacy was measured using 12 items focusing on the ability to navigate mobile loan applications or USSD platforms, ability to understand digital loan terms and conditions, ability to interpret digital financial messages, and confidence in using mobile devices for financial transactions. Respondents rated the statements on a five-point Likert scale. A composite score was computed by averaging the responses across all the items such that a higher score indicated a higher level of digital literacy, including greater competence in using mobile financial platforms, better understanding of digital loan information, improved interpretation of digital financial messages, and stronger confidence in conducting financial transactions through mobile devices. The descriptive statistics for digital literacy are presented in Table 4.7.

Table 4.7: Descriptive Statistics for Digital Literacy

	N	Mean	Std. Deviation
I can apply for a digital loan using a mobile app or USSD code without assistance.	387	3.06	1.092
I am able to move through different menus on a loan app or USSD platform without difficulty.	387	3.06	1.216
If I encounter a problem while using a loan app or USSD code, I can usually resolve it on my own.	387	3.17	1.215
I understand the interest rates and charges applied to digital loans before accepting them.	387	3.34	1.210
I can calculate or estimate how much I will repay after borrowing a digital loan.	387	3.20	1.101
I understand the consequences of late repayment when using digital lending platforms.	387	3.04	1.127
I understand the repayment reminders sent to me through SMS or mobile notifications.	387	3.39	1.117
I can interpret transaction confirmation messages sent after making a mobile payment.	387	3.10	1.156
I can tell from mobile messages whether a loan has been approved, disbursed, or deducted.	387	3.36	1.206
I feel confident using my phone to send or receive money through mobile money services.	387	3.24	1.177
I am comfortable performing financial transactions on my phone without help from others.	387	3.25	1.141
I trust my ability to use mobile platforms safely for financial activities.	387	3.20	1.101
Digital Literacy - Overall Score	387	3.2013	.99611

Source: Research Data (2026)

The findings indicated that respondents had a moderately positive perception of their digital literacy levels, as reflected by the composite mean score of $M = 3.20$ ($SD = 0.996$). Respondents particularly agreed that they understood repayment reminders sent through SMS or mobile notifications ($M = 3.39$, $SD = 1.117$), which was the highest-rated item. Similarly, respondents agreed that they could identify whether a loan had been approved, disbursed, or deducted from mobile messages ($M = 3.36$, $SD = 1.206$). These findings suggest that respondents were relatively capable of interpreting digital financial messages and managing loan-related information through mobile platforms.

The findings further showed that respondents possessed moderate confidence in using digital financial services. Respondents moderately agreed that they understood interest rates and charges associated with digital loans before accepting them ($M = 3.34$, $SD = 1.210$), while many also reported confidence in using mobile money services and conducting financial transactions through their phones. This implies that digital financial platforms had become relatively integrated into the financial practices of rural women in Machakos County.

However, the lowest-rated items related to the ability to independently apply for digital loans using mobile applications or USSD codes ($M = 3.06$, $SD = 1.092$) and navigating digital loan menus without difficulty ($M = 3.06$, $SD = 1.216$). These findings suggest that although respondents were generally comfortable with basic digital financial activities, some still experienced challenges with platform navigation and independent use of digital lending systems. Variations in responses may have been influenced by differences in education levels, smartphone familiarity, and prior exposure to digital services.

Overall, the findings imply that digital literacy among rural women in Machakos County was moderately developed and generally sufficient to support participation in digital lending services. Nevertheless, challenges related to advanced platform navigation and independent troubleshooting highlight the continued importance of digital financial education and user-friendly platform design in promoting broader financial inclusion.

4.4.6 Economic Empowerment

Economic empowerment was measured using 8 statements focusing on financial well-being, access to financial services, expansion of micro-businesses, and economic independence and

decision-making capabilities. Respondents rated the statements on a five-point Likert scale. A composite score was computed by averaging the responses across all the items such that a higher score indicated a higher level of economic empowerment, including improved financial stability, enhanced access to financial services, greater participation in income-generating activities, increased business growth, and stronger financial independence and decision-making ability. The descriptive findings for this variable are presented in Table 4.8.

Table 4.8: Descriptive Statistics for Economic Empowerment

	N	Mean	Std. Deviation
Access to digital lending has improved my ability to meet my daily financial needs.	387	3.34	1.210
My overall financial stability has improved due to the financial opportunities provided by digital lending.	387	3.20	1.121
Digital lending has made it easier for me to access loans and other financial services when needed	387	3.34	1.092
The availability of digital lending has enabled me to participate in financial activities that were previously out of reach.	387	3.39	1.117
Digital lending has provided me with the financial resources needed to start or expand my small business.	387	3.14	1.019
When the bank promises to do something by a certain time, it does so, which makes me feel I can depend on them and strengthens our relationship.	387	3.27	1.249
The dependable service from my bank gives me confidence in managing my M-PESA outlet's liquidity, which is crucial for my business success and satisfaction.	387	3.14	1.019
The bank's staff promptly attend to my service requests, which makes me feel valued and reduces my waiting time.	387	3.01	1.041
Economic Empowerment - Overall Score	387	3.2277	.94349

Source: Research Data (2026)

The findings indicated that respondents had a moderately positive perception of economic empowerment, as reflected by the composite mean score of $M = 3.23$ ($SD = 0.943$). Respondents particularly agreed that digital lending enabled them to participate in financial activities that were previously out of reach ($M = 3.39$, $SD = 1.117$), which was the highest-rated item. Similarly, respondents agreed that access to digital lending improved their ability to meet daily financial needs ($M = 3.34$, $SD = 1.210$) and enhanced access to loans and other financial services when needed ($M = 3.34$, $SD = 1.092$). These findings suggest that digital lending enhanced financial inclusion and expanded financial opportunities among rural women in Machakos County.

The findings further showed that digital lending contributed to improved financial stability and business development. Respondents moderately agreed that digital lending improved their overall financial stability ($M = 3.20$, $SD = 1.121$) and provided resources needed to start or expand small businesses ($M = 3.14$, $SD = 1.019$). This implies that digital loans supported household financial management and entrepreneurial activities among respondents.

However, the lowest-rated item related to the promptness of service delivery by financial service providers ($M = 3.01$, $SD = 1.041$). Although respondents generally had positive perceptions of digital lending services, the findings suggest that delays in customer support and responsiveness remained a concern for some users. Moderate ratings across several empowerment indicators also imply that the benefits of digital lending may have been gradual rather than fully transformational.

Overall, the findings suggest that digital lending positively contributed to the economic empowerment of rural women by improving financial access, supporting business activities, and enhancing participation in financial opportunities. Nevertheless, broader economic empowerment may still depend on additional factors such as stable income opportunities, financial literacy, and household economic conditions.

