DIGITAL FINANCIAL TRANSFORMATION AND FINANCIAL INCLUSION BY MOBILE SERVICE PROVIDERS IN WEST POKOT COUNTY, KENYA

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MASTER OF SCIENCE

(DEVELOPMENT FINANCE)

KCA UNIVERSITY

2023

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

OCTOBER, 2023

DECLARATION

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

Student Name:_____ Reg. No:_____

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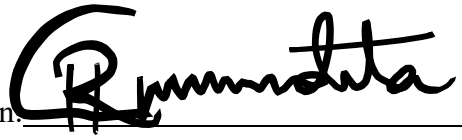
I do hereby confirm that I have examined the master's dissertation of

Laban Khaemba Selevani

And have approved it for examination.

Sign:  Date: 23/10/2023

Dr. Rogers Ochenge

ABSTRACT

The primary objective of this study was to investigate the influence of digital financial transformation on financial inclusion within West Pokot County, Kenya. In particular, the research focused on evaluating how digital payment systems, digital credit facilities, digital insurance products, and digital investment products impact financial inclusion within the county. The study was supported by the technology acceptance model, the systems theory of financial inclusion and the diffusion of innovation theory. A descriptive research design was adopted to elucidate the attributes associated with the digital financial transformation contributing to financial inclusion among West Pokot County residents. The target population encompasses 56,000 mobile users within West Pokot County. To create a representative sample, a stratified sampling approach was employed, followed by the application of a simple random sampling technique, resulting in the selection of 384 residents. Structured questionnaires served as the primary data collection instrument, utilizing the drop-and-pick method and email for distribution. Subsequently, the collected data underwent analysis employing both descriptive and inferential statistics, facilitated by SPSS Version 25.0. The study findings show that there is a positive and statistically significant correlation between financial inclusion and various digital financial services, namely digital payment systems, digital credit facilities, digital insurance products, and digital investment products. Further, regression analysis results show that digital payment systems, digital credit facilities, digital insurance products, and digital investment products demonstrate statistically significant positive relationships with financial inclusion. These findings emphasize the importance of digital financial services in promoting greater financial inclusion in West Pokot County. The study recommends that efforts should continue to promote and expand the use of digital financial transformation products, given the overwhelmingly positive attitudes and the perceived benefits of convenience and improved financial access. Mobile service providers and relevant stakeholders should prioritize the development and accessibility of user-friendly digital payment, digital credit, digital investment, and digital insurance solutions. Additionally, policymakers should consider regulatory frameworks that promote responsible and inclusive lending through digital channels.

Key Words: Digital Financial Transformation, Financial Inclusion, Digital Payment Systems, Digital Credit Facilities, Digital Insurance Products, And Digital Investment Products

ACKNOWLEDGMENT

To begin, I want to thank God for making it possible for me to reach this significant point in my schooling. Second, I would like to express my deepest thanks to both my supervisor, Dr. Rogers Ochenge, for his patience, and my entire family for their unwavering support during this entire process.

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DEDICATION

This research work is dedicated to my family and the entire KCA fraternity for their support.

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ACRONYMS AND ABBREVIATIONS

CBK: Central Bank of Kenya

CGAP: Consultative Group to Assist the Poor

FICO: Fair Isaac Corporation

FSD: Financial Sector Deepening

GDP: Gross Domestic Product

IDC: International Data Corporation

LREB: Lake Region Economic Block

MSME: Micro, small, and medium-sized enterprises

TAM: Technology Acceptance Model

OPERATIONAL DEFINITION OF TERMS

Digital Credit Facilities: The provision of credit facilities or loan services via a digital medium as a commercial endeavor (World Bank, 2020).

Digital financial transformation: This is the process of restructuring finance and accounting operations through the use of technology to develop efficient operating systems and procedures without completely replacing the existing ones (Veerabhadran, 2020).

Digital Insurance Products: It is a reference to insurance businesses that handle the sales and management of insurance policies using a technology-first operation model. This approach was developed by insurance companies (World Bank, 2020).

Digital Investment Products: A digital investment platform is an online service that lets people invest money in stocks, shares, and investment funds to make more money (World Bank, 2020).

Digital Payment Systems: These are payments made digitally or online, without the exchange of cash (World Bank, 2020).

Financial inclusion: Refers to the ease with which people and organizations may obtain the financial products and services they require (World Bank, 2023).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financial industry has undergone significant transformation due to the rapid emergence of new technologies. Digital financial transformation, which involve integrating digital technology into the financial value chain to benefit consumers and stakeholders, can enhance organizational performance (Mavlutova, Spilbergs, Verdenhofs, Natrins, Arefjevs & Volkova, 2022). By adopting new technologies, financial institutions can increase operational efficiency, effectiveness, and access to sustainable development paths, leading to the creation of new value through innovative offerings, value chains, propositions, and business models. Digital transformation has resulted in more individualized financial solutions and convenient access channels, ultimately benefiting society (Allen, Demirguc-Kunt, Klapper & Martinez-Peria, 2016).

According to the International Data Corporation (IDC, 2022), more than half of the global economy will be digital by 2024, with over 90% of enterprises focusing on digital financial transformation as a growth strategy. Nations are now prioritizing the development of digital competitiveness and sustainable economic growth. China has particularly excelled in digital financial transformation, with its digital economy expected to contribute to 38% of the country's GDP by 2020, a significant increase from 14% in 2005 (Guo & Xu, 2021).

In Africa, FinTech is rapidly expanding in areas like trade, and individual financial management, with the usage of blockchain and other digital financial technologies gaining traction (Akiwumi, 2022). For example, Eversend, a Ugandan electronic wallet, facilitates international money transfers, foreign exchange, prepaid debit cards, and stock trading in various currencies across multiple African countries (Eversend, 2022). However, financial inclusion, particularly

digital financial inclusion, remains a significant challenge in Africa, hindering economic progress (World Bank, 2020). Establishing a solid financial infrastructure is crucial to encourage greater participation in the African economy by individuals and companies. Various financing options, such as venture capital and online marketplaces, are emerging outside the traditional banking system to support the expansion of small knowledge-intensive businesses (Akiwumi, 2022).

In Kenya, digital financial transformation has become integral to financial inclusion. The rapid technological developments have led to the emergence of new financial products, distribution channels, and business models, providing individualized financial services to all segments of the consumer population (Misati, Kamau & Nassir, 2019). Kenyan banks have heavily relied on digital financial platforms to serve the historically unbanked and underserved populace, offering services such as branchless banking, electronic payment systems, Internet banking, and mobile banking (Muiruri & Ngari, 2014).

One noteworthy example of digital banking and mobile money technologies in Kenya is the widespread use of MPESA, a mobile money transfer service by Safaricom Company (FinAccess, 2021). MPESA has revolutionized financial services, allowing clients to conduct various transactions directly from their mobile devices, benefiting low-income earners who previously had limited access to the market. Additionally, non-banking financial products, like mobile money lending apps, have expanded the consumer credit sector (CBK, 2022).

Embracing digital technologies and innovative solutions is vital for the advancement of the financial sector and overall economic development. The purpose of this study is to understand how the adoption of digital financial services and technologies can enhance financial inclusion. Digital financial services facilitated by telecommunication companies such as Safaricom have the potential to extend financial services to West Pokot County. This study looked at the relationship

between digital financial transformation and financial inclusion by mobile service providers in West Pokot County, Kenya.

1.1.1 Digital Financial Transformation

Digital financial transformation, as defined by Veerabhadran (2020), involves restructuring finance and accounting operations through technology to create efficient systems and processes while preserving existing ones. This transformation is no longer an optional upgrade but a crucial business strategy. Banks and financial institutions have experienced significant benefits by shifting from labor-intensive paper-based procedures to user-friendly mobile apps, resulting in increased revenue and higher client satisfaction. Consequently, the financial services industry has undergone a profound transformation, with a strong focus on operational changes and the development of seamless digital services (European Commission, 2018).

The primary objective of digital financial services is to provide individuals with access to secure and low-cost financial solutions, rather than merely teaching them how to manage their money (Veerabhadran, 2020). Through their mobile devices and the Internet, customers can now access a wide range of banking and financial services, including bill payments and money transfers. This widespread availability of mobile phones and internet connectivity has not only facilitated the efficient distribution of traditional banking services but also spurred the emergence of innovative investment and insurance opportunities (Abbasi & Weigand, 2017).

Traditional banks are facing competition from mobile phones and the internet, prompting them to develop user-friendly mobile banking applications accessible to both current and potential customers (Shaikh, Alharthi & Alamoudi, 2020). As the financial landscape continues to evolve, digital financial transformation remains a crucial aspect for institutions to

remain competitive and provide superior services to their clientele. The study looked at the adoption and usage of digital financial services in West Pokot County as part of the ongoing digital financial transformation agenda in Kenya.

1.1.2 Financial Inclusion

Financial inclusion, as defined by the World Bank (2023), refers to the accessibility of financial products and services for individuals and organizations. The concept of financial inclusion gained prominence in the early 2000s, with roots traced back to the microcredit movement of the 1970s. Recognized for its potential to drive progress in various areas like agriculture, education, and disaster relief, financial inclusion has become a critical focus on the international development agenda, supported by global organizations and national governments (CGAP, 2023).

Access to financial resources plays a crucial role in day-to-day operations, long-term planning, and emergency preparedness for individuals, families, and businesses (Allen et al., 2016). Having bank accounts often leads people to utilize other financial services, such as credit and insurance, enabling them to improve their lives through business expansion, investment in education and health, risk management, and financial resilience. The COVID-19 pandemic has further highlighted the significance of expanding access to digital financial services, emphasizing the need for digital financial inclusion, which entails responsibly providing suitable formal financial services to the financially underserved and excluded at accessible prices (World Bank, 2023).

Measuring financial inclusion requires a combination of quantitative data from surveys, national statistics, financial institution reports, and qualitative information gathered through interviews and focus groups. Here are different ways financial inclusion can be measured

(Alexander & Karametaxas, 2020). The first metric is Account Penetration which quantifies the percentage of individuals or households that have access to a formal financial account, such as a bank account or a mobile money account. The second measure is Branch/ATM Density which measures the number of bank branches or automated teller machines (ATMs) per capita in a given area, indicating the physical accessibility of financial services (Ozili, 2021).

The third measure is Mobile Phone and Internet Penetration which measures the extent of mobile phone and internet usage can indicate the potential for digital financial services. Higher mobile and internet penetration suggest a greater possibility of reaching underserved populations through digital channels. The fourth metric is Usage of Financial Services which includes measuring the frequency and types of financial transactions conducted by individuals or businesses, such as savings deposits, loan applications, insurance coverage, or remittances (Feng, 2022). The fifth metric is Credit Access which involves assessing the availability and usage of credit, including loans and credit facilities, provides insights into the accessibility of financing options for individuals and businesses (Ozili, 2021).

The sixth measure is Financial Literacy which involves evaluating financial knowledge and understanding among individuals helps assess the level of financial education and awareness within a population. The seventh metric is Informal Financial Services. In this case, many individuals rely on informal financial mechanisms, such as community savings groups or moneylenders. Understanding the usage of these services is crucial for assessing the effectiveness of formal financial inclusion efforts (Alexander & Karametaxas, 2020). The eight metric is Insurance Coverage which involves examining the percentage of individuals or businesses with access to insurance services can shed light on the level of risk protection and resilience within a population. Lastly, measuring Affordability which involves assessing the cost of financial services,

such as transaction fees, interest rates, or account maintenance charges, helps determine whether they are affordable for low-income individuals and small businesses (Ozili, 2021).

1.1.3 Digital Financial Transformation and Financial Inclusion

The increasing shift towards online transactions has made it easier, cheaper, and safer for workers to receive paychecks, send remittances, and make purchases (World Bank, 2022). Mobile money accounts have played a vital role in facilitating high-volume, low-value transactions, providing access to banking services and enabling individuals to build savings, especially during challenging times. For women, personal bank accounts offer greater anonymity, safety, and control over their financial matters (Feng, 2022).

The digital revolution has also contributed to increased transparency and reduced corruption in government welfare programs by rerouting payments to recipients' cell phones (Alexander & Karametaxas, 2020). By doing so, administrative waste and fraud can be minimized, and assistance reaches those in need more efficiently, as seen during the pandemic when subsidies helped many individuals in underdeveloped countries maintain their standard of living. To sustain this positive trend and mitigate the impact of ongoing economic challenges, it is essential to enhance access to money, lower the cost of digital transactions, and promote wage payments and social transfers through financial accounts (CGAP, 2023).

Governments and the private sector can play crucial roles in accelerating this digital shift. Establishing a conducive environment for business and policy is essential, ensuring interoperability between different banks and mobile money providers. Expanding financial access largely relies on mobile phone infrastructure rather than traditional banking institutions. Therefore, widespread availability of affordable and reliable mobile phones, along with low-cost internet service, is crucial to boost the adoption of digital money. Additionally, consumer safeguards and

sound regulations are needed to foster safe and fair practices that build confidence in digital financial services (Alexander & Karametaxas, 2020).

In Kenya, financial inclusion has been significantly enhanced through digital financial transformation (CBK, 2022). The country has progressed from merely offering payment services to providing a wide range of digital financial services, including insurance and credit, through collaboration between commercial banks and telecoms (Mateka & Omagwa, 2016). Notably, the introduction of Safaricom Ltd.'s MPESA platform in 2007 accelerated the growth of mobile money services, with other telecommunications carriers like Airtel Kenya also entering the market. As a result, mobile money services have expanded beyond payments to encompass comprehensive banking services, contributing significantly to increased levels of financial inclusion in Kenya (CBK, 2022).

1.1.4 Mobile Service Providers in Kenya

Mobile service providers in Kenya play a crucial role in the country's telecommunication industry, providing a wide range of mobile services to millions of users. Kenya's mobile communication sector has witnessed significant growth over the years, becoming a major driver of economic development and social inclusion. The leading mobile service providers in Kenya include Safaricom, Airtel Kenya, Telkom Kenya, and Equitel. Safaricom, a subsidiary of Vodafone, is the largest and most dominant player, with a substantial market share. It has pioneered many innovations in the industry, such as the revolutionary mobile money service, M-Pesa, which has transformed the financial landscape in Kenya and beyond (Communications Authority of Kenya, 2021).

Mobile service providers in Kenya offer various services, including voice calls, text messaging, data services, mobile internet, mobile money, and value-added services like mobile

banking, mobile health, and mobile agriculture (Gitau & Muthee, 2019). The availability of affordable and accessible mobile services has significantly improved communication, financial inclusion, and access to information for both urban and rural populations. In recent years, the adoption of smartphones and the expansion of 4G and 4G+ networks have accelerated mobile data usage, enabling users to access a wide range of online services and applications. This digital financial transformation has opened new opportunities for businesses, government agencies, and individuals to leverage mobile technology for various purposes, including e-commerce, digital payments, and e-governance (Wekesa, 2020).

1.1.5 West Pokot County

West Pokot County is located in the North Rift region together with three other counties: Turkana, West Pokot, and Samburu. West Pokot County is situated in the northwest region of Kenya, bordering Uganda. The county's landscape is characterized by hilly terrains, valleys, and rugged landscapes. The majority of the population in West Pokot consists of the Pokot community, a pastoralist and agro-pastoralist group. The region is known for its traditional practices, including elaborate cultural ceremonies and the production of traditional crafts (West Pokot County, 2023).

1.2 Statement of the Problem

Digital financial transformation and financial inclusion are crucial for the welfare and development of Kenyans. Financial inclusion, facilitated by digital financial transformation, allows individuals and businesses to access and use financial services effectively. This enables them to save, invest, borrow, and manage their finances more efficiently, leading to increased economic empowerment and improved welfare (CBK, 2021). Further, digital financial transformation, through innovative technologies like mobile banking and digital wallets, enables easier access to formal financial services, such as banking, insurance, and credit. This inclusion

provides individuals with secure and convenient ways to store and grow their money, protecting them from risks associated with cash transactions and informal savings methods (Ndung'u, 2019). In addition, by giving individuals access to financial services, they can build savings, invest in income-generating activities, and manage risks. This can break the cycle of poverty by providing opportunities for individuals to improve their livelihoods and access resources for education, healthcare, and entrepreneurship (Financial Sector Deepening, 2019).

Kenya has made significant strides in advancing financial inclusion, primarily driven by the adoption of mobile money services like M-Pesa (Financial Sector Deepening, 2019). However, variations in financial inclusion exist across different regions of the country. According to the 2021 FinAccess Household Survey by the Central Bank of Kenya, the Kenya National Bureau of Statistics, and the Financial Sector Deepening (FSD) Kenya, national financial inclusion increased to 83.7% in 2021, reflecting improved access to financial services facilitated by technology (CBK, 2021). Nevertheless, Turkana and West Pokot counties in Kenya lag behind in the adoption of mobile money services. The 2019 survey revealed that West Pokot County, which includes Turkana, Samburu, and West Pokot counties, had the highest financial exclusions at 29%. The 2021 survey showed that West Pokot County had the lowest access to formal financial channels among the 47 counties with a financial inclusion rate of 57.7%. Consequently, the North Rift Valley region's financial inclusion improved marginally from 57% in 2019 to 57.4% in 2021. The 2021 report further says that West Pokot Counties also relies significantly on informal financial channels (CBK, 2021). These statistics indicate significant challenges in terms of financial access in West Pokot County, emphasizing the need for targeted interventions to enhance financial inclusion in this county.

This glaring disparity in access to financial services hinders the economic empowerment and overall well-being of the region's residents. Moreover, West Pokot County heavily relies on informal financial channels, further exposing its inhabitants to the risks associated with cash transactions and limiting their ability to save, invest, or manage their finances efficiently (Ndung'u, 2019). The lack of digital financial transformation in this region accentuates the urgency of tailored research to address these disparities and explore innovative solutions to enhance financial inclusion, ultimately improving the livelihoods, access to education, healthcare, and entrepreneurial opportunities for the residents of West Pokot as articulated in the report by CBK (2021). The available studies by (Muiruri & Ngari, 2014; Ndirangu and Nyamongo, 2015; Cherotich, Sang, Mutungu & Shisia, 2015; Chipeta & Muthinja, 2018) could not provide solutions to the problem since they used different variables, thus further informing the study. This research is essential not only for the equitable development of West Pokot but also as a model for addressing similar challenges in other underserved regions within Kenya and beyond, contributing to broader financial inclusion and societal well-being.

1.3 Research Objectives

The general objective of this study was to determine the effect of digital financial transformation by mobile service providers on financial inclusion in West Pokot County. The study will be guided by the following specific objectives:

(i) To determine the effect of digital payment systems by mobile service providers on financial inclusion in West Pokot County.

(ii) To investigate the effect of digital credit facilities by mobile service providers on financial inclusion in West Pokot County.

(iii) To evaluate the effect of digital insurance products by mobile service providers on financial inclusion in West Pokot County.

(iv) To assess the effect of digital Investment products by mobile service providers on financial inclusion in West Pokot County.

1.4 Research Questions

(i) What is the effect of digital payment systems by mobile service providers on financial inclusion in in West Pokot County?

(ii) What is the effect of digital credit facilities by mobile service providers on financial inclusion in in West Pokot County?

(iii) What is the effect of digital insurance products by mobile service providers on financial inclusion in in West Pokot County?

(iv) What is the effect of digital investment products by mobile service providers on financial inclusion in in West Pokot County?

1.5 Justification of the Study

This study is designed digital financial services providers, banks, and policymakers in boosting financial inclusion in in West Pokot County and contributing to Vision 2030. Providers of digital financial services and banks will use this information to push for greater use of digital payment methods. Because consumers who receive money in an account are more likely to utilize that account to make payments and access other services, this will aid households directly and also contribute to the growth of the digital financial ecosystem in West Pokot County.

For West Pokot County communities to benefit fully, policymakers will need to go above and beyond. Financial inclusion in West Pokot County can be sped up with the help of this study because policymakers will have a better idea of how they can support the use of digital financial

services. As such, it is crucial that policymakers provide funding for financial-education programs, particularly those that emphasize peer-to-peer learning (for example, through women's self-help organizations).

This study will also provide a body of knowledge to the literature in the area of digital financial transformation and financial inclusion which is now a hot topic in the world. The recommendations in this study will be used by academics and researchers to further inquire into digital financial transformation and financial inclusion.

1.6 Scope of the Study

The study examined the effect of digital financial transformation on financial inclusion in West Pokot County. Independent variables include digital payment systems, digital credit facilities, digital insurance products, and digital Investment products. The dependent variable is financial inclusion. The study focused on West Pokot County only.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a comprehensive literature review that explores the impact of digital financial transformation on financial inclusion. It begins with a theoretical review, where various theories and models supporting the study are examined. Moving on to the empirical review section, the chapter analyzes past studies related to the objectives of the current research. In doing so, it identifies a research gap, emphasizing the importance of this study in contributing to knowledge in the domain of digital financial transformation and financial inclusion. Furthermore, the chapter offers a conceptual framework to illustrate the interrelationships between different variables. Lastly, the chapter concludes with a table that operationalizes the study variables, providing a clear structure for further investigation.

2.2 Theoretical Review

This study will be guided by the technology acceptance model, the systems theory of financial inclusion and diffusion of innovation theory as follows:

2.2.1 Technology Acceptance Model

The Technology Acceptance Model (TAM) is a well-known framework used to study and predict the likelihood of individuals adopting new technologies. Developed by Davis in 1989, TAM has since been expanded and modified by other researchers. The model revolves around two key criteria: perceived utility and ease of use. When individuals evaluate a technology, they consider how simple it is to use and how much it improves efficiency. Social norms, compatibility with existing systems, and perceived complexity also play a role in shaping users' perceptions of a technology's utility and ease of use (Okafor, Nico & Azman, 2016).

TAM is centered on people's motivations for using technology and their intended behaviors. Users' perceptions of a technology's value influence their behavioral intention to use it. The user-friendliness of a technology not only affects how users feel about the product but also how they perceive its benefits (Nadri et al., 2018). By considering the needs and preferences of end-users, the TAM model helps evaluate user satisfaction based on the perceived usefulness and ease of use of the technology (Evans, 2018).

The Technology Acceptance Model (TAM) is highly relevant to the study. TAM is a well-established framework used to investigate and predict individuals' willingness to adopt new technologies. This model has widespread application in various fields, including information systems, marketing, and healthcare, to better understand and predict user behavior towards new technologies (Evans, 2018). It has been utilized to enhance technology adoption through training programs and improved user interfaces. Given this study's focus on assessing the impact of digital payment systems, digital insurance products, digital credit facilities, and digital investment goods on financial inclusion in the counties of West Pokot County, TAM is highly relevant to this research.

2.2.2 The Systems Theory of Financial Inclusion

The Systems Theory of Financial Inclusion was developed in the early 2010s by a team of researchers from the Fletcher School at Tufts University, led by Professor Kim Wilson. Their research project aimed to explore financial inclusion in diverse contexts worldwide. Since its inception, the theory has gained widespread recognition and application in development economics, public policy, and financial services (Ozil, 2020).

This theoretical framework views financial inclusion as a complex and dynamic system involving multiple actors, processes, and interactions. It goes beyond mere access to financial

services, emphasizing the importance of creating a supportive ecosystem that enables effective and sustainable use of these services. The theory acknowledges that financial inclusion is influenced by various factors, including economic, social, cultural, and political aspects, which interact with the financial system, forming intricate relationships and feedback loops that impact financial inclusion outcomes (Ozil, 2020).

The Systems Theory of Financial Inclusion identifies three key components: demand, supply, and the enabling environment. The demand component pertains to people's needs and preferences for financial services, while the supply component concerns the availability and quality of such services. The enabling environment component encompasses the regulatory, institutional, and infrastructure frameworks supporting financial inclusion (Elsayed, 2020). The theory underscores the necessity of a holistic and integrated approach to financial inclusion, involving collaboration among multiple stakeholders to build a supportive ecosystem. Monitoring and evaluation are also essential to understand the effectiveness of interventions and identify avenues for improvement (Kamal, Hussain & Khan, 2021).

The Systems Theory of Financial Inclusion is highly relevant to the study. Digital payment systems play a critical role in financial inclusion by providing convenient, secure, and accessible channels for conducting transactions and accessing financial services. The Systems Theory helps understand how the effectiveness of digital payment systems depends on factors like the adoption rate among consumers, the interoperability of different payment platforms, the regulatory environment, and the integration with other financial services. Digital credit facilities have the potential to expand access to credit for underserved populations, but their impact on financial inclusion is influenced by various interconnected factors. The Systems Theory enables researchers

to examine how the availability of credit information, digital identity systems, regulatory policies, and user behavior interact to determine the success and inclusivity of digital credit services.

Digital insurance products can enhance financial resilience and protect individuals and businesses from unexpected shocks. The Systems Theory allows researchers to explore how factors like digital insurance, and the understanding of insurance concepts interact to shape the extent of financial inclusion achieved through these products. Digital investment products, such as mobile-based investment platforms, have the potential to democratize access to investment opportunities. The Systems Theory helps in examining how factors like financial literacy, risk perception, regulatory frameworks, and the integration of digital investments with other financial services influence the level of financial inclusion achieved through these products. Thus, this theory supports two independent variables: digital insurance products, and digital Investment products

2.2.3 Diffusion of Innovation Theory

Diffusion of Innovation Theory, introduced by Everett Rogers in 1962, seeks to elucidate the process, reasons, and pace at which products, services, or processes disseminate throughout a population or social system. It sheds light on how new concepts and technologies spread, making it a valuable tool for marketers to gauge the likelihood of consumer adoption of novel products or services (Rogers, 1971). Research on diffusion explores the transmission of ideas among groups, surpassing the two-step flow theory by examining the factors that influence the adoption or rejection of innovations within a culture. Multi-step diffusion involves opinion leaders influencing adopters, with intermediaries like change agents encouraging opinion leaders to embrace or reject innovations (Infante, Rancer, & Womack, 1997).

Innovations are not embraced simultaneously by all individuals in a social system but rather follow a time-based sequence, leading to adopter categorization based on their uptake speed. Identifying these categories is essential for change agents aiming to facilitate innovation adoption. The adoption of new ideas is fostered through human interaction in interpersonal networks, resembling a binomial expansion as initial adopters discuss innovations with others, leading to a bell-shaped curve of adopter distribution over time (Rogers, 1971). The theory draws from the law of diffusion of innovation, analogizing the spread of ideas, products, services, or behaviors to food dye diffusing in water. New ideas permeate through a population across time, defining a population as a culture, nation, generation, or specific group of adopters (Zulkifli, 2023).

The diffusion of innovation operates on both personal and social scales. On a personal scale, individuals analyze the impact of innovations using the diffusion model process. On the social scale, innovations diffuse from concentrated few users to widespread adoption in society. Collective innovation decisions arise when every individual within a society opts to adopt an innovation, as in a democratic society, while authority innovation decisions occur when an authority, such as a government, implements an innovation decision on society (Zulkifli, 2023).

This theory focuses on how innovations, in this case, digital financial services, spread through a population. It considers the characteristics of the innovation, the communication channels, the social system, and the extent of individuals' willingness to adopt the innovation. Examining the diffusion of digital financial services in West Pokot County can provide insights into their potential to promote financial inclusion. Diffusion of Innovation Theory is relevant to the study because it helps understand how the adoption and spread of digital financial services (digital payment systems, digital credit facilities, digital insurance products, and digital Investment products) occur within a population or region. This theory can provide valuable insights into the

factors influencing the acceptance and use of digital financial services in West Pokot County and their potential impact on financial inclusion. The theory supports all the four independent variables: digital payment systems, digital credit facilities, digital insurance products, and digital Investment products.

2.3 Empirical Review

2.3.1 Effect of Digital Payment Systems on Financial Inclusion

The digitization of government and NGO cash distribution programs is on the rise (Patra, 2019). During the pandemic, digital payment systems played a vital role in distributing aid and salaries to over 222 nations and territories (Alkhowaiter, 2020). Alkhowaiter's (2020) research highlights the increasing use of digital payment solutions for secure and prompt fund transfers for social protection. Prior to the pandemic, women already benefited significantly from these new digital payment methods (Raharja, Muhyi, & Herawaty, 2020). Demirguc-Kunt, Klapper, and Singer (2017) discovered that between 2014 and 2017, 35 million women opened their first account to receive wage payments, while 80 million women opened their first account to access government social benefits.

During the lockdown, the government of Bangladesh mandated digital payments for laborers in the ready-made garment industry for the first time (Gentilini, 2020). This led to the creation of approximately 2 million digital accounts for employees to receive compensation within just 25 days (Alkhowaiter, 2020), with many first-time users, particularly among women. The implementation of dispute resolution systems in collaboration with key apparel manufacturers further enhanced the reliability and security of these digital payments (Widjaja, 2016).

Digital payment systems offer significant societal benefits by increasing financial inclusion (Demirguc-Kunt et al., 2017). Access to a variety of user-friendly financial services leads to

increased income for low-income individuals (Urbiola, Pacheco, & Lozano, 2020). Facilitating secure and efficient financial transactions becomes an effective way to combat poverty and inequality (Beilefeld, 2019). This allows individuals to save for the future, invest in education, and manage financial risks more effectively. Moreover, insurance plays a crucial role in protecting families from negative income disruptions, which can be especially devastating for the poorest households lacking sufficient financial resources to cope with unforeseen events (Shailza & Sarkar, 2019).

Direct deposit into bank accounts linked to debit cards or mobile money accounts has replaced traditional cash disbursements, reduced transaction costs, and enabled individuals to access funds without compromising essential activities such as employment or child care (Lacity, Khan, & Yan, 2016). One significant advantage is the reduction in transaction costs. With digital payment systems, the need for physical cash handling and distribution is minimized, eliminating expenses related to printing, transporting, and securing large amounts of currency (Shailza & Sarkar, 2019). This cost reduction not only benefits financial institutions but also extends to individuals who would otherwise bear the burden of withdrawal fees or other transaction charges when dealing with cash disbursements (Patra, 2019).

In Indonesia, the presence of digital finance plays a crucial role in advancing financial inclusion and facilitating the growth of small and medium-sized enterprises (SMEs), which hold substantial importance in the nation's economy (Shofawati, 2019). For SMEs, which are often unbankable, digital payment systems are crucial for accessing capital for business operations, investment, and growth (Owen & Pereira, 2018). In this context, digital payment systems emerge as a game-changer for SMEs. These systems offer a more inclusive and accessible financial landscape, allowing SMEs to overcome the barriers imposed by traditional banking. Through

digital payment platforms, SMEs gain easier access to financial resources, as they can perform transactions online, receive payments from customers, and make payments to suppliers and employees without the need for physical bank branches (Owen & Pereira, 2018).

Disse and Sommer (2020) explored the effects of digitalization on micro, small, and medium-sized businesses (MSMEs) in Sub-Saharan Africa. They suggest that greater technical collaboration and information exchange between nations could lead to the development of national regulatory frameworks for digital money, promoting economic growth that benefits all individuals. Ensuring access to digital financial services for vulnerable groups, disadvantaged entrepreneurs, and small businesses is crucial for fostering appropriate growth without negatively impacting social cohesion (Yi, Zhang, & Guo, 2018).

In the context of the Kenyan banking industry, Agufa (2016) found a small negative correlation between financial inclusion and digital payment systems, based on the number of agents, mobile banking transactions, and Internet banking transactions. Similarly, Kapadia (2019) observed that digital payment systems in Kenya were primarily adopted by banks to reduce operating costs and improve financial performance, rather than explicitly promoting financial inclusion. Kapadia recommended raising awareness of digital financial services and offering them at more affordable prices to enhance financial inclusion.

2.3.2 Effect of Digital Credit Facilities on Financial Inclusion

Numerous research studies have delved into the challenges faced by small borrowers, including households and SMEs, in their quest for credit access. The SME sector, which significantly contributes to overall production and employment, has been hindered by inadequate funding options. Ayyagari, Demirgüc-Kunt, and Maksimovic (2017) highlighted credit information gaps, insufficient collateral, and weak legal institutions as major barriers to SME

financing. On the other hand, Carstens (2019) identified a lack of trust in the financial system, financial illiteracy, high costs of financial services, and limited documentation as primary obstacles to financial service utilization by the underprivileged.

Fintech has emerged as a game-changer, facilitating access to financing for small consumers globally, especially in developed and developing nations. Nesta (2014) reported that a considerable number of borrowers on P2P lending platforms had been previously rejected by traditional banks. In the United States and the United Kingdom, where traditional lenders dominate, the Lending Club's success demonstrated that its credit scoring system outperformed the widely used FICO score, allowing borrowers to obtain lower interest rates (Jagtiani & Lemieux, 2017). Similarly, fintech credit on Alibaba's online marketplace overcame traditional credit limitations, such as geographical restrictions (Hau, Huang, Shan, & Sheng, 2018). Additionally, P2P lending platforms like Prosper and Lending Club played a vital role in filling the credit vacuum created by banks' deleveraging after the global financial crisis, effectively complementing traditional bank lending (Havrylchyk, Mariotto, Rahim, & Verdier, 2019).

Recent research has investigated the relationship between fintech lenders and traditional institutions. According to research by Freedman and Jin (2017) on peer-to-peer mortgage lending in the United States, the proportion of loans made by fintech companies increased from 2 percent in 2010 to 8 percent in 2016. They demonstrate that by utilizing digital technology, fintech mortgage lenders shaved 20% off the application process. It appears that peer-to-peer mortgage lenders compete primarily with established mortgage lenders, as opposed to clients who lack access to traditional markets. Tang (2019) provides a conceptual analysis and empirical evaluation to determine if fintech credit is a substitute for bank lending in the consumer credit market or if fintech complements bank lending by reaching out to lower-quality underserved customers. The

author exploits the 2010 regulatory tightening of underwriting standards by banks to conclude that, while P2P lending complements bank lending for small loans and thus expands access to credit for small debtors, it competes with banks for high-quality customers at comparable terms.

Research has also investigated national differences in digital credit development. Goldstein, Jiang, and Karolyi (2019) conducted a comprehensive study utilizing CCAF data to examine the international variations in crowdfunding. Through their analysis, they shed light on the diverse landscape of crowdfunding practices across countries, unveiling the importance of understanding the regulatory and economic context in shaping these differences. This study emphasized the significance of crowdfunding as an alternative financing option that plays a crucial role in bridging funding gaps for various ventures worldwide. Furthermore, Claessens (2018) contributed to the understanding of fintech lending dynamics by exploring the relationship between a country's GDP per capita and its marketplace lending activity. His research unveiled a positive correlation between GDP per capita and marketplace lending per capita. This suggests that countries with higher economic prosperity tend to have more substantial adoption and utilization of marketplace lending platforms, which offer borrowers easier access to credit. Interestingly, Claessens (2018) also discovered that countries with laxer banking sector regulations and less competition in the banking industry experience higher levels of fintech loan activity per capita. This finding indicates that a favorable regulatory environment and a less competitive banking sector can encourage the proliferation of fintech lending, as these factors create an environment that fosters fintech innovation and growth. In such countries, fintech lenders can fill the void left by traditional banks and provide financing options to underserved segments of the population, contributing to increased financial inclusion.

In their study, Rasheed, Siddiqui, Mahmood, and Khan (2019) delved into the impact of digital microfinance on the financial inclusion of Micro, Small, and Medium Enterprises (MSMEs). The research findings revealed that digital banking adoption in emerging economies has been relatively slower compared to more developed nations. Specifically, Pakistan faces a similar challenge, lagging behind other emerging economies in terms of achieving comprehensive financial inclusion (Yi, Zhang, & Guo, 2018). To address this issue and empower the MSME sector for driving economic development, Yang and Zhang (2020) suggested crucial measures. These include reducing the cost of accessing digital financial services and expanding the range of financial products available on digital platforms. By implementing such initiatives, Pakistan and other emerging economies can bridge the financial inclusion gap and enable greater participation of MSMEs in the formal financial system, ultimately fostering economic growth and development.

2.3.3 Effect of Digital Insurance Products on Financial Inclusion

The insurance industry, like all other sectors, faces compelling pressures to embrace digitalization. As the insurance sector undergoes digital financial transformation, it has witnessed an increase in insurance penetration (Diniyya, Aulia, & Wahyudi, 2020). In response to this digital shift, the emergence of insurance technology has played a crucial role. Insurance technology refers to digital platforms or technologies that offer insurance aggregators, digital agents, online claims features, and marketplaces (Uyun, Sekarhati, Amastini, Nefirantika, Shihab, & Ranti, 2020). In countries like Indonesia, recent trends have shown notable growth in total gross insurance premiums and insurance density, indicating a rising demand for life insurance coverage (Saputra & Wicaksono, 2020). Insurance technology has played a pivotal role in this development by driving the creation of digital insurance products across the globe (Diniyya, Aulia, & Wahyudi,

2020). Embracing digital solutions in the insurance industry is essential to meet the evolving demands of consumers and adapt to the modern business landscape.

According to Mishra (2018), while there are clear benefits to digitizing the insurance industry, there are also significant difficulties due to the need for continuous change in operational procedures. Although these technologies frequently cause security difficulties and data theft, they also create a promising future for customers and the insurance sector. Insurers will strengthen bonds with their clientele, increase sales to new people, and develop professionally as a result. The business model and insurance premiums will undergo significant shifts due to digital inclusion. The insurance industry requires the creation of proprietary IT infrastructure. The coverage offered by digital insurance providers varies widely. The digital marketing business has a promising future (Umut, 2020). Customers are pleased with India's digital marketing service for banks and insurers, contributing to the country's expanding financial sector. A digital marketing and digital marketing strategy in India will help it move further tomorrow. Shetty (2019) argues that digital insurance marketing is a key strategy for regional insurers to compete with their larger national counterparts. Many customers benefit from web advertising and other paid communication campaigns. Insurance firms would be wise to adopt this practice because it has the potential to significantly increase their productivity. The primary goal must be to attract an ever-increasing number of people who can be persuaded only through digital means. Karthi (2014) found that insurance firms can add value to their clients' lives by advertising their services online. Customers gain a better understanding of the company's vision, mission, and policies, as well as the products and services offered by competitors.