4.5 Diagnostic Tests

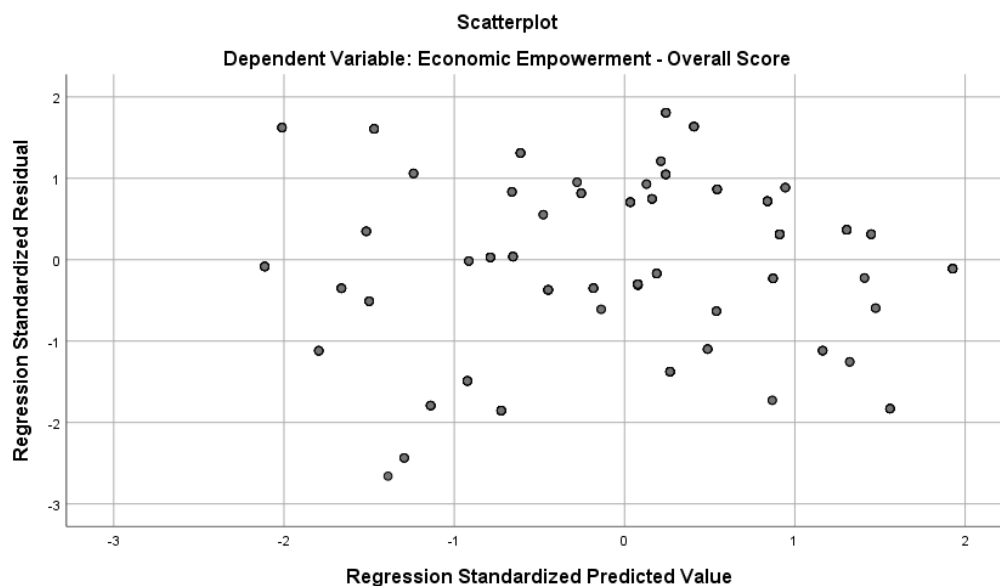


Figure 4.1: Residual-versus-fitted Plot
Source: Research Data (2026)

Linearity was assessed using a residual-versus-fitted plot, as presented in Figure 4.1. The assumption of linearity requires that the relationship between the independent variables and the dependent variable be linear, such that the residuals are randomly distributed around zero without displaying any systematic pattern or curvature. As shown in Figure 4.1, the residuals appear to be randomly scattered around the horizontal axis with no clear curved, funnel-shaped, or clustered pattern. The points are distributed across both positive and negative values of the standardized predicted values, indicating that the relationship between the predictor variables and economic empowerment was approximately linear. Additionally, there was no evidence of systematic trends that would suggest non-linearity in the regression model. The random dispersion of residuals therefore indicates that the assumption of linearity was met.

The assumption of independence of errors was tested using the Durbin–Watson statistic. The Durbin–Watson test examines whether the residuals in the regression model are independent and not autocorrelated. A Durbin–Watson value ranging between 1.5 and 2.5 is generally considered acceptable, indicating the absence of significant autocorrelation among the residuals. The analysis produced a Durbin–Watson statistic of 2.054, which falls within the acceptable range. This indicates that there was no significant autocorrelation among the residuals and that the errors were independent of one another. Therefore, the assumption of independence of errors was met, implying that the regression results were reliable and suitable for further inferential analysis regarding the relationship between digital lending practices and economic empowerment among rural women in Machakos County.

Homoscedasticity was assessed using the Breusch–Pagan test. The test examines whether the variance of the residuals remains constant across all levels of the predicted values. A non-significant p-value ($p > 0.05$) indicates that the residuals have constant variance and that the assumption of homoscedasticity has been satisfied. The results of the Breusch–Pagan test revealed a Chi-square value of 7.842 with a p-value of 0.164. Since the p-value was greater than 0.05, the null hypothesis of constant variance could not be rejected. This indicates that there was no evidence of heteroscedasticity in the regression model. Therefore, the assumption of homoscedasticity was met, implying that the residuals exhibited constant variance across the predicted values.

Normality of residuals was examined using the Shapiro-Wilk test shown in Table 4.9.

Table 4. 9: Normality Tests

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Loan Disbursement	.104	387	.251	.963	387	.295
Mobile Loan Repayment	.118	387	.467	.964	387	.358
unsecured Loans	.088	387	.127	.965	387	.604
Credit Scoring Methods	.123	387	.219	.966	387	.740
Digital Literacy	.163	387	.102	.941	387	.311
Economic Empowerment	.101	387	.332	.972	387	.433

Source: Research Data (2026)

Normality of residuals was examined using the Shapiro–Wilk test, as presented in Table 4.9. The normality assumption requires that the residuals of the regression model be approximately normally distributed. According to the Shapiro–Wilk test, a p-value greater than 0.05 indicates that the data do not significantly deviate from a normal distribution. The findings in Table 4.9 show that all the study variables had Shapiro–Wilk significance values greater than 0.05. Specifically, loan disbursement had a p-value of 0.295, mobile loan repayment had a p-value of 0.358, unsecured loans had a p-value of 0.604, credit scoring methods had a p-value of 0.740, digital literacy had a p-value of 0.311, while economic empowerment had a p-value of 0.433. Since all the significance values exceeded the threshold of 0.05, the null hypothesis of normality could not be rejected. These findings indicate that the residuals for all the study variables were approximately normally distributed. Therefore, the assumption of normality was met, implying that the data were suitable for parametric statistical analyses such as correlation and multiple regression analysis.

Table 4.10: Collinearity Statistics

Variable	Tolerance	VIF
Loan Disbursement	0.624	1.603
Mobile Loan Repayment	0.571	1.751
Unsecured Loans	0.536	1.866
Credit Scoring Methods	0.648	1.543
Digital Literacy	0.592	1.689

Source: Research Data (2026)

Multicollinearity was assessed using Variance Inflation Factors (VIFs) and tolerance values. Multicollinearity occurs when independent variables are highly correlated with one another, which may distort regression estimates and affect the reliability of the model. A tolerance value greater

than 0.10 and a VIF value less than 10 indicate the absence of problematic multicollinearity. The findings in Table 4.10 indicate that all the independent variables had tolerance values greater than 0.10 and VIF values below 10. Specifically, the VIF values ranged from 1.543 to 1.866, which are well within the recommended threshold. These findings indicate that there was no significant multicollinearity among the predictor variables included in the regression model. Therefore, the assumption of multicollinearity was not violated, implying that each independent variable contributed unique information in explaining variations in economic empowerment among rural women in Machakos County. The absence of multicollinearity further suggests that the regression coefficients obtained from the model were stable, reliable, and suitable for interpretation.

Overall, the diagnostic test results confirmed that all the assumptions required for parametric analysis were satisfactorily met. The residual-versus-fitted plot demonstrated that the assumption of linearity was achieved, while the Durbin–Watson statistic confirmed the independence of errors. The Breusch–Pagan test established that the assumption of homoscedasticity was not violated, indicating constant variance of residuals across the model. In addition, the Shapiro–Wilk test showed that the residuals were normally distributed, while the Variance Inflation Factor (VIF) values confirmed the absence of significant multicollinearity among the independent variables. Since all the regression assumptions were satisfied, the data were considered suitable for parametric statistical analyses, including correlation and multiple regression analysis, to examine the relationship between digital lending practices and economic empowerment among rural women in Machakos County.

4.6 Inferential Analysis

4.6.1 Correlations

Table 4.11: Correlations

		Loan Disbursement	Mobile Loan Repayment	Unsecured Loans	Credit Scoring Methods	Digital Literacy	Economic Empowerment
Loan Disbursement	r	1					
	p						
Mobile Loan Repayment	r	.441	1				
	p	.000					
Unsecured Loans	r	.554	.339	1			
	p	.000	.000				
Credit Scoring Methods	r	.467	.537	.353	1		
	p	.000	.000	.000			
Digital Literacy	r	.472	.353	.464	.371	1	
	p	.000	.000	.000	.000		
Economic Empowerment	r	.754	.862	.643	.750	.629	1
	p	.000	.000	.000	.000	.000	

Source: Researcher (2026)

Table 4.11 presents the Pearson correlation analysis results showing the relationships among loan disbursement, mobile loan repayment, unsecured loans, credit scoring methods, digital literacy, and economic empowerment. The findings revealed that the independent variables were positively and significantly related to one another, with correlation coefficients ranging from $r = 0.339$ to $r = 0.554$ ($p < 0.05$). These moderate relationships suggest that improvements in one aspect of digital financial services were generally associated with improvements in related aspects among respondents.

The findings further showed that all the independent variables had strong positive and statistically significant relationships with economic empowerment. Mobile loan repayment recorded the strongest relationship with economic empowerment ($r = 0.862$, $p < 0.05$), followed by loan disbursement ($r = 0.754$, $p < 0.05$) and credit scoring methods ($r = 0.750$, $p < 0.05$). Unsecured loans ($r = 0.643$, $p < 0.05$) and digital literacy ($r = 0.629$, $p < 0.05$) also demonstrated strong positive relationships with economic empowerment. These findings imply that higher levels of digital lending practices and digital literacy were associated with higher levels of economic empowerment among rural women in Machakos County.

In addition, the correlation coefficients among the independent variables were below the threshold of 0.80, indicating the absence of serious multicollinearity concerns. This suggested that the variables were sufficiently distinct to allow further regression analysis. Overall, the findings provided a basis for conducting inferential analysis to determine the combined and individual effects of the predictor variables on economic empowerment.

4.6.2 Regression Analysis

Hierarchical regression analysis was performed for both the main effects model and the interaction (moderation) model used to examine the effect of digital lending practices on economic empowerment and the moderating effect of digital literacy among rural women in Machakos County respectively.

4.6.2.1 Main Effects Regression

In Model 1, the independent variables comprising loan disbursement, mobile loan repayment, unsecured loans, credit scoring methods, and digital literacy were entered simultaneously using the enter method. The findings showed a strong positive relationship between the predictor variables and economic empowerment ($R = 0.712$). The model produced an R Square value of 0.506, indicating that 50.6% of the variation in economic empowerment among rural women in Machakos County was explained by the predictor variables. The model was statistically significant ($F = 2469.671$, $p < 0.05$), implying that digital lending practices and digital literacy jointly had a significant effect on economic empowerment.

Table 4.12: Regression Coefficients for Main Effects Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.228	.008		386.479	.000
	LD	.494	.041	.512	12.081	.000
	MR	.611	.029	.641	20.924	.000
	UL	.245	.034	.256	7.133	.000
	CS	.411	.041	.411	9.965	.000
	DL	.781	.048	.825	16.298	.000
a. Dependent Variable: Economic Empowerment						

Source: Research Data (2026)

Table 4.12 presents the regression coefficients for the hierarchical regression analysis for the main effects model (Model 1). The regression coefficients further showed that all the predictor variables had positive and statistically significant relationships with economic empowerment. Loan disbursement had a significant positive effect on economic empowerment ($\beta = 0.512$, $t = 12.081$, $p < 0.05$), suggesting that timely and efficient loan disbursement enhanced respondents' financial participation and well-being. Mobile loan repayment also had a positive and significant relationship with economic empowerment ($\beta = 0.641$, $t = 20.924$, $p < 0.05$), indicating that convenient repayment systems contributed to financial stability and economic participation among respondents.

Similarly, unsecured loans demonstrated a positive and statistically significant relationship with economic empowerment ($\beta = 0.256$, $t = 7.133$, $p < 0.05$), implying that access to unsecured digital credit improved financial access for business and personal activities. Credit scoring methods also had a positive and significant effect on economic empowerment ($\beta = 0.411$, $t = 9.965$, $p < 0.05$), suggesting that fair and efficient credit evaluation practices enhanced access to credit and financial inclusion.

The findings further revealed that digital literacy had a positive and statistically significant relationship with economic empowerment ($\beta = 0.825$, $t = 16.298$, $p < 0.05$), recording the strongest contribution among the predictor variables. This implies that the ability to use digital financial platforms and understand digital financial services played an important role in enhancing economic empowerment among rural women in Machakos County.

4.6.2.2 Moderation Model Regression

In Model 2, interaction terms between digital literacy and the independent variables were introduced to determine whether digital literacy moderated the relationship between digital lending practices and economic empowerment. The findings showed that the interaction model remained statistically significant ($F(9,377) = 1385.031$, $p < 0.05$). However, the explanatory power of the model changed only marginally, with the R Square reducing slightly from 0.506 in Model 1 to 0.504 in Model 2. The R Square change of 0.002 and the non-significant F change ($p = 0.120$) indicate that the interaction terms did not substantially improve the explanatory power of the model.

The regression coefficients further showed that loan disbursement ($\beta = 0.559$, $p < 0.05$), mobile loan repayment ($\beta = 0.657$, $p < 0.05$), unsecured loans ($\beta = 0.232$, $p < 0.05$), credit scoring methods ($\beta = 0.393$, $p < 0.05$), and digital literacy ($\beta = 0.847$, $p < 0.05$) all maintained positive and statistically significant relationships with economic empowerment. Digital literacy remained the strongest predictor, followed by mobile loan repayment.

Table 4.13: Moderation Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	3.231	.012		276.751	.000
	LD	.540	.050	.559	10.884	.000
	MR	.626	.031	.657	20.277	.000
	UL	.222	.038	.232	5.883	.000
	CS	.393	.044	.393	8.973	.000
	DL	.802	.053	.847	15.026	.000
	LD X DL	-.047	.056	-.053	-.847	.397
	MR X DL	-.032	.035	-.037	-.926	.355
	UL X DL	.125	.049	.138	2.563	.011
	CS X DL	-.050	.054	-.056	-.935	.351
a. Dependent Variable: Economic Empowerment						

Source: Research Data (2026)

The findings for Model 2 shown in Table 4.13. Regarding moderation effects, only the interaction between unsecured loans and digital literacy had a positive and statistically significant relationship with economic empowerment ($\beta = 0.138$, $t = 2.563$, $p = 0.011$). This finding suggests that respondents with higher levels of digital literacy derived greater empowerment benefits from unsecured digital loans. However, the interaction terms for loan disbursement and digital literacy ($\beta = -0.053$, $p = 0.397$), mobile loan repayment and digital literacy ($\beta = -0.037$, $p = 0.355$), and credit scoring methods and digital literacy ($\beta = -0.056$, $p = 0.351$) were not statistically significant.

Overall, the findings indicate that digital lending practices and digital literacy were positively associated with economic empowerment among rural women in Machakos County. However, digital literacy only significantly moderated the relationship between unsecured loans and economic empowerment, while its moderating effect on loan disbursement, mobile loan repayment, and credit scoring methods was not statistically significant. The findings further

suggest that flexible repayment systems and digital capability were particularly important in supporting meaningful participation in digital financial services among rural women.

Based on the regression coefficients presented in Table 4.12, the final estimated regression equations for the main effects model and the moderation model were as follows:

Main Effects Regression Equation (Model 1)

$$EE = 3.228 + 0.494LD + 0.611MR + 0.245UL + 0.411CS + 0.781DL$$

Where:

- EE = Economic Empowerment
- LD = Loan Disbursement
- MR = Mobile Loan Repayment
- UL = Unsecured Loans
- CS = Credit Scoring Methods
- DL = Digital Literacy

The equation indicates that positive changes in loan disbursement, mobile loan repayment, unsecured loans, credit scoring methods, and digital literacy were associated with positive changes in economic empowerment among rural women in Machakos County.

Moderation Regression Equation (Model 2)

$$EE = 3.231 + 0.540LD + 0.626MR + 0.222UL + 0.393CS + 0.802DL - 0.047(LD \times DL) - 0.032(MR \times DL) + 0.125(UL \times DL) - 0.050(CS \times DL)$$

Where:

- EE = Economic Empowerment
- LD = Loan Disbursement

- MR = Mobile Loan Repayment
- UL = Unsecured Loans
- CS = Credit Scoring Methods
- DL = Digital Literacy
- (LD×DL) = Interaction between Loan Disbursement and Digital Literacy
- (MR×DL) = Interaction between Mobile Loan Repayment and Digital Literacy
- (UL×DL) = Interaction between Unsecured Loans and Digital Literacy
- (CS×DL) = Interaction between Credit Scoring Methods and Digital Literacy

4.6 Chapter Summary

This chapter presented and analyzed the findings of the study on the relationship between digital lending practices and economic empowerment among rural women in Machakos County. The chapter covered the response rate, respondents' characteristics, descriptive statistics, diagnostic tests, correlation analysis, and hierarchical regression analysis. The findings established that loan disbursement, mobile loan repayment, unsecured loans, credit scoring methods, and digital literacy were positively associated with economic empowerment. The moderation analysis further revealed that digital literacy significantly moderated only the relationship between unsecured loans and economic empowerment.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion, conclusion, and recommendations of the study on the relationship between digital lending practices and economic empowerment among rural women in Machakos County. The chapter provides a summary of the main findings and discusses the findings in relation to the study objectives and existing literature. The chapter further presents the conclusions drawn from the study findings, recommendations for policy and practice, limitations encountered during the study, suggestions for further research, and a summary of the chapter.