Digital insurance products can have a positive impact on financial inclusion by increasing underserved populations' access to insurance. With the advancement of digital technology,

insurance providers can now reach previously inaccessible markets by offering affordable and accessible insurance products via digital channels. Digital insurance products have the potential to increase low-income and impoverished individuals' access to insurance. Traditional insurance products are often costly and require a high level of financial literacy to comprehend, rendering them inaccessible to economically marginalized individuals (Kozmenko & Roienko, 2016). On the other hand, another study found out that digital insurance products can be designed to be more affordable, accessible, and user-friendly. They can be delivered via mobile apps, online platforms, or even SMS services, making it simpler for individuals to purchase and administer insurance policies. This can assist in overcoming the physical and financial obstacles that prevent many individuals from obtaining health insurance. Digital insurance products can also be tailored to the requirements of individuals with low incomes and those living in poverty (Rwiririza, 2022). For instance, microinsurance policies can be tailored to cover specific risks that are prevalent among informal laborers and rural residents. By offering more targeted insurance products, insurers can ensure that their services are applicable and accessible to marginalized populations (Mpofu & Mhlanga, 2022).

Digital insurance products have the potential to reduce the price and duration of traditional insurance products. Insurance providers can reduce their need for physical branches, paper documents, and manual processes by utilizing digital platforms. This can help reduce the price of insurance products, making them more accessible to individuals with modest incomes and those living in rural areas (Mpofu & Mhlanga, 2022). Digital insurance products can be less expensive than conventional insurance products, making them more accessible to low-income individuals who may not be able to afford costly policies. This is because digital insurance providers can reduce costs associated with maintaining a physical branch, such as rent, salaries, and other

operational expenses. These savings can be passed on to consumers through reduced premiums and fees. In addition, the underwriting process for digital insurance products is frequently streamlined, eliminating the need for complex medical examinations, lengthy paperwork, and other bureaucratic procedures. This makes it easier for individuals with low incomes to apply for insurance and obtain coverage promptly and effectively (An et al., 2023).

Digital insurance products can also be tailored to the unique requirements of each customer, enabling insurance providers to offer more personalized and adaptable coverage options. This can help to meet the unique insurance requirements of underserved populations, such as farmers or informal workers, who may face risks and vulnerabilities that are not covered by traditional insurance products (An et al., 2023). Another study established that digital insurance products can be tailored to customers' specific requirements and are accessible to a greater number of customers than traditional insurance products. By leveraging digital platforms, insurers can reach consumers in remote and underserved areas where traditional insurers may not have a physical presence. This can be accomplished via mobile applications, online portals, and other digital channels, easing customer access to insurance products (Naumenkova et al., 2019). In addition, digital insurance products can be tailored to satisfy the specific requirements of various customer segments. For instance, insurance providers can tailor products for farmers, informal laborers, and businesses owned by women. By comprehending the specific risks and vulnerabilities of different customer segments, insurance companies can offer more effective and relevant products. Further, a study by Animashaun (2022) showed that customization of digital insurance products may also include more adaptable coverage options, allowing customers to select the coverage that best meets their requirements and budgets. This is crucial for low-income individuals who may not be able to afford comprehensive insurance policies.

2.3.4 Effect of Digital Investment Products on Financial Inclusion

According to a study by Naumenkova et al. (2019), digital investment products have the potential to increase financial inclusion by providing low-income individuals with increased access to investment opportunities who may not have had access to traditional investment products. These digital investment products offer a low-cost, readily available alternative to conventional investment products, allowing more individuals to participate in the financial market. Zachosova et al. (2018) concurred, stating that digital investment products have the potential to increase financial inclusion by making simple and accessible investment opportunities available to individuals who may not have had access to traditional investment opportunities. These digital investment products enable individuals to invest in a variety of assets, including equities, bonds, and mutual funds, through the use of digital technology.

The accessibility of digital investment products is one of their chief advantages. Digital investment products can be accessed via mobile phones, which are becoming increasingly prevalent even in low-income countries. This means that individuals who may not have access to conventional investment opportunities can still potentially invest their money and earn returns (Albeverio et al., 2019). Traditional investment options may be more expensive than digital investment products. For instance, some digital investment products may have lower fees and lower minimum investments than traditional investment products, making them more accessible to individuals with lower incomes (Rwiririza, 2022). In addition, a key advantage of digital investment products is that they can be made available at a lower price than traditional investment products. This makes them more accessible to low-income individuals who may have lacked the financial means to invest in conventional investment products (Lu et al., 2022).

According to a study by Salman and Ismael (2023), digital investment products have the potential to increase financial inclusion by providing user-friendly investment opportunities to individuals who may not have had access to traditional investment opportunities. These digital investment products enable individuals to invest in a variety of assets, including equities, bonds, and mutual funds, through the use of digital technology. According to Arner et al. (2018), digital investment products can be designed to be more user-friendly and accessible, which can help new investors overcome entry barriers. Through digital platforms and social media, digital investment products could potentially reach a larger audience. This can promote financial literacy and education and provide individuals with more opportunities to learn about investment products and strategies.

Similarly, Saxen and Goyal (2022) found that the user-friendliness of digital investment products is one of their primary advantages. Digital investment platforms typically feature user-friendly interfaces that guide individuals through the investment process, making it simpler for individuals who are unfamiliar with investing to get started. Moreover, some digital investment products provide educational resources and tools to assist consumers in making informed investment decisions (Animashaun, 2022). Digital investment products can also give investors more control and flexibility. Some digital investment platforms, for instance, enable users to establish investment objectives and risk preferences, and then automatically generate a diversified investment portfolio based on those preferences. This can make investing more accessible and less intimidating for individuals who lack traditional investment experience (Manta, 2018).

2.3.5 Summary of Literature Review and Research Gaps

The literature review explores the effect of digital financial transformation on financial inclusion in West Pokot County, Kenya, across four key dimensions: payment systems, credit

facilities, insurance products, and digital investment products. It examined how digitalization is reshaping the financial landscape and providing opportunities to promote financial inclusion in a previously underserved region. However, several research gaps are evident in each of these dimensions.

In the first dimension, the effect of digital payment systems on financial inclusion is discussed. Literature review highlights the increased use of digital payment solutions, which can benefit women and low-income individuals. However, there's a lack of specific information about the adoption of digital payment systems in West Pokot County. More research was needed to assess the current state of digital payment adoption in the region and its impact on different demographics, particularly women. Additionally, while studies provide global insights, research specific to the socio-economic and cultural context of West Pokot County was required to understand the unique challenges and opportunities for digital payment systems in the region.

In the second dimension, the effect of digital credit facilities on financial inclusion is explored. The literature review discusses how fintech has expanded access to credit, particularly for underserved populations. Yet, it's crucial to determine the extent to which digital credit facilities are accessible in West Pokot County. More research was needed to identify the existing barriers to accessing digital credit and the factors influencing its adoption, considering the county's distinct economic landscape and the unique challenges faced by small borrowers in the region.

In the third dimension, the effect of digital insurance products on financial inclusion is examined. The literature review highlights the potential of digital insurance to increase coverage, especially for low-income individuals. However, there was a need for studies specific to the insurance industry in West Pokot County. Research was needed to explore the demand for digital

insurance products, the barriers to their adoption, and the potential benefits they could bring to the region, such as offering insurance tailored to the needs of local communities and businesses.

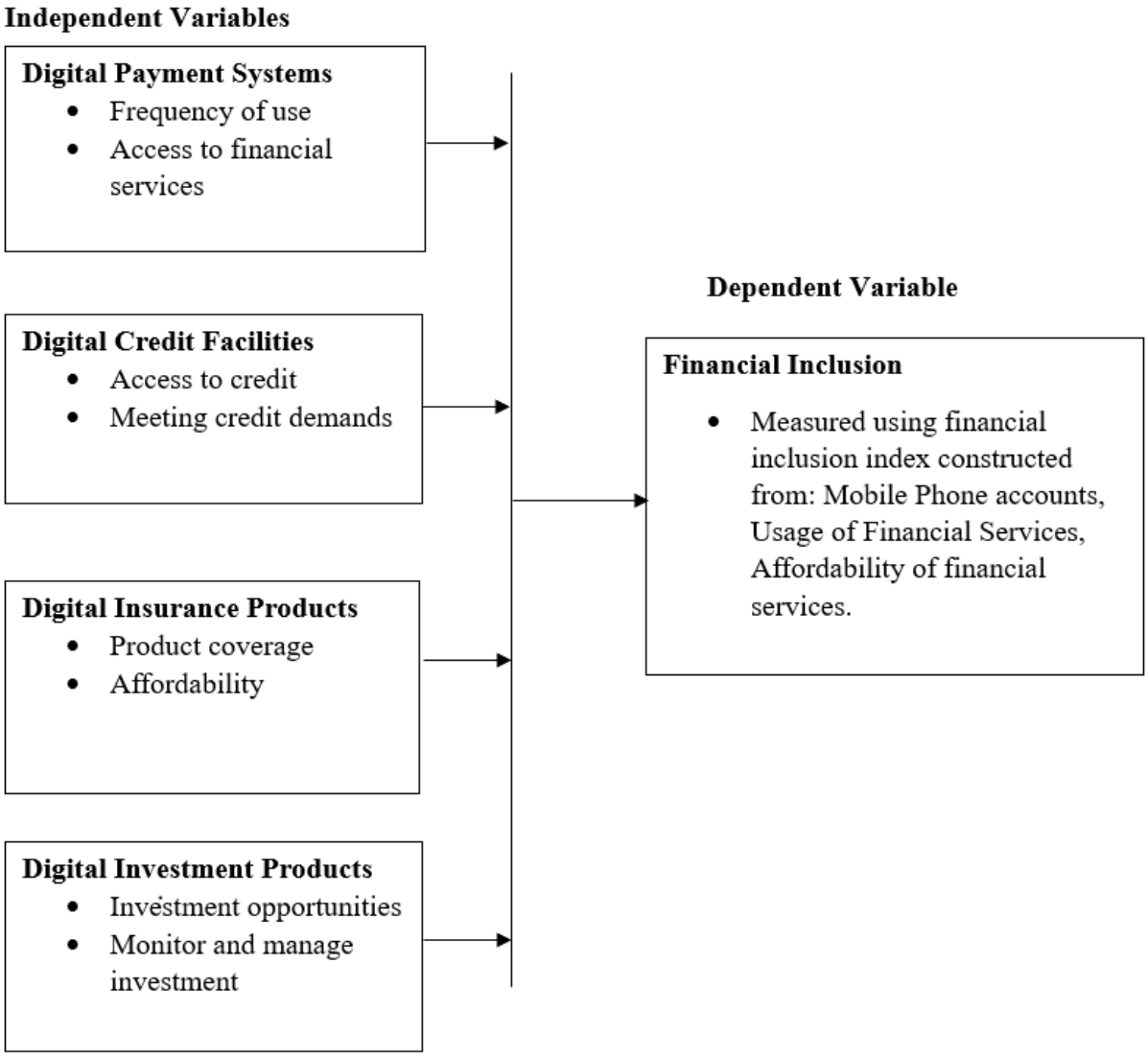
In the fourth dimension, the effect of digital investment products on financial inclusion was discussed. The literature review suggests that digital investment products can make investing more accessible and affordable. However, it was essential to understand the level of financial literacy in West Pokot County and the factors affecting individuals' willingness to invest digitally. Further research was needed to investigate the barriers to entry and the readiness of the local population to embrace digital investment solutions.

2.4 Conceptual Framework

The following is the conceptual framework showing the relationship between digital financial transformational services and financial inclusion.

FIGURE 1

A Conceptual Framework



Source: Author (2023)

2.5 Operationalization of Variables

TABLE 1

Operationalization of Variables

Variable Type	Variable	Indicators	Measurement of variables	Analysis tools
Independent Variables: digital financial transformation	Digital payment systems	• Frequency of use • Convenience • Access to financial services	Pilot study, Closed ended Questionnaire, 5-Likert scale	Mean, standard deviation, regression analysis, correlation analysis F-Test
	Digital credit facilities	• Access to credit • Meeting credit demands	Pilot study, Closed ended Questionnaire, 5-Likert scale	Mean, standard deviation, regression analysis, correlation analysis, F-Test
	Digital insurance products	• Product coverage • Affordability • Convenience	Pilot study, Closed ended Questionnaire, 5-Likert scale	Mean, standard deviation, regression analysis, correlation analysis, F-Test
	Digital investment products	• Investment opportunities • Monitor and manage investment	Pilot study, Closed ended Questionnaire, 5-Likert scale	Mean, standard deviation, regression analysis, correlation analysis, F-Test
Dependent variable: financial inclusion in West Pokot County	Financial inclusion	Financial Inclusion Index Indicators: • Usage of digital financial services • Affordability • Mobile phone accounts	Pilot study, Closed ended Questionnaire, 5-Likert scale	Financial inclusion index will be calculated through simple average.

Source: Author (2023)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that will guide the research process. The chapter deals with the research design, target population, sampling and sampling procedure, research instruments, validity and reliability of the research instrument, data collection procedure, and data processing and analysis.

3.2 Research design

The research design serves as the comprehensive plan and structure guiding the study, encompassing specific methods, procedures, and techniques to collect and analyze data, aiming to address the research questions and objectives effectively (Easterby-Smith, Thorpe, & Jackson, 2015). The study adopted a descriptive research design, a type of research design that aims to provide a detailed and accurate account of a phenomenon or population without manipulating or explaining causal relationships. It focuses on describing the characteristics, behaviors, opinions, or patterns of a specific group or situation (Bryman, 2016). The descriptive research design was well-suited for this study as it sought to depict the digital financial transformation of financial inclusion among residents in West Pokot County, estimate the influence of digital financial transformation on financial inclusion, and make predictions (Kothari, 2004). By employing this design, the study aimed to present a comprehensive and informative portrayal of the pertinent aspects related to the research topic.

3.3 Target Population

The target population refers to the specific group of individuals or cases to which the researcher aims to generalize the findings or draw conclusions. It represents the broader population

that the researcher intends to make inferences about, utilizing the data collected from the study sample. The definition of the target population is guided by the research objectives and the study's scope, which may vary depending on the research topic and the specific research questions being addressed (Kothari, 2004). In this study, the target population was composed of people residing in West Pokot County, Kenya, who are users or potential users of mobile financial services provided by mobile service providers operating in the area. The target population included individuals who actively use mobile money services, mobile banking, and other digital financial solutions offered by mobile service providers in West Pokot County. According to Kenya National Bureau of Statistics (2022), West Pokot County had an estimated 56,000 mobile phone users.

The decision to sample only mobile phone users stemmed from the recognition that mobile phones play a pivotal role in facilitating financial inclusion in many underserved regions, including West Pokot County. Mobile phones serve as a primary channel for accessing digital financial services, such as mobile banking, digital wallets, and payment platforms, which are essential components of digital financial transformation. By targeting mobile phone users, the study focused on a key demographic that is at the forefront of leveraging digital financial solutions provided by telecommunications service providers. While financial inclusion is a broader concept encompassing various factors beyond telecommunications, it recognizes the fundamental role that mobile services and digital technologies play in bringing financial services to underserved populations, thereby improving access to formal financial systems and fostering economic empowerment (Tay et al., 2022).

TABLE 2

Target Population Distribution

Sub-County	Population of Mobile Users
West Pokot	18,900
North Pokot	11,241
Central Pokot	13,622
Pokot South	12,237
Total Population	56,000

Source: Author (2023)

3.4 Sampling and Sampling Procedure

3.4.1 Sampling and Sample Size

Sampling refers to the process of selecting a subset of individuals or objects from a larger population for the purpose of conducting a study or gathering data. It is often impractical or impossible to collect data from an entire population, so sampling allows researchers to obtain information and draw inferences about the population based on a smaller, more manageable sample (Cooper & Schindler, 2003). Sample size refers to the number of individuals or objects selected for the sample. It is an important consideration in research because the size of the sample can impact the reliability and generalizability of the results (Cooper & Schindler, 2003). As illustrated below, the Cochran equation is used to determine the sample size when the population exceeds 10,000 units, as proposed by Kothari (2008).

$$n = \frac{z^2\, p\, (1-p)}{e^2}$$

Where; n = sample size

z = the standard deviation value for the level of confidence, for instance, 95% level of confidence = 1.96

e = margin of error (level of precision set at 5% in the study)

p = Since the proportion of the population with the characteristic is not known, then 50% will be used.

P=0.5 Therefore, the sample size is derived as follows;

$$n = \frac{(1.96^2)\,(0.5)\,(1 - 0.5)}{(0.05)^2}$$

$$n = 384$$

Therefore, 384 respondents (mobile phone users) participated in the study. The distribution of the sample size is presented in Table 3.2.

3.4.2 Sampling Procedure

The sampling procedure refers to the specific method or technique used to select individuals or objects from a population to form a sample. The choice of sampling procedure depends on the research objectives, characteristics of the population, available resources, and the desired level of representativeness and generalizability (Cooper & Schindler, 2003). Given the estimated population of 56,000 mobile phone users in West Pokot County, Kenya, and the sample size of 384 respondents calculated using the Cochran equation, the most appropriate sampling technique for this study would be stratified random sampling. Stratified random sampling is a method that involves dividing the population into subgroups or strata based on specific characteristics relevant to the research objective.

In this study, strata were based on geographic locations (sub-counties) within West Pokot County. By using stratified random sampling, the researcher acknowledges that the population of

mobile phone users in West Pokot County may not be homogenous. Different subgroups might have distinct characteristics or usage patterns related to digital financial transformation and financial inclusion. Stratification ensures that each stratum is represented in the sample, allowing for more precise and meaningful analysis. A simple random sampling technique was then applied, selecting samples from each stratum in proportion to their representation in the population. This method ensured that each subgroup (county) is adequately represented in the sample and allows for comparisons within and between strata (counties) (Cooper & Schindler, 2003). Then a sample size in each stratum is determined. For example, West Pokot sub-county= 18900/56000* 384=130.

TABLE 3

Sample Size Distribution

County	Population of Mobile Users	Sample Size
West Pokot	18,900	130
North Pokot	11,241	77
Central Pokot	13,622	93
Pokot South	12,237	84
Total Population	56,000	384

Source: Author (2023)

3.5 Research Instrument

A research instrument, also known as a research tool or measurement instrument, refers to the tool or technique used to collect data or information in a research study. It is designed to gather specific data related to the research objectives and research questions (Mugenda & Mugenda, 2003). The researcher collected primary data using structured questionnaires. The questionnaire included questions related to financial inclusion, digital financial transformation services, access to financial services, usage patterns, and demographic information.

3.6 Validity and Reliability of the Instrument

3.6.1 Pilot Test

In order to enhance the reliability and validity of the data collection instrument, a pilot study will be conducted among residents of Nairobi County. As Cooper and Schindler (2003), suggests, a pilot study should be carried out in settings similar to the actual target population. The pilot study will serve to identify any weaknesses in the instrument before its implementation for data collection. Approximately 5% of the target population were selected as respondents for the pilot study. The findings from the pilot study were used to assess the instrument's ability to gather reliable and valid data for the main research study.

3.6.2 Validity of Research Instrument

The validity of a research instrument refers to the extent to which the instrument measures what it is intended to measure and accurately represents the construct or variable of interest. It is a critical aspect of research because if an instrument lacks validity, the results and conclusions drawn from it may not accurately reflect the concept or phenomenon being studied (Mugenda & Mugenda, 2003). Content validity was used to evaluate the extent to which the items or questions in the instrument represent the entire domain of the construct being measured. It involved a comprehensive review by experts in the field to ensure that the instrument adequately covers all relevant aspects of the construct. The researcher’s supervisor acted as the expert reviewer of research instrument.

3.6.3 Reliability of Research Instrument

The reliability of a research instrument refers to the extent to which the instrument consistently measures the construct or variable it is intended to measure. In other words, reliability assesses the stability and consistency of the instrument's results over time, across different

conditions, or when administered by different researchers. Reliability is crucial because if a research instrument is not reliable, it may produce inconsistent or unreliable results, which can undermine the validity and trustworthiness of the study's findings (Mugenda & Mugenda, 2003). An overall examination of the questionnaire's internal consistency reliability will be performed. The reliability of the research questionnaire was assessed following a pilot study. Twenty people from outside of the target countries were used to pilot test the questionnaire. For the sake of construct validity, the questionnaire were broken up into four sections, one for each of the four goals. Cronbach's alpha was used to evaluate the reliability of the survey. The instrument was considered reliable if Cronbach's alpha for the questionnaire was more than 0.7.

3.7 Data Collection Procedure

Prior to commencing data collection, the researcher secured a letter of introduction from KCA University and obtained approval from the National Commission on Science, Technology, and Innovation (NACOSTI). Subsequently, the researcher meticulously planned the data collection process, encompassing all four sub-counties comprising West Pokot County. The administration of questionnaires was carried out directly by the researcher, with the assistance of two research assistants. The entire data collection process spanned approximately one week to complete.

3.8 Data Processing and Analysis

Data processing and analysis refer to the systematic procedures and techniques used to transform raw data into meaningful information and draw conclusions from it. It involves organizing, cleaning, transforming, and summarizing data to uncover patterns, relationships, and insights (Mugenda & Mugenda, 2003). The first step in data analysis was to code questionnaires. This was followed by data entry into excel and then exported to SPSS Version 25 (the Statistical

Package for the Social Sciences) for analysis. Before beginning analysis, the data were double-checked for mistakes in data entry or omitted information.

The data were then analyzed using both descriptive statistics and inferential statistics. Descriptive statistics were used to examine the data collected. Frequency and percentage distributions, were presented as descriptive statistics. Descriptive statistics provided a solid foundation for understanding the basic characteristics of the data in the study and serve as a starting point for more advanced statistical analyses and inferential tests. They are crucial for gaining initial insights into the topic, interpreting the data, and informing subsequent research steps and policy recommendations (Mugenda & Mugenda, 2003).

Inferential statistics were also used to analyze data. Data analysis using inferential statistics is employed to draw conclusions or make inferences about a larger population based on a sample of data. Inferential statistics allow researchers to go beyond the descriptive analysis of the sample and make generalizations or predictions about the population from which the sample was drawn. Both correlation and regression analysis were used in this study. Correlation analysis examines the strength and direction of the relationship between two or more variables. It assesses how changes in digital financial transformation services are associated with changes in other digital financial transformation services and financial inclusion. Regression analysis goes beyond correlation analysis by attempting to model the relationship between variables and make predictions or explain the variation in financial inclusion based on digital financial transformation services. It examines the impact of one or more independent variables on a dependent variable (Mugenda & Mugenda, 2003). The following is the regression model adopted in the study:

$$Y = \beta_0 + \beta_1 L_1 + \beta_2 L_2 + \beta_3 L_3 + \beta_4 L_4 + \varepsilon$$

Where; Y = Financial Inclusion (measured using financial inclusion index constructed from: Mobile Phone accounts, Usage of Financial Services, Access to financial services, Affordability of financial services.

$\beta 0$ = Constant Term

$\beta 1$= Beta coefficients

L_1= Digital Payment Systems

L_2= Digital Credit Facilities

L_3= Digital Insurance Products

L_4 = Digital Investment Products

ε = Error term

3.8.1 Diagnostic Tests

Before performing a regression model, diagnostic tests will be undertaken to ensure the reliability of the results. This test included the normality test aimed at avoiding spurious regression outcomes. Normality testing in regression analysis is an essential diagnostic step to assess whether the residuals (the differences between the observed and predicted values) follow a normal distribution. It is important because many regression techniques assume that the residuals are normally distributed. Deviations from normality can affect the validity of statistical inferences drawn from the regression model. This assumption was tested using Q-Q plots (quantile-quantile plots). If the residuals closely follow a normal distribution, these plots would appear roughly linear, with points following a diagonal line. Departures from linearity may indicate non-normality.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

Chapter five deals with data analysis, presentation of research findings, and in-depth discussions surrounding those findings. The chapter provides insights into the outcomes of the study titled "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya." It follows this structure: response rate, demographic information, descriptive statistics, inferential statistics, and diagnostic tests. The results pertaining to each study variable are thoroughly presented within this chapter.

4.2 Response Rate

A set of 384 questionnaires were distributed to the intended respondents, and out of these, 292 questionnaires were completed and returned to the researcher. This accounts for a response rate of 76.04%. According to Kothari (2004), this response rate is considered sufficient to proceed with data analysis.

TABLE 4

Response Rate

	Number	**Percent**
Sample	384	
Issued Questionnaires	384	100%
Duly filled and Returned Questionnaires	292	76.04%

Source: Author (2023)

4.3 Demographic Information

4.3.1 Gender Distribution

TABLE 5

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	151	51.7	51.7	51.7
Male	141	48.3	48.3	100.0
Total	292	100.0	100.0	

Source: Author (2023)

There was a total of 292 participants in the study. Out of these participants, 151 were female, which accounts for 51.7% of the total participants. The remaining 141 participants were male, making up 48.3% of the total participants. In summary, the study's gender distribution shows that there were slightly more female participants (51.7%) than male participants (48.3%). This information is important for understanding the composition of the study population and may be relevant for analyzing how gender may influence digital financial transformation and financial inclusion in West Pokot County, Kenya.

4.3.2: Age Distribution

TABLE 6

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
18-24 years	52	17.8	17.8	17.8
25-34 years	115	39.4	39.4	57.2
35-44 years	77	26.4	26.4	83.6
45-54 years	24	8.2	8.2	91.8
55 and above	24	8.2	8.2	100.0
Total	292	100.0	100.0	

Source: Author (2023)

The results in table 6 represent the age distribution of participants. The age group with the highest representation among the study participants is "25-34 years," which constitutes 39.4% of the total participants. The age groups "35-44 years" and "18-24 years" are the next most significant, with 26.4% and 17.8% of participants, respectively. The age groups "45-54 years" and "55 and above years" have similar participation levels, each accounting for 8.2% of the total participants. The study appears to have a relatively balanced distribution of participants across different age groups, with a focus on the younger population (25-34 years) but still including a reasonable representation from older age groups. This information is relevant for analyzing the impact of digital financial transformation and financial inclusion initiatives among different age groups in West Pokot County, Kenya.

4.3.3 Education Levels

TABLE 7

Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Primary School or Below	48	16.4	16.4	16.4
Secondary School	93	31.8	31.8	48.3
Diploma	99	33.9	33.9	82.2
Bachelor’s Degree	44	15.1	15.1	97.3
Postgraduate Degree	8	2.7	2.7	100.0
Total	292	100.0	100.0	

Source: Author (2023)

According to table 7, the education levels of participants in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya" vary significantly. The majority of participants have completed secondary school education, with 31.8% falling into this category. Additionally, 33.9% have diploma-level qualifications, and 15.1% have bachelor's degrees. A smaller proportion, 16.4%, have education

levels at or below primary school. The smallest group in the study, comprising 2.7%, holds postgraduate degrees. These findings provided insights into the diverse educational backgrounds of the participants, which would influence their engagement with digital financial transformation and financial inclusion initiatives in the region.

4.3.4 Monthly Income Levels

TABLE 8

Monthly Income

	Frequency	Percent	Valid Percent	Cumulative Percent
Below KSH 10,000	85	29.1	29.1	29.1
KSH 10,001-20,000	124	42.5	42.5	71.6
KSH 20,001-30,000	42	14.4	14.4	86.0
KSH 30,001-50,000	24	8.2	8.2	94.2
Above KSH 50,000	17	5.8	5.8	100.0
Total	292	100.0	100.0	

Source: Author (2023)

The results in table 8 depict the income levels of participants in the study titled "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya." The data reveals a varied distribution of income among the participants. The largest proportion, at 42.5%, falls within the income range of KSH 10,001 to KSH 20,000, followed by 29.1% with incomes below KSH 10,000. A notable portion of participants, 14.4%, falls into the KSH 20,001 to KSH 30,000 range, while 8.2% report incomes between KSH 30,001 and KSH 50,000. Lastly, 5.8% of participants report incomes exceeding KSH 50,000. These findings offer insights into the income diversity within the study population, which can be crucial for understanding the potential impact of digital financial transformation and financial inclusion initiatives by mobile service providers in West Pokot County, Kenya, across various income groups.

4.4 Descriptive Statistics

4.4.1 Digital Payment Systems and Financial Inclusion

In this part, respondents were required to indicate their level of agreement with regard to how frequently they use of digital payment systems for financial transactions.

TABLE 9

Frequency of Use of Digital Payment Systems for Financial Transactions

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	1	.3	.3	.3
Disagree	1	.3	.3	.7
Neutral	18	6.2	6.2	6.8
Agree	175	59.9	59.9	66.8
Strongly Agree	97	33.2	33.2	100.0
Total	292	100.0	100.0	

Source: Author (2023)

The results in table 9 reflect respondents' levels of agreement regarding their frequency of using digital payment systems for financial transactions in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya." The results demonstrates that a majority of respondents are inclined toward using digital payment systems, with 33.2% strongly agreeing and 59.9% agreeing. This indicates that a significant portion of the participants actively embraces digital financial tools for their transactions. Conversely, a very small percentage, 0.3%, strongly disagrees or disagrees with the use of digital payment systems. Furthermore, 6.2% express a neutral stance on the matter. The study also shows that only a very small percentage, 0.3%, strongly disagrees or disagrees with the use of digital payment systems. This suggests that there is limited resistance or disagreement among respondents regarding the adoption of digital financial tools.

A significant majority of participants agreeing actively embrace digital financial tools for their transactions, reflecting a strong inclination toward the use of digital payment systems. This positive sentiment aligns with previous research that highlights the growing importance of digital payment solutions in improving financial inclusion, especially in the context of aid distribution and social protection programs (Patra, 2019; Alkhowaiter, 2020).

These findings correlate with the increasing global trend of digitization in various sectors, particularly government and NGO programs, where digital payment systems have been instrumental in distributing aid and salaries across nations and territories, emphasizing their importance in facilitating prompt and secure financial transactions (Alkhowaiter, 2020). The positive sentiment towards digital payment systems mirrors previous research on the adoption of digital financial tools, which has played a significant role in financial inclusion by enhancing access to user-friendly financial services (Urbiola, Pacheco, & Lozano, 2020). Digital payment systems also hold the potential to combat poverty and inequality by enabling individuals to save, invest, and manage financial risks more effectively (Beilefeld, 2019). Furthermore, the reduced transaction costs associated with digital payment systems, as compared to traditional cash disbursements, benefit not only financial institutions but also individuals, aligning with previous research highlighting the cost-saving advantages (Shailza & Sarkar, 2019).

While the study's focus is on West Pokot County in Kenya, it resonates with the broader global context where digital payment systems have significantly contributed to the financial inclusion of underserved populations, emphasizing their pivotal role in enhancing access to capital for business operations, investments, and growth, particularly in SMEs (Shofawati, 2019). The potential of digital payment systems as a game-changer for SMEs, which are often considered unbankable, echoes the findings of previous studies, indicating that these systems create a more

inclusive and accessible financial landscape for such businesses, removing barriers imposed by traditional banking (Owen & Pereira, 2018). The study's results reinforce the importance of digitalization in fostering economic growth and the development of national regulatory frameworks for digital money, aligning with the idea of ensuring access to digital financial services for vulnerable groups and disadvantaged entrepreneurs (Disse & Sommer, 2020).

However, it's important to note that while the results demonstrate strong support for digital payment systems in West Pokot County, they may not capture the nuanced barriers and challenges faced by specific demographic groups within the population, which could be addressed through targeted interventions. Moreover, the slight negative correlation between financial inclusion and digital payment systems observed in the context of the Kenyan banking industry (Agufa, 2016) and the focus on cost reduction and financial performance by banks (Kapadia, 2019) indicate that there may still be room for further efforts to enhance the affordability and awareness of digital financial services to ensure that they are accessible to all segments of the population.

TABLE 10

Whether Digital Payment Systems Have Made It Easier for Them to Send and Receive Money

	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	8	2.7	2.7	2.7
Neutral	39	13.4	13.4	16.1
Agree	191	65.4	65.4	81.5
Strongly Agree	54	18.5	18.5	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were required to indicate whether digital payment systems have made it easier for them to send and receive money. The results in table 10 pertain to respondents' perceptions of whether digital payment systems have made it easier for them to send and receive

money in the study. The results indicates that a substantial majority of participants are positive about the impact of digital payment systems, with 18.5% strongly agreeing and 65.4% agreeing that these systems have made money transfer processes easier. This suggests that a significant portion of the population in West Pokot County perceives digital financial tools as convenient and efficient for financial transactions. On the other hand, a smaller proportion, 13.4%, maintains a neutral stance, and only 2.7% disagree with the notion that digital payment systems have facilitated money transfers.

The results of the study on the impact of digital payment systems on sending and receiving money in West Pokot County reveal a predominantly positive perception among respondents regarding the convenience and efficiency of these systems. This aligns with the broader literature on the subject, which highlights the growing significance of digital payment solutions in facilitating secure and efficient fund transfers, particularly in the context of government programs and aid distribution (Patra, 2019; Alkhowaiter, 2020). It also resonates with the idea that digital payment systems offer substantial societal benefits by increasing financial inclusion and leading to higher incomes for low-income individuals, as observed in prior studies (Demirguc-Kunt et al., 2017; Urbiola, Pacheco, & Lozano, 2020). These findings are in line with the overarching goal of using digital financial tools to combat poverty, promote savings, and enhance access to essential financial services (Beilefeld, 2019).

Moreover, the positive perception of digital payment systems' impact on money transfers aligns with the broader trend of reducing transaction costs associated with the digitization of financial services, which benefits both financial institutions and individuals. It's noted in the literature that digital payment systems reduce the need for physical cash handling, thereby eliminating the expenses related to printing, transporting, and securing large amounts of currency

(Shailza & Sarkar, 2019). This cost reduction contributes to the overall positive perception of digital payment systems among the respondents in West Pokot County. The positive sentiment toward digital payment systems in West Pokot County also aligns with the global experience, where digital finance has played a crucial role in advancing financial inclusion and supporting the growth of small and medium-sized enterprises (SMEs) by providing easier access to financial resources for business operations, investments, and growth (Shofawati, 2019; Owen & Pereira, 2018). This reflects the notion that digital payment systems can be a game-changer for SMEs, allowing them to overcome the barriers imposed by traditional banking. The positive perception of these systems further validates their role in promoting economic growth and benefiting all individuals, as suggested by Disse and Sommer (2020).

TABLE 11

Whether Digital Payment Systems Had Improved their Access to Financial Services

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0	1.0
Disagree	11	3.8	3.8	4.8
Neutral	58	19.9	19.9	24.7
Agree	188	64.4	64.4	89.0
Strongly Agree	32	11.0	11.0	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were required to indicate whether digital payment systems had improved their access to financial services (e.g., savings, loans, insurance). The results in table 11 capture respondents' perceptions regarding whether digital payment systems have improved their access to financial services in the study. The results reveals that a significant portion of participants, 64.4%, agrees that digital payment systems have enhanced their access to financial services, while

11.0% strongly agree, collectively indicating a favorable view of these systems as tools for improving financial access. In contrast, a smaller proportion, 3.8%, disagrees, and 1.0% strongly disagrees with the idea that digital payment systems have contributed to improved financial access. Furthermore, 19.9% express a neutral stance on the matter.

The results indicating respondents' perceptions regarding the impact of digital payment systems on their access to financial services in West Pokot County are largely positive, reflecting a favorable view of these systems as tools for improving financial access. This positive sentiment aligns with the broader literature on the subject, emphasizing the role of digital payment systems in increasing financial inclusion and access to user-friendly financial services (Demirguc-Kunt et al., 2017; Urbiola, Pacheco, & Lozano, 2020). The findings also correlate with the notion that facilitating secure and efficient financial transactions is an effective strategy for combating poverty and inequality (Beilefeld, 2019) and enabling individuals to save, invest in education, and manage financial risks more effectively. Moreover, digital payment systems have the potential to protect families from negative income disruptions, particularly for the poorest households (Shailza & Sarkar, 2019).

Similarly, the positive findings in the study resonate with the broader literature's observations that digital finance is crucial in advancing financial inclusion and supporting the growth of small and medium-sized enterprises (SMEs), which play a significant role in economies like Indonesia (Shofawati, 2019; Owen & Pereira, 2018). For SMEs, which are often unbankable through traditional channels, digital payment systems offer an inclusive and accessible financial landscape, allowing them to access capital for business operations, investment, and growth. The positive sentiment toward digital payment systems also aligns with the idea that technical collaboration and information exchange can lead to the development of national regulatory

frameworks for digital money, promoting economic growth that benefits all individuals (Disse and Sommer, 2020).

In the context of the Kenyan banking industry, where a small negative correlation was found between financial inclusion and digital payment systems (Agufa, 2016), the study results demonstrate that there may be mixed views on the impact of these systems on financial access. It is essential to consider that the effectiveness of digital payment systems can vary depending on the local context, the availability of infrastructure, and individual preferences. As recommended by Kapadia (2019), addressing these challenges and making digital financial services more affordable and accessible can help enhance financial inclusion, thus underscoring the importance of ongoing efforts to optimize the use of digital payment systems for the benefit of all.