5.2 Summary of Findings

The study established that loan disbursement was positively associated with economic empowerment among rural women in Machakos County, with respondents generally perceiving timely and efficient loan disbursement as important in supporting financial needs and economic activities. The findings further showed that mobile loan repayment was positively associated with economic empowerment, suggesting that convenient and flexible repayment systems were linked to improved financial management and financial participation among respondents. The study also established that unsecured loans were positively associated with economic empowerment, indicating that access to unsecured digital credit was linked to improved access to financial resources and income-generating opportunities among rural women.

The findings further revealed that credit scoring methods used by digital lenders were positively associated with economic empowerment, with respondents generally perceiving fair and efficient credit scoring systems as important in improving access to digital financial services. In addition, the study established that digital literacy was positively associated with economic empowerment. However, the moderation analysis showed that digital literacy only significantly moderated the relationship between unsecured loans and economic empowerment, while its moderating effect on the relationships between loan disbursement, mobile loan repayment, credit scoring methods, and economic empowerment was not significant.

5.3 Discussion of Findings

5.3.1 Effect of Loan Disbursement on Economic Empowerment

The findings revealed a positive and statistically significant relationship between loan disbursement and economic empowerment among rural women in Machakos County. Respondents who perceived digital loan disbursement as timely, accessible, and reliable also reported stronger financial participation and improved ability to manage household and business obligations. Within rural contexts characterized by irregular income streams and recurring financial pressures, timely access to credit appeared important in reducing financial disruptions and reliance on informal borrowing alternatives.

The findings generally support Resource Control Theory (RCT), which argues that access to and control over critical resources strengthens individual agency and socioeconomic participation (Hawley, 1999). Digital loan disbursement potentially expands women's access to financial resources beyond the limitations of conventional lending systems that often require collateral and formal employment records. The findings align with the theory's proposition that access to resources may strengthen participation in economic activities and enhance financial control (Bower & Hawley, 2020). However, the findings also reveal limitations within RCT. Moderate perceptions across some loan disbursement indicators suggest that access alone may not guarantee meaningful empowerment outcomes. This reinforces critiques that RCT pays limited attention to broader structural constraints such as unstable incomes, technological limitations, and socioeconomic inequalities that influence how resources are utilized (Fisher, 2017; Turner & Roberts, 2023).

The findings also align with the Theory of Capability Approach (TCA), which emphasizes the expansion of freedoms and capabilities rather than simple access to resources (Sen, 1985). Timely loan disbursement potentially expands women's choices by enabling them to respond to household demands, sustain business activities, and manage financial shocks more effectively. The findings support the argument that financial services become meaningful when they enhance individuals' ability to pursue valued economic outcomes (Robeyns, 2017). Nevertheless, moderate perceptions regarding convenience and platform preference indicate that access does not automatically translate into broader economic freedoms. Women may gain financial flexibility while still

experiencing concerns relating to affordability, repayment pressure, and institutional trust. This supports Sen's argument that development depends not only on resources but also on individuals' ability to convert them into valued outcomes (Sen, 1985).

The findings were generally consistent with previous studies that reported positive associations between efficient loan disbursement systems and women's economic participation. Nugroho and Chowdhury (2015) found that faster loan approval and disbursement enhanced women's ability to address urgent financial needs and reduced reliance on informal lenders. Similarly, Ozili (2018) observed that improved access to digital credit strengthened women's capacity to finance productive activities and improve household welfare. Bhatia and Singh (2019) also reported that continuous access to digital lending services strengthened financial autonomy among women borrowers. The current findings reinforce these studies by indicating that timely loan disbursement was associated with stronger financial participation among rural women.

However, the findings also reveal contextual differences that challenge uniformly positive portrayals of digital lending systems. While previous studies often emphasize the transformative role of rapid digital lending systems (Suri et al., 2021; Tao et al., 2022), moderate perceptions among respondents indicate that digital lending experiences remain conditional and uneven. Rural women in Machakos County continue to operate within environments characterized by unstable connectivity, inconsistent access to smartphones, and varying lender practices. These conditions suggest that the practical value of digital lending may depend not only on access to funds but also on the reliability, transparency, and usability of digital financial systems.

5.3.2 Effect of Mobile Loan Repayment on Economic Empowerment

The findings revealed a positive and statistically significant relationship between mobile loan repayment and economic empowerment among rural women in Machakos County. Respondents who perceived mobile repayment systems as accessible, flexible, and convenient also reported stronger financial participation, improved financial management, and greater ability to sustain economic activities. Within rural contexts characterized by irregular income flows and limited banking infrastructure, repayment flexibility and accessibility appeared important in shaping whether digital lending systems were perceived as supportive or financially burdensome.

The findings generally support Resource Control Theory (RCT), which argues that empowerment emerges through access to and effective utilization of critical resources (Hawley, 1999). Mobile repayment systems function not only as repayment channels but also as mechanisms that help borrowers maintain continued access to financial resources through strengthened repayment histories and improved creditworthiness. The findings align with the theory's proposition that effective management of financial resources enhances economic participation and agency (Bower & Hawley, 2020). The accessibility of repayment platforms through mobile phones and USSD systems may reduce geographical and logistical barriers that have historically constrained women's participation in formal financial systems. However, the findings also expose limitations within RCT. Moderate perceptions relating to repayment pressure and platform accessibility suggest that financial control remains conditional and uneven. This reinforces critiques that RCT underestimates the influence of broader structural constraints and socioeconomic realities affecting how resources are utilized (Fisher, 2017; Turner & Roberts, 2023).

The findings also align with the Theory of Capability Approach (TCA), which emphasizes expanding individuals' freedoms and practical opportunities rather than merely increasing access to resources (Sen, 1985). Mobile repayment systems potentially enhance women's capabilities by enabling easier loan management, improved credit histories, and access to future borrowing opportunities without requiring physical interaction with financial institutions. The findings support the argument that development occurs when individuals gain opportunities to pursue valued economic activities (Robeyns, 2017). Nevertheless, moderate responses regarding platform accessibility and repayment challenges indicate that digital convenience does not necessarily translate into universally positive experiences. Women operating within irregular income environments may still experience tension between repayment obligations and household financial needs. These findings support critiques suggesting that TCA may understate the influence of structural and institutional barriers affecting the conversion of opportunities into meaningful outcomes (Naz, 2020; Kuhumba, 2017).

The findings were generally consistent with previous studies that reported positive associations between effective repayment systems and women's economic participation. Sarker and Rahman (2024) found that user-friendly repayment systems strengthened repayment behavior and financial sustainability among women entrepreneurs. Similarly, Msomi and Olarewaju (2022) established

that accessible repayment mechanisms supported business continuity and financial independence. Bai (2019) and Esayas and Tolossa (2015) also observed that timely repayment improved future borrowing opportunities and business growth. The current findings similarly indicate that accessible and flexible repayment systems were associated with stronger financial participation among rural women.

However, the findings also reveal contextual complexities that challenge purely positive interpretations of repayment systems. Existing literature often emphasizes efficiency and convenience, yet moderate perceptions regarding repayment pressure and accessibility indicate that digital repayment experiences remain conditional. Rural women in Machakos County continue to operate within environments characterized by unstable income streams, limited financial buffers, and technological constraints. These conditions suggest that repayment systems may simultaneously support financial participation while creating pressure associated with repeated borrowing and repayment cycles. Consequently, the practical value of mobile repayment systems appears linked not only to technological efficiency but also to affordability, usability, and borrowers' broader economic circumstances.