4.4.2 Digital Credit Facilities and Financial Inclusion

TABLE 12

Whether Digital Credit Facilities Had Provided Them with Access to Credit that they Wouldn't Have Had Otherwise

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	8	2.7	2.7	2.7
Disagree	10	3.4	3.4	6.2
Neutral	16	5.5	5.5	11.6
Agree	217	74.3	74.3	86.0
Strongly Agree	41	14.0	14.0	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital credit facilities had provided them with access to credit that they wouldn't have had otherwise. The results in table 12 reflect the opinions of respondents regarding whether digital credit facilities have provided them with access

to credit that they wouldn't have had otherwise in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya." The data indicates that a significant majority of participants, 74.3%, agree that digital credit facilities have indeed granted them access to credit that they might not have had otherwise, with an additional 14.0% strongly agreeing. Conversely, only a small proportion, 3.4%, disagrees, and 2.7% strongly disagree with the idea that digital credit facilities provide this access. Furthermore, 5.5% express a neutral stance on the matter.

The study's findings align with research that emphasizes the challenges faced by small borrowers, especially those in the SME sector, in accessing credit through traditional banking channels. These challenges include credit information gaps, insufficient collateral, and weak legal institutions (Ayyagari, Demirgüc-Kunt, and Maksimovic, 2017). The positive perception of digital credit facilities serving as an alternative source of credit is in line with the idea that fintech has emerged as a game-changer in facilitating access to financing for small consumers, particularly those who have been previously rejected by traditional banks (Nesta, 2014). In various countries, digital lending platforms have filled the credit gap created by traditional banks, providing borrowers with lower interest rates and easier access to credit (Hau, Huang, Shan, & Sheng, 2018; Havrylchyk, Mariotto, Rahim, & Verdier, 2019).

Moreover, the study results are consistent with research exploring the relationship between fintech lenders and traditional institutions. The findings align with studies that suggest fintech complements traditional banks by reaching underserved customers while also competing with banks for high-quality customers (Freedman and Jin, 2017; Tang, 2019). This suggests that digital credit facilities have the potential to expand access to credit for small debtors who may face difficulties accessing loans through traditional channels. The positive perception of digital credit

facilities in the study also resonates with research on international variations in crowdfunding and fintech lending. It highlights the role of regulatory and economic contexts in shaping the fintech landscape. Fintech lending activity is influenced by a country's GDP per capita, with countries having higher economic prosperity tending to have more substantial adoption and utilization of fintech lending platforms, which offer borrowers easier access to credit (Goldstein, Jiang, and Karolyi, 2019; Claessens, 2018). Additionally, countries with favorable regulatory environments and less competitive banking sectors tend to experience higher levels of fintech loan activity per capita, creating an environment that fosters fintech innovation and growth (Claessens, 2018).

TABLE 13

Whether Digital Credit Facilities Had Helped Them Meet Their Financial Needs More Quickly Compared to Traditional Lending Options

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	9	3.1	3.1	3.1
Disagree	17	5.8	5.8	8.9
Neutral	31	10.6	10.6	19.5
Agree	199	68.2	68.2	87.7
Strongly Agree	36	12.3	12.3	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital credit facilities had helped them meet their financial needs more quickly compared to traditional lending options. The results in table 13 reflect respondents' perceptions regarding whether digital credit facilities have helped them meet their financial needs more quickly compared to traditional lending options in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya." The data shows that a substantial majority of participants, 68.2%, agree

that digital credit facilities have enabled them to meet their financial needs more quickly, with an additional 12.3% strongly agreeing. Conversely, only a small proportion, 5.8%, disagrees, and 3.1% strongly disagree with this idea. Furthermore, 10.6% express a neutral stance on the matter.

The study's findings align with research that highlights the challenges faced by small borrowers, including SMEs, in accessing credit through traditional banking channels due to barriers such as credit information gaps, insufficient collateral, and weak legal institutions (Ayyagari, Demirgüc-Kunt, and Maksimovic, 2017). The positive perception of digital credit facilities offering quicker access to funds is consistent with the idea that fintech has emerged as a game-changer, filling the credit vacuum created by traditional banks, and providing borrowers with faster access to financing (Nesta, 2014; Havrylchyk, Mariotto, Rahim, & Verdier, 2019).

The findings are also consistent with research on the relationship between fintech lenders and traditional institutions, which suggests that fintech can complement traditional banks by offering faster and more streamlined credit application processes (Freedman and Jin, 2017). This aligns with the perception that digital credit facilities have helped participants meet their financial needs more quickly, potentially saving time compared to traditional lending options. Additionally, the positive perception of digital credit facilities aligns with the literature exploring international variations in fintech lending, which underscores the role of regulatory and economic contexts in shaping the fintech landscape. Countries with higher economic prosperity tend to have more substantial adoption and utilization of fintech lending platforms, which offer borrowers quicker access to credit (Claessens, 2018). Furthermore, the study's results are in line with research addressing the adoption of digital financial services in emerging economies, where the adoption has been relatively slower compared to more developed nations. The positive perception of digital credit facilities can be seen as an important step in bridging the financial inclusion gap and enabling

greater participation of underserved segments of the population in the formal financial system (Rasheed, Siddiqui, Mahmood, Khan, 2019; Yang and Zhang, 2020).

4.4.3 Digital Insurance Products and Financial Inclusion

TABLE 14

Whether Digital Insurance Products Had Increased Their Access to Affordable Insurance Coverage

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0	1.0
Disagree	9	3.1	3.1	4.1
Neutral	23	7.9	7.9	12.0
Agree	183	62.7	62.7	74.7
Strongly Agree	74	25.3	25.3	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital insurance products had increased their access to affordable insurance coverage. The results in table 14 reflect the responses of respondents regarding whether digital insurance products have increased their access to affordable insurance coverage in the study. The results shows that a substantial majority of participants, 62.7%, agree that digital insurance products have indeed expanded their access to affordable insurance coverage, with an additional 25.3% strongly agreeing. On the contrary, only a small proportion, 3.1%, disagrees, and 1.0% strongly disagrees with this notion. Additionally, 7.9% express a neutral stance on the matter.

The study's results are consistent with research highlighting the growth in insurance penetration as a response to the digital shift and the emergence of insurance technology (Diniyya, Aulia, & Wahyudi, 2020; Uyun, Sekarhati, Amastini, Nefirantika, Shihab, & Ranti, 2020). The positive perception of digital insurance products is in line with the idea that digital platforms and

technologies are driving the creation of more accessible and affordable insurance products across the globe. Additionally, the findings are consistent with research emphasizing the importance of digital marketing and digital marketing strategies in promoting insurance services. The positive perception of digital insurance products resonates with the idea that digital marketing can help regional insurers compete with larger national counterparts and increase their productivity (Shetty, 2019; Karthi, 2014). Furthermore, the study's results align with research that points to the potential for digital insurance products to increase access to insurance for low-income and marginalized individuals. Digital insurance products can be designed to be more affordable, accessible, and user-friendly, making it simpler for individuals with low incomes to purchase and manage insurance policies (Kozmenko & Roienko, 2016; Rwiririza, 2022). This is crucial for expanding financial inclusion and ensuring that insurance coverage is accessible to underserved populations.

The positive perception of digital insurance products is also consistent with research highlighting the potential cost savings associated with digital insurance. By leveraging digital platforms, insurance providers can reduce operational expenses and pass on these savings to consumers through reduced premiums and fees (Mpofu & Mhlanga, 2022). This aligns with the perception that digital insurance products have made insurance more affordable and accessible. Moreover, the findings correspond with research emphasizing the customization and tailoring of digital insurance products to meet the specific requirements of customers, including those in underserved segments. Digital insurance products can be tailored to the unique needs of each customer, which is essential for serving diverse customer segments effectively (An et al., 2023; Naumenkova et al., 2019). This allows insurance companies to provide more relevant and adaptable coverage options, catering to the needs and budgets of low-income individuals and those in underserved areas.

TABLE 15

Whether Digital Insurance Products Had Provided Them with Convenient Options for Insurance Premium Payments and Claims

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	1.7	1.7	1.7
Disagree	15	5.1	5.1	6.8
Neutral	57	19.5	19.5	26.4
Agree	181	62.0	62.0	88.4
Strongly Agree	34	11.6	11.6	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital insurance products had provided them with convenient options for insurance premium payments and claims. The results in table 15 represent the opinions of respondents regarding whether digital insurance products have provided them with convenient options for insurance premium payments and claims in the study. The results reveals that a significant majority of participants, 62.0%, agree that digital insurance products have indeed offered convenient options for premium payments and claims processing, with an additional 11.6% strongly agreeing. On the other hand, only a small proportion, 5.1%, disagrees, and 1.7% strongly disagree with this notion. Furthermore, 19.5% express a neutral stance on the matter.

The positive perception of convenient premium payments and claims processing aligns with the literature emphasizing the pivotal role of digital technology and insurtech in the insurance sector. The emergence of insurance technology, or insurtech, has played a crucial role in improving the convenience and efficiency of various insurance processes (Uyun, Sekarhati, Amastini, Nefirantika, Shihab, & Ranti, 2020). The digitalization of insurance processes has been a response to the increasing demand for convenient and accessible insurance services. This positive perception also corresponds with research highlighting the potential for digitalization to make

insurance services more customer-friendly and efficient. By embracing digital solutions, insurance providers can strengthen their relationships with customers, increase sales, and adapt to the changing business landscape (Mishra, 2018). The positive perception of convenience suggests that customers value the benefits of digital inclusion and the ease of managing insurance-related tasks.

The findings are in line with the idea that digital insurance products have the potential to reduce the cost and duration of traditional insurance processes. By reducing the need for physical branches and streamlining underwriting processes, digital insurance providers can offer more cost-effective and efficient services (Mpofu & Mhlanga, 2022). This aligns with the positive perception of convenience in premium payments and claims processing, as cost-effectiveness and efficiency often translate into convenience for customers. Moreover, the results are consistent with research emphasizing the customization of digital insurance products to meet the specific needs of customers. Digital insurance products can be tailored to cater to the unique requirements of different customer segments, which can lead to more personalized and adaptable coverage options (An et al., 2023). This customization contributes to the perception of convenience as customers can access insurance options that align with their specific needs and budgets.

4.4.4 Digital Investment Products and Financial Inclusion

TABLE 16

Whether Digital Investment Products Had Expanded Their Investment Opportunities

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0	1.0
Disagree	3	1.0	1.0	2.1
Neutral	23	7.9	7.9	9.9
Agree	236	80.8	80.8	90.8
Strongly Agree	27	9.2	9.2	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital investment products had expanded their investment opportunities. The results in table 16 reflect respondents' perceptions regarding whether digital investment products have expanded their investment opportunities in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya." The data shows that an overwhelming majority of participants, 80.8%, agree that digital investment products have indeed broadened their investment opportunities, with an additional 9.2% strongly agreeing. Conversely, only a small proportion, 1.0%, both disagree and strongly disagree with this notion. Additionally, 7.9% express a neutral stance on the matter.

The positive perception of expanded investment opportunities through digital platforms is consistent with prior research highlighting the role of these products in increasing financial inclusion. Studies by Naumenkova et al. (2019) and Zachosova et al. (2018) have demonstrated that digital investment products offer accessible and low-cost alternatives to traditional investment options, thus broadening the scope for individuals, particularly those with lower incomes, to participate in the financial market. This alignment between the study results and these research

findings underscores the value of digital investments in reaching underserved populations. The accessibility of digital investment products, including their lower fees and minimum investment requirements, is often mentioned as one of their chief advantages. The study's findings are in line with this view, as they suggest that the convenience and affordability of digital investments contribute to the expansion of investment opportunities (Albeverio et al., 2019; Rwiririza, 2022). These attributes make digital investment products appealing to individuals with modest financial means, potentially driving financial inclusion by removing barriers related to cost and minimum investment thresholds.

User-friendliness and accessibility are recurrent themes in the literature regarding digital investment products. This aligns with the respondents' positive perceptions of these products. Salman and Ismael (2023) and Arner et al. (2018) have highlighted the user-friendly nature of digital investment platforms and the role they play in making investment opportunities accessible to a wider audience. These platforms often feature intuitive interfaces and educational resources, making it easier for inexperienced investors to get started and learn about investment options. The findings are also in agreement with the idea that digital investment products can provide individuals with greater control and flexibility over their investments. Some platforms allow users to set investment objectives and risk preferences, which are then used to generate diversified investment portfolios automatically. This level of customization can be particularly empowering for individuals who lack traditional investment experience, making investing less intimidating and more accessible (Saxen and Goyal, 2022; Manta, 2018).

TABLE 17

Whether Digital Investment Products Had Made It Easier for Them to Monitor and Manage My Investments

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	6	2.1	2.1	2.1
Disagree	13	4.5	4.5	6.5
Neutral	39	13.4	13.4	19.9
Agree	190	65.1	65.1	84.9
Strongly Agree	44	15.1	15.1	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital investment products had made it easier for them to monitor and manage my investments. The results in table 17 capture respondents' perspectives on whether digital investment products have made it easier for them to monitor and manage their investments in the study. The results indicates that a significant majority of participants, 65.1%, agree that digital investment products have indeed facilitated the monitoring and management of their investments, with an additional 15.1% strongly agreeing. Conversely, only a small proportion, 4.5%, disagrees, and 2.1% strongly disagree with this notion. Additionally, 13.4% express a neutral stance on the matter.

In alignment with prior research, the positive perception of digital investment products in facilitating investment monitoring and management can be attributed to several factors. First, the accessibility of digital investment products, particularly via mobile phones, makes it convenient for users to check their investments and manage them from anywhere. This aligns with the findings of Albeverio et al. (2019) and the study's results. Mobile accessibility is particularly crucial for those in low-income countries who may not have access to traditional investment options. The cost-effectiveness of digital investment products, as suggested by the study participants, is another

key factor. These products often have lower fees and minimum investment requirements compared to traditional investment options, as mentioned by Rwiririza (2022) and Lu et al. (2022). This affordability makes it more appealing for users, including those with lower incomes, to invest and actively manage their portfolios.

User-friendliness and accessibility, which are consistently highlighted in the literature, also contribute to the positive perception of digital investment products in terms of investment management. As Salman and Ismael (2023), Arner et al. (2018), and Saxen and Goyal (2022) suggest, these platforms typically feature intuitive interfaces and provide educational resources to assist users in making informed investment decisions. This simplifies the investment process and promotes financial literacy, particularly among individuals who may not have prior experience with investing. The customizability and flexibility of digital investment products are also seen as advantageous, enabling investors to establish their investment objectives and preferences. This corresponds to the findings of Manta (2018), who highlights that some digital platforms automatically generate diversified portfolios based on these preferences. This level of customization empowers users and makes investment management more accessible and less intimidating, particularly for those who lack traditional investment experience.

4.4.5 Financial Inclusion

Respondents were asked to indicate their level of agreement with the following statements regarding financial inclusion.

TABLE 18

Whether digital Financial Transformation Had Improved Their Overall Access to Financial Products and Services

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	2	.7	.7	.7
Disagree	7	2.4	2.4	3.1
Neutral	40	13.7	13.7	16.8
Agree	181	62.0	62.0	78.8
Strongly Agree	62	21.2	21.2	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital financial transformation had improved their overall access to financial products and services. The results in table 18 convey the perspectives of respondents regarding whether digital financial transformation has improved their overall access to financial products and services in the study. The results demonstrates that a notable majority of participants, 62.0%, agree that digital financial transformation has indeed enhanced their access to a wider array of financial products and services, with an additional 21.2% strongly agreeing. This indicates that a significant portion of the population in West Pokot County perceives digital financial transformation as a catalyst for improving their financial access. Conversely, only a small proportion, 2.4%, disagrees, and 0.7% strongly disagree with this notion. Additionally, 13.7% express a neutral stance on the matter.

This aligns with the global focus on improving financial inclusion, as highlighted by the World Bank (2023). The study suggests that the adoption of digital financial services is seen as a catalyst for improving financial access in the region. As Allen et al. (2016) emphasized, access to

financial resources plays a crucial role in various aspects of individuals' lives. The study's findings indicate that digital financial transformation has the potential to empower individuals, families, and businesses by expanding their access to financial services. This aligns with the idea that financial inclusion can lead to business expansion, investment in education and health, risk management, and financial resilience. The study results reflect the importance of digital financial inclusion, which involves providing suitable formal financial services to underserved and excluded populations. This aligns with the global discussions on expanding access to digital financial services, which has become even more critical in the context of the COVID-19 pandemic (World Bank, 2023). Digital financial transformation is seen as a means to provide accessible financial services to underserved individuals at reasonable costs.

TABLE 19

Whether Digital Financial Transformation Had Positively Impacted Their Financial Well-Being and Economic Empowerment

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.0	1.0	1.0
Disagree	10	3.4	3.4	4.5
Neutral	35	12.0	12.0	16.4
Agree	191	65.4	65.4	81.8
Strongly Agree	53	18.2	18.2	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether digital financial transformation had positively impacted their financial well-being and economic empowerment. The results reveals that a substantial majority of participants, 65.4%, agree that digital financial transformation has indeed had a positive effect on their financial well-being and economic empowerment, with an additional 18.2% strongly agreeing. This suggests that a significant portion of the population in

West Pokot County perceives digital financial transformation as a means to enhance their financial stability and economic empowerment. Conversely, only a small proportion, 3.4%, disagrees, and 1.0% strongly disagrees with this notion. Additionally, 12.0% express a neutral stance on the matter.

The study results show a strong positive perception of the impact of digital financial transformation on financial well-being and economic empowerment. This aligns with the broader literature emphasizing the potential of digital financial services to improve access to financial resources and enhance financial inclusion Alexander & Karametaxas, 2020; Ozili, 2021; Feng, 2022). The concept of financial inclusion, as defined by the World Bank (2023), emphasizes the importance of providing access to financial products and services to drive progress in various areas, including economic empowerment. The study's findings suggest that digital financial transformation is contributing to the economic empowerment of the participants in West Pokot County.

TABLE 20

Whether Respondents Felt More Included in The Formal Financial System as A Result of Digital Financial Services

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	1.7	1.7	1.7
Disagree	12	4.1	4.1	5.8
Neutral	52	17.8	17.8	23.6
Agree	198	67.8	67.8	91.4
Strongly Agree	25	8.6	8.6	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether they felt more included in the formal financial system as a result of digital financial services. The results in table 20 reflect the opinions of respondents on whether they feel more included in the formal financial system as a

result of digital financial services in the study. Results shows that a significant majority of participants, 67.8%, agree that digital financial services have indeed contributed to them feeling more included in the formal financial system, with an additional 8.6% strongly agreeing. Conversely, only a small proportion, 4.1%, disagrees, and 1.7% strongly disagree with this notion. Additionally, 17.8% express a neutral stance on the matter. The study's findings align with the broader literature emphasizing the potential of digital financial services to contribute to individuals' feelings of inclusion in the formal financial system. The study's findings suggest that digital financial services are effectively contributing to this goal by enhancing individuals' feelings of inclusion (World Bank, 2023; CGAP, 2023).

TABLE 21

Whether They Believed That Digital Financial Services Had Contributed to Reducing Financial Inequality in Their Community

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	100	34.2	34.2	34.2
Disagree	48	16.4	16.4	50.7
Neutral	63	21.6	21.6	72.3
Agree	71	24.3	24.3	96.6
Strongly Agree	10	3.4	3.4	100.0
Total	292	100.0	100.0	

Source: Author (2023)

In this part, respondents were asked to indicate whether they believed that digital financial services had contributed to reducing financial inequality in their community. The results in table 21 reveals a range of viewpoints, with the largest group, at 34.2%, strongly disagreeing that digital financial services have reduced financial inequality. Additionally, 16.4% disagree, and 21.6% maintain a neutral stance on the matter. However, a notable portion, 24.3%, agrees that these services have contributed to reducing financial inequality, with an additional 3.4% strongly

agreeing. This result is in agreement with Allen et al. (2016), Alexander and Karametaxas (2020), Ozili (2021) and Feng (2022) who established that access to services but also their usage, affordability, and effectiveness in reducing financial inequality.

4.5 Inferential Statistics

4.5.1 Correlation Analysis

TABLE 22

Correlations

		Financial Inclusion	Digital Payment Systems	Digital Credit Facilities	Digital Insurance Products	Digital Investment Products
Financial Inclusion	Pearson Correlation	1	.410**	.553**	.446**	.260**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	292	292	292	292	292
Digital Payment Systems	Pearson Correlation	.410**	1	.172**	.089	-.055
	Sig. (2-tailed)	.000		.003	.129	.350
	N	292	292	292	292	292
Digital Credit Facilities	Pearson Correlation	.553**	.172**	1	.108	.050
	Sig. (2-tailed)	.000	.003		.066	.392
	N	292	292	292	292	292
Digital Insurance Products	Pearson Correlation	.446**	.089	.108	1	.041
	Sig. (2-tailed)	.000	.129	.066		.484
	N	292	292	292	292	292
Digital Investment Products	Pearson Correlation	.260**	-.055	.050	.041	1
	Sig. (2-tailed)	.000	.350	.392	.484	
	N	292	292	292	292	292

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author (2023)

The correlational analysis in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya" reveals several noteworthy

insights as depicted in table 22. Firstly, there is a positive and statistically significant correlation between financial inclusion and various digital financial services, namely digital payment systems, digital credit facilities, digital insurance products, and digital investment products at $P<0.05$. This implies that individuals who are more engaged with these digital financial services tend to have higher levels of financial inclusion. Specifically, the strongest correlation exists between financial inclusion and digital credit facilities, with a Pearson Correlation coefficient of 0.553. This suggests that the availability and utilization of digital credit options may play a particularly influential role in enhancing financial inclusion in West Pokot County. Similarly, in a study by Demirgüç-Kunt, Klapper, Singer and Van Oudheusden (2018) highlights the positive relationship between financial inclusion and inclusive economic growth, emphasizing the role of digital financial services in promoting financial inclusion.

Secondly, the correlations between different types of digital financial services also provide valuable insights. For instance, digital payment systems exhibit a positive correlation with digital credit facilities (0.172) but a weaker correlation with digital insurance products (0.089) and digital investment products (-0.055) at $P<0.05$. This implies that individuals who use digital payment systems are somewhat more likely to utilize digital credit facilities, but these payment systems may not have as strong a relationship with digital insurance or investment products. These findings underscore the interconnectedness of various digital financial services and suggest potential areas for targeted interventions to improve financial inclusion and access to specific services within the community. Similarly, a study by Kshetri and Voas (2015) discusses the ecosystem of digital financial services, highlighting the varying degrees of interconnectedness between different services and platforms.

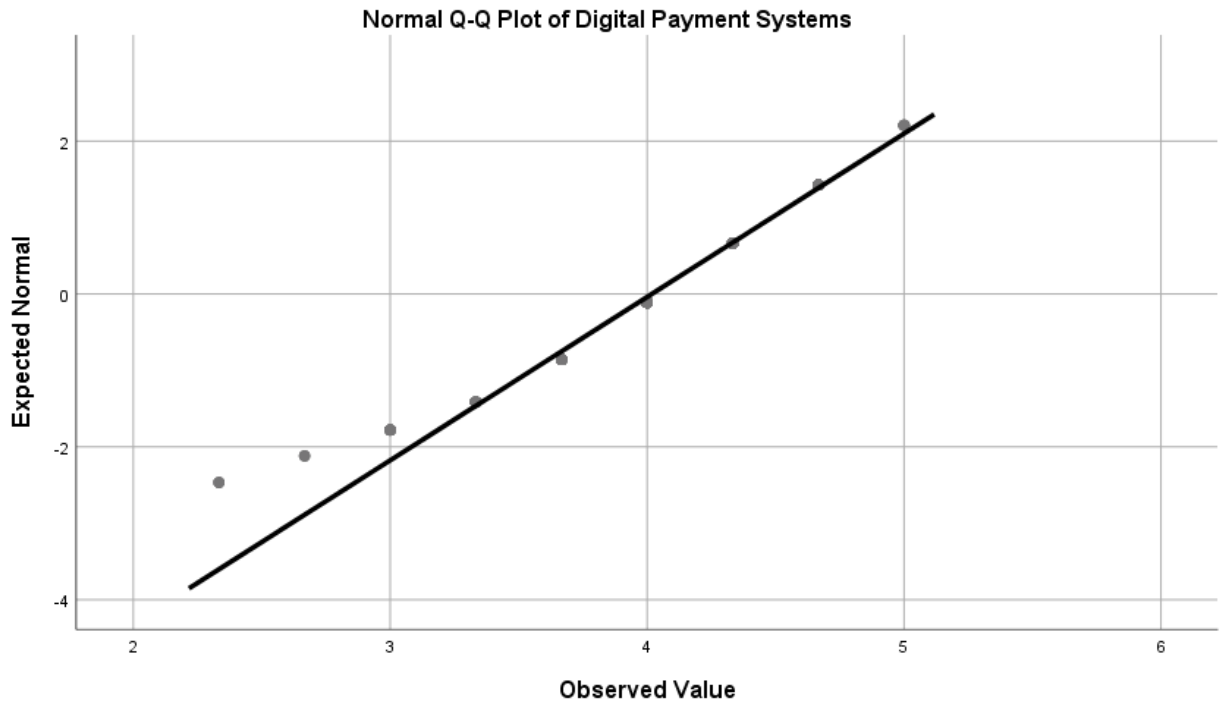
4.5.2 Diagnostic Tests

Normality Tests:

The following are the Q-Q plots from Normality Tests of data collected in the study:

FIGURE 2

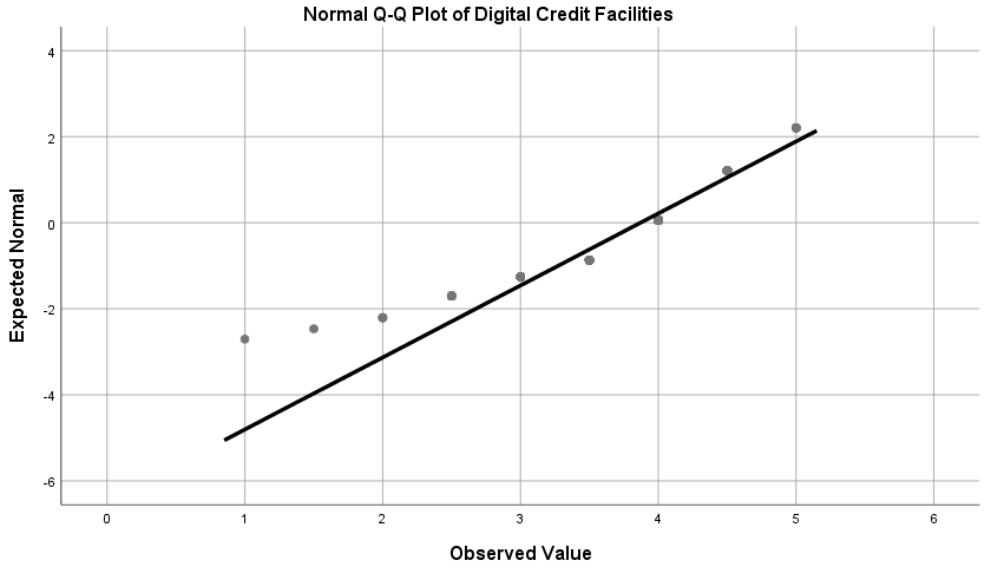
Normal Q-Q Plot of Digital Payment Systems



Source: Author (2023)

FIGURE 3

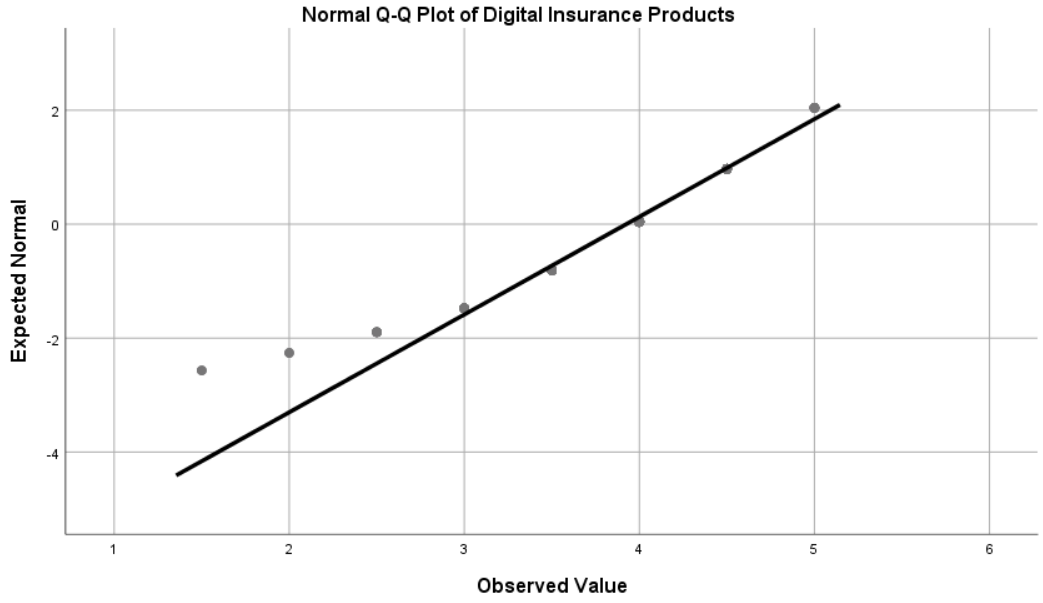
Normal Q-Q Plot of Digital Credit Facilities



Source: Author (2023)

FIGURE 4

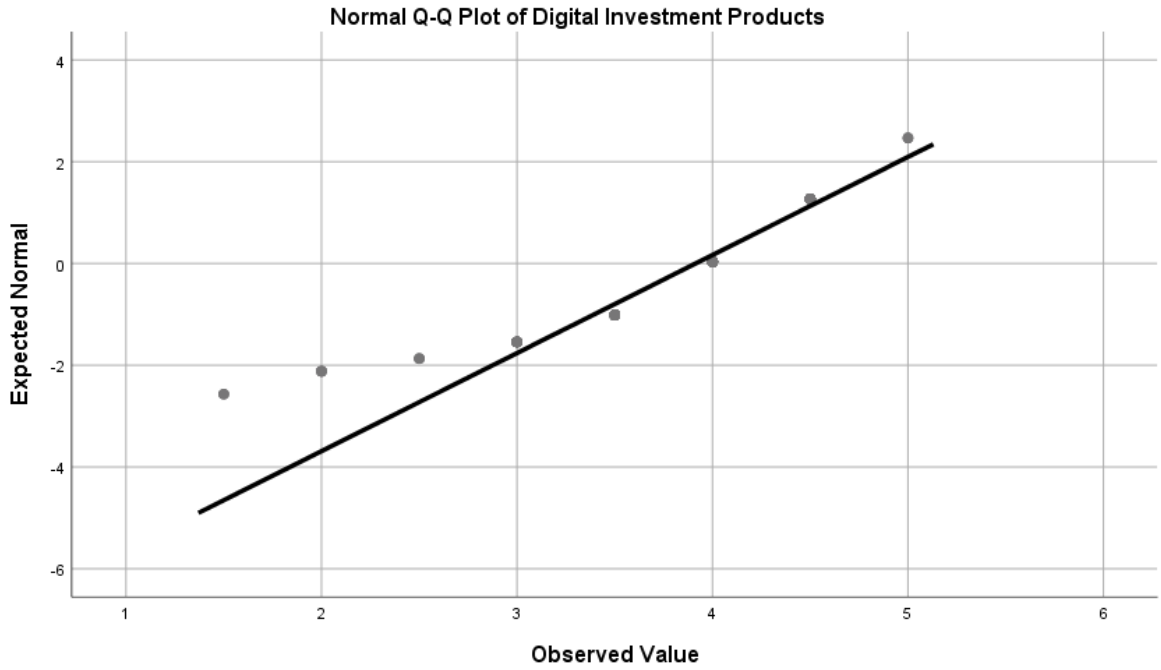
Normal Q-Q Plot of Digital Insurance Products



Source: Author (2023)

FIGURE 5

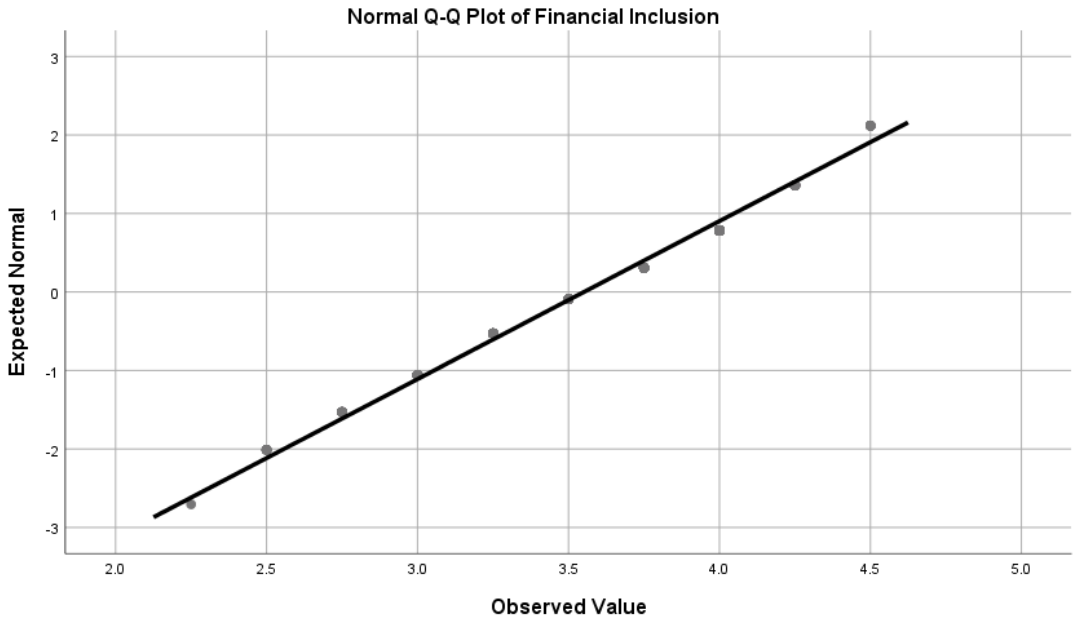
Normal Q-Q Plot of Digital Investment Products



Source: Author (2023)

FIGURE 6

Financial Inclusion



Source: Author (2023)

Quantile-quantile (Q-Q) plots, are commonly used to assess whether a dataset follows a normal distribution. Since the data points in the plots above (fig 2,3,4,5) closely adhere to a straight diagonal line, it suggests that the data follows a normal distribution. The Q-Q plots show that the data passed normality tests because data points closely align with the diagonal line, indicating that the data is approximately normally distributed. Having normally distributed data was a prerequisite for correlation and regression analysis performed in the study. It's a positive outcome because it suggests that this study's data met this assumption, making it more suitable for correlation and regression tests and providing more robust results.

4.5.3 Regression Analysis

TABLE 23

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774[a]	.599	.594	.22881

a. Predictors: (Constant), Digital Payment Systems, Digital Credit Facilities, Digital Insurance Products, Digital Investment Products

Source: Author (2023)

The model summary (in table 23) of the regression analysis in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya" provides valuable insights into the relationships between digital financial services and financial inclusion. The model, which includes predictors such as Digital Payment Systems, Digital Credit Facilities, Digital Insurance Products, and Digital Investment Products, demonstrates a relatively strong association, with an R-Square value of 0.599. This indicates that approximately 59.9% of the variance in financial inclusion can be explained by the included digital financial service variables. The adjusted R-Square of 0.594 suggests that even when accounting

for the complexity of the model, these digital financial services remain robust predictors of financial inclusion. Additionally, the standard error of the estimate at 0.22881 indicates the average degree of error in predicting financial inclusion based on these digital service variables. Overall, these results indicate that the selected digital financial services have a substantial impact on financial inclusion in West Pokot County, emphasizing the importance of these services in promoting greater financial access and participation within the community.

TABLE 24

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.485	4	5.621	107.369	.000[b]
	Residual	15.026	287	.052		
	Total	37.510	291			

a. Dependent Variable: Financial Inclusion

b. Predictors: (Constant), Digital Payment Systems, Digital Credit Facilities, Digital Insurance Products, Digital Investment Products

Source: Author (2023)

The ANOVA table of the regression analysis conducted in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya" provides important insights into the significance of the regression model. The table shows that the regression model as a whole is highly significant, with an F-statistic of 107.369 and a p-value (Sig.) of .000. This indicates that the predictors included in the model, namely Digital Payment Systems, Digital Credit Facilities, Digital Insurance Products, and Digital Investment Products, collectively have a substantial impact on explaining the variance in Financial Inclusion. The sum of squares for the regression is 22.485, while the sum of squares for the residual (unexplained variance) is 15.026, demonstrating that the model is effective in accounting for a significant portion of the variation in Financial Inclusion. These findings suggest that the digital

financial service variables under consideration are indeed important contributors to financial inclusion in West Pokot County, as evidenced by the highly significant ANOVA results.

TABLE 25

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.529	.184		2.880	.004
	Digital Payment Systems	.241	.029	.313	8.225	.000
	Digital Credit Facilities	.270	.023	.449	11.757	.000
	Digital Insurance Products	.222	.023	.360	9.543	.000
	Digital Investment Products	.166	.026	.240	6.386	.000

a. Dependent Variable: Financial Inclusion

Source: Author (2023)

The coefficients from the regression analysis in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya" provide valuable insights into the relationships between the predictor variables (Digital Payment Systems, Digital Credit Facilities, Digital Insurance Products, and Digital Investment Products) and the dependent variable (Financial Inclusion).

Firstly, the constant term (Constant) has a coefficient of 0.529 with a standard error of 0.184. This constant represents the estimated baseline level of Financial Inclusion when all the predictor variables are zero. The statistically significant coefficient (p-value = 0.004) at $P<0.05$ indicates that even without the influence of digital financial services, there is a positive baseline level of financial inclusion. Likewise, Demirgüç-Kunt et al. (2018) emphasized the importance of

acknowledging the baseline level of financial inclusion as a starting point for policy interventions and measurement.

Secondly, each of the digital financial service variables (Digital Payment Systems, Digital Credit Facilities, Digital Insurance Products, and Digital Investment Products) demonstrates statistically significant positive relationships with Financial Inclusion. These coefficients represent the change in the Financial Inclusion score associated with a one-unit increase in each respective digital financial service while holding other variables constant. For example, the coefficient for Digital Credit Facilities is 0.270, implying that a one-unit increase in the usage of digital credit facilities is associated with a 0.270 increase in the Financial Inclusion score (see regression equation below). Similarly, all other coefficients are positive and statistically significant, indicating that greater utilization of these digital financial services is linked to higher levels of financial inclusion in West Pokot County. A study by Muto and Yamano (2019) obtained the positive impact of mobile banking and digital financial services on rural entrepreneurship and financial inclusion, showing that digital financial transformation services have positive and significant impact on financial inclusion.

In terms of their significance and impact on Financial Inclusion, the predictor variables can be ranked from highest to lowest as follows: Digital Credit Facilities, Digital Insurance Products, Digital Payment Systems, and Digital Investment Products. These findings emphasize the importance of digital financial services, particularly credit facilities and insurance products, in promoting greater financial inclusion in West Pokot County. These findings align with existing research in the field of financial inclusion such as Dewilde and Yao (2020), emphasizing the crucial roles of credit, insurance, and digital payment services in promoting greater financial inclusion, particularly in underserved regions like West Pokot County.

The following is the regression model obtained in the study: Financial Inclusion = 0.529 + 0.241 Digital Payment Systems + 0.270 Digital Credit Facilities + 0.222 Digital Insurance Products + 0.166 Digital Investment Products.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Chapter five in the study "Digital Financial Transformation and Financial Inclusion by Mobile Service Providers in West Pokot County, Kenya" offers a comprehensive overview of the study's key findings, conclusions, and recommendations. This chapter is organized into the following sections: summary, conclusions, recommendations, limitations of the study, and suggestions for future research.

5.2 Summary

5.2.1 Digital Payment Systems and Financial Inclusion

The findings reveal a positive attitude toward digital payment systems, with a majority (93.1%) of respondents either strongly agreeing or agreeing to use them for financial transactions. Further, results data highlights positive perceptions among respondents regarding the ease of sending and receiving money through digital payment systems. A substantial majority, comprising 83.9% of participants, agrees that these systems have simplified money transfers. In addition, respondents' perceptions regarding digital payment systems' impact on their access to financial services are largely positive. A substantial proportion (75.4%) agrees or strongly agrees that these systems have improved their financial access, reflecting their favorable view of digital tools in this regard. Further, a statistically significant positive correlation exists between financial inclusion and digital payment systems at a significance level of $P<0.05$. In addition, the regression analysis demonstrates statistically significant positive relationships between digital payment systems and financial inclusion at a significance level of $P<0.05$.

5.2.2 Digital Credit Facilities and Financial Inclusion

Results show that a significant majority of respondents (88.3%) in West Pokot County perceive digital credit facilities as providing them access to credit they might not have had otherwise. These results indicate that digital credit options are considered valuable tools for enhancing credit access. Also, results indicate that a majority of respondents (80.5%) in West Pokot County perceive digital credit facilities as a faster and more efficient means of meeting their financial needs compared to traditional lending options. These findings emphasize the potential advantages of digital financial transformation and mobile service providers' initiatives in expediting financial solutions and enhancing financial inclusion in the region. Further, there is a strong correlation between financial inclusion and digital credit facilities. This suggests that the availability and utilization of digital credit options may play a particularly influential role in enhancing financial inclusion in West Pokot County. In addition, regression analysis show that digital credit facilities at $P<0.05$ have statistically significant positive relationships with Financial Inclusion.

5.2.3 Digital Insurance Products and Financial Inclusion

The findings reveal that a substantial majority of respondents (88.0%) in West Pokot County perceive digital insurance products as effectively expanding their access to affordable insurance coverage. These results underscore the perception that digital insurance offerings enhance the accessibility and affordability of insurance services. Further, results demonstrates that a significant majority of respondents (73.6%) in West Pokot County perceive digital insurance products as providing convenient options for insurance premium payments and claims processing. These results indicate that digital insurance is considered user-friendly and efficient for managing insurance needs. Results also show that there is a positive and statistically significant correlation between financial inclusion and digital insurance products at $P<0.05$. Finally, regression analysis

show that digital insurance products at P<0.05 have statistically significant positive relationships with Financial Inclusion.

5.2.4 Digital Investment Products and Financial Inclusion

Results reveal that a substantial majority of respondents (90.0%) in West Pokot County perceive digital investment products as effectively expanding their investment opportunities. These results emphasize the view that digital investment options enhance individuals' investment choices and opportunities. Also, results reveal that a significant majority of respondents (80.2%) in West Pokot County perceive digital investment products as effective tools for simplifying the monitoring and management of their investments. These results emphasize the view that digital investment options enhance individuals' ability to oversee and control their investment portfolios efficiently. Also, a statistically significant positive correlation has been identified between financial inclusion and digital investment products at the significance level of P<0.05. Additionally, the regression analysis reveals statistically significant positive relationships between digital investment products and financial inclusion at the same significance level of P<0.05.

5.3 Conclusions

5.3.1 Digital Payment Systems and Financial Inclusion

Based on the study's findings, the study concludes that there is a highly positive sentiment towards digital payment systems among respondents. Furthermore, the study concludes that digital payment systems as convenient for sending and receiving money, with majority of participants believing that these systems have simplified money transfers. This optimism extends to improved financial access, as majority of respondents agree that digital payment systems have enhanced their access to financial services. These positive perceptions are supported by statistical analyses, revealing a significant and positive correlation between financial inclusion and digital payment

systems and confirming the substantial impact of these systems on improving financial inclusion in the study's context.

5.3.2 Digital Credit Facilities and Financial Inclusion

Based on the study's findings the study concludes that there is substantial positive impact of digital credit facilities on financial inclusion in West Pokot County. An overwhelming majority of respondents perceive these digital credit options as providing crucial access to credit they might not have otherwise had, demonstrating their value in enhancing credit access. Furthermore, the study concludes that digital credit facilities as a quicker and more efficient way to meet their financial needs compared to traditional lending methods. The strong correlation between financial inclusion and digital credit facilities underscores their significant role in improving financial inclusion in the region, supported by regression analysis showing statistically significant positive relationships between these facilities and financial inclusion. This suggests that the availability and utilization of digital credit options are key drivers of financial inclusion in West Pokot County, emphasizing their importance in promoting financial access and economic empowerment in the community.

5.3.3 Digital Insurance Products and Financial Inclusion

The study concludes that digital insurance products play a vital role in improving financial inclusion and enhancing access to insurance services in West Pokot County. The study also concludes that digital insurance products provide convenient options for premium payments and claims processing due to their user-friendliness and efficiency. The positive and statistically significant correlation between financial inclusion and digital insurance products, as well as the regression analysis indicating significant positive relationships between the two further emphasize

the pivotal role of digital insurance in promoting financial inclusion and improving financial well-being in the region.

5.3.4 Digital Investment Products and Financial Inclusion

The concludes that digital investment products play a crucial role in expanding investment opportunities and simplifying the management of investments for respondents in West Pokot County. This underscores their potential in empowering individuals to explore a wider range of investment possibilities and manage their portfolios efficiently. Moreover, the identified statistically significant positive correlation between financial inclusion and digital investment products, along with the regression analysis confirming significant positive relationships between the two, highlight the importance of digital investment options in promoting financial inclusion and contributing to the economic empowerment of the community.

5.4 Recommendations

Based on the study findings, several recommendations can be made to enhance digital financial transformation and financial inclusion in West Pokot County, Kenya. Firstly, efforts should continue to promote and expand the use of digital financial transformation products, given the overwhelmingly positive attitudes and the perceived benefits of convenience and improved financial access. Mobile service providers and relevant stakeholders should prioritize the development and accessibility of user-friendly digital payment, digital credit, digital investment, and digital insurance solutions.

The overwhelmingly positive perception of these facilities as valuable tools for enhancing credit access and as faster and more efficient means of meeting financial needs suggests their importance in improving financial inclusion. Mobile service providers and financial institutions should collaborate to make digital credit options more accessible and tailored to the needs of the

local population, especially those who may have limited access to traditional financial services. Additionally, policymakers should consider regulatory frameworks that promote responsible and inclusive lending through digital channels. Continuous monitoring and evaluation of digital credit services should also be conducted to ensure they are effectively contributing to financial inclusion and addressing the credit needs of the community.

5.5 Limitations of the Study

The study has four limitations. First, the study may not capture the rapidly evolving landscape of digital financial services, and the findings could become outdated as new technologies and services emerge. Second, the study focuses on a specific set of digital financial services and their impact on financial inclusion. Other factors influencing financial inclusion, such as education levels or employment opportunities, may not have been fully explored. Third, the findings may be specific to the context of West Pokot County and might not be applicable to other regions with different socio-economic, cultural, or infrastructural characteristics. Fourth, data collection in rural or remote areas posed challenges, including issues related to connectivity, language barriers, and accessibility to respondents. This was addressed by the employment of a local research assistant who understands the language and terrains.

5.6 Recommendations for Future Research

The study makes some suggestions for further study. First, a study is recommended to cover multiple regions in Kenya or other countries with varying socio-economic, cultural, and infrastructural contexts. Comparing different regions can help identify region-specific challenges and opportunities for digital financial services. Another study is recommended to investigate the role of education and financial literacy in digital financial service adoption and financial inclusion. This could involve designing interventions to improve financial literacy and studying their impact.

Also, a study is recommended to analyze the impact of digital financial services on vulnerable populations, including low-income individuals, smallholder farmers, and marginalized communities. Finally, the results indicate a community with mixed views on the influence of digital financial services on reducing financial inequality. While a significant portion is skeptical about their impact, another segment believes in their potential to address this issue. To gain a deeper understanding of the factors shaping these diverse opinions and to develop more precise financial inclusion strategies, further investigation and analysis may be necessary.

REFERENCES

Abbasi, T., & Weigand, H. (2017). *The Impact of Digital Financial Services on Firm's Performance*: *A Literature Review*. 1–15.

ADB. (2016). *Digital Financial Services in The Pacific*. Asian Development Bank Philippines. ISBN 978-92-9257-358-4 (Print), 978-92-9257-359-1 (e-ISBN).

Agufa, M.M. (2016). *The Effect Of Digital Finance On Financial Inclusion In The Banking Industry In Kenya*. An Unpublished Master's Thesis, University of Nairobi.

Akiwumi, P. (2022, September 5). Digitalization as a driver of structural transformation in African LDCs. https://www.un.org/technologybank/news/digitalization-driver-structural-transformation-african-ldcs

Albeverio, S., Steblovskaya, V., & Wallbaum, K. (2019, July 29). The volatility target effect in investment-linked products with embedded American-type derivatives. *Investment Management and Financial Innovations*, *16*(3), 18–28. https://doi.org/10.21511/imfi.16(3).2019.03

Alexander, S. K., & Karametaxas, X. (2020). Digital Transformation and Financial Inclusion. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3645994

Alkhowaiter, W. A. (2020). Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*, Vol. 53 p.1-17.

Allen, F., Demirguc-Kunt, A., Klapper, L., & Martinez Peria, M. S. (2016, July). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, *27*, 1–30. https://doi.org/10.1016/j.jfi.2015.12.003

An, C., He, X., & Zhang, L. (2023, February). The coordinated impacts of agricultural insurance and digital financial inclusion on agricultural output: Evidence from China. *Heliyon, 9*(2), e13546. https://doi.org/10.1016/j.heliyon.2023.e13546

Animashaun, S. (2022). Digital Platforms and Sustainable Developments: Regulating BigFinTechs for Digital Financial Inclusion. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4135615

Arner, D. W., Buckley, R. P., & Zetzsche, D. A. (2018). Fintech for Financial Inclusion: A Framework for Digital Financial Transformation. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3245287

Ayyagari, M., A. Demirgüç-Kunt, V., & Maksimovic, N. (2017). SME Finance. *The World Bank Group Development Research Group Policy Research Working Paper*, 8241.

Beck, T., & Cull, R. (2014). Access to Financial Services: The African Experience. *Journal of Development Economics*, 112, 185-201.

Beilefeld, F. B. (2019). The Cashless Debit Card and Rights of Persons with Disabilities. *Alternative Law Journal*, Vol. 44(2) 114-120.

Bryman, A. (2016). *Social research methods*. Oxford, UK: Oxford University Press.

Bwalya, S. M., Mulwa, R. M., & Meso, P. (2017). Mobile Banking and Financial Inclusion: The Regulatory Lessons. *Journal of Financial Regulation and Compliance*, 25(3), 277-294.

Carstens, A. (2019). Central banking and innovation: partners in the quest for financial inclusion. *BIS Speech*. Available at https://www.bis.org/speeches/sp190425.htm

CBK. (2019). 2019 FinAccess Household Survey. https://www.fsdkenya.org/wp-content/uploads/2019/04/2019-FinAcces-Report-Web-05-JAN-2020.pdf

CBK. (2021). 2021 FinAccess Household Survey. https://www.centralbank.go.ke/uploads/financial_inclusion/2064908903_2021%20FinAccess%20Survey%20Report%20Launched_15%20Dec%202021.pdf

CBK. (2022). FinAccess Household Survey Report: County Perspective, November 2022 | CBK. https://www.centralbank.go.ke/2022/11/11/finaccess-household-survey-report-county-perspective-november-2022/

Census-Kenya (2019). 2019 Kenya Population and Housing Census. *Kenya National Bureau of Statistics*, Volume I.

Chernenko, L., & Sunderam, A. (2020). Digital Technology and the Allocation of Bank Loans. *Journal of Finance*, 75(6), 3057-3094.

Cherotich, K., Sang, W., Mutungu, C., & Shisia, A. (2015). Financial innovations and performance of commercial banks in Kenya. *International Journal of Economics, Commerce and Management*, Vol. III No. 5, pp. 1242-1265.

Chipeta, C., & Muthinja, M. (2018). Financial innovations and bank performance in Kenya: evidence from branchless banking models. *South African Journal of Economic and Management Sciences*, Vol. 21 No. 1, pp. 1-11.

Claessens, S. (2018). Fintech credit markets around the world: size, drivers and policy issues. *BIS Quarterly Review, September*.

Cole, S., Giné, X., Tobacman, J., Topalova, P., Townsend, R., & Vickery, J. (2013). Barriers to Household Risk Management: Evidence from India. *Journal of Development Economics*, 110, 232-246.

Communications Authority of Kenya. (2021). Sector Statistics Report: Fourth Quarter 2020/2021. Retrieved from https://ca.go.ke/wp-content/uploads/2021/06/CA-Sector-Statistics-Report-Fourth-Quarter-2020-2021.pdf

Consultative Group to Assist the Poor (CGAP). (2023). Financial Inclusion | CGAP. https://www.cgap.org/financial-inclusion

Cooper, D. R., & Schindler, P. S. (2003). *Business Research Methods* (8th ed.). McGraw-Hill Irwin, Boston.

Dell'Ariccia, G., Minoiu, C., & Ratnovski, L. (2019). Bank Profitability and Risk-Taking. *The Journal of Finance*, 74(4), 1563-1611.

Demirguc-Kunt, A., Klapper, L., & Singer, D. (2017). *Financial Inclusion and Inclusive Growth. World Bank – Development Research Group, Finance, and Private Sector Development Team*. Available at: https://openknowledge.worldbank.org/handle/10986/26479

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. (2018). Financial Inclusion and Inclusive Growth: A Review of Recent Empirical Evidence. *Journal of Finance*, 74(3), 803-834.

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). Mobile Money and Financial Inclusion: Evidence from Sub-Saharan Africa. *World Development*, 112, 34-50.

Denscombe, M. (2014). *The good research guide: For small-scale social research projects*. New York, NY: McGraw Hill Education.

Dewilde, T., & Yao, R. (2020). Financial Technology and Household Finance: A Scoping Review and Research Agenda. *Journal of Economic Surveys*, 34(5), 995-1017.

Diniyya, A. A., Aulia, M., & Wahyudi, R. (2020). Financial Technology Regulation in Malaysia and Indonesia: A Comparative Study. Ihtifaz. *Journal of Islamic Economics, Finance, and Banking*, 3(2), 67–87.

Disse, S., & Sommer, C (2020). *Digitalization and its impact on SME finance in Sub-Saharan Africa: Reviewing the hype and actual developments*. Discussion Paper, No. 4/2020, ISBN 978-3-96021-115-0, Deutsches Institut für Entwicklungspolitik (DIE), Bonn.

Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2015). *Management and business research*. London, UK: Sage

Eling, M., & Lehmann, M. (2017). The Digitalization of Insurance: Consumer Acceptance and Use across Insurance Types. *Journal of Finance*, 72(4), 1315-1352.

Elsayed, A. (2020). The Interrelationship Between Financial Inclusion, Financial Stability, Financial Integrity and Consumer Protection (I-SIP Theory). *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3745874

European Commission. (2018). FinTech Action plan: For a more competitive and innovative European financial sector. Retrieved from https://ec.europa.eu/info/publications/180308-action-plan-fintech_en

Evans, O. (2018). Connecting the poor: the internet, mobile phones and financial inclusion in Africa. *Digital Policy, Regulation and Governance*, 20(6), pp.568-581.

Eversend. (2022). Eversend: All-in-one Borderless Payments. https://eversend.co

Fanta, N., & Ghatak, S. (2017). Mobile Money: The Impact of Mobile Money Services on Output and Inflation in Sub-Saharan Africa. *Journal of Economic Behavior & Organization*, 131, 464-481.

Feng, T. (2022). Financial Digital Transformation Research of Chinese Enterprises Based on Financial Sharing Mode. *Creativity and Innovation*, *6*(3), 200–204. https://doi.org/10.47297/wspciwsp2516-252740.20220603

FinAccess. (2021). 2021 FinAccess household survey report. https://www.knbs.or.ke/wpcontent/uploads/2021/12/2021-Finaccess-Household-Survey-Report.pdf

Freedman, S., & Jin, G. Z. (2017). The information value of online social networks: lessons from peer-to peer lending. *International Journal of Industrial Organization*, 51, 185-222.

FSD. (2019). Creating value through inclusive finance, 2018 Annual Report. FSD Kenya.

Gentilini, U. (2021). *Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures*, World Bank, Washington, DC, https://openknowledge.worldbank.org/handle/10986/33635

Gitau, J., & Muthee, K. N. (2019). Mobile Communication Services and Socio-Economic Development in Kenya. *International Journal of Information, Business, and Management*, 11(1), 92-102.