5.3.3 Effect of Unsecured Loans on Economic Empowerment

The findings revealed a positive and statistically significant relationship between unsecured loans and economic empowerment among women in Machakos County. Women with greater access to unsecured digital credit also reported stronger financial participation, improved ability to support household and business activities, and greater engagement in income-generating opportunities. The removal of collateral requirements appeared important in expanding financial access among women who may otherwise experience exclusion from conventional lending systems. However, moderate perceptions regarding affordability, repayment pressure, and financial risk suggest that access to unsecured credit does not necessarily eliminate financial vulnerability.

The findings broadly support Resource Control Theory (RCT), which views empowerment as emerging through access to and control over critical resources (Hawley, 1999). Unsecured digital loans potentially enhance women's financial agency by removing collateral barriers that frequently limit access to conventional credit systems. The findings align with the theory's proposition that reducing barriers to resource access may strengthen socioeconomic participation and inclusion

(Bower & Hawley, 2020). Within Machakos County, this is particularly relevant because many women operate within informal economic sectors where conventional lending remains inaccessible. However, the findings also reveal tensions within RCT. Concerns relating to interest rates, repayment burdens, and financial risk suggest that access to financial resources alone may not automatically translate into empowerment. These findings support critiques that RCT pays limited attention to structural inequalities and contextual conditions influencing how resources are utilized (Fisher, 2017; Turner & Roberts, 2023).

The findings also align with the Theory of Capability Approach (TCA), which emphasizes expanding individuals' opportunities and freedoms rather than merely increasing resource access (Sen, 1985). Access to unsecured digital loans potentially expands women's ability to pursue business opportunities, address emergencies, and participate in economic activities that may otherwise remain inaccessible. The findings support TCA's proposition that development involves strengthening individuals' ability to pursue valued outcomes (Robeyns, 2017). However, moderate perceptions regarding affordability and repayment risks indicate that increased financial access does not necessarily translate into sustained capability enhancement. Women may gain temporary financial flexibility while remaining exposed to repayment pressure and financial uncertainty. This supports critiques suggesting that TCA may underestimate institutional and structural conditions necessary for converting opportunities into meaningful outcomes (Naz, 2020; Kuhumba, 2017).

The findings were generally consistent with previous studies reporting positive associations between unsecured lending and women's economic participation. Shoma (2019) found that unsecured credit enabled women entrepreneurs to stabilize incomes and expand businesses, while Rashid and Ejaz (2019) reported similar improvements in economic participation. Peter and Orser (2024) also observed that women accessing unsecured digital loans were more likely to invest in productive activities. The current findings similarly indicate that collateral-free lending structures may reduce barriers to financial participation.

At the same time, the findings also support more cautious perspectives within the literature regarding the long-term sustainability of unsecured digital credit systems. Zunaida et al. (2019) found that high interest rates weakened the empowerment potential of unsecured loans, while Chowdhury (2015) and Sarania (2015) warned that improved accessibility may increase risks of over-indebtedness among financially vulnerable borrowers. Similar concerns emerged in the

present findings, where respondents expressed moderate concerns regarding affordability and repayment pressure. Rural women in Machakos County operate within a rapidly expanding digital financial environment that improves accessibility while simultaneously exposing borrowers to financial risk. These patterns suggest that unsecured lending may function not only as a source of financial inclusion but also as a mechanism for managing short-term financial pressures and maintaining economic continuity rather than solely supporting long-term economic transformation.

5.3.4 Effect of Credit Scoring Methods on Economic Empowerment

The findings revealed a positive and statistically significant relationship between credit scoring methods and economic empowerment among women in Machakos County. Respondents who perceived digital credit scoring systems as accurate, transparent, fair, and efficient also reported stronger financial participation, improved access to lending opportunities, and greater confidence in engaging with digital financial services. These findings suggest that women's experiences with digital lending are influenced not only by access to loans but also by how lending decisions are made and communicated, particularly within contexts where many women have historically faced exclusion from formal financial systems.

The findings broadly support Resource Control Theory (RCT), which emphasizes that access to and control over valuable resources shape socioeconomic participation and agency (Hawley, 1999). Credit scoring systems function as gatekeeping mechanisms that determine access to financial opportunities within digital lending ecosystems. The findings align with the theory's proposition that equitable access to resources may strengthen inclusion among marginalized groups (Bower & Hawley, 2020). Alternative scoring approaches based on mobile money transactions may be particularly relevant for rural women who often operate outside formal employment structures. However, the findings also reveal tensions within RCT. Moderate perceptions regarding fairness and understanding of scoring criteria suggest that resource access remains partially mediated by institutional judgment and algorithmic processes. This supports critiques that RCT pays limited attention to structural and institutional factors shaping how resources are allocated and experienced (Fisher, 2017; Turner & Roberts, 2023).

The findings also align with the Theory of Capability Approach (TCA), which conceptualizes development as the expansion of practical opportunities and freedoms (Sen, 1985). Fair and transparent credit scoring systems potentially broaden women's access to financial opportunities and enhance participation in economic activities that may otherwise remain inaccessible. The findings support the argument that empowerment depends on individuals' ability to convert opportunities into meaningful outcomes (Robeyns, 2017). However, moderate responses regarding understanding of scoring processes indicate that informational asymmetry remains an important challenge. Women may gain access to financial opportunities without fully understanding how lending decisions are determined. These findings reinforce critiques suggesting that TCA may understate institutional and technological factors that shape how opportunities are experienced in practice (Naz, 2020; Kuhumba, 2017).

The findings were generally consistent with previous studies that identified credit scoring systems as important mechanisms for financial inclusion and lending efficiency. Mhlanga (2021) found that data-driven scoring models expanded financial access among underserved populations, while Kumar et al. (2024) observed that alternative transaction data improved identification of creditworthy borrowers lacking conventional financial records. Similar patterns emerge in the current study, where respondents associated digital scoring systems with improved access to lending opportunities and more efficient loan processing.

However, the findings also support concerns raised within existing literature regarding transparency and institutional trust. Henderson et al. (2015) argued that traditional credit scoring systems may disadvantage women and marginalized groups, while Gutiérrez-Nieto et al. (2016) and Gulati et al. (2017) noted that opaque scoring systems can weaken borrower confidence. Similar concerns emerged in the present findings, where respondents valued efficiency and accessibility but expressed more moderate perceptions regarding fairness and understanding of scoring processes. These patterns suggest that digital credit scoring systems may improve financial access while simultaneously creating new forms of exclusion where borrowers possess limited understanding of how lending decisions are made. Consequently, the effectiveness of digital scoring systems appears dependent not only on predictive efficiency but also on transparency, institutional trust, and borrowers' understanding of how such systems operate.

5.3.5 Moderating Effect of Digital Literacy on the Relationship Between Digital Lending and Economic Empowerment

The findings revealed that digital literacy had a positive direct relationship with economic empowerment among rural women in Machakos County. However, its moderating effect was only statistically significant in the relationship between unsecured loans and economic empowerment, while interaction effects involving loan disbursement, mobile loan repayment, and credit scoring methods were not statistically significant. These findings suggest that digital literacy may function more as an enabling capability rather than consistently altering how women experience all dimensions of digital lending (Morgan & Long, 2020; Msomi & Olarewaju, 2022). Digital literacy appeared more relevant in financial activities requiring greater judgment and decision-making, particularly in the management of unsecured loans.

The findings partially support Resource Control Theory (RCT), which argues that empowerment depends not only on access to resources but also on individuals' ability to control and utilize them effectively (Hawley, 1999). Digital literacy may be viewed as an intangible resource that strengthens women's ability to navigate digital financial systems and engage confidently with lending platforms. The positive direct relationship between digital literacy and economic empowerment aligns with the theory's proposition that knowledge-based resources strengthen participation and agency (Bower & Hawley, 2020). However, the findings also challenge assumptions within RCT. If digital literacy functioned uniformly as a resource-enhancing mechanism, stronger moderating effects would have emerged across all dimensions of digital lending. Instead, the findings suggest that the role of digital competence may depend on the complexity and risk associated with specific financial activities. This supports critiques that RCT understates the influence of institutional and technological systems in shaping how resources are accessed and utilized (Fisher, 2017; Turner & Roberts, 2023).

The findings also partially support the Theory of Capability Approach (TCA), which emphasizes the expansion of practical opportunities and individuals' ability to convert opportunities into valued outcomes (Sen, 1985). Digital literacy potentially enhances women's capabilities by enabling them to understand digital financial services, evaluate borrowing conditions, and make informed financial decisions. The findings align with the argument that knowledge and practical competence enhance socioeconomic participation (Robeyns, 2017). Nevertheless, the absence of

significant moderation effects across most lending dimensions introduces tensions within TCA. The findings suggest that digital competence alone may not substantially alter how women experience standardized financial services. In contexts where mobile money systems are already embedded in daily life, routine financial activities may require only basic digital skills. These patterns support critiques suggesting that TCA may sometimes overemphasize individual capability while underestimating broader structural and economic influences (Naz, 2020; Kuhumba, 2017).

The findings generally align with empirical studies identifying digital literacy as an important factor in socioeconomic participation and empowerment. Anzak and Sultana (2020), Mosobalaje et al. (2024), and Al-Afeef and Alsmadi (2025) found that stronger digital competencies were associated with improved participation in financial and economic activities. Similarly, Rahayu et al. (2023) reported that digital financial literacy demonstrated stronger associations with women's empowerment than traditional financial literacy. The current findings similarly indicate that digital literacy was positively associated with economic empowerment.

However, the findings also diverge from literature suggesting that digital literacy consistently strengthens the effectiveness of digital financial services across contexts (Kaiser & Menkoff, 2017; Morgan & Long, 2020). While previous studies frequently conceptualized digital literacy as a broad enabler of empowerment (Robeyns, 2017; Sen, 1985), the current findings reveal a more selective influence. The absence of significant moderation effects across loan disbursement, mobile repayment, and credit scoring suggests that digital literacy may not universally strengthen all dimensions of digital lending. The significant interaction effect involving unsecured loans indicates that digital literacy becomes more relevant where financial activities involve greater risk assessment, planning, and borrower judgment (Kuhumba, 2017; Gasper, 2010). These findings further suggest that technological competence alone may not substantially transform economic outcomes where broader challenges such as unstable incomes, repayment pressure, and limited economic opportunities remain significant (Naz, 2020; Turner & Roberts, 2023). Consequently, the influence of digital literacy appears closely tied to the nature of the lending activity and the broader socioeconomic context within which digital financial services are utilized.

5.4 Conclusion

The study concluded that digital lending practices were significantly associated with economic empowerment among rural women in Machakos County. Loan disbursement, mobile loan repayment, unsecured loans, and credit scoring methods demonstrated positive relationships with economic empowerment, indicating the importance of digital financial systems in enhancing financial participation and access to economic opportunities. The study further concluded that digital literacy had a positive relationship with economic empowerment, although its moderating influence varied across different dimensions of digital lending. The findings also suggest that access to digital financial services alone may not be sufficient for meaningful empowerment outcomes, as factors such as affordability, transparency, repayment pressures, technological capability, and broader socioeconomic conditions influence how women experience and utilize digital lending services. Consequently, strengthening digital financial ecosystems requires attention not only to access but also to the quality, usability, and inclusiveness of financial services within rural contexts.

5.5 Recommendations

5.5.1 Policy Recommendations

Policymakers and regulators such as the Central Bank of Kenya should prioritize improving the usability, transparency, and affordability of mobile repayment systems within rural financial markets. Measures such as simplified repayment interfaces, standardized repayment notifications, and clearer disclosure of penalties and repayment obligations may reduce borrower uncertainty and repayment pressure among rural women. There is also need for stronger consumer protection policies targeting unsecured digital lending, particularly regarding loan pricing, rollover practices, and hidden charges. In addition, policymakers should promote context-specific digital financial literacy programs focusing on repayment planning, responsible borrowing, and fraud awareness among rural women. Efforts to improve transparency in credit scoring systems and address infrastructural barriers such as unreliable internet connectivity and limited smartphone access would further strengthen digital financial inclusion in rural areas.

5.5.2 Managerial Recommendations

Managers of digital lending institutions should focus on improving the reliability and user-friendliness of mobile repayment systems by reducing transaction failures, simplifying repayment procedures, and providing clear repayment reminders in locally understandable formats. Digital lenders should also strengthen communication regarding loan terms, repayment obligations, penalties, and credit scoring processes to improve borrower understanding and trust. In relation to unsecured lending, institutions should review automated loan escalation and rollover practices to minimize borrower over-indebtedness and repayment distress. Additionally, embedding simple financial guidance tools such as repayment calculators and loan comparison prompts within lending platforms may support better financial decision-making among rural borrowers.

5.5.3 Theoretical Recommendations

The findings suggest the need for refinement of Resource Control Theory and the Theory of Capability Approach within digital financial inclusion research. The study demonstrates that access to digital financial resources alone may not fully explain economic empowerment outcomes, as factors such as digital literacy, affordability, transparency, and broader socioeconomic conditions also influence borrowers' experiences. The findings further suggest that digital literacy may have varying influence across different digital lending activities, indicating the need for future theoretical models to incorporate technological capability and contextual realities in explaining empowerment within digital financial ecosystems.

5.6 Limitations of the Study

The study had several limitations that should be considered when interpreting the findings. The use of a cross-sectional design limited the findings to associations observed at a single point in time and did not capture changes in digital lending experiences over time. The reliance on self-reported questionnaire data may have introduced recall bias, social desirability bias, and subjective interpretation of responses. Additionally, the study focused on rural women in Machakos County, limiting the generalizability of findings to other contexts. Measurement of digital literacy may not have captured all dimensions of digital competence, while the exclusion of other factors such as regulatory issues, financial resilience, and borrower protection mechanisms may have limited the explanatory scope of the study. Furthermore, the use of perceptual measures for both independent

and dependent variables may have introduced common method bias that potentially influenced some observed relationships. Despite these limitations, the study provides important insights into digital lending and economic empowerment among rural women.

5.7 Areas for Further Research

Future research should consider adopting longitudinal research designs to examine how digital lending experiences and economic empowerment evolve over time among rural women. Studies should also incorporate additional dimensions of digital finance, such as interest rate structures, borrower protection mechanisms, digital fraud experiences, financial resilience, and regulatory factors, to provide a broader understanding of digital lending ecosystems. Comparative studies across different counties, urban settings, and demographic groups are recommended to assess the generalizability of the findings. Further research should also explore digital literacy using more comprehensive frameworks that capture advanced digital competencies and financial decision-making skills. In addition, qualitative and mixed-method studies may provide deeper insights into the lived experiences of women in navigating digital lending platforms and the broader contextual factors influencing financial participation and empowerment.

5.8 Chapter Summary

This chapter presented the discussion, conclusions, and recommendations of the study on digital lending and economic empowerment among rural women in Machakos County. The chapter discussed the findings in relation to the study objectives, theoretical framework, and existing empirical literature. It further presented policy, managerial, and theoretical recommendations arising from the findings. In addition, the chapter outlined the limitations of the study and suggested areas for further research aimed at deepening understanding of digital financial inclusion and women's economic empowerment within rural contexts.

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APPENDICES

Appendix I: Letter of Introduction

Dear Participant,

You are invited to take part in a research study titled “Effect of Digital Lending Practices on Economic Empowerment Among Women in Rural Areas of Machakos County.”

About the Researcher:

This study is being conducted by Nancy Kalama, a student at Strathmore University.