Goldstein, I., Jiang, W., & Karolyi, G. A. (2019). To FinTech and beyond. *The Review of Financial Studies*, 32(5), pp. 1647-1661.

Guo, L., & Xu, L. (2021, November 19). The Effects of Digital Transformation on Firm Performance: Evidence from China's Manufacturing Sector. *Sustainability*, *13*(22), 12844. https://doi.org/10.3390/su132212844

Hannig, A., & Jansen, S. (2010). The Impact of Digital Finance on Financial Inclusion and Stability. *Journal of Banking & Finance*, 34(3), 590-599.

Hau, H., Huang, Y., Shan, H., & Sheng, Z. (2018). *Fintech credit, financial inclusion and entrepreneurial growth*. Unpublished working paper. Available at https://efmaefm.org/0EFMAMEETINGS/EFMA%20ANNUAL%20MEETINGS/2018-Milan/phd/001.pdf

Havrylchyk, O., Mariotto, C., Rahim, T., & Verdier, M. (2018). What has driven the expansion of peer-to-peer lending. *Universite Paris, Boston University, and the European Commission Working Paper*.

IDC. (2022). *FutureScape Webcast: Worldwide Digital Transformation 2022 Predictions*. IDC: The Premier Global Market Intelligence Company. https://www.idc.com/getdoc.jsp?containerId=US48360721

Infante, D. A., Rancer, A. S., & Womack, D. F. (1997). *Building Communication Theory* (3rd ed.). Wadsworth Publishing.

Jack, W., & Suri, T. (2014). Barriers to the Adoption of Mobile Money in Rural Kenya. *Journal of African Business*, 15(1-2), 130-147.

Jack, W., & Suri, T. (2018). Digital Financial Inclusion: The Impact of Mobile Money. *Journal of Development Economics*, 134, 102-120.

Jack, W., & Suri, T. (2018). The Long-run Poverty and Gender Impacts of Mobile Money. *The World Bank Research Observer*, 33(2), 134-155.

Jagtiani, J., & Lemieux, C. (2017). Fintech Lending: Financial Inclusion, Risk Pricing, and Alternative Information. *Federal Reserve Bank of Philadelphia Working Paper* No. 17-17.

Jentzsch, N. (2017). Digital Financial Inclusion: A Structural Estimation Approach. *World Development*, 96, 62-78.

Jentzsch, N. (2017). Digital Financial Inclusion: A Structural Estimation Approach. *World Development*, 96, 62-78.

Kamal, A., Hussain, T., & Khan, M. M. S. (2021, June 30). Impact of Financial inclusion and financial stability: Empirical and theoretical review. *Liberal Arts and Social Sciences International Journal (LASSIJ), 5*(1), 510–524. https://doi.org/10.47264/idea.lassij/5.1.33

Kapadia, S. (2019). *A Perspective on Financial Literacy and Inclusion in India*. SSRN Working Paper, 1- 19. Available at SSRN: https://ssrn.com/abstract=3396241

Karthi. R. (2012). Influences of online marketing in the prospective Indian Insurance Industry. *IOSR Journal of Business and Management*, e-ISSN: 2278-487X, p-ISSN: 2319-7668, pp.24-30.

Kothari, C. (2004). *Research methodology: methods and techniques*, 2nd edition. New Delhi: New age International Publishers.

Kozmenko, S., & Roienko, V. (2016, November 18). Ensuring financial inclusion through insurance companies and credit unions. *Insurance Markets and Companies*, *7*(1), 6–10. https://doi.org/10.21511/imc.7(1).2016.01

Kshetri, N., & Voas, J. (2015). Digital Financial Services: Systems and Platforms for Enhanced Inclusion. *Information Systems Journal*, 25(3), 265-293.

Lacity, M. C., Khan, S. A., & Yan, A. (2016). Review of the empirical business services sourcing literature: an update and future directions. *Journal of Information Technology*, pp.269-328.

Lin, M., Prabhala, N. R., & Viswanathan, S. (2019). Digital Disruption in Banking and Lending. *Journal of Financial and Quantitative Analysis*, 54(3), 1063-1102.

Lin, S., Prabhala, N. R., Viswanathan, S., & Zhang, M. (2020). Digital Finance and FinTech: Current Research and Future Research Directions. *Journal of Banking & Finance*, 121, 105916.

LREB. (2022). Lake Region Economic Block– Main. https://lreb.or.ke/

Lu, X., Lai, Y., & Zhang, Y. (2022, December 26). Digital financial inclusion and investment diversification: Evidence from China. *Accounting & Finance*. https://doi.org/10.1111/acfi.13043

Manta, O. (2018). Financial Inclusion and Pollinators in the Digital Community. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3236070

Mas, I. (2015). Digital Financial Inclusion: Definitions, Determinants, and Policy Directions. *World Development*, 74, 181-190.

Mas, I. (2015). Mobile Money and Financial Inclusion in Sub-Saharan Africa: The Case of Uganda. *Journal of African Business*, 16(3), 387-409.

Mateka, M., & Omagwa, J. (2016). Effects Of Internet Banking on Financial Performance Of Listed Commercial Banks In Kenya Effects Of Internet Banking On Financial Performance Of Listed Commercial Banks IN. *American Journal of Finance*, 1(2), 53.

Maurer, B., Musaraj, S., & Small, L. (2013). Digital Financial Services and Financial Inclusion. *World Development*, 54, 147-167.

Mavlutova, I., Spilbergs, A., Verdenhofs, A., Natrins, A., Arefjevs, I., & Volkova, T. (2022, December 23). Digital Transformation as a Driver of the Financial Sector Sustainable Development: An Impact on Financial Inclusion and Operational Efficiency. *Sustainability*, *15*(1), 207. https://doi.org/10.3390/su15010207

Misati, R., Kamau, A., & Nassir, H. (2019). Do migrant remittances matter for financial development in Kenya. *Financial Innovation*, Vol. 5 No. 31, pp. 1-25.

Mishra, A.K. (2018). Assessment of Effect of Globalization on the Indian Insurance Industry. *Journal of Advanced Research in Business Law and Technology Management*, Volume 1, Issue 3, pp.1-4.

Mpofu, F. Y., & Mhlanga, D. (2022, July 29). Digital Financial Inclusion, Digital Financial Services Tax and Financial Inclusion in the Fourth Industrial Revolution Era in Africa. *Economies, 10*(8), 184. https://doi.org/10.3390/economies10080184

Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Acts Press, Nairobi-Kenya.

Mugo, M., & Kilonzo, E. (2017). Community – Level Impacts Of Financial Inclusion In Kenya With Particular Focus On Poverty Eradication And Employment Creation. *Central Bank of Kenya*. https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2017/04/Matu-Mugo-and-Evelyne-Kilonzo-UN-SDGs-Paper5May2017-Kenya-Financial-Inclusion.pdf

Muiruri, J., & Ngari, J. (2014). Effects of financial innovations on the financial performance of commercial banks in Kenya. *International Journal of Humanities and Social Science*, Vol. 4 No. 7, pp. 51-57.

Muiruri, J., & Ngari, J. (2014). Effects of financial innovations on the financial performance of commercial banks in Kenya. *International Journal of Humanities and Social Science*, Vol. 4 No. 7, pp. 51-57.

Mutisya, D. K., & Kurnia, S. (2016). Factors Influencing the Adoption of Mobile Banking in Kenya: A Case of Nakuru Municipality. *International Journal of Business and Commerce*, 5(5), 12-29.

Muto, M., & Yamano, T. (2019). Financial Inclusion, Mobile Banking, and Rural Entrepreneurship: Survey Evidence from Rural Uganda. *World Development*, 37(12), 1664-1678.

Nadri, H., Rahimi, B., Lotf, N.A., Samadbeik, M., & Garavand, A. (2018). Factors Affecting Acceptance of Hospital Information Systems Based on Extended Technology Acceptance Model: A Case Study in Three Paraclinical Departments. *Applied Clinical Informatics*, Vol. 09 (2), pp.238–247.

Naumenkova, S., Mishchenko, S., & Dorofeiev, D. (2019, September 19). Digital financial inclusion: evidence from Ukraine. *Investment Management and Financial Innovations*, *16*(3), 194–205. https://doi.org/10.21511/imfi.16(3).2019.18

Ndirangu, L., & Nyamongo, E. (2015). Financial innovations and their implications for monetary policy in Kenya. *Journal for African Economies*, Vol. 24 No. Suppl_1, pp. 46-71.

Ndung'u, N. (2019). Digital technology and state capacity in Kenya. CGD Policy Paper 154, Center for Global Development.

Nesta, J. (2014). Understanding alternative finance. *The UK alternative finance industry report*.

Notheisen, B., & Hofmann, E. (2020). Digital Innovation and the Distribution of Investment Products. *Journal of Financial Services Research*, 58(3), 299-319.

Okafor, D. J., Nico, M., & Azman, B. B. (2016). The influence of perceived ease of use and perceived usefulness on the intention to use a suggested online advertising workflow. *Canadian International Journal of Science and Technology*, Vol. 6 (14), pp.162-174.

Owen, A. L., & Pereira, J. M. (2018). Bank concentration, competition, and financial inclusion. *Review of development finance*, 8(1), pp.1-17.

Ozili, P. K. (2021). Measuring Financial Inclusion and Financial Exclusion. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3769847

Ozili, P.K. (2020). Theories of Financial Inclusion. *Emerald Studies in Finance, Insurance, and Risk Management*, pp. 89-115. https://doi.org/10.1108/978-1-80043-095-220201008

Patra, D. M. (2018). Electronic Payment Adoption in India: Development and Policy Issues. *A Peer Reviewed Research Journal*, Vol. 10, pp. 49-59.

Raharja, S. J., Muhyi, H. A., & Herawaty, T. (2020). Digital Payment as an Enabler for Business Opportunities: A Go-Pay Case Study. *Review of Integrative Business & Economics Research*, Pp 319-329.

Rahman, S., & Ashraf, A. (2019). Digital Credit: Policy and Regulatory Challenges. *Journal of Banking Regulation*, 20(3), 187-199.

Rasheed, R., Siddiqui, S.H., Rahman, S.A. (2018). Influence of Awareness on SMEs' Intention towards Adoption of Islamic Finance in Pakistan. *Review of Economics and Development Studies*, Vol. 4(1), pp.51-59.

Republik, F. F. G. (2018, April 9). *Facts & Figures*. TURKANA. http://www.visitturkanaland.com/turkana-county/facts-figures/

Rogers, E. M. (1971). *The Diffusion of Innovations* (3rd ed.). Free Press.

Rwiririza, W. (2022, November 30). Digital Financial Innovative Products and Financial Inclusion in Rwanda. *International Journal of Economics and Management Studies*, *9*(11), 27–35. https://doi.org/10.14445/23939125/ijems-v9i11p104

Salman, D., & Ismael, D. (2023, January 26). The effect of digital financial inclusion on the green economy: the case of Egypt. *Journal of Economics and Development*. https://doi.org/10.1108/jed-05-2022-0087

Samburu County. (2023, May 11). Kenya Luxury Safari Packages | Luxury Kenya Safari Holidays | Luxury Safaris in Kenya. https://ajkenyasafaris.com/things-todo/samburu-county/

Saputra, A., & Wicaksono, A. (2020). Developing New Wave Marketing Initiatives to Optimize Bancassurance Distribution Channel: Case Study: PT ABL. *Proceedings of the 2nd International Conference on Inclusive Business in the Changing World* (ICIB 2019), 470–481.

Saxena, D., & Goyal, N. (2022, June). Digital Financial Inclusion In India. *Interscience Management Review*, 188–200. https://doi.org/10.47893/imr.2022.1131

Shaikh, A. A., Alharthi, M. D., & Alamoudi, H. O. (2020). Examining key drivers of consumer experience with (non-financial) digital services: An exploratory study. *Journal of Retailing and Consumer Services*, 55(February), 102073. https://doi.org/10.1016/j.jretconser.2020.102073

Shailza, Y., & Sarkar, M. P. (2019). Literature Review on Adoption of Digital Payment System. *Global Journal of Enterprise Information System*, Volume - 11, Issue 3.

Shetty, A.R. (2019). Digital insurance marketing with respect to private insurance companies in Bangalore. *International Journal of Applied Research*, Vol. 5, Issue 3, Part C, pp. 1-4.

Shetty, S., & Hans, V. (2018). Women Empowerment in India and Financial Inclusion Barriers. *International Journal of Management Sociology and Humanities*, 9(3), 344-352.

Shofawati, A. (2019). The Role of Digital Finance to Strengthen Financial Inclusion and the Growth of SME in Indonesia. *KnE Social Sciences*, pp.389-407.

Sserwanga, A., Lwanga, M. M., & Munene, J. C. (2019). Mobile Money and Financial Inclusion: Evidence from Uganda. *World Development*, 122, 223-233.

Tang, H. (2019). Peer-to-peer lenders versus banks: substitutes or complements? *The Review of Financial Studies*, Vol. 32, no. 5, pp. 1900-1938.

Tay, L.-Y., Tai, H.-T., & Tan, G.-S. (2022). Digital financial inclusion: A gateway to sustainable development. *Heliyon*, *8*(6), e09766. https://doi.org/10.1016/j.heliyon.2022.e09766

Umut, M. (2020, September 9). Towards Digitalization In Insurance Market: Telematic Insurance. *Mugla Journal of Science and Technology*. https://doi.org/10.22531/muglajsci.702898

Urbiola, P., Pacheco, L., & Lozano, J. (2020). Innovation and competition in payments: Evolving policy challenges. *Payment Strategy & Systems*, Volume 15, PP 54-56.

Uyun, A., Sekarhati, D. K. S., Amastini, F., Nefiratika, A., Shihab, M. R., & Ranti, B. (2020). Implication of InsurTech to Implementation IT Decision Domain Perspective: The Case Study of Insurance XYZ. *2020 6th International Conference on Computing Engineering and Design* (*ICCED*), 1–6.

Veerabhadran, V.K (2020). Digital Finance Transformation: Challenges and Benefits. *Infosys BPM*. https://www.infosysbpm.com/blogs/finance-accounting/digital-transformation-in-finance-challenges-and-benefits.html

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *Information & Management*, 45(1), 1-8.

Wekesa, D. W. (2020). The Impact of Mobile Service Providers on Financial Inclusion in Kenya. *International Journal of Economics, Commerce, and Management*, 8(8), 133-144.

West Pokot County. (2023). *About County*. Open County. https://opencounty.org/county-about.php?com=8&cid=24

Widjaja, E. P. (2016). Non-Cash Payment options in Malaysia. *Journal o f Southeast Asian Economies*, Vol 33, No 3, pp. 398-412.

Winkler, J. K., & Drevs, F. (2018). The Impact of Digitalization on the Insurance Value Chain and the Insurability of Risks. *Information Systems Research*, 29(3), 595-612.

World Bank. (2020 April). Digital Financial Services. https://pubdocs.worldbank.org/en/230281588169110691/Digital-Financial-Services.pdf

World Bank. (2020). *Financing Africa: Through the Crisis and Beyond*. World Bank. https://www.worldbank.org/en/programs/africa-regional-studies/publication/financing-africa-through-the-crisis-and-beyond

World Bank. (2022, July 12). *Aiding the digital revolution in global financial inclusion*. World Bank Blogs. https://blogs.worldbank.org/voices/aiding-digital-revolution-global-financial-inclusion

World Bank. (2023). *Financial Inclusion*. World Bank. https://www.worldbank.org/en/topic/financialinclusion/overview

World Economic Forum. (2015). The Future of FinTech: A Paradigm Shift in Small Business Finance. *White Paper*, *October*, available at http://www3.weforum.org/docs/IP/2015/FS/GAC15_The_Future_of_FinTech_Paradigm_Shift_Sma ll_Business_Finance_report_2015.pdf

Yang, L., & Zhang, Y (2020) Digital Financial Inclusion and Sustainable Growth of Small and Micro Enterprises— Evidence Based on China's New Third Board Market Listed Companies. *Sustainability*, Vol. 12, pp. 1-21.

Yi, J., Zhang, R., & Guo, F. (2018). Can Micro-Credit Promote Financial Inclusion? The Evidence from China. *Journal of Financial Risk Management*, Vol. 7(4), pp.428-441.

Zachosova, N., Herasymenko, O., & Shevchenko, N. (2018, December 10). Risks and possibilities of the effect of financial inclusion on managing the financial security at the macro level. *Investment Management and Financial Innovations*, *15*(4), 304–319. https://doi.org/10.21511/imfi.15(4).2018.25

Zulkifli, N. S. (2023). Diffusion of Innovation Theory: A Contemporary Review. *Journal of Innovation and Social Development*, 8(2), 145-158.

APPENDICES

Appendix I: Structured Questionnaire

Section 1: Demographic Information

1. Gender:
    a) Male
    b) Female
2. Age:
    a) 18-24
    b) 25-34
    c) 35-44
    d) 45-54
    e) 55 and above
3. Education Level:
    a) Primary School or Below
    b) Secondary School
    c) Diploma
    d) Bachelor's Degree
    e) Postgraduate Degree
4. Monthly Income:
    a) Below 10,000 KES
    b) 10,000 - 20,000 KES
    c) 20,001 - 30,000 KES
    d) 30,001 - 50,000 KES
    e) Above 50,000 KES

Section 2: Digital Payment Systems

Please indicate your level of agreement with the following statements regarding digital payment systems (e.g., mobile money, online banking):

5. I frequently use digital payment systems for my financial transactions.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

6. Digital payment systems have made it easier for me to send and receive money.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

7. Digital payment systems have improved my access to financial services (e.g., savings, loans, insurance).

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

Section 3: Digital Credit Facilities

Please indicate your level of agreement with the following statements regarding digital credit facilities (e.g., mobile loans, digital lending platforms):

8. Digital credit facilities have provided me with access to credit that I wouldn't have had otherwise.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

9. Digital credit facilities have helped me meet my financial needs more quickly compared to traditional lending options.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

Section 4: Digital Insurance Products

Please indicate your level of agreement with the following statements regarding digital insurance products (e.g., mobile-based insurance):

10. I have used digital insurance products for coverage (e.g., health, crop, or livestock insurance).

a) Yes

b) No

11. Digital insurance products have increased my access to affordable insurance coverage.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

12. Digital insurance products have provided me with convenient options for insurance premium payments and claims.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

Section 5: Digital Investment Products

Please indicate your level of agreement with the following statements regarding digital investment products (e.g., online investment platforms):

13. Digital investment products have expanded my investment opportunities.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

14. Digital investment products have made it easier for me to monitor and manage my investments.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

Section 6: Financial Inclusion

Please indicate your level of agreement with the following statements regarding financial inclusion:

17. Digital financial transformation has improved my overall access to financial products and services.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

18. Digital financial transformation has positively impacted my financial well-being and economic empowerment.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

19. I feel more included in the formal financial system as a result of digital financial services.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree

20. I believe that digital financial services have contributed to reducing financial inequality in my community.

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly Disagree