For any questions, you may contact the researcher at:

Email: Nancy.kalama@strathmore.edu

Phone: 254 792 405662

Purpose of the Study:

The aim of this research is to understand how digital lending affects economic empowerment among rural women in Machakos County. Specifically, the study will examine factors such as loan disbursement, mobile loan repayment, unsecured loans, and credit scoring methods. Your participation will provide valuable insights that can help shape better financial services for women in rural areas.

What Participation Involves:

If you agree to participate, you will be asked to complete a questionnaire, which should take about 10–15 minutes. The questions will relate to your experiences and views on digital lending and its role in your economic well-being.

Your Rights:

Participation is completely voluntary.

You may skip any question or withdraw from the study at any time without any negative consequences.

Your responses will be kept strictly confidential; no personally identifiable information will be published or shared.

The findings will be used solely for academic purposes.

Contact for Questions:

If you need further information or have any concerns about the study, please feel free to contact Nancy Kalama at the email or phone number provided above.

Thank you for considering participation in this important study. Your perspective is highly valued and will contribute meaningfully to our understanding of digital lending and women's economic empowerment.

Sincerely,

Nancy Kalama

Strathmore University

Appendix II: Participant Information and Informed Consent

PARTICIPANT INFORMATION AND CONSENT FORM

EFFECT OF DIGITAL LENDING PRACTICES ON ECONOMIC EMPOWERMENT AMONG WOMEN IN RURAL AREAS IN MACHAKOS COUNTY

SECTION 1: INFORMATION SHEET

Investigator: Nancy Tumaini Kalama

Institutional affiliation: Strathmore Business School (SBS)

SECTION 2: INFORMATION SHEET–THE STUDY

2.1 : Why is this study being carried out?

The general objective of this research is to establish the effect of digital lending on economic empowerment among rural women in Machakos County.

The specific objectives are:

- i. To establish the effect of loan disbursement on economic empowerment among rural women in Machakos County.
- ii. To determine the effect of mobile loan repayment on economic empowerment of rural women in Machakos County.
- iii. To establish the effect of unsecured loans on economic empowerment among women in Machakos County.
- iv. To establish the effect of credit scoring methods used by digital lenders on economic empowerment of women in Machakos County.
- v. To examine the moderating effect of digital literacy on the relationship between digital lending and economic empowerment among rural women in Machakos County.

2.2 : Do I have to take part?

No. Taking part in this study is entirely optional and the decision rests only with you. If you decide to take part, you will be asked to complete a questionnaire to get information on your demographic details, such as age. You will also provide information related to women economic empowerment and digital lending. If you are not able to answer all the questions successfully the first time, you may be asked to sit through another informational session after which you may be asked to answer the questions a second time. You are free to decline to take

part in the study from this study at any time without giving any reasons.

2.3 : Who is eligible to take part in this study?

- Women aged 18+ years
- Those who do not have any cognitive impairments
- Those who have used digital lending services
- Residents of Machakos County

2.4 : Who is not eligible to take part in this study?

- Those who have cognitive impairments
- Those who are below the age of 18 years
- Men

2.5 : What will taking part in this study involve for me?

You will be approached by Nancy Tumaini Kalama and requested to take part in the study. If you are satisfied that you fully understand the goals behind this study, you will be asked to sign the informed consent form (this form) and then taken through a questionnaire to complete.

2.6 : Are there any risks or dangers in taking part in this study?

There are no risks in taking part in this study. All the information you provide will be treated as confidential and will not be used in any way without your express permission.

2.7 : Are there any benefits of taking part in this study?

The information will contribute to a better understanding of how digital lenders can empower women in Machakos County.

2.8 : What will happen to me if I refuse to take part in this study?

Participation in this study is entirely voluntary. Even if you decide to take part at first but later change your mind, you are free to withdraw at any time without explanation.

2.9 : Who will have access to my information during this research?

All research records will be stored in securely locked cabinets. That information may be transcribed into our database but this will be sufficiently encrypted and password protected. Only the people who are closely concerned with this study will have access to your information. All your information will be kept confidential.

2.10 : Who can I contact in case I have further questions?

You can contact me, Nancy Tumani Kalama, at SBS, or by e-mail (nancy.kalama@strathmore.edu), or by phone (+254 792 405 662). You can also contact my supervisor, Dr. Erastus Mbithi at the Strathmore Business School, Nairobi, or by e-mail

(EMbithi@strathmore.edu) or by phone (+254 729 207 192)

If you want to ask someone independent anything about this research please contact:

The Secretary–Strathmore University Institutional Ethics Review Board, P. O. BOX 59857,
00200, Nairobi, email ethicsreview@strathmore.edu Tel number: +254 703 034418

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you;

Participation in the research study

☐

I AGREE to take part in this research

☐

DON'T AGREE to take part in this research

Storage of information on the completed questionnaire

☐

I AGREE to have my completed questionnaire stored for future data analysis

☐

DON'T AGREE to have my completed questionnaire stored for future data analysis

Participant's Signature:

Date: ____/____/____

*DD / MM /
YEAR*

Participant's Name:

Time: ____/____

*(Please print
name)*

HR / MN

I, _____ (Name of person taking consent) certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consents to the participation in the study. S/he has been given opportunity to ask questions which have been

answered satisfactorily.

Investigator's Signature:

Investigator's Name:

(Please print name)

Date: ____/____/____

*DD / MM /
YEAR*

Time: ____/____

HR / MN

Appendix III: SU-ISERC Ethical Approval



23rd April 2026

Ms Kalama Nancy,
Nancy.Kalama@strathmore.edu

Dear Ms Kalama,

RE: Effect of Digital Lending Practices on Economic Empowerment Among Women in Rural Areas of Machakos County

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC3541/26**. The approval period is from **23rd April 2026 to 22nd April 2027**.

This approval is subject to compliance with the following requirements:

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

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

Yours sincerely,

A handwritten signature in black ink, appearing to read "Ambrose Rachier".

Mr Ambrose Rachier,
Chairperson; SU-ISERC

Appendix IV: NACOSTI License

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION.
Ref No: 249328	Date of Issue: 05/May/2026
RESEARCH LICENSE	
	
This is to Certify that Miss. NANCY TUMAINI KALAMA of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Machakos on the topic: EFFECT OF DIGITAL LENDING PRACTICES ON ECONOMIC EMPOWERMENT AMONG WOMEN IN RURAL AREAS IN MACHAKOS COUNTY for the period ending : 05/May/2027.	
License No: NACOSTI/P/26/4188973	
249328	
Applicant Identification Number	Ag. Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION	
Verification QR Code	
	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to.
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way:
 - i. Endanger national security
 - ii. Adversely affect the lives of Kenyans
 - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
 - iv. Result in exploitation of intellectual property rights of communities in Kenya
 - v. Adversely affect the environment
 - vi. Adversely affect the rights of communities
 - vii. Endanger public safety and national cohesion
 - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. Neither the license nor any rights thereunder are transferable.
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
Innovation(NACOSTI),
Off Waiyaki Way, Upper Kabete,
P. O. Box 30623 - 00100 Nairobi, KENYA
Telephone: 020 4007000, 0713788787, 0735404245
E-mail: dg@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix V: Questionnaire

Section A: Respondents' Profile

Please tick the appropriate box

1. What is your age category?

- 18-24 years ☐
- 25-34 years ☐
- 35-44 years ☐
- 45-54 years ☐
- 55 years and above ☐

2. What is your highest level of education?

- No formal education ☐
- Primary education ☐
- Secondary education ☐
- Diploma/Certificate ☐
- Bachelor's degree ☐
- Master's degree or higher ☐

3. What is your current employment status?

- Self-employed ☐
- Employed (formal) ☐
- Employed (informal) ☐
- Unemployed ☐
- Other (please specify): _____

4. What is your marital status?

- Single ☐
- Married ☐
- Widowed ☐
- Divorced/Separated ☐
- Other (please specify): _____

5. Have you ever used digital lending services?

- Yes ☐
- No ☐

6. For those who selected "Yes" above, How long have you been using digital lending services?

- Less than 6 months ☐
- 6 months to 1 year ☐
- 1-2 years ☐
- More than 2 years ☐

7. How often do you use digital lending services?

- Rarely (less than once a year) ☐
- Occasionally (a few times a year) ☐
- Regularly (monthly or more) ☐

8. What is the primary reason for using digital lending services?

- Personal expenses ☐
- Business-related expenses ☐
- Emergencies ☐
- Education ☐
- Other (please specify): _____

9. Do you have access to a smartphone or the internet for accessing digital lending platforms?

- Yes ☐
- No ☐

Section B: Digital Lending

This section contains statements on aspects related to digital lending. For each statement, indicate the extent to which you agree with statements (SD – strongly disagree, D – Disagree, N – Neutral, A – Agree, SA – Strongly Agree).

Loan Disbursement	SD	D	N	A	SA
The loans I apply for through digital lending platforms are disbursed quickly, allowing me to address financial needs on time.	☐	☐	☐	☐	☐

Fast loan disbursement has enabled me to take advantage of business opportunities that require immediate financial input.	☐	☐	☐	☐	☐
Delays in receiving digital loans have negatively impacted my ability to pay for urgent expenses, such as school fees or medical bills (R).	☐	☐	☐	☐	☐
When loan disbursement takes too long, I am forced to seek alternative, often more expensive, sources of credit (R).	☐	☐	☐	☐	☐
Digital lending has provided me with immediate access to funds, helping me manage unexpected financial emergencies.	☐	☐	☐	☐	☐
The quick availability of digital loans has reduced my reliance on informal borrowing, improving my financial stability.	☐	☐	☐	☐	☐
Fast loan disbursement allows me to plan my finances more effectively, ensuring that I can meet my business and household obligations on time.	☐	☐	☐	☐	☐
Receiving digital loans quickly has improved my ability to make well-informed financial decisions without the pressure of delayed funding.	☐	☐	☐	☐	☐
The process of applying for digital loans is simple and does not require lengthy paperwork, making it easier for me to access credit when needed.	☐	☐	☐	☐	☐
I prefer digital lending platforms because they provide a convenient and efficient way to apply for and receive loans.	☐	☐	☐	☐	☐

Mobile Loan Repayment	SD	D	N	A	SA
I find it easy to access mobile platforms (apps/USSD) to repay my digital loans.	☐	☐	☐	☐	☐
The availability of mobile repayment options allows me to manage my financial obligations more independently.	☐	☐	☐	☐	☐
Mobile loan repayment services are available to me whenever I need to make a payment, including outside normal banking hour	☐	☐	☐	☐	☐
I am able to repay my digital loan installments on time using mobile repayment platforms.	☐	☐	☐	☐	☐
Timely repayment through mobile platforms has improved my ability to access additional or larger loans when needed.	☐	☐	☐	☐	☐
Receiving mobile reminders or notifications helps me avoid missing my loan repayment deadlines	☐	☐	☐	☐	☐
Repaying my digital loans on time has enabled me to qualify for higher loan limits.	☐	☐	☐	☐	☐
Loan graduation (access to bigger loans after successful repayment) has improved my ability to expand my business or income-generating activities.	☐	☐	☐	☐	☐
Knowing that consistent repayment improves my future borrowing opportunities motivates me to repay my loans responsibly.	☐	☐	☐	☐	☐

Unsecured Loans	SD	D	N	A	SA
The loan limits for unsecured digital loans are sufficient to support my business or personal financial needs.	☐	☐	☐	☐	☐
Increasing the loan limit for unsecured loans would allow me to invest in more income-generating activities.	☐	☐	☐	☐	☐
The interest rates on unsecured loans are affordable and manageable within my financial capacity.	☐	☐	☐	☐	☐
High interest rates on unsecured loans make it difficult for me to repay on time (R).	☐	☐	☐	☐	☐
I find it easy to qualify for unsecured loans due to minimal requirements from digital lenders.	☐	☐	☐	☐	☐
Strict eligibility criteria for unsecured loans limit my ability to access credit when needed (R).	☐	☐	☐	☐	☐
I worry about the risks associated with unsecured loans, such as high penalties for late repayment (R).	☐	☐	☐	☐	☐
I avoid unsecured loans because of concerns about debt accumulation and financial instability (R).	☐	☐	☐	☐	☐
I have used unsecured loans to expand my business and improve my financial independence.	☐	☐	☐	☐	☐
Access to unsecured loans has enabled me to invest in productive activities that enhance my income.	☐	☐	☐	☐	☐

Credit Scoring	SD	D	N	A	SA
The credit scoring methods used by digital lenders accurately assess my ability to repay loans.	☐	☐	☐	☐	☐
I have received fair loan limits and repayment terms based on my credit score.	☐	☐	☐	☐	☐
The criteria used to determine my credit score are fair and do not discriminate against me.	☐	☐	☐	☐	☐
My financial history is evaluated fairly when determining my eligibility for digital loans.	☐	☐	☐	☐	☐
I clearly understand how my credit score is calculated by digital lenders.	☐	☐	☐	☐	☐
Digital lenders provide transparent information on how I can improve my credit score.	☐	☐	☐	☐	☐
The credit scoring process is efficient, allowing me to receive loan approvals quickly.	☐	☐	☐	☐	☐
Digital lenders process my loan applications in a timely manner based on my credit score.	☐	☐	☐	☐	☐

Digital Literacy	SD	D	N	A	SA
I can apply for a digital loan using a mobile app or USSD code without assistance.	☐	☐	☐	☐	☐
I am able to move through different menus on a loan app or USSD platform without difficulty.	☐	☐	☐	☐	☐
If I encounter a problem while using a loan app or USSD code, I can usually resolve it on my own.	☐	☐	☐	☐	☐
I understand the interest rates and charges applied to digital loans before accepting them.	☐	☐	☐	☐	☐
I can calculate or estimate how much I will repay after borrowing a digital loan.	☐	☐	☐	☐	☐
I understand the consequences of late repayment when using digital lending platforms.	☐	☐	☐	☐	☐
I understand the repayment reminders sent to me through SMS or mobile notifications.	☐	☐	☐	☐	☐
I can interpret transaction confirmation messages sent after making a mobile payment.	☐	☐	☐	☐	☐
I can tell from mobile messages whether a loan has been approved, disbursed, or deducted.	☐	☐	☐	☐	☐
I feel confident using my phone to send or receive money through mobile money services.	☐	☐	☐	☐	☐
I am comfortable performing financial transactions on my phone without help from others.	☐	☐	☐	☐	☐
I trust my ability to use mobile platforms safely for financial activities.	☐	☐	☐	☐	☐

Section C: Economic Empowerment

This section contains statements on how digital lending has empowered you economically. . For each statement, indicate the extent to which you agree with statements (SD – strongly disagree, D – Disagree, N – Neutral, A – Agree, SA – Strongly Agree).

Economic Empowerment	SD	D	N	A	SA
Access to digital lending has improved my ability to meet my daily financial needs.	☐	☐	☐	☐	☐
My overall financial stability has improved due to the financial opportunities provided by digital lending.	☐	☐	☐	☐	☐
Digital lending has made it easier for me to access loans and other financial services when needed	☐	☐	☐	☐	☐
The availability of digital lending has enabled me to participate in financial activities that were previously out of reach.	☐	☐	☐	☐	☐
Digital lending has provided me with the financial resources needed to start or expand my small business.	☐	☐	☐	☐	☐
Access to credit through digital platforms has helped me improve the productivity and profitability of my business	☐	☐	☐	☐	☐

Digital lending has empowered me to make independent financial decisions for myself or my family.	☐	☐	☐	☐	☐
The financial support I have received through digital lending has strengthened my role in household financial decision-making	☐	☐	☐	☐	☐

Thank